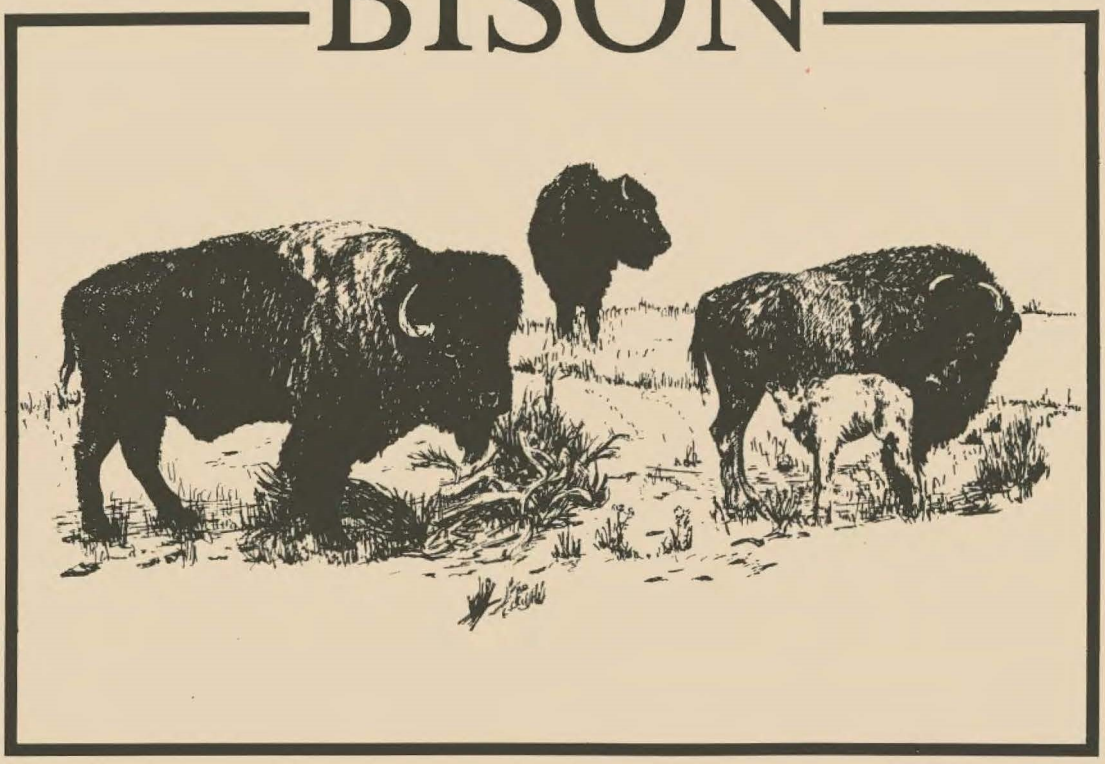
Alaska Department of Fish and Game
Division of Game
Federal Aid in Wildlife Restoration
Annual Report of Survey—Inventory Activities

BISON



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STATEWIDE HARVEST AND POPULATION STATUS

Data are presented for the 4 bison herds in the State. The parent herd at Delta Junction is stable and has been managed at a relatively low population level to minimize problems arising from agricultural damage. Now that adequate alternative habitat is available and being used on the Delta Bison Range, it may now be possible to allow the herd to increase. The Farewell Herd in Unit 19 is growing rapidly; the smaller Copper River Herd was up in 1986, but the Chitina Herd was down because of low calf production.

All bison hunting is conducted on a permit basis. In 1985 all bison hunts were designated as subsistence hunts because of the state subsistence law, and the Copper River hunt was cancelled because of endangered recruitment. However, in 1986 the Board of Game reclassified them as sport hunts, thereby allowing all hunters an equal opportunity in the permit drawing. The hunter harvest was as follows:

Herd	Hunter harvest		
	Bulls	Cows	Total
Copper River	2	6	8
Chitina River	3	1	4
Farewell (S.F. Kuskokwim River)	11	8	19
Delta Junction	17	47	64

Donald E. McKnight
Acting Deputy Director

BISON

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 11

GEOGRAPHICAL DESCRIPTION: Chitina River

PERIOD COVERED: 1 July 1986-30 June 1987

Season and Bag Limit

See Hunting Regulations No. 27.

