Position Statement

EFFECTS OF RECREATIONAL AND COMMERCIAL USE OF DRONES ON WILD SHEEP

Situational Overview

The Wild Sheep Foundation (WSF) supports wild sheep management and use decisions that consider and balance the known threats to wild sheep and other mountain ungulates from all sources. Recent advances and use of technology can be beneficial, but may also create negative impacts on wild sheep, and present unique challenges for their managers and the recreational public.

The use of Unmanned Aircraft Systems (UAS), often referred to as Unmanned Aircraft Vehicles (UAVs) or drones, is steadily increasing, including within wild sheep habitat. Drones generally operate at low altitudes (<500 m) and can be present in any terrain. Therefore, they interact with wildlife as a new and novel anthropogenic disturbance, the effects of which have not yet been fully evaluated (Mulero-Pázmány et al. 2017). Reported wildlife and domestic pet responses to drones appear to be similar, and can range from escape/flight response, various behavioral changes, to stress-induced elevation in heart rate and other physiological responses. The reactions are believed to be caused by the sound and/or visual stimulus of the drone (RSPCA 2021), with the strongest reactions in wildlife occurring where drones use a target-oriented flight pattern (i.e., pursuit and following), are of larger UAS sizes, and have fuel-powered (noisier) engines (Mulero-Pázmány et al. 2017).

To better understand the effects from drones, Rebolo-Ifrán et al. (2019) examined current literature and online sources, and found that many species from different taxonomic groups and multiple countries exhibited strong behavioral responses to drone overflights, resulting in changes in movements following overflights. Furthermore, they reported that 26% of the species that were disturbed by drone activity were included on at least one IUCN categories of threat. Coincidentally, published literature on the effects of helicopter and other aircraft overflights on wild sheep have documented strong changes in movements following those overflights (Bleich et al 1994). The types of behavior changes caused by drones varies from an overt and acute flight response of individuals that can result in injury or death, to chronic avoidance and alienation of habitat. Changes in behavior can create changes in physiological and metabolic metrics, including elevated stress hormones; chronic stress responses in wildlife have been shown to result in impacts to individual and herd health, and population persistence.

In summary, there is the potential for significant negative responses from wild sheep and other wildlife as a result of disturbance from both commercial and recreational drone use. Proactive and responsible management of manned and unmanned aircraft is an important part of protecting and ensuring the sustainability and resiliency of our wild sheep resources.

Recognition of the significant impact of aerial disturbance on wildlife has prompted some jurisdictional wildlife agencies to implement specific legislative restrictions and policies on drone use:

- https://news.gov.bc.ca/releases/2016FLNR0150-001340
- https://bcparks.ca/visiting/parks-and-drones/
- https://www.leg.state.nv.us/NAC/NAC-503.html#NAC503Sec148 and
- https://www.leg.state.nv.us/NRS/NRS-503.html#NRS503Sec010 (Nevada regulation and statute on manned and unmanned aircraft related to wildlife).

Provisions for certification/licensing of drone operation is now required in Canada (https://tc.canada.ca/en/aviation/drone-safety/flying-your-drone-safely-legally#legal), and similar requirements are being considered elsewhere.

Wildlife agency staff and others recognize there may be specific benefits to the use of drones, and recommend:

- implementing mitigation measures such as ensuring minimum separation distances to wildlife, to reduce negative impacts;
- decisions to use UAS being justified with a formal rationale, and authorized under permit;
- in some areas, UAS operations are only undertaken under the direction of an agency professional who is knowledgeable on disturbance-risk and the impacts on the wildlife being observed; and/or
- the activity is considered necessary to protect human safety or is justified by the collection of scientific/ biological information.

Drone use that is considered necessary to support wildlife management and/or research would still be conducted in a manner that appropriately restricts negative impacts to wildlife.

Public use of UAS/UAV/drones should be informed by research and outreach to improve the understanding of impacts associated with their use. WSF supports existing agency and jurisdictional policy/certification/licensing programs, and urges agencies and regulators to include research that assesses potential impacts of drone operations while providing education, instruction, and communication to enable responsible public use of this technology.

Position

In response to the increasing pressures, known impacts and potential dangers from UAS/UAV/drones on wild sheep and other wildlife, the Wild Sheep Foundation supports regulations restricting use of this technology while hunting. WSF also supports development of federal/state/provincial/territorial government land and wildlife management agencies' regulation of drone use for recreational and commercial purposes, until such time that adequate certification, licensing, and education programs are developed, in all jurisdictions. WSF encourages both the public and wild sheep conservation stakeholders to conduct any activities using UAS/UAV/drones in a manner that does not disturb wild sheep or wildlife, and to practice caution and employ avoidance strategies when using drones in areas where they may result in disturbance to wildlife.

Literature Cited

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