

Are economic incentives the answer to the conservation of leopards in the Waterberg?

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Conflict with carnivores in South Africa dates way back to the establishment of the first European settlement in the Cape in 1652. While most large carnivores have been exterminated from private land in South Africa, leopards (*Panthera pardus*) still persist in many areas in the country. Leopards accomplish this feat by their remarkable adaptability, which is evident in their broad habitat selection and a varied diet.

Causes of leopard mortalities

Retaliation to livestock predation has been one of the main contributors to leopard losses in South Africa, Namibia and the rest of Africa and far outnumbers those shot by trophy hunters. In the face of human prosecution on private land leopards only reach densities as low as 0.1% of that on protected land. The recent explosion of game ranches introduced a new dimension in leopard conflict. The perceived impact that leopards have on game numbers, leads to the killing of not just leopards, but also caracal, cheetah, wild dogs, baboons and even brown hyenas.

Conservation value of game farms

With an estimated 9000 game ranches in South Africa (and still growing) the contribution of game ranches to conservation should not be underestimated and is already being recognised for the conservation of free roaming cheetahs and wild dogs in South Africa. However, with carnivores taking out prey from game ranches and putting nothing back, leads to extremely low tolerance levels towards them. Increasing the value of carnivores for game ranchers seems to be the only way forward in the conservation of leopards and other free ranging carnivores on game ranches.

Study at Jobedi Game lodge in the Waterberg

In a study on Jobedi Game Lodge, in the Waterberg, 4 leopards were fitted with GPS collars. Using the tracking data to identify and interview impacted ranchers gave interesting views towards the conservation of leopards. 22.7% of farmers felt that leopard numbers increased in the last 10 years and 86.8% contributed this increase to an increase in game ranches. 50.7% of ranchers reported that leopards have no value at present, while 49.3% indicated that leopards have an ecological, eco-tourism and esthetical value. Increasing the value of leopards would theoretically lead to increased tolerance of leopards, thereby benefiting leopard conservation. Incentives like increase hunting quotas, habituated leopards (more likely to see during game drive), green labelling (leopard friendly beef), leopard signs (tracking of leopards and camera trap pictures) have been proposed to increase leopard value for farmers. While livestock farms preferred increased hunting quotas as economic incentives, eco-tourism and consumptive wildlife utilization enterprises chose habituation and leopard signs as economic incentives (Fig 1).

Conservation obstacles

The dilemma is that leopards in the Waterberg have large home ranges (over 298km² for male leopards) (Table 1), spanning over 30 different farms (Fig 2). Historic and continued prosecution of leopards makes habituation impossible, while increased hunting quotas only benefit hunting operators. Although the leopard-hunting quota for South Africa has been increased, no studies as to date have linked an increase in game ranches with an increase in leopard numbers. In fact leopard range sizes today in the Waterberg seem to be same as 15 years ago (for males in 1992 range were 303km² and 2007 is 298km²).

Even though incentive driven conservation is flawed with difficulties over 70% of ranchers are positive towards leopards, while 80% of ranchers in the study indicated that leopards in the Waterberg should be conserved. Hunting alone is not going to help with the conservation of the leopards in the Waterberg. A combination of different economic incentives, the formation of conservancies, farmer input and finally ecological and social conscience will all have to be combined if conservation is to be successful.

