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Integrating UAS in African National Parks.

Unmanned Aerial Vehicles (UAVs) have been successful in many aspects of today's economies ranging from Military through to agriculture and Marine life. The emergence of remote sensing aerial platforms in the National Parks with real-time reporting has been a game-changer for the endangered game species in Africa such as the rhinos and elephants whose demand for tusks has put these animals at such a greater risk. The use of Drones in the monitoring of these animals with low risks of exposing or destruction of habitat will see the old traditional ways of foot patrol by the game rangers reduced and rangers trained to read and digest the information provided by the drones. This information was later used to provide actual statistics and positions of the poachers without them realizing their positions had been given out by the drones. This will reduce the tasks for the remembers because they will be knowing the exact pinpoint position where to go. This is a cost-effective way of saving money which will be channeled into other research works.

According to an online article published November 3, 2019, by Lazaro J Mangewa, the author argues that real-time ecological data is critical for the effective and efficient monitoring of wildlife populations and habitats to deal with the threats that face wildlife. In his arguments, he stated the importance of these drones' applicability, especially in Tanzania. Interestingly, the adoption of the use of drones to monitor and get real-time details of animal positions in Africa.

This method has been adopted by many countries and this has proved to be cost-effective hence reducing the human presence in the jungles.

Furthermore, we have witnessed increased poaching for the Asian market especially in China for the animal Tusks and rhino horns. The enormous number of animals have been killed and the introduction of Ultralight UAS and integrating it in the National Parks and game reserves has seen these animal movements being tracked and the information relayed directly to the controlling centers. With the UASs, this application when fully developed will reduce encroachment and poaching as a result we see an increased number of animals.

Conservation Biology in Sub-Saharan Africa by Richard Primack and Jonny assess the use of remote sensing which offers a variety of tools that allow biologists to monitor biodiversity beyond the abilities of traditional field monitoring techniques. These methods are more advanced beyond field patrols. The remote sensing and spatial analysis for the African conservation with the addition of data being provided by the drones have been effective in many aspects. It is time-saving and covers a wider range of the vast sizes of national parks. If the government decides to advance the use of drones in national parks protecting a threatened species will require a firm grasp of making sure that the conservationists put in place emphasis to carry out aggressive ways to combat poaching and protect the wildlife.

Further application of these drones would be to access the hard-to-reach places. The drones can easily access and monitor these areas, unlike the traditional methods. In case of a wildland fire outbreak, drones have been used for firefighting and monitoring. Rural areas where these national parks sit tend to be so isolated and without minimal resources investing in drones to replace some of the old techniques will increase the efficiency and performance in these national parks. This form of drone eliminates the costly helicopter-based surveillance. The drones will be

used to see current fire conditions and respond accordingly to changing situations. Time-saving and hence reducing the areas burnt down and loss of flora and fauna habitat. Furthermore, these methods reduce the risk of better game rangers and fighters on land through aerial monitoring.

In this modern error, there has been a lot of tourists in hard-to-reach national parks socially mountain areas around the world. Search and rescue and surveying of areas of hard-to-reach are easily delivered by the drones. Drones using the cameras survey large and wider areas at a cheaper cost. These drones are operational day and night especially with the use of thermal imaging cameras and floodlights. In cases where animals are injured there is an easy way of finding them using a surveillance method in combination with the use of thermal imaging to search and rescue these animals.

The Australian group called Wildlife Drones has employed drones to collect data and track the movements of small migratory birds. Using the drones, the group is currently working across Australia and abroad to track the movement of a wide range of most endangered species. This new development and integrating of drones in the conservation of wild habitat has paved way for improved conservation and research and monitoring and tracking of animals and their movements.

Interestingly in other fields, UAVs have been used for water management through effective monitoring of water areas for wildlife protection. The World Wildlife Fund (WWF) has applied drones in areas all over the world to fight poaching and illegal wildlife trades. In South Africa, we witnessed at times drones engaging and closing on the poachers. Drones are believed to be armed so this scare will deter the killing of this wildlife and reduce the confrontation by rangers and poachers hence improving the technical ability of rangers to perform distance away from the hot areas.

In conclusion there, is much has this is still in the trial phase, the success of the drones in monitoring fire, water areas, and real-time reporting of the position of poachers as seen significant improvement in wildlife management. As we still have a long way to go yet a short time, technological advancement has been steady fast and with this, we will witness more efficient and significant methods of drone applicability. The drone pilots training will help just like the usage of military drones by security forces, we will see drones fighting the battles of game rangers against the poachers.

Drones are the future of wildlife management and tracking all the fauna and flora destruction. In Nepal, the tagging technology has proven effective and has seen a very big reduction in game ranger patrolling since the specialized aerial surveillance system was introduced by the WWF.

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