Population Status and Trend

Forty-one bison were observed during an aerial survey on 10 May; this amount is substantially lower (18%) than the 56 bison observed in 1985. The herd declined in response to reduced calf production and/or survival.

Population Composition

Thirty-six adults and subadults and 5 calves were observed during the 10 May aerial survey. In 1986 calves composed 12% of the herd, while in 1985 they made up 21% (12 calves).

Mortality

Five hunters killed 4 bison (3 bulls and 1 cow) in 1986. There were 410 applications for the Chitina bison hunt. All successful hunters were nonlocal Alaskan residents that used aircraft for transportation. The unsuccessful hunter reported using a riverboat. Successful hunters averaged 5.5 days hunting; the unsuccessful hunter, 7 days.

Management Summary and Recommendations

The Chitina bison hunt was classified as a sport hunt by the Board of Game in June 1986; all hunters were given an equal opportunity in the permit drawing. This decision reversed a 1985 subsistence designation that gave local rural residents a priority in the permit drawing. In response to the lower number of calves observed in the 1986 spring composition count, the number of harvest permits issued in 1986 was lowered from 12 to six.

The current management plan calls for maintaining a herd of 30 overwintering animals; this management objective is now

considered low. When the plan was drafted in 1976, range deterioration was a major concern because moose and horses were also grazing on the range. Over the past decade, moose numbers have declined and 1 horse-grazing lease has been cancelled, reducing the number of these species utilizing the bison range. Miquelle (1985) concludes that grazing by ungulates on the Chitina bison range has caused no recent deterioration in range conditions and the range is recovering from an earlier period of overuse; therefore, an increased number of overwintering bison could be maintained in this area.

Because steep mountains surround the area and suitable bison habitat is limited to the narrow valley floor, the Chitina bison range probably cannot support a herd larger than 150 bison; however, this herd should be allowed to increase to 75 overwintering animals. The bag limit should be changed to "bulls-only", and 6 permits should be issued per year. Population modeling suggests that a harvest of 4 bulls per year will allow growth to the desired herd size in about 7 years. The time needed for herd growth would be longer, however, if poaching continues at levels similar to those observed in past years. When the herd numbers 75 overwintering animals, the range should be reevaluated and management actions adjusted accordingly.

Literature Cited

Miquelle, Dale. 1985. Food habits and range conditions of bison and sympatric ungulates on the Upper Chitina River, Wrangell-St. Elias National Park and Preserve. U. S. Dept. of Interior. Nat. Part Service. Ak. Region Research/Resources Management Report AR-8. Anchorage.

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BISON

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 11

GEOGRAPHICAL DESCRIPTION: Copper River

PERIOD COVERED: 1 July 1986-June 30 1987

Season and Bag Limit

See Hunting Regulations No. 27

Population Status and Trend

Eighty-eight bison were counted in the Copper River Herd during surveys on 24 May and 23 June. This count was appreciably higher than the 1985 count of 68 bison.

Population Composition

The population composition of bison counted during spring surveys was 70 adults and subadults and 18 calves. In 1986 calves composed 20% of the herd, compared with 12% (8 calves) in 1985.

Mortality

Eight bison (2 bulls and 6 cows) were reported killed from the Copper River Herd during a 3-day hunting season. After the quota of 8 bison was taken, the hunting season was closed by emergency order on 23 September. Seventy permits were issued during the 1986 season: 35 (50%) to local rural residents and the remainder to nonlocal Alaskan residents. Four successful hunters were local rural residents, and four were nonlocal Alaskan residents. Although nonresidents were eligible, none hunted.

Successful hunters averaged 1.4 days afield, while unsuccessful hunters averaged 2.1 days afield. River boats were the most popular method of transportation used by both successful (63%) and unsuccessful (83%) hunters. Aircraft were used by 37% of the successful and 17% of the unsuccessful hunters.