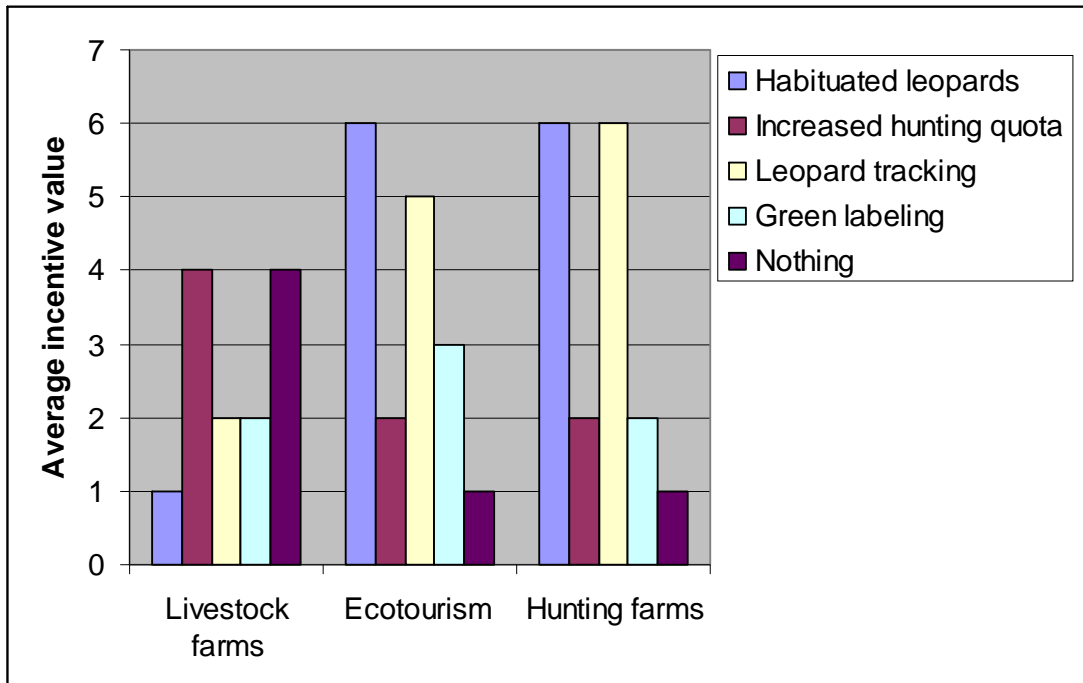


Figure 1: Incentives to increase leopard value, as chosen by different land use types

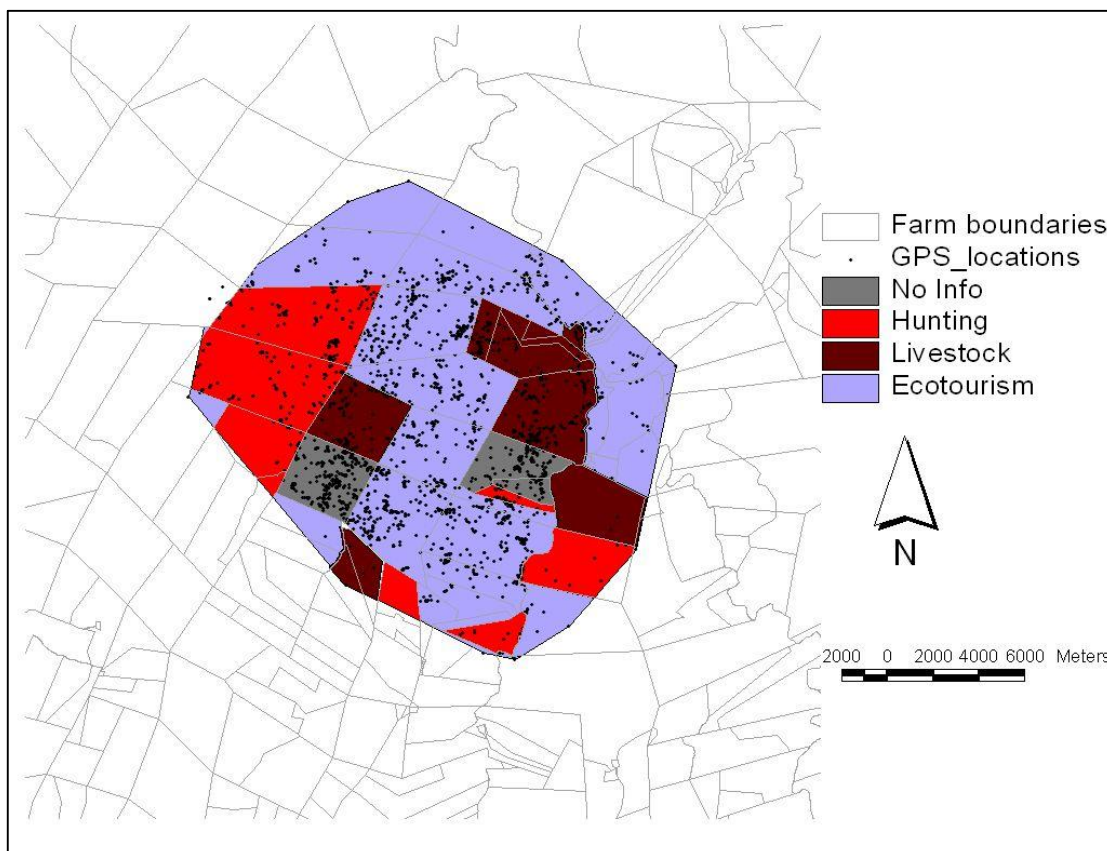


Figure 2: Graphic representation of home range of a male leopard showing the land use and number of farms impacted. Range size according to minimum convex polygon method.

Leopard ID	Range size Km ²	Number of farms used
Male	290	30
Female1	291	34
Female2	161	20
Female 3	41	4

Table 1: Leopard home range size and the number of properties used per leopard. Leopard range size according to minimum convex polygon method.