



**IN-SERVICE NOTE**  
**2004 AERIAL ELK SURVEY**  
By  
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**Elk Program Coordinator**

**Introduction** – An annual aerial elk survey was initiated in 1991 to gain more information on the status and distribution of Arkansas' elk herd. Survey objectives were to: 1) obtain reliable information on elk distribution; 2) obtain data on bull/cow and calf/cow ratios; and 3) obtain a minimum population estimate. The survey was again conducted in 2004.

**Methods** – A Hughes 269B helicopter was used for the survey. Changes in procedures for 2004 include: 1) use of same procedures used in the 2002 survey with the exception that survey section two was enlarged slightly with the east boundary extending to the mouth of Richland Creek (all of the Gene Rush WMA included in survey section two) and the survey of the river corridor from highway 65 to White River was modified to include only the river corridor from highway 65 to highway 14; 2) radio telemetry equipment was used in locating some elk; and 3) the private land survey in elk zone A was not completed until April 5 due to weather delays.

**Results (all elk survey areas)** – A total of 266 elk were observed. Antlered bulls totaled 72 (21 spikes, 51 branched) with antlerless elk totaling 194 (143 cows and 51 calves). The bull/cow ratio was 50 bulls per 100 cows and the calf/cow ratio was 36 calves per 100 cows. The largest elk group observed included 57 animals and the average group size for 29 elk groups observed was 9.2. Survey data suggests that the elk herd along the Buffalo River corridor is somewhat stable; however data indicates a decline on private land in elk hunt zone A with low numbers persisting for the last two years.

**Results (original BNR corridor)** – The original BNR corridor survey (includes the Gene Rush Wildlife Management Area (GRWMA)) was initiated on February 11 and completed on March 10. A total of 250 elk was observed including 92 (37%) in section one (Boxley Valley to Pruitt), 97 (39%) in section two (Pruitt to mouth of Richland Creek and 61 (24%) in section 3 (mouth of Richland Creek to the Hwy 65 bridge). Two hundred and forty-one elk were observed during the BNR corridor flight with 9 elk spotted during National Park Service (NPS) property boundary flights (all on private land). Twenty-eight elk were spotted during boundary flights in 2003.

Antlered bulls totaled 70 (21 spikes, 49 branched) with antlerless elk totaling 180 (133 cows, 47 calves). This compares to 20 antlered and 184 antlerless in 2003. Branch antlered bulls totaled 49 which is 37 more than the number (12) observed in 2003 and 18 more than the number observed in 2002 (31). Spike bulls observed increased by 13 (163%). Total bulls observed in 2004 increased by 50 (250%) from the number observed in 2003 (20). Antlerless elk observed decreased by 2% (4) from the 2003 level. The decrease occurred in numbers of cows (6%) observed. Calves observed increased by 4 (9%). The bull/cow ratio was 53 bulls per 100 cows, which is much higher than the ratio observed in 2003 (14:100), 2002 (34:100), 2001 (26:100) and 2000 (34:100). The calf/cow ratio was 35 calves per 100 cows, which was higher than 2003 (31:100) lower than 2002 (36:100), but higher than 2001 (24:100), and 2000 (33:100). The 2004 bull/cow ratio was higher and the calf/cow ratio slightly lower than the minimum target ratio of 40 bulls/100 cows and 40 calves/100 cows established in the current elk management plan.

A total of 26 elk groups were observed which ranged in size from one to 57. The average elk group size was 9.6, which is lower than the average in 2003 (13.6), 2002 (18.8), 2001 (15.2), and 2000 (10.6). Most elk were observed in open habitat (hay fields, pastures, old fields). Fifty-three (53) elk were observed on the GRWMA which is an increase of 6 (13%) from the number (47) observed in 2003. Only twelve elk were observed on the area in 1999. Elk use and elk numbers have increased steadily on GRWMA due to continued habitat improvements.

All identified bulls carried both antlers with the exception of five bulls that had cast both antlers and one that was carrying only one antler. All shed bulls except one had radio collars. Observers noted that 27 (39%) of 70 bulls observed carried radio collars. Sixteen (33%) of 49 branch antlered bulls were classed as mature breeding bulls (6X6 or better, dark heavy antlers, large body size). In 2003, only two (17%) of 12 branched antlered bulls were classed as mature breeding bulls. Numbers were higher in 2002 (eight (26%) of 31) and 2001 (seven (28%) of 25).

The aerial elk count in the Buffalo River corridor was the highest on record since initiation in 1991. The number of elk observed increased by 46 from 2003 but was only seven higher than the number counted in 2000. Comparable numbers of elk were observed in elk hunt zones one, two and three. Fifty elk were counted in Boxley Valley (viewing area closed to hunting) and 42 in the Erby area. The highest number of elk seen by elk hunt zone was observed in elk hunt zone four.