Management Summary and Recommendations

Hunter interest in the Copper River bison hunt was high; 63% of the permittees hunted on opening day. Most of the herd was

located adjacent to the Copper River, and the desired harvest was quickly attained. Because of the heavy hunting pressure, crowding occurred at access points, and competition between hunters detracted somewhat from the hunt quality. Many hunters were still afield when the hunt was closed by emergency order.

The postseason adult bison population estimate of 63 animals for 1986 was the highest in 7 years. Good calf production in 1986 was attributed to the closed hunting season in 1985 and the low cow take (3) in 1984 that resulted in an increase in the number of adult cows.

The management goal of 60 overwintering bison was established in 1976, but the present population now exceeds that goal. My current recommendation for the Copper River Herd is to achieve a population of 90 overwintering adults and subadults. An increase in the number of adult cows in the herd should produce higher annual-recruitment rates. Current range conditions are not believed to preclude attaining this objective, because the range has carried in excess of 60 bison for a number of years and range expansion into adjacent similar habitat has not been observed. Average body- and blood-condition parameters obtained from captured bison suggest current range conditions are adequate. To accomplish this new goal, harvests should be maintained below sustained yield until the herd reaches 90 overwintering adults and subadults.

Managing this herd at a higher population level should allow herd stabilization without having to cancel the bison season in years of low recruitment. With a larger herd, a higher yearly harvest can be maintained. Present herd size makes it difficult to manage a hunt for less than 8-10 bison. High hunter participation, especially early in the season, increases the chance of taking too many bison in one day. With a small quota, the desired harvest could be exceeded before the season could be closed. With a larger herd, an overharvest of a few animals would have less of an impact than is presently the case.

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SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNITS: 19C and 19D

GEOGRAPHICAL DESCRIPTION: South Fork Kuskokwim River

PERIOD COVERED: 1 July 1986-30 June 1987

Season and Bag Limit

See Hunting Regulations No. 27.

Population Status and Trend

No data were collected to assess the population status during this reporting period. The most recent population estimate (June 1985) ; however, recruitment (which exceeded mortality) was high, and the herd experienced a 17% growth between 1984 and 1985. Harvest in 1986 was 1 bison less than in 1985. Recruitment for 1986 was not determined, but there is no indication that it should have been unusually low. Consequently, it is probable that the herd continued to increase.

Mortality

Sport hunting represented the only known source of mortality during 1986. Nine hundred and three individuals applied for 40 either-sex drawing permits. Nineteen bison (11 males and 8 females) were taken by 25 hunters during the 6 September-31 October season.

Management Summary and Recommendations

A doubling of the number of permits issued in 1985 had the effect of approximately doubling the harvest. However, this harvest, which approaches 10% of the herd, appears to be allowing for recruitment of approximately 20 bison annually, and the herd appears to be expanding.

Although habitat does not appear to be limiting at this time, reforestation is probably occurring in the recently burned areas. If the range, which is allowing the present population increases, is to be maintained to sustain these herd increases, habitat maintenance or enhancement procedures may be necessary in the relatively near future.

The management guideline that stipulates maintaining the population at 80 bison (as stated in the 1976 draft management plan for the Farewell Bison Herd) appears to be inappropriate at the present time. This guideline was based on the habitat data available in the early 1970's. The Bear Creek fire in 1977 resulted in a significant increase in carrying capacity for bison in the area. The last herd estimate (223 bison in 1985) was approximately 2.5 times that recommended in the 1976 plan, but there is no indication that the herd is limited by range availability or quality at this level. Production has been high and survival has been excellent for the last few years when data were gathered.

Current cooperative efforts involving Bureau of Land Management (BLM) and Alaska Department of Natural Resources (ADNR) resulted in a controlled burn along Windy Creek in 1985. This burn should be evaluated to determine if forage quality and quantity are similar to the Bear Creek burn. Management objectives for the herd should be revised to reflect current and anticipated conditions.

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BISON

SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNITS: 20A and 20D

GEOGRAPHICAL DESCRIPTION: Delta Junction

PERIOD COVERED: 1 July 1986-30 June 1987

Season and Bag Limit

See Hunting Regulations No. 27.

Population Status and Trend

The Delta Bison Herd, which contained approximately 275 animals before calving in 1987, is down from the 1986 estimate of 300 (Fig. 1).

