ELK REFUGE AREAS AND THEIR IMPACTS

NOTE: This narrative is a Montana Fish, Wildlife and Parks (FWP) product assembled to describe impacts from refuge areas where elk become concentrated during fall hunting seasons in Montana. Incorporating inputs from FWP Communications, Enforcement, and Wildlife staff, it reflects management experience, research, and various perspectives given statutory responsibilities for elk management, public expectations, and disease concerns. It is not intended to speculate reasons for landowner decisions, challenge private property rights, or advocate specific solutions. It is intended to assist staff in communicating this real and often volatile issue impacting elk and elk management.

BACKGROUND

Elk management in Montana is guided in part by state law directing FWP and the Fish and Wildlife Commission to manage sustainable numbers of elk. Sustainable numbers were developed through extensive public involvement and incorporate biological and social considerations, including landowner tolerance. They are manifested as elk population objectives in the current Montana Elk Management Plan. Montana has long identified public elk hunting as the primary mechanism for population management.

Many biological and social issues surround elk management. Across Montana, some elk populations are over population objective because of low harvest despite liberal hunting seasons. Many of these situations include refuge areas on private lands or inaccessible public lands where concentrations of elk result from one or more landowners limiting hunting pressure or other human disturbance. Fall refuge areas can "pull" elk from surrounding habitats, including public lands where habitat and motorized travel are often managed to maintain some level of elk presence. These refuge areas become problematic if they preclude effective population management relative to publicly developed elk population objectives.

Elk quickly adjust behavior as they discover and use refuge areas, including residential areas that may also disrupt travel corridors. Relatively high habitat quality in some refuge areas and reduced energy costs from low disturbance levels may further enhance elk survival and productivity.

Wolves or other predators are often perceived as the reason for elk concentrations in refuge areas, but elk do not necessarily escape predation in these areas. Further, some elk concentrations existed prior to wolves and others persist in areas with little or no wolf presence. Research confirms elk adjust behavior and small scale distribution in response to wolves, but are consistently more sensitive to human activity. Consequently, consistent human disturbance intended to move or disperse elk likely reduces any effect wolves or other predators have in concentrating elk. Habitat changes can also cause elk concentrations. While elk do have a long history of finding relatively rich foraging opportunities or security on private land, hunting or other deliberate human disturbance can disperse these elk.

CONSEQUENCES

Limited or no elk harvest on refuge areas and no dispersal from them during the fall hunting seasons promotes elk population growth. As elk population density increases, so does average group size, the proportion of elk living in large groups, and the frequency of large groups. These effects are more pronounced in open, grassland, shrub, or irrigated habitats. Increased populations in and from refuge areas confound management.

Prolonged, larger, or denser concentrations of elk increase the likelihood of elk-to-elk transmission of brucellosis (*Brucella abortus)* where it is known to occur. Spontaneous abortions can occur without individual elk moving to secluded locations, making infected material available for transmission to other elk. Increased infection of elk may increase potential elk-to-cattle transmission, regardless of elk numbers. Prolonged, larger, or denser concentrations of elk may also enhance transmission of other diseases, including Chronic Wasting Disease (CWD) if it were to become established in Montana.

Elk associated with concentrations on refuge areas during fall hunting seasons can and often do persist through spring or longer. Refuge areas may lead to lost migration patterns and more yearlong resident elk on refuge areas and neighboring non-refuge properties that do not want more elk presence. Elk arriving and staying longer on or near refuge areas increases game damage potential and disease risk regardless of population size. Game damage prevention efforts can be hampered by refuge areas. Habitat may also be negatively affected.

A single refuge area may affect elk distribution and limit elk harvest across an entire hunting district. Limited hunting pressure and harvest on such areas for a portion of the fall season or late hunting seasons, or both, has generally not reduced population size. Liberalized hunting pressure on elk using public lands may result in even more elk on refuge areas. Human use of public lands, even if managed for less impact than historic levels, may still help "push" elk into the stronger "pull" of relatively quieter refuge areas. Large groups of elk can be difficult to disperse and may prompt unsightly "shoot-outs" if a group of elk moves off a refuge area during hunting season. These circumstances often prompt landowners and hunters to criticize FWP, resulting in strained relations among all three.

SUMMARY

One management challenge across Montana is refuge areas where elk concentrations are maintained during fall hunting seasons. Refuge areas can cause large total numbers of elk, high density elk concentrations, large elk group sizes, increased disease transmission potential, problematic distributions of elk with reduced seasonal elk migrations to public lands, more yearlong resident elk and game damage potential on private lands, reduced harvest, and impaired management. Many of these consequences are detrimental to the long term health and management of elk, domestic livestock, and private lands supporting elk. History has shown that efforts to manage elk numbers, distribution, or disease risk without addressing refuge areas are minimally effective and often completely unsuccessful.

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