

2008 Hay-Zama bison

Section Author: Dave Moyles

Suggested Citation:

Moyles, M. 2009. Hay-Zama Bison. Pages 20-24. *In*: N. Webb and R. Anderson. Delegated aerial ungulate survey program, 2007-2008 survey season. Data Report, D-2009-008, produced by the Alberta Conservation Association, Rocky Mountain House, Alberta, Canada. 97 pp.

The Hay-Zama lowlands were selected in the late 1970s and early 1980s as a site suitable for reintroduction of wood bison (Reynolds et. al. 1982). An enclosure designed as a temporary holding facility for these animals was built and a small herd was introduced from Elk Island National Park in 1983. The bison were never released because of concerns about these animals contracting bovine brucellosis and/or tuberculosis from diseased bison wandering out of Wood Buffalo National Park. In 1993, portions of the fence collapsed and the small herd escaped into the Hay-Zama area. The Hay-Zama wood bison herd has spread throughout the low-lying areas between Zama Ridge to the south and the slopes of the Cameron Hills and Bootis Hill to the north. We have monitored an increase in bison numbers in their range through aerial surveys in late winter. The purpose of these surveys was to estimate bison numbers and their distribution in the Hay-Zama Lakes – Chinchaga River - Zama City area (Figure 4)

Study area

Much of the area in and around the Hay-Zama wetland complex is comprised of sedge meadows and wet sedge grass communities, which are prime foraging areas for bison (Reynolds et al. 1982). Bison also make extensive use of oxbows along the lower reaches of the Chinchaga River to its confluence with the Hay River.

The area surrounding the wetlands and rivers is dominated by black spruce muskeg communities, with aspen and white spruce bluffs on better drained soils. The network of oil patch infrastructure, which includes well sites, borrow pits, road side edges, pipelines, battery sites and airstrips, provides additional habitat for bison because clover has been used extensively for reclamation purposes. Bison have followed this

infrastructure into the Shekilie Field and close to the Paramount Bistcho Plant. Bison have also followed the Zama Road to its junction with Highway 35, and have been seen along Highway 58 near Rainbow Lake.

Survey methods

On March 6 2008, a two-person crew in a Cessna 206 fixed-wing aircraft searched areas where bison had been seen during prior years, as well as new areas that were thought to be attractive to bison. The extra areas surveyed this year included the area along Highway 35 north from the High Level airport to the Steen River area, east of the junction of Highway 35 and the Zama City Road, north of Zama City to the Paramount Bistcho gas plant in 122-2, W6M, along the Hay River to the British Columbia boundary, then north along 120° longitude to 59° 15' latitude, then east into the Shekilie Field area. A GPS waypoint (geographic coordinate) was taken for all sightings of bison or tracks and the number of bison recorded.

