

## 2012 Hay-Zama bison



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### **Suggested Citation:**

Hermanutz, R., and L. Fullerton. 2013. Hay-Zama bison. Pages 21-25. *In*: M. Ranger and K. Zimmer. Delegated big game surveys, 2011/2012 survey season. Data Report, D-2013-005, produced by the Alberta Conservation Association, Sherwood Park, Alberta, Canada.

The Hay-Zama wood bison population was established in 1983 and has been reported on in three previous survey reports (Morton 2003; Moyles 2007, 2008). In 2008, a seven month hunting season was initiated for bison in the Hay-Zama complex from 1 September 2008 to 31 March 2009 for Aboriginal hunters and a two month season from 1 January to 28 February for recreational hunters. The Resident Wood Bison season in this area has continued annually with the goal to maintain bison numbers at 400 – 600 animals. The objectives of the introduction of a hunting season were to reduce bison numbers and their range, due to growing concerns over disease transmission among herds, with bison moving west from Wood Buffalo National Park; concern for public safety with conflicts in communities and risks associated with road collisions

in the region. We monitored the Hay-Zama bison population in March 2012 using aerial surveys.

### *Study area*

The Hay-Zama wood bison herd established itself in the area west of High Level, east of Rainbow Lake and north to Zama City (Moyles 2008). The limits of this distribution are roughly North 58 degrees 30 minutes in the south, North 59 degrees 30 minutes in the north, West 117 degrees 30 minutes to the east, and West 119 degrees 30 minutes to the west (Figure 1). The herd distribution has changed in recent years, expanding to the south along Highway 58 and easterly along the Zama Highway. Expansion to northerly and westerly areas appears to be seasonal, occurring during the summer. Six townships (Township 112, 113, and 114, Range 2, and 3) have been established as a “No Hunting Area” to provide a refuge of important winter habitat for the bison.

### *Survey methods*

From 6 – 8 March 2012, a two-person crew in a Cessna 206 airplane performed pre-flight surveys for bison in the Hay-Zama area. The pre-flight surveys consisted of transect lines flown in an east-west direction along lines of latitude spaced 1 minute apart, covering an area of approximately 6,900 km<sup>2</sup>. Included in this area were flight lines not previously flown to locate bison in the northern and eastern areas of their range. Bison sightings and areas of bison tracks were recorded, and a GPS waypoint was taken using a handheld unit. Poor visibility due to falling snow interrupted surveys on 7 March; however, conditions improved again on 8 March and the pre-flight was successfully completed.

On 9 – 10 March 2012, the same two-person crew flew intensive surveys in a Bell 206B helicopter to locate and count the bison observed during the pre-flight surveys. All observed bison were counted and classified as calves or adults. Photos were taken of herds to confirm the number of calves, which were identified by their smaller body size and absence of horns. Yearlings were included in the adult age class because of the difficulty in distinguishing between these two age categories in an aerial survey. We did not correct for sightability; therefore, overall counts should be considered as minimum population estimates and direct comparisons of survey results among years may be difficult.

