

Are poachers rhinos' only problem?



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Abstract

Rhinos don't have it easy these days. Usually, they roam large areas in Africa and Eurasia. Now they occur almost only in protected areas due to *poaching* (forbidden hunting) and destruction of their *habitats*. We had a close look at Kruger National Park in South Africa where many rhinos live. We found they face two problems: illegal hunters and droughts.

Two rhino species live in Kruger Park - white and black rhino. One curious finding is that each of them suffers from the drought in a different way - due to the different food they eat. So keeping the poachers away is not enough to conserve the rhinos. We also have to understand the effect of the climate.

Introduction

Two rhino species live in Africa: the white rhino and the smaller black rhino. Poachers hit both rhino *populations* so hard that they came to the brink of extinction.

Rhinos are killed for their horns because many people (mistakenly) think that they have healing powers and are ready to pay a lot of money for them. (Yet, a pill made of rhino horn has the same effect as a pill made of ground toenails.)

As a result, there are about 20,000 white rhinos and only about 5000 black rhinos left in Africa, despite all the people working to protect them. (Related article in *Science Journal for Kids*: [Can we save rhinos from extinction?](#))

Most white rhinos live in Kruger National Park in South Africa (Figure 2). This is a protected area the size of the country Slovenia. You might have heard about this wildlife paradise - it is a popular safari destination. You can also see zebras, elephants, giraffes, and lions there.

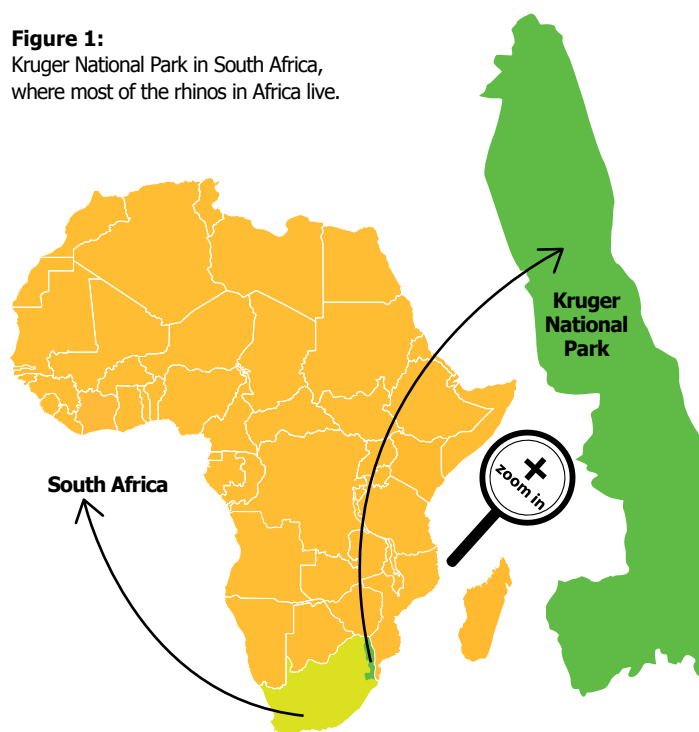
Yet, even in Kruger Park, neither black nor white rhinos live in total safety. In the five years from 2011 to 2015, poachers killed almost 3000 rhinos there. So the number of white and black rhinos has not increased much in recent years.

We wanted to know if illegal hunters are the only problem rhinos are facing. Do other factors also influence their survival? For instance, Kruger Park experienced a drought in

2015/16. Could that have also kept rhino numbers low? We looked at some climate data to find out.

Figure 1:

Kruger National Park in South Africa, where most of the rhinos in Africa live.



Methods

Our study focused on the southern part of Kruger where most rhinos live (Fig. 2). Here, the rainy season usually starts in October and ends in April. But in 2015/16 there was a drought. The region received about half of the average rainfall for normal years (293 mm of rain per year vs. 575 mm on average).

We compared the number of births and deaths (both natural and hunted) for white and black rhinos. We wanted data from before, during and after the drought to see if it affected them.

To make sure the data were representative, we divided our

study area into 3x3 km squares. Then we randomly picked 489 of them where we conducted counts from helicopters. We counted all living and dead rhinos and noted the sex and age of the animals (judging from the animals' size).

We also determined how a rhino died: if its horn was still present we concluded it was a natural death. If the horn was cut off, the rhino was poached.

Finally, we calculated each rhino's birth year by counting backwards from the age we estimated it to be when we saw it.



Figure 2: African (white) and black rhinos have been hunted so much that they only live in protected areas.
Credit: savetherhino.org

Results

Interestingly, we found different results for the two rhino species: the population of black rhinos was growing, while the population of white rhinos was declining.

But why? Our 4-year comparison gave us some insights.

First the good news: in the last two years of our study, poachers killed fewer rhinos (both black and white) compared to before. Also, fewer black rhinos died of natural

causes. At the same time, their birth rate went up. So the black rhino population increased overall (Figure 3, right).

Things were different for the white rhinos though: more died of natural causes after the drought of 2015/16, and fewer white rhino babies were born. The death rate stayed more or less the same, so in the end, fewer babies meant fewer white rhinos (Fig. 3, left).

