USE OF TRAIL CAMERAS FOR MANAGING MULE DEER

Fact Sheet #40

BACKGROUND

We sometimes consider remotely placed automated cameras (trail cameras) to be a recent invention, yet remotely triggered cameras have been used since the early 1900s when trip wires and flash bulbs were used to capture images of wildlife. By the early 1980s, technology had advanced to include infrared beam triggers and 35mm film. Today remote images are captured with high resolution digital cameras with rapid trigger speeds, wireless image transfer, video capability, and infrared illumination. With this advancement in technology, concurrent with decreasing cost, the use and popularity of trail cameras dramatically increased among the public and wildlife conservation agencies.

MANAGEMENT AND RESEARCH USES

Trail camera use is common and very useful for wildlife research and management purposes. Biologists and law enforcement officers use trail cameras in ways that improve efficiency, promote safety, increase compliance with wildlife laws, and enhance our ability to locate or enumerate secretive or uncommon species. Some examples include:

- Law Enforcement - Trail cameras allow law enforcement officers to extend their efforts to document unlawful activity, such as monitoring illegal bait sites, documenting motorized vehicle use on closed trails, and searching for offending parties.
- Monitoring - Wildlife managers and hunters alike use remote cameras for gathering population monitoring data, such as fawn:-doe and buck:doe ratios, use of wildlife crossing structures, and migration routes.
- Occupancy - Wildlife agencies and other researchers may use cameras to collect occupancy data to document species occurrence in certain areas, particularly for species that occur at low densities and are difficult to detect with traditional surveys.
- Abundance or density estimation - Trail cameras can be used to estimate wildlife population abundance and density if statistical assumptions of sampling approaches can be met. Many population estimation techniques using trail cameras are continually being refined to provide sound statistical sampling designs.

USE BY HUNTERS AND WILDLIFE WATCHERS

Because of the affordability and availability, hunters and wildlife watchers have begun to use trail cameras to enhance their experiences in the natural world. Hunters can use trail cameras to assess the availability of bucks and learn about deer behavior in their anticipated hunting areas. Wildlife watchers enjoy learning more about wildlife from trail camera photos. In some instances, citizen-science protocols can be used for monitoring efforts and may contribute meaningfully to research and management.

Photo by: Matt Maples

POTENTIAL NEGATIVE EFFECTS

Although the use of trail cameras by wildlife agencies and the public has become common practice, their use has the potential to negatively impact

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mule deer due to the increased human presence on the landscape. This may be especially true if vehicles, horses, ATV's or foot traffic is concentrated near a focused area such as water sources. Although the camera itself may not have a measurable impact on wildlife behavior, many studies have documented a negative effect of increased traffic, noise, and disturbance on mule deer. Wireless cellular cameras may help alleviate some of those concerns, although their use hasn't been as widely adopted by the public due to their higher costs and data transmission fees. The use of cameras that transmit images to the user wirelessly also raise questions about fair chase and ethics. In addition, such cameras may be illegal in some states or during hunting seasons.

Mule deer water source with at least 15 cameras visible.

The most important source of potential disturbance is that associated with the placement, maintenance, and frequent checking of traditional (non-wireless) trail cameras near water sites in arid environments. The potential effect on wildlife is high when multiple parties repeatedly visit camera locations over a short time. Wildlife officials in multiple jurisdictions have observed as many as 15 or more cameras placed at the same water source. When multiple cameras are placed by different parties on the same water source, as often occurs before and during hunting seasons, the associated disturbance may interfere with mule deer accessing crucial resources. This can be especially problematic in arid ecosystems where access to free-standing water is critical to mule deer during hot and dry periods.

FAIR CHASE

Several western states have considered the ethics of using trail cameras for the purposes of hunting, scouting, or pursuing mule deer and other game species. The ethical dilemma largely involves the concept of fair chase, specifically determining what constitutes an unfair advantage when hunting or pursuing wildlife. Because remote cameras can improve the ability of a hunter to locate a large-antlered buck, the issue of fairness has been questioned. Wireless cameras that instantaneously transmit images to the user via cellular or satellite technology have escalated the controversy. By using multiple cameras, and remote transmission capabilities, a single hunter may canvass a large part of a hunting unit or seasonal range with real-time images of mule deer. Some states have addressed these issues by adopting regulations on the use of trail cameras for hunting purposes or the type of camera system allowed (such as, wireless image transmission). Boone and Crockett and Pope and Young have both taken positions against the use of wireless trail cameras and may not allow an entry if defined rules of fair chase are violated.

SUMMARY

Trail cameras are commonly used by wildlife agencies, wildlife enthusiasts, and hunters to capture images of mule deer in their natural environment. These tools can help wildlife managers and the public gain information about the timing, frequency, and distribution of where wildlife occur. However, they may have negative consequences when used around critical resources such as water developments or fawning sites, due to increased human presence and disturbance.

If you choose to use a trail camera for scouting, photography, or hunting, check the local regulations before going afield. Hunters and other wildlife enthusiasts should consider reducing their collective disturbance in critical areas. It is imperative all trail camera users work to minimize any potential negative effects of this activity to ensure wildlife habitats remain undisturbed.

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

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