No elk were seen in the BNR corridor between Gilbert and highway 14. The public and NPS staff in this section of the BNR corridor report occasional elk sightings; however, numbers of elk appear to be very low.

No dead elk were observed and none of the elk seen appeared sick or injured, all looked healthy. One cow elk radio-tagged in the late 1990's was observed near Erby which is about 16 river miles east of her capture location in Boxley Valley. A higher elk count and higher number of bulls observed in 2004 is partially attributed to survey personnel's ability to locate radio-collared bulls. Often these animals were in wooded areas and other un-collared elk often accompanied them. Without radio-collars on bulls, it is likely that a number of these elk would not have been observed during the survey.

**Results (additional elk surveys)** An additional aerial survey of private land in southwest Boone and southeast Carroll Counties resulted in an observation of three elk groups totaling 16 elk (two bulls, 10 cows and four calves). The same number of elk was observed in 2003 (16 elk in two groups) and 2002 (16 elk in three groups). No sick elk were observed. Nuisance elk complaints have decreased in the area since limited hunting was initiated in 1998. Data indicates a substantial decrease in the population with elk numbers persisting at low levels. From 1994-2003 an additional area of Ozark National Forest (ONF) and private land was surveyed along the Richland Creek drainage south of the NPS border. The area was surveyed again in 2004 and no elk were observed.

**Results (deer and turkey sightings)** During the survey, sightings of deer, turkey and other wildlife are recorded. A total of 225 deer and 181 turkeys were observed during the original BNR corridor survey. This compares to 172 deer and 69 turkeys observed in 2003, 227 deer and 350 turkeys in 2002, 40 deer and 168 turkeys in 2001, and 58 deer and 98 turkeys in 2000. In 1999, a year of poor mast production, 359 deer and 723 turkeys were observed. Four bald eagles and four coyotes were also observed. An additional 210 deer and 26 turkeys were observed on private land in southwest Boone and southeast Carroll Counties. This compares to 70 deer and three turkeys seen in 2003, 128 deer and 99 turkeys in 2002, 30 deer and 24 turkeys in 2001 and 35 deer and 18 turkeys in 2000.

## HELICOPTER ELK COUNT (1991-2004)

Buffalo River Corridor							Private Land (Boone & Carroll Counties)						
Year	Antlered Bulls	Cows	Calves	Total	Bull/Cow Ratio	Calf/Cow Ratio	Antlered Bulls	Cows	Calves	Total	Bull/Cow Ratio	Calf/Cow Ratio	Grand Total
1991	18	41	17	76	44	42	No survey						76
1992	35	78	31	144	45	40	No survey						144
1993	35	63	32	130	56	51	3	7	2	12	43	29	142
1994	30	78	32	140	39	41	0	0	0	0	--	--	140
1995	49	82	28	159	60	34	1	1	0	2	--	--	161
1996	46	90	45	181	51	50	3	14	6	23	21	43	204
1997	41	99	39	179	41	39	6	10	6	22	60	60	201
1998	46	100	39	185	46	39	7	21	12	40	33	57	225
1999	63	113	53	229	56	47	7	22	11	40	32	50	269
2000	49	146	48	243	34	33	7	25	10	42	28	40	285
2001	34	131	32	197	26	24	5	20	4	29	25	20	226
2002	45	133	48	226	34	36	0	14	2	16	--	14	242
2003	20	141	43	204	14	31	3	10	3	16	30	30	220
2004	70	133	47	250	53	35	2	10	4	16	20	40	266



# ARKANSAS

## GAME AND FISH COMMISSION

### Wildlife Management Division

#### MEMORANDUM

Reply to:

File # 0211-06-38-04

TO: Mr. John Sunderland, Assistant Chief, WMD

Attachment

cc: Harris

Shook

File

FROM: Michael E. Cartwright, Elk Program Coordinator

DATE: May 28, 2004

SUBJECT: In-Service Note - 2004 Aerial Elk Survey

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Attached please find a brief report on the 2004 aerial elk survey conducted within the current elk range. The 2004 count of 266 is the third highest since the survey was initiated in 1991. The count in the Buffalo National River corridor (primary elk range) increased by 23% from the 2003 level with most of the increase in antlered bulls. The higher elk count and higher number of bulls observed in 2004 is partially attributed to survey personnel's ability to locate radio-collared bulls. Often these animals were in wooded areas and other un-collared elk often accompanied them. Without radio-collars on bulls, it is likely that a number of these elk would not have been observed during the survey. The count on private land was the same as in 2003 (16) and 2002 (16) and indicates a very low population. The bull/cow ratio in the primary elk range was the fourth highest recorded since the survey was initiated in 1991 and for the first time since 1999 exceeded the minimum target level established in the elk plan. The calf/cow ratio increased slightly from the 2003 level but still remained below the minimum target level in the elk plan. If no additional changes are warranted I am requesting that the report be forwarded to Arlene Green for posting on the AGFC website.