Population Composition

A population estimate of the Delta Bison Herd was made in their summer range during July 1986; aerial surveys were conducted on 16 July and 29 July, and 361 bison were photographed and counted. Composition data were obtained on 11 November 1986 when 119 bison were classified from the ground using a spotting scope. The extrapolated herd composition was 28% bulls, 50% cows, 13% yearlings, and 22% calves. Population composition ratios were 54 bulls:100 cows, 26 yearlings:100 cows, and 44 calves:100 cows.

Mortality

A hunt for 10 bulls and 55 cows was scheduled for the 1986-87 hunting season. Applications were received from 6,585 people (Fig. 2). Sixty-two of 64 participating hunters took 64 bison (17 bulls and 47 cows). One hunter shot 3 bison, and 6 hunters shot bison of the wrong sex. Hunters averaged 3.2 days afield, and there was an average of 2.1 persons per hunting party.

Other known mortality included 2 bulls fatally wounded during the hunt, 1 cow that died of unknown causes, 1 cow killed in a highway accident, and 2 bison of unknown sex killed by trappers' snares. Predation is believed to be an insignificant mortality source.

Movements and Distribution

During the summer months, bison continued to make extensive use of the Delta River floodplain adjacent to Black Rapids. The use of this area by bison was encouraged by the placement of 50-pound trace-mineral blocks and 1-ton blocks of surplus drilling salt (NaCl).

Bison also extensively used the Delta Junction Bison Range (DJBR). The herd arrived on the DJBR in late August, and with minor exceptions, they remained there through early October. The bulk of the herd then moved into the Delta Agricultural Project for the remainder of the winter; the heaviest use of this area was in the southeast corner adjacent to the Tanana River. Groups of up to 100 bison continued to use the DJBR for extended intermittent periods throughout the winter. Bison began returning to their summer range in March.

Range and Habitat

Eight hundred fifty-six acres were planted to annual and perennial bison forages on the DJBR during July 1986. Planned clearing on the DJBR was completed in 1985; 2,800 acres have been cleared and 1,200 acres planted. The remainder of the clearings are scheduled for planting in 1987 and 1988.

Local Economic Impact of Hunting Delta Bison

Delta bison hunters were asked to estimate the amount of money they spent in the Delta Junction area during their bison hunt. Estimates ranged from $5 for one local hunter to over $1,000 for a large, nonlocal party. Hunters reported spending an average of approximately $290 each, for a total of slightly more than $18,000. The largest expenditure was for lodging (36%), followed by gasoline (29%), meals (23%), and groceries (12%). No effort was made to estimate other economic values or the effects of this money on the local economy. Benefits to hunting parties included the harvest of nearly 40,000 pounds of meat and more than 600 person-days of recreation.

Management Summary and Recommendations

The precalving size of the Delta Bison Herd has been held at 275 animals for more than 10 years to minimize agricultural depredations and concerns about possible summer-range limitations. Conditions in the Delta area have changed, and it may now be possible to allow the herd to increase.

Agricultural depredations caused by bison are now at a very low level because of development of the DJBR. Reduced agricultural activities suggest the total extent of

depredations will remain small. It is likely that only a small percentage of the agricultural project will be in production in the near future. Many farmers are now participating in the federal government's Conservation Reserve Program (CRP), which allows them to receive annual compensation for leaving previously cropped fields in perennial cover.

This combination of circumstances means the following: (1) the DJBR and lands in the CRP will provide far more winter forage than is needed by the bison herd, so less winter forage will be needed on the DJBR; and (2) the potential for fall bison depredation can be alleviated by use of this excess forage on the DJBR. Therefore, total winter range is sufficient, and the depredation potential should be small enough to allow an increase in herd size.

The remaining consideration is the summer range; while it is heavily used by bison, there is no evidence that it limits their productivity or seasonal fidelity. Past concerns should be reevaluated. A joint State-Federal project to investigate the carrying capacity of the summer range and the potential for its improvement is planned for summers 1987 and 1988. With these considerations in mind, an increase in the size of the precalving herd to 350 animals should be proposed for public and agency consideration.

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