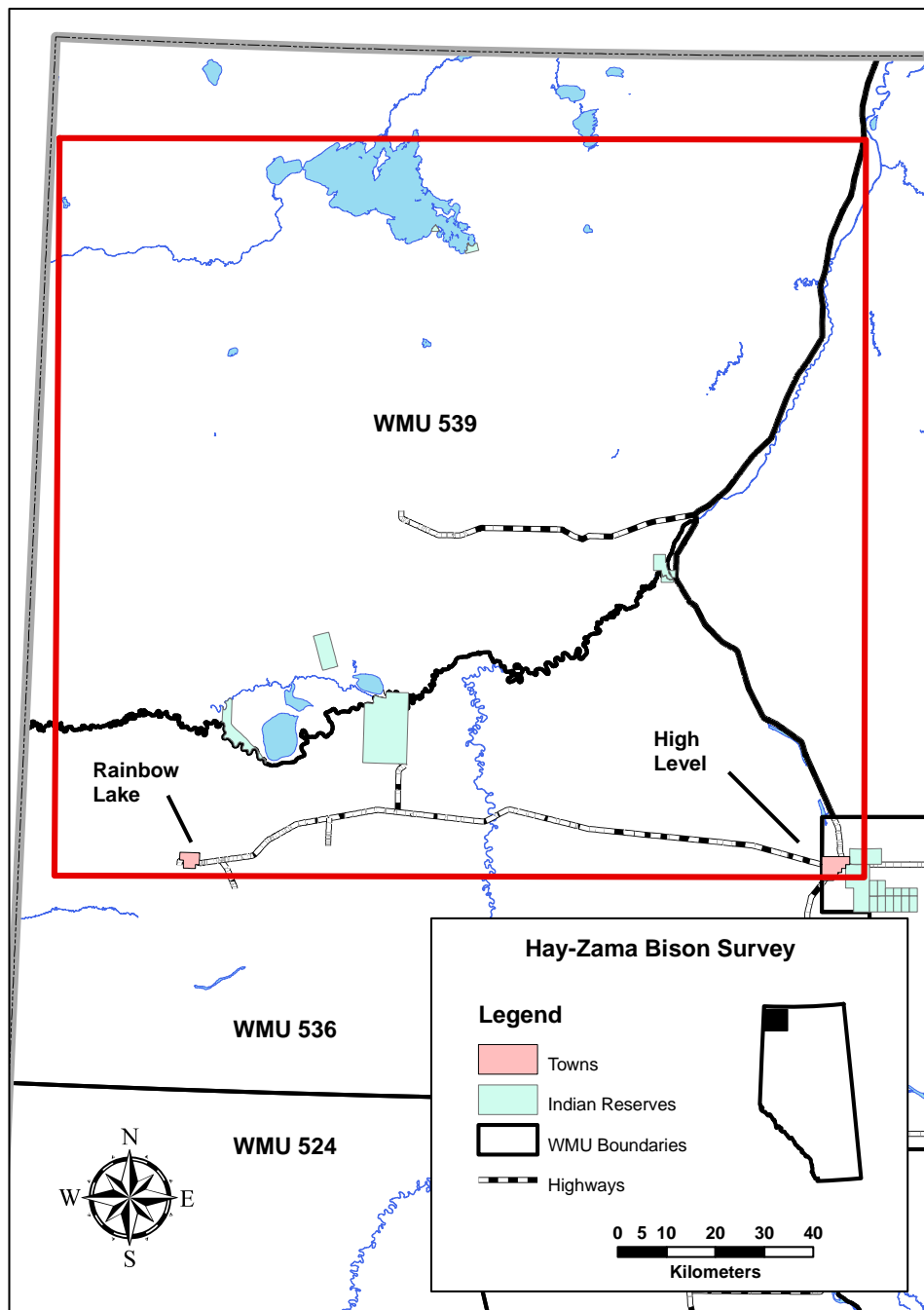


Figure 4. Location of the Hay-Zama bison herd in Alberta.

On March 7, a two-person crew in a Bell 206 helicopter located all bison observed the previous day. After locating bison, the pilot maintained a relatively high altitude to allow observers to conduct a complete count. The pilot then maneuvered closer to the herd to allow identification of calves. Calves were identified by their smaller body size and horns. If any difficulties were encountered with classification or the total count, the crew took pictures of herds for further analysis. Given this approach, our counts were presumably biased toward individuals found in herds and provide minimum estimates.

Results

Conditions were ideal for this survey given fresh snow had fallen on March 1 and 3. Bison tracks were easily identified in the deep snow conditions. Bison or bison tracks were located at 63 sites throughout the large area surveyed. In total, the survey crew observed 652 bison (593 adults and 59 calves) and five sites with fresh bison tracks but no bison (Table 3). No bison were seen along Highway 35, the upper reaches of the Hay River, along the Alberta-British Columbia boundary or in the Shekile or Paramount Bistcho fields. A few old tracks were found in the Shekile Field area.

Table 3. Hay-Zama area bison surveys, 1994 to 2008.

Year	# of Groups	# of Bison			% Calves ^b
		Adults ^a	Calves	Total	
Mar. 2008	63	593	59	652	9
Mar. 2007	41	499	66	565	12
Feb. 2006	41	499	23 ^d	522	5
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	155	14
Mar. 1999	14	81	16	97	17
Feb. 1998	12	106	6 ^c	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	30

^a "Adults" includes yearlings

^b % Calves = calves/total population x 100

^c This is a minimum count (Morton 2003)

^d This is a minimum count; difficulty encountered distinguishing calves from yearlings

Literature Cited

- Morton, K. 2003. Population Surveys in the Hay-Zama Lowlands - Wood Bison (*Bison bison athabasca*) – February 24, 2003. Alberta Fish and Wildlife Division. Unpublished Report, Edmonton, Alberta. 10 pp.
- Reynolds, H., G. Lynch, and B. Lajeunesse. 1982. Range assessment of the Hay-Zama Lakes area, Alberta, as habitat for wood bison and a proposal for their re-introduction. Canadian Wildlife Service, unpublished report, Edmonton, Alberta. 54 pp.