

How do we protect our wildlife in the present and the future?

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In the 21st century, we are facing a huge crisis. Our world has been evolving and changing as rapidly. However, as a result, many side effects occurred by rapid changes of the earth. One of the most urgent problems is the disappearing wildlife and animals in danger. Our community should make a plan for wildlife protection. Currently, many wildlife protection organizations and government agencies in each country are trying to protect wildlife with drone use. This is a prime example of solving problems through advances in technology with developed technology. At this time, I will research the status of wildlife activities, and solutions with drone use. In addition, I will share examples of solving these problems through drones too.

According to the article, “The 10 most endangered animals in 2021”, there are 41,415 species on the International Union for Conservation of Nature and Natural Resources (IUCN) Red List, and 16,306 of the endangered species are threatened with extinction. On the list, there are many animals that we are familiar with like the tiger, elephant, and so on. There is a specific reason why those species of animals are decreasing: climate change. This is because global warming has changed the climate with an impact on animals' habitats. Many wildlife experts analyze that the population is decreasing because animals cannot adapt to these environmental changes. For example, according to the article, “Climate change responsible for global vegetation change” the author cited that:

“While the researchers, geographers from the University of Zurich, Switzerland, and colleagues from the Netherlands, say the last 30 years have seen substantial changes, satellites have during that time been recording how vegetation has altered. In a striking and perhaps unexpected development, the team found that while vegetation has declined south of the Equator, it has increased in the northern hemisphere. The climate is what governs the

seasonal activity of vegetation. In the humid mid-latitudes, the temperature is the largest factor influencing plant growth.”

Over the past 30 years, many ecosystems have been destroyed and the vegetation level is dropping extremely low. For most terrestrial creatures, these ecosystem changes are fatal to their survival. Therefore, we have to make a plan to protect them. Another reason for animal extinction is overexploitation. Examples of overexploitation are poaching, redevelopment, logging, and so on. Poaching is illegal, however, more than 100,000 elephants have been killed by poachers. According to the article, “Poaching animals, explained,” every animal needs a place to eat specialized food found in nature. However, the animals captured by a poacher are filled in boxes or suitcases and will be locked up for the rest of their lives.

The destruction of natural forests is also an important problem. Most of the land has already been developed, so people cut down trees and build buildings there. For example, the Amazon, the world's largest rainforest, according to Brazil's National Space Research Institute, forest losses in Brazil's Amazon rose 22% year-on-year between August 2020 and July 2021, the highest level in 15 years. In forest areas, fires deliberately set to prepare pastures and agricultural land for livestock breeding and illegal mine development activities often spread large fires, causing great damage.

Let’s think about protecting our wildlife. Can a drone protect and save it? Certainly, I can say “yes”. It is a representative example of contributing to society with advanced technology. So, how can drones help wildlife? The first application is the existence of anti-poaching drones. The typical anti-poaching drones are Super Bat Da-50, Air Shepherd ZT-TIC, Silent Falcon, Zeta FX-61 Phantom, 100km Skywalker, DJI Inspire 1, SenseFly eBee Plus, and so on. People might be curious how drones prevent poaching.

According to the article “7 Top Anti-poaching drones for critical wildlife protection,” drone usage includes animal/flock counting, camera trap image retrieval, vessel monitoring, animal tracking, perimeter assessment, habitat management, anti-poaching activities, nest surveys, and species identifications. The biggest advantage of drones is that they protect people from dangerous activities while being appropriate for wildlife protection. Wildlife protection organizations can collect the data from the area where poachers frequently operate. The command of an organization tasks an anti-poaching drone with monitoring poachers. The drone is equipped with a thermal sensing camera and an optical camera, as well as GPS connectivity. These drones contribute greatly to arresting poachers. When drones are used, poaching activities have decreased significantly.

The Super Bat DA-50 drone has especially great performance compared with others. The endurance is 10 hours, the operational flight ceiling is 15,000 feet, and this drone can travel from 50 to 80 miles per hour. The biggest strength of this drone is that it can fly quietly and silently with autonomous flight capability including launch and landing. Therefore, poachers cannot hear it. In addition, Super Bat DA-50 is practical with a high-quality point-and-click camera on the wing for mapping missions with the ability to remotely send and receive data and communication. In addition, it has lots of functions to protect animals such as battery power on the ground for pre-flight checking, compact and modular design small enough to fit in an SUV, and optional data processing software for aerial mapping applications. This drone is playing an important role in catching poachers.

Drones with animal tracking have an important role. It is close to impossible for people to identify animal populations without high-tech equipment. Drones provide very suitable equipment to solve these problems. Through drones, it is possible to more clearly identify the types of animals, the feeding grounds, and the increase or decrease in population.

Cited with the article “conservation drone project”, the author said:

Conservation Drones are inexpensive, autonomous, and operator-friendly unmanned aerial vehicles for surveying and mapping forests and biodiversity. They are able to fly pre-programmed missions autonomously for a total flight time of up to ~50 minutes and over a distance of ~25 km. Depending on the camera system installed, these drones can record videos at up to 1080 pixel resolution, and acquire aerial photographs of <10 cm pixel resolution. Aerial photographs can be stitched together to produce near real-time geo-referenced land use/cover maps of surveyed areas.

In conclusion, drones provide “no risk but high return.” Drones still have a key role in multiple fields and are performing various missions. Many people are concerned that the advancement of drone technology will cause increased unemployment. However, like wildlife protection, drones are a good example of technological development that enables people to do things they cannot do otherwise.

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