2010 Wildlife Management Units 136 and 140 deer

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Wildlife Management Units 136 and 140 were flown only once previously (Morton 2005), when it was determined that a baseline population estimate should be established. These two WMUs have little quality deer habitat and generally have low densities of deer (i.e. WMU 136 had a mule deer density of approximately 0.27 deer/km^2 in 2005). As well, neither WMU has a special management regime in place, such as Trophy buck management.

Hunting permit numbers for both WMUs have increased over the last 5 years. Population estimates used for permit calculations each year were derived from the 2005 survey results and adjusted for harvest and recruitment estimates based on the

provincial management plan for both mule deer (F&WD 1989) and white-tailed deer (F&WD 1995) and annual game harvest surveys. The increase in permits each year led to stakeholder concerns that the populations, particularly mule deer, were being pushed well below their management goal (ASRD unpublished data, 2005 - 2009). In order to properly address the concerns, WMUs 136 and 140 were placed at the top of the aerial survey priority list for the winter of 2009/2010.

The results of these surveys will be used by ASRD to calculate permit allocations for the upcoming hunting seasons. As well, they will provide the starting point for calculations to determine population estimates in future years, as both WMUs will now be considered a low priority for aerial surveys for the next 5 years.

Study area

WMU 136 and 140 are located in the mixedgrass and dry mixedgrass natural subregions of Alberta (Natural Regions Committee 2006) (Figure 1). WMU 136 is mostly cultivated farmland, with some areas of native grassland in the center of the unit and along the northern edge, where it includes portions of the Siksika Indian Reserve #146 that lie ssouth of the Bow River. Since recreational hunters typically do not gain access to hunt on Reserve lands, only the portions of WMU 136 that are outside Reserve boundaries were included in the study area. Population estimates and associated densities derived from survey results will only apply to these same lands. WMU 140 is also predominantly cultivated agricultural land, with native grassland covering about 20% of the unit in the northeast portion, south of Bow City.

Survey methods

Based on a request by ASRD, this survey was flown as a trend survey and not the typical random stratified block survey. The survey attempted to fly 100% coverage of the area to provide a minimum population count for the WMUs. Survey flight lines were spaced 1.6 km apart, covering the entire area of both WMU 136 and WMU 140. Where vegetation cover and topography reduced sightability to less than 1.6 km between flight lines, distance between lines was reduced. As well, in areas with deep coulees and/or heavy tree cover, lines were meandering rather than straight, to effectively obtain complete coverage of the area. Height and speed of the rotary-winged

aircraft varied depending on wind speed and direction and amount of cover and topography of the area, but was typically 500 m above ground with a forward air speed averaging 195 km/h. Observers were able to see up to 800 m in open areas and 400 - 500 m in other areas. The crew was comprised of one navigator, who also recorded and

