



Mule Deer
Working Group

Fact Sheet

DRONES IN BLACK-TAILED AND MULE DEER MANAGEMENT

Fact Sheet #47

BACKGROUND

Unmanned Aircraft Systems (UASs) or drones have become readily available to the public with many technological advances such as high-definition and thermal infrared (IR) cameras, global positioning systems, and longer lasting batteries. Availability, affordability, utility, and simple operation have put drones in the hands of almost 1 million people. According to the United States Federal Aviation Administration (FAA), the number of registered drones is increasing rapidly as cost declines and technology improves exponentially. Drone types and sizes vary from multi-rotor to single-rotor helicopters to fixed-wing types with the ability to easily control and maneuver in the air for hours. Drone regulations vary by country and jurisdiction. In the United States, drones must weigh less than 55 pounds at takeoff (including payload), fly within 400 feet of ground level, and the operator must be within line-of-sight of the drone. However, waivers can be granted from the FAA that exempt someone from these requirements. United States and Canadian jurisdictions have additional laws that pertain to drones in wildlife management. By 2025, 21 of the 24 Western Association of Fish and Wildlife Agencies allowed the use of drones to count or observe deer not related to hunting. Drones can benefit mule deer management, but also bring many challenges related to fair chase and harassment of wildlife.

AGENCY USE

Drone use by wildlife management agencies continues to evolve with improvements in cameras, batteries, and other technologies. These innovations allow wildlife management agencies to conduct management activities in new or alternative ways. Drones provide an alternative method to traditional aircraft surveys to estimate mule deer population parameters necessary for making management decisions. Identifying different species or sex and age classes can be difficult using IR imaging cameras, so using them in conjunction with high-definition cameras can bridge the gap between detecting animals and positively identifying individual animals. Increasingly, artificial intelligence and machine learning are being used to identify species and even assess animal health.



Photo: Kanwar Johal, Superwake

High-definition, IR, and other cameras attached to drones have made it possible for many jurisdictions to use drones in a limited or strategic fashion. For example, in Alaska, the Department of Fish and Game staff have used drones to spot deer in clear cuts to more effectively dart them from the ground to attach radio collars. In Utah, biologists from the Division of Wildlife Resources have used drones to herd/haze elk and pronghorn out of agricultural fields in crop depredation situations, assess wildlife damage to agricultural crops such as corn fields, as well as outreach efforts to video big game animals that are released during translocations. Drones have proven to be very useful in Wyoming, where biologists and game wardens have used them to document wildlife distribution, hazing elk out of conflict situations, and to document habitat conditions. In the Yukon Province, drones have been used to conduct deer and elk population surveys. Drones have also been modified to apply herbicide for brush treatments on smaller acreage.

PUBLIC USE

Drones can provide hunters with a bird's-eye view of their hunting areas. This allows them to scout for game animals more effectively, saving time and effort. Drones can also be used to assess the terrain, identify potential hazards, plan access routes, or help recover deer. Using drones for shed hunting is becoming more popular. However, many states and provinces do not allow use of drones for hunting, scouting, or both. If the jurisdiction allows drones to be used for scouting, there are laws to uphold fair chase standards, such as waiting 24-72 hours prior to hunting or a season opener after the use of a drone in the hunting area. All states and provinces have laws prohibiting drones from harassing wildlife. Being careful not to harass wildlife is not only required by law, but biologically important.

Agencies have prosecuted drone operators who have harassed wildlife. In one case, a hunter harassed a mule deer buck from private land onto public land to harvest it. Harassment cases using drones have occurred throughout the West and are concerning. Fines and penalties vary by violation and jurisdiction, but fines can be as high as \$125,000. In addition, penalties such as loss of drone equipment and drone license or even jail time are possible. Drones can undoubtedly be used for wrong reasons to give hunters a significantly unfair advantage.



CHALLENGES AND CONCERNNS

Drones create challenges for deer managers if they are used to chase or harass wildlife. For example, black-tailed and mule deer and other wildlife face stresses from environmental factors year-round. Adding another stressor like drone harassment can have a negative impact on the survival of that animal. Many animals are preyed upon from the air and can be distressed by drones flying above them. A mother with young will likely have an even more heightened reaction to the presence of drones which could cause increased energy expenditure. Those using drones should maintain distance from wild animals and avoid activity that causes agitation. Animals may not visibly react to stress, but if you notice any behavior changes, you are definitely too close and causing harassment. It is everyone's duty to be stewards of our wildlife and wild places, so using drones responsibly requires operators to be attentive not to harass wildlife on winter range, move them from resting spots in hot or cold weather, or scatter them from water sources. Not only is harassing wildlife illegal, it can tarnish the image of hunters to the general public. It is imperative that you know your state's or province's regulations concerning drone use for wildlife, be aware not to harass wildlife, and keep an eye out for others not following the law or ethical use of drones. As society continues to become more technologically advanced, we must be vigilant about monitoring the balance between the benefits and potential challenges to wildlife conservation, our hunting heritage, and fair chase principles.

More information on mule deer can be found at www.muledeerworkinggroup.com