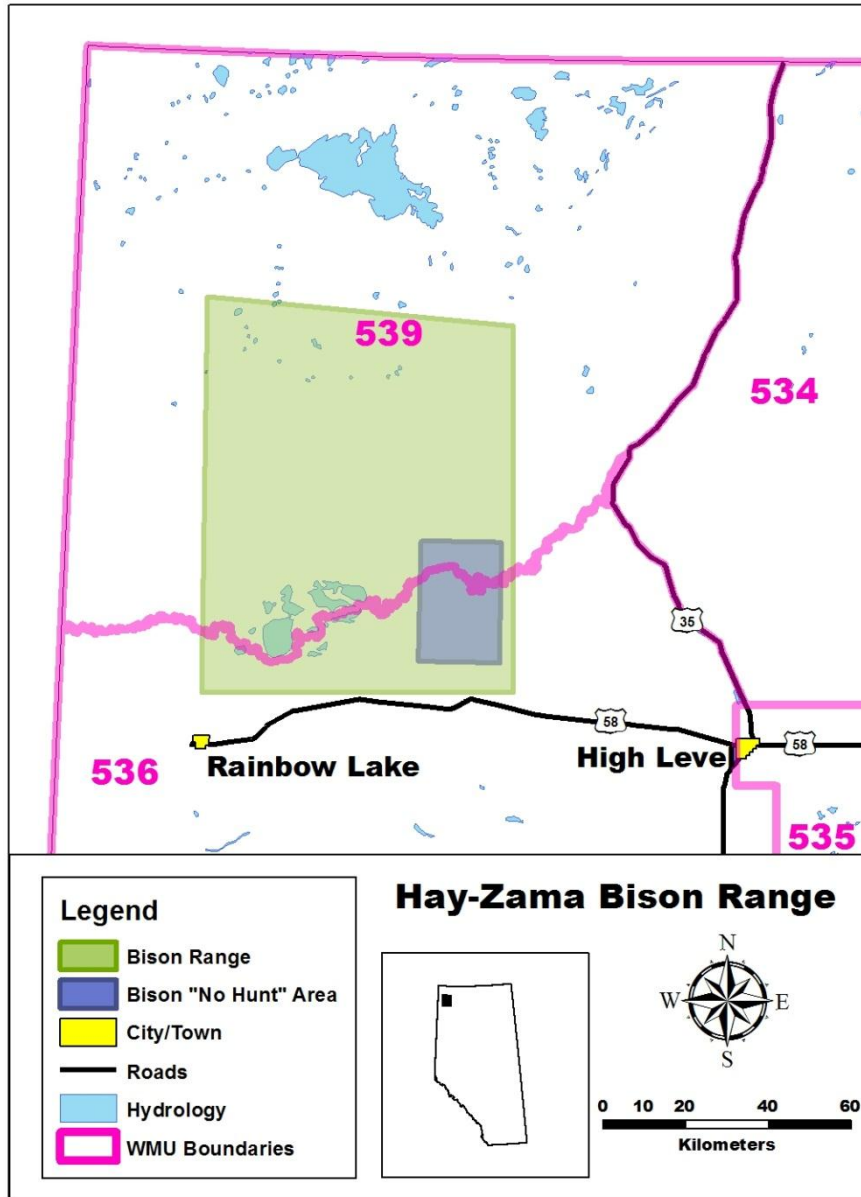


Figure 1. Location of the Hay-Zama bison herd range in Alberta.

Although light conditions for the survey varied from flat to bright, overall weather and sightability conditions were acceptable for the survey. Snow conditions were fair to marginal with accumulations in the area being far below normal values. Through visual and ground observations, there was an estimated 40 to 60 cm of snow cover; however, the amount of fresh snow to cover old tracks was minimal.

### *Results*

A total of 587 bison (512 adults and 75 calves) were counted at 30 sites throughout the survey area (Table 1). A significant number of bison were located within the Hay-Zama Wildland Provincial Park. Four bison were located northeast of Zama City (Township 119 Range 3), while only 2 bison were located southeast of Zama City (Township 115 Range 5). The remaining bison were observed in traditional wintering areas throughout their range. No bison were located near the Zama Highway or Highway 58, in the southern portion of their traditional winter range. The number of bison counted during the 2012 survey is consistent with the previous three years. The Hay-Zama bison population appears to be stabilized at the higher end of the desired population goal (400 – 600 animals).

Table 1. Comparison of aerial survey results for bison in the Hay-Zama area from 1994 – 2012.

Year	# of Groups	Number of bison			% Calves <sup>b</sup>
		Adults <sup>a</sup>	Calves	Total	
Mar. 2012	30	512	75	587	13
Mar. 2011	31	500	61	561	11
Mar. 2010	39	452	75	527	14
Feb. 2009	59	547	50	597	8
Mar. 2008	63	593	59	652	9
Mar. 2007	41	499	66	565	12
Feb. 2006	41	499	23 <sup>c</sup>	522	4
Mar. 2005	33	365	59	424	14
Mar. 2004	30	267	53	320	17
Feb. 2003	23	236	26	262	10
Feb. 2002	21	200	33	233	14
Mar. 2001	12	158	27	185	15
Mar. 2000	12	132	21	153	14
Mar. 1999	14	81	16	97	17
Feb. 1998	12	106	6 <sup>d</sup>	112	5
Mar. 1997	7	75	14	89	16
Mar. 1996	7	61	15	76	20
Nov. 1995	4	62	12	74	16
Mar. 1995	4	48	15	63	24
Dec. 1994	3	41	17	58	29

<sup>a</sup> Adults includes yearlings.

<sup>b</sup> % Calves = calves/total population x 100.

<sup>c</sup> This is a minimum count due to difficulties in distinguishing calves from yearlings.

<sup>d</sup> This is a minimum count.

### *Literature Cited*

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