

Drones Usage in Wildlife Conservation

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Introduction

When protecting wildlife comes to mind, one does not instantly think of drones. Drones in the past have been a problem in wildlife with countless bird strikes and wreaking havoc on other species by disturbing them with noise while interrupting their habitual life. More recently though drone technology has been adapting to help with wildlife conservation and prevention of extinction of many animals. Drones have three main reasons why they are effective to preserve wildlife; drones can prevent invasive species, drones can prevent/limit poachers, and drones are a cost-effective environmentally sound way to protect wildlife. Drone usage in wildlife has endless benefits to keep wildlife safe without disrupting the environment around it.

Eliminating Evasive Species

One way drones are used to protect wildlife is by eliminating invasive species that are forcing their way into environments where they are not welcome. A perfect example of this would be found in the Galapagos Islands where rats are invading the island. According to Murison in "How Drones Are Protecting Endangered Species" drones are bringing in poisoned rat bait to eliminate the invasive species. More ways drones are used to prevent invasive species are mapping the distribution of massive weeds, early detection of deadly oak diseases, and many more examples are given in the article written by the University of Minnesota. In Florida, drones can be used to track pythons that are not native to the state. Drones make it easier to track since they are not provoked by the drones unlike, they are while humans follow them. Another way drones are being used in our real world to prevent invasive species is in Hawaii where silk oak trees are damaging the limited ecosystem there. Drones are a completely useful source in tracking and preventing the spread of invasive species (Are Drones the Key in Tracking and Reducing Invasive Species).

Preventing Poachers

A second huge way drones are helping in the protection of wildlife is by preventing poachers. One way that poachers are being prevented by drones is by using thermal imagery. Drones are quiet and far enough away so the poachers will not know they are being spied on. The people then operating the drones can quickly call or alert rangers who are in charge of that area. Drones have also been used to spy on people who were illegally fishing in a protected reef area. This process would be extremely similar to the way it happens on land (Torchia). Another way of preventing poachers is having a drone survey the area equipped with a loud horn to alert the animals in harm's way. This has been used to alarm rhinos to get them to evacuate towards somewhere safe. The drone can also be used to guide many animals to a safe spot by being extremely maneuverable (Scully). These new systems are entirely needed because poaching kills 40,000 elephants and 1,200 rhinos each year. The system for stopping poachers has been proven effective with a 93% accuracy rate in predicting illegal poaching activity (“Are Drones Bad for Wildlife”). The last way drones prevent wildlife from being destroyed from illegal activity or poaching is by tracking illegal burning and preventing forest fires. Drones equipped with thermal technology can quickly alert the right personnel if a fire is about to break loose and cause serious damage to the environment around it (Qiu).

Environmental Safety

Lastly, drones are a cost-effective and safe way to protect environments without damaging the current state of the habitat. One of the biggest ways drones are superior at keeping the environment safe is by less noise to startle animals and make them nervous. For example, when an aircraft flies by most animals are startled and scared. Increased heart rates, startled animals, and breeding behaviors are all changed when spooked by an aircraft (PSU

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Noisequest). Compared to drones in a recent study done by Mulero-Pázmány drones were experiencing much better results in terms of animals' reactions. Most animals showed minimal effects from the drones unless the drones used a threatening flight path. This study proves that drones will not harm animals on research assignments if flown correctly. Drones can continually help the environment in ways that one does not initially think of. For example, environmentally friendly energy is key for the future and for not destroying our environment. Drones can be used to continually check on pipelines, solar panels, dams, and wind turbines without risking human lives and while being a cheap alternative. Drones also help out with agriculture and have numerous benefits to help farmers to create a better environment for crops that are needed. The drone imagery can help show farmers where their crops are succeeding in growing and what is needed to help crops grow where they are currently failing. Drones are now being used to help efforts in reforestation. This solution to the problem of deforestation was enhanced by Mark Rober whose plan is to have drones fly over terrain to see optimal spots for seeds of trees to grow. Once the desired location is spotted the drones can fly over and release seeds, fertilizer, and ghost peppers to deter animals such as rabbits, and squirrels from eating the seeds as food (Shore).

Conclusion

Concluding the topics of this paper, drones have endless benefits to clean and protect the environment. Drones can stop the spread of invasive species and the endless torment of invasive animals in societies in today's world. Drones have been proven effective to quickly detect invasive plants and can easily track animals that are not native to the specific habitat where it is now found. The second huge benefit of drones to conserve our wildlife is preventing poachers. Losing a certain species due to human intervention is one of the biggest atrocities that

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humankind can do. With drone intervention, it is easier to stop and prevent poachers who illegally hunt endangered species. This is a huge benefit to keeping certain species able to survive on this planet. The third and last main point in this paper is how many endless environmentally friendly benefits drones have. From checking on sources of cleaner energy to making sure that animals do not get startled by the noise they are making while doing checkups to ensure numbers and data are not obscure. Overall drones must continue to make great strides in conserving the wildlife and not lose progress or there will be numerous downfalls of plants and animals.

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