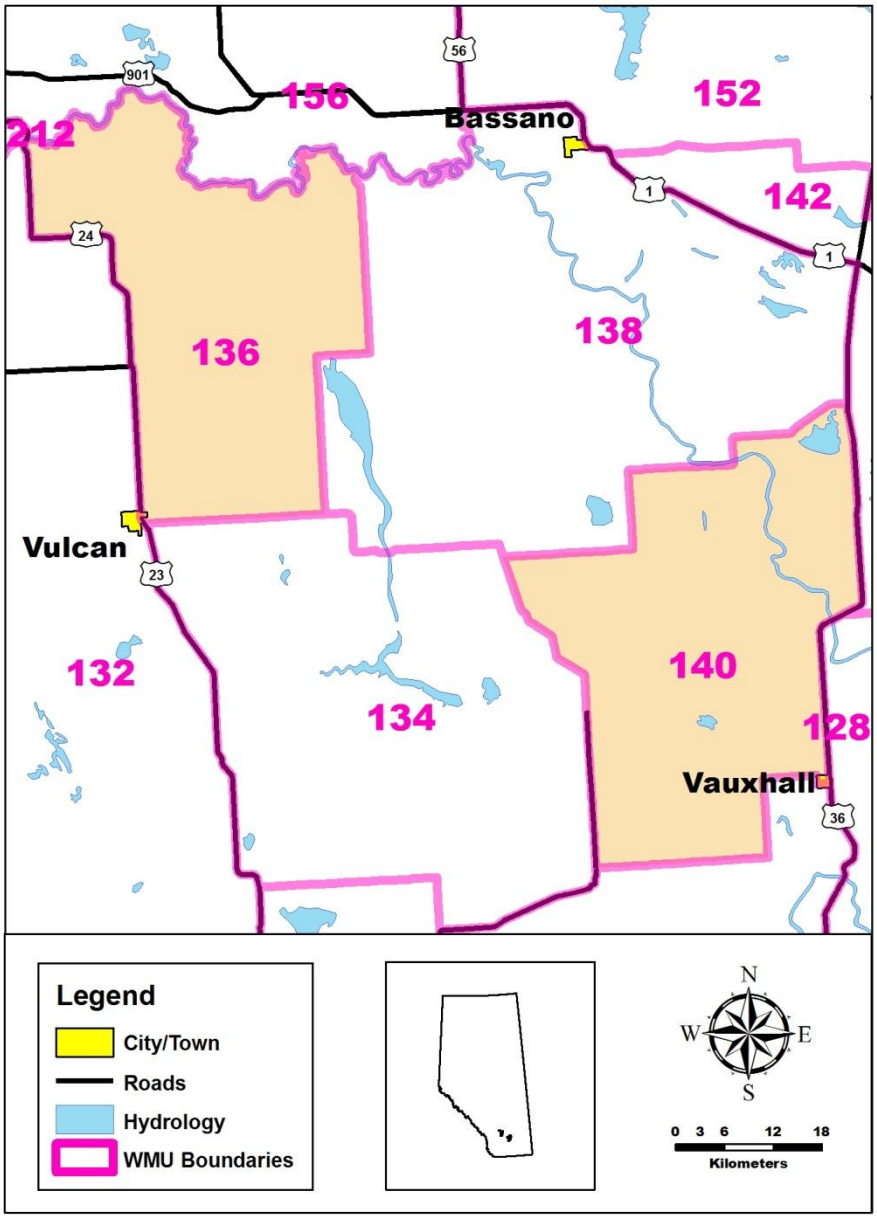

Figure 1. Location of Wildlife Management Units 136 and 140 in Alberta.

observed, in the front seat beside the pilot, and two observers in the back seat, one on each side of the helicopter.

For population composition, sex was determined by the presence of antlers, as early in December, bucks would not typically begin dropping antlers. To determine age, body size and length of face provides an accurate means to classify fawns from adults.

Snow cover was very good throughout all three days of the survey, 9 – 11 December 2009. Cloud cover varied from 70 - 100% over the three days providing 'Good' to 'Excellent' visibility. We did not correct for sightability; therefore, overall counts should be considered as minimum population estimates.

Results

In WMU 136, a total of 381 mule deer and 276 white-tailed deer were observed (Table 1). The density of mule deer in WMU 136 is at least 0.28/km^2, assuming 100% sightability. Herd composition data indicate 67 bucks per 100 does and 65 fawns per 100 does. The density of white-tailed deer in WMU 136 is at least 0.21/km^2. Herd composition data indicate 25 bucks per 100 does and 73 fawns per 100 does.

In WMU 140, a total of 137 mule deer and 308 white-tailed deer were observed (Table 1). The density of mule deer in WMU 140 is at least 0.09/km^2. Herd composition data indicate 60 bucks per 100 does and 76 fawns per 100 does. The density of white-tailed deer in WMU 140 is at least 0.20/km^2. Herd composition data indicate 21 bucks per 100 does and 46 fawns per 100 does.

Table 1. Mule deer and white-tailed deer aerial survey results for Wildlife Management Units 136 and 140 in 2009.

	Bucks	Does	Juveniles	Unclassified	Total Deer	Deer/ km²	Ratio to 100 Females	
							Males	Juveniles
WMU 136								
Mule Deer	109	164	107	1	381	0.28	67	65
White-tailed Deer	35	139	102	0	276	0.21	25	73
WMU 140								
Mule Deer	35	58	44	0	137	0.09	60	76
White-tailed Deer	38	185	85	0	308	0.20	21	46

Literature Cited

Fish and Wildlife Division. 1989. Management plan for mule deer in Alberta. Wildlife Management Planning Series No. 1, produced by the Department of Forestry, Lands and Wildlife, Edmonton, Alberta, Canada. 138 pp.

Fish and Wildlife Division. 1995. Management plan for white-tailed deer in Alberta. Wildlife Management Planning Series No. 11, produced by Alberta Environmental Protection, Edmonton, Alberta, Canada. 142 pp.