CHALLENGE FROM PEACE PARKS FOUNDATION

AUTHOR

Douglas Gillings

Combatting Wildlife Crime Programme Manager

Peace Parks Foundation

BRIEF DESCRIPTION OF OBJECTIVE

Stopping the illegal rhino horn trade in South Africa by improving protection to threatened rhino populations in key protected areas through instituting economical, scalable technology-based detection systems that give an early-warning to poaching threats and allow a rapid response.

BACKGROUND

Peace Parks Foundation (PPF) was established in 1997 with the mandate to facilitate and drive the process of transfrontier conservation area (TFCA) establishment in southern Africa. Since then PPF has formalised seven TFCAs with ten southern African countries. Comprising over a million square kilometers, these transboundary protected areas incorporate over half of the declared conservation estate in southern Africa. While protecting vital ecosystems and wildlife, TFCAs provide nature-based tourism opportunities and contribute to economic development.

However, 2008 marked the beginning of a brutal poaching epidemic in southern African protected areas that is threatening the future existence of one of the region's most iconic species – the African rhinoceros. Responding to this crisis, in 2014 PPF launched the Rhino Protection Programme (RPP). The RPP has investigated, developed and implemented a multitude of solutions targeting the illegal rhino horn trade at critical points in the trade chain in key countries in southern Africa and Asia.

The RPP has evolved into an extensive initiative, tackling the trade on three critical fronts: supporting priority rhino strongholds with emphasis on force-multiplying technological solutions; risk and threat management through cooperative intelligence-led investigations that support counter-trafficking and targeted demand management campaigns in end-use countries that seek to influence consumer behaviour. In addition, addressing one of the key enablers of poaching, advocacy, awareness and livelihood projects increase awareness and introduce incentives that favour the protection of wildlife to neighbour communities involved in wildlife crime.

Read more here:
Rhino protection report
Enlisting Microsoft Azure In The Fight Against Rhino Poaching
Hiding in the dark: Saving lives in Kruger National Park

CHALLENGE

The Illegal wildlife trade is one of the greatest threats faced by species globally and wildlife trafficking is one of the world's top criminal activities. Like other biodiverse[1] regions of the world, South Africa is experiencing record levels of wildlife crime[2]. Home to 40% of the world's rhino, the country has become the major supply area[3] for the illegal rhino horn trade.

The purported medicinal value of rhino horn in traditional Asian medicine, as well as its value as a status-conferring gift or bribe that complements Asian "face" culture, are factors motivating people to buy horn and are driving poaching in Africa. Driven by demand from enormous Asian markets, transnational crime syndicates exploit weak state controls and corruption as well as vulnerable communities neighbouring protected areas[4] and have moved into the region to control a rampant trade in illegally harvested wildlife.

The result is a devastating 9,000% increase in rhino poaching since 2007. Thousands of rhinos have been butchered and although poaching has declined in 2018, two rhinos are still lost to poaching every day. In addition, other species fetching high prices on the black market, such as African elephants and pangolins are increasingly targeted.

Wildlife crime is also impacting the region's people. Rangers[5] place their lives at risk on a daily basis and rural villages neighbouring protected areas have become crime hotspots. Countless young men, coerced into lives of crime, have lost their lives or have been imprisoned. Gains from wildlife crime are short-term and at the expense of sustainable wildlife-based initiatives that could secure a more prosperous future.

Until demand reduction and community development initiatives in both Asia and southern Africa begin yielding results, the killing of rhinos in South Africa will not abate. It is therefore critical to ensure rhinos are adequately secured in protected areas in the country.

Anti-poaching strategies in protected areas focus on detection and early interception of threats. The goal is identifying the threat while poachers are attempting entry or have just entered the area. Early detection of threats gives enforcement teams' adequate time to respond and increases the chances of securing arrests, preventing poachers from locating and killing a rhino.

Several detection systems have been employed - Annexure 1: Poaching Detection Technologies — A Survey, Section 3, provides an evaluation of systems in use and reviews

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[1] Biodiversity is defined as: the variety of plant and animal life in the world or in a particular habitat, a high level of which is usually considered to be important and desirable.

[2] Poaching is defined as: illegal hunting or capturing of wild animals.

[3] Milliken T., Emslie R. H., Talukdar, B. (2009). African and Asian rhinoceroses—status, conservation and trade. A report from the IUCN Species Survival Commission (IUCN/SSC) African and Asian Rhino Specialist Groups and TRAFFIC to the CITES Secretariat pursuant to Resolution Conf. 9.14 (Rev. CoP14) and Decision 14.89. Report to CITES 15th meeting (Doha, March 2010), CoP 15 Doc.45.1A annex: 1–18.

[4] A protected area is defined as: locations which receive protection because of their recognized natural, ecological or cultural values.

[5] Rangers are defined as: people employed in protected areas responsible for protecting national parks; the natural resources, ecosystems, and wildlife within them; and the people who visit them.

them against criteria such as energy efficiency, scalability and robustness. The evaluation highlights limitations and the varying levels of success in the field.

Under-funded protected areas in South Africa, with rhino populations critical to the survival of the species,[6] are now being targeted by syndicates who have moved from areas such as KNP where risk outweighs benefits. There is thus an urgent need for scalable, economical, poacher detection solutions that can provide these at-risk populations the same level of protection as well-funded areas. An example of the various components comprising an anti-poaching solution is available here and illustrated in this diagram showing technical functionality integration.

GOALS

Considering the limitations of detection solutions currently available, and the examples above, PPF would like to conceptualise potential proof of concept/s (PoC) for mainstreaming and deployment in the fight against rhino poaching. Concepts selected will be explored further in workshops planned for early 2019. Key considerations should be that they are economical and scalable and can interface with current systems. They should ideally be focused on open source solutions and standards that can be provided to all protected areas in South Africa. Solutions should be themed on: 1. Detection of poachers entering or hunting illegally within the protected areas and 2. Data processing that enables data to be more effectively synthesised, visualised and interpreted by rangers.

END-USERS

Rangers and field rangers working in protected areas in southern Africa.

AGENDA 2030

The protection of wildlife indirectly addresses several United Nations Sustainable Development Goals. In reducing poaching, wildlife assets, critical for the development of sustainable economic opportunities that will support poverty reduction in communities are secured – linking to Goal 1, No Poverty. The direct link is with Goal 15, Life on Land - actively halting the loss of biodiversity by protecting and preventing the extinction of threatened species (rhino and other wildlife). *Read more here* Southern African Development Community website.

FUTURE PLANS

Solutions demonstrating viability will be taken further and integrated within the larger strategy and ecosystem. They will be tested in real-world scenarios with resources allocated. Focused workshops using raspberry pi and common sensors will be held to test possible open source solutions and expand on the identified concept detection and protected area management functionality. A plan will be developed for 2019.

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[6] Emslie, R., & Brooks, M. (1999). African rhino: Status survey and conservation action plan. Cambridge, UK: IUCN, World Conservation Union.