Wildlife Management Unit 509 Elk Total Minimum Count Survey (2015)

Background

Wildlife Management Unit (WMU) 509 has not been aerially surveyed for elk prior to 2015. Beginning in the 1960s, elk were periodically translocated from Elk Island National Park to nearby WMUs 510, 512 and 516. While elk were slow to populate WMU 509, by 1995 enough elk had been observed in WMU 509 to support a recreational hunting season. Incidental elk observations have been recorded on past aerial ungulate surveys but data has been insufficient to draw any conclusions on population size. A population goal of 200 elk is in place for this WMU. In February of 2015 Alberta Environment and Sustainable Resource Development (ESRD) flew a post-hunting season Total Minimum Count (TMC) survey of WMU 509.

Elk management, and the associated harvest regime, in WMU 509 are currently under review and consultation is occurring with local stakeholders. Stakeholders value the opportunity to hunt quality bulls in this WMU as it is currently managed as a 6+ point special license hunting season for bulls in November, with unlimited archery harvest opportunities in September and October. Local land owners and agricultural producers have identified elk depredation concerns in WMU 509 and have provided elk sightings that suggested that the elk population was much higher than the 2014 estimate of 98 animals.

Survey Method

The focused survey, Total Minimum Count, method was used to survey known elk wintering ranges. Key wintering areas were identified from previous aerial ungulate survey information, landowner information, and information obtained from Solicitor General Enforcement Field Services staff. In addition, an unstandardized relative density surface was created from all existing elk observations from previous surveys and for ENFOR occurrences where the number of animals, or approximate estimate, was specified in the record. While this approach is not representative of actual densities the layer was useful to prioritize the survey effort for the total count based on previous information. If elk were not easily located in an area, we raised our altitude and an effort was made to locate tracks in the snow to search for the group.

When elk were encountered, effort was made to determine number of calves, number of cows, and number of adult bulls in the group. When possible, bulls were classified into their respective antler class based on the number of antler tine points. However, bulls were often found in bachelor groups and due to thick cover were unable to be classified by number of antler tine points. When large groups were encountered, or when in heavy cover, the pilot slowly flew in soft arcs working the elk from one side of the wooded area into a clearing. The clearing was first surveyed for fences or property that could be damaged by a large herd of elk. Careful observation of the herd behaviour, and patience or corrective action by the pilot to direct the herds' movement would typically result in the cohesion of the elk herd in

a single group in the open where we counted and classified the group. Once the group was in the open a series of digital photographs were recorded to later be used to improve our counts and classification of sex, age and antler class.

Results

This one day survey (6.3 hours flight time) was flown on February 17, 2015. A total of 213 elk were observed, of which 53 were bulls, 95 were cows, 30 were calves and 35 were unable to be classified. Of the 53 bulls observed; 19 were classified as small (1-2 antler tine points), 15 were classified as medium (3-5 antler tine points), 10 were classified as large/trophy (6+ antler tine points) and 9 were not able to be classified by exact number of points but exceeded at least 3 points. Table 2 summarizes the bull antler classifications. Given observed data, at least 18.8% of bulls were harvestable under the current 6+ antler tine point restriction in WMU 509 (perhaps greater than 18.8% as 9 bulls were seen too briefly determine exact number of points). The observed age/sex ratio of this population of elk is 56 bulls: 100 cows: 32 calves. Survey data is presented in Table 1. One known herd of approximately 20-30 elk was unable to be located in the central portion of the WMU. Prior to this survey, the elk population was estimated to be 100 animals (based on past observations and public reporting). This survey was the first specific elk survey conducted in WMU 509 and demonstrates that the elk population has reached the goal of 200 elk. Given the nature of a TMC survey, no confidence in a population estimate can be inferred from this data.

Table 1. WMU 509 Elk Survey estimate and Cow Calf Ratio

Survey Year	Survey Type	Total Elk Observed	Ratio to 100 Adult Females	
			Bulls	Calves
2014/15	Total Minimum Count	213	56	32

Note: The 2014/15 season was the first year an elk specific

Table 2. Classification of bulls observed by number of antler tine points (February 2015)

Unclassified (but > 3 pt.)*	Spike	3+ pt.	4+ pt.	5+ pt.	6+ pt.
9	19	0	6	9	10

The '3+ pts' to '6+ pts' categories are used to demonstrate the minimum number of antler tine points per antler for those elk exhibiting asymmetry in this regard.
**These bulls were observed briefly and demonstrated antler characteristics of medium to large bulls greater than the average 3 point bull. Observation time was insufficient to categorize antler tine points more specifically.*