How many white and black rhinos were left in the park by the end of our study? Which species has a better chance of survival in the long run?

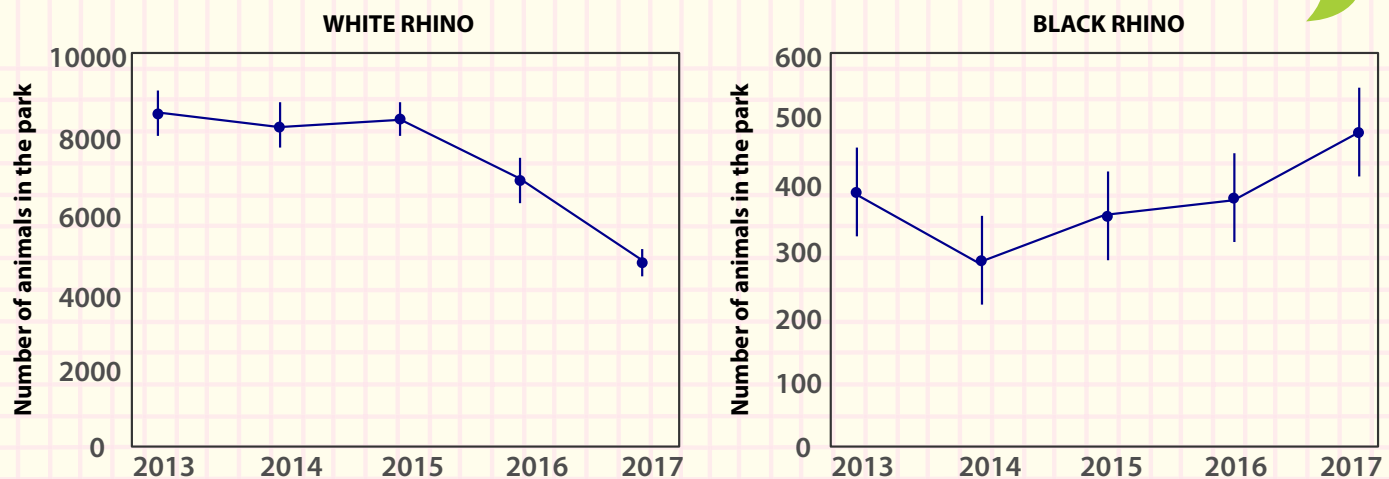


Figure 3: Population trends in white and black rhino in Kruger National Park from 2013–2017.

Discussion

We're excited to see that over the course of our study, fewer rhinos were illegally killed by poachers. We have to keep protecting them, but some of the conservation efforts are certainly working.

But our study also shows that poaching is not the only threat white rhinos face. Climatic events like the drought in 2015/2016 in Kruger, can be really hard on the animals. The white rhinos had fewer babies and many animals died due to natural causes. We did not see the same effect on black rhinos. They did OK despite the drought. How can we explain this?

The white rhino is a *grazer*, which means they eat grass or plants that grow low to the ground. When there is less rain, less grass grows, and white rhinos have less food.

Black rhinos, on the other hand, are *browsers*. They mostly eat leaves from bushes or trees. Those plants are less affected immediately after droughts, so we think that the black rhinos were not short of food. Still, a longer-lasting drought could impact them too.

Conclusion

Our study showed that on top of poaching, drought can make life harder for some endangered animals. People should continue to work hard to protect them. Continue to educate yourself about rhinos, their biology and habitat.

Never buy any wildlife products that are illegal and caused the animal to die in their production (like rhino horns, animal skins and teeth).

Glossary of Key Terms

Browser – an animal that feeds off leaves or other parts of bushes or trees, like the black rhino in our study.

Grazer – an animal that eats grass and vegetation low to the ground, like the white rhino.

Habitat – a natural environment of an animal or plant (or other living organisms). It provides food and shelter.

Poaching – the illegal killing of animals.

Population – a group of animals from the same species that live in a certain area.

Population trend – describes changes in the size of a population over a period of time.

Random sampling – sometimes we cannot count every single animal out there so we must take a sample in which each animal has an equal chance of being counted.

Representative sampling – taking samples that are “typical”, so that we don’t accidentally get an estimate which is too high or too low. For example, a representative sample of rhinos should have a similar proportion of adult and baby rhinos as the full population.

Check your understanding

- 1 Why can't you find rhinos in the wild anymore?
- 2 What did our numbers show about poaching of white and black rhinos in Kruger Park?
- 3 How were white rhinos impacted by the drought that occurred in 2015/16 in Kruger Park?
- 4 What impact did the drought have on black rhinos? How can you explain the different effect on the white rhinos?
- 5 What did our results show about overall population trends of white and black rhinos in Kruger Park?
- 6 What can you do to help protect rhinos and other wild animals?

REFERENCES

Ferreira SM, le Roex N, Greaver C (2019) *Species-specific drought impacts on black and white rhinoceroses*. PLoS ONE. <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0209678>

WWF: Rhino factsheet

<https://www.worldwildlife.org/species/rhino>

Science Journal for Kids: Can we save rhinos from extinction?

<https://www.sciencejournalforkids.org/search-articles/can-we-save-rhinos-from-extinction>