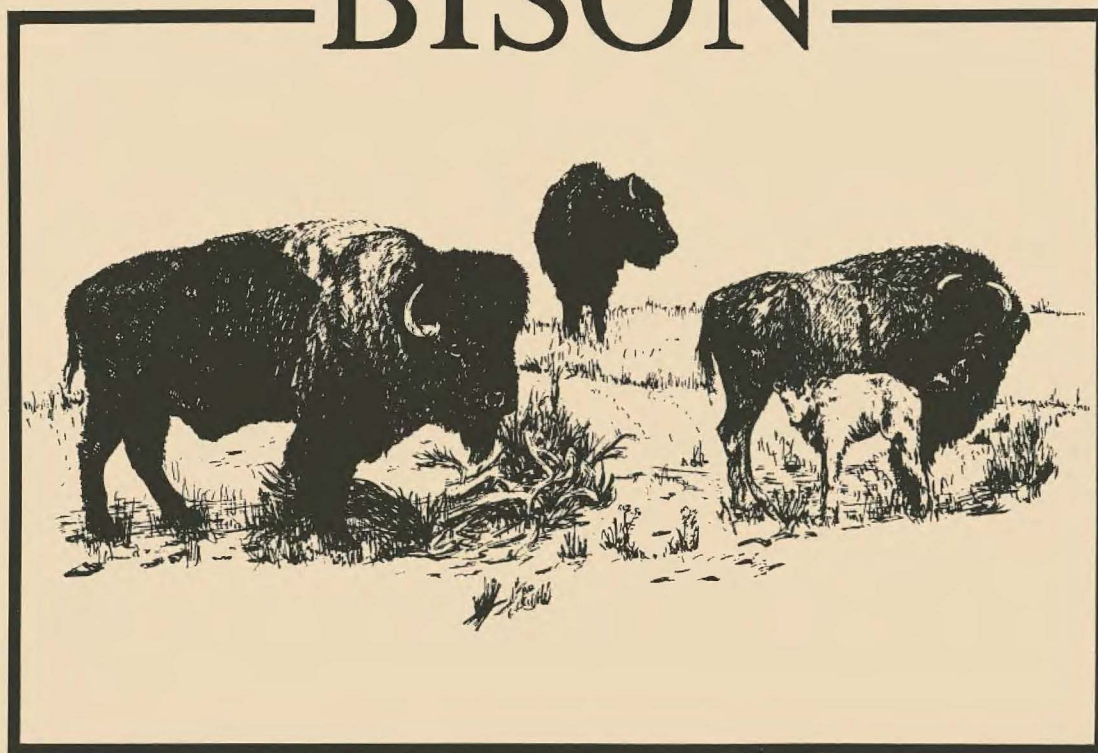


Alaska Department of Fish and Game
Division of Game
Federal Aid in Wildlife Restoration
Annual Report of Survey—Inventory Activities

BISON



Compiled and edited by
Barbara Townsend, Publications Technician
Vol. XVII, Part I
Project W-22-5, Job 9.0
July 1986

STATE OF ALASKA
Bill Sheffield, Governor

DEPARTMENT OF FISH AND GAME
Don W. Collinsworth, Commissioner

DIVISION OF GAME
W. Lewis Pamplin, Jr., Director
Robert A. Hinman, Deputy Director

Persons intending to cite this material should obtain prior permission from the author(s) and/or the Alaska Department of Fish and Game. Because most reports deal with preliminary results of continuing studies, conclusions are tentative and should be identified as such. Due credit will be appreciated.

Additional copies of this report, or reports on other species covered in this series may be obtained from:

Publications Technician
ADF&G, Game Division
P.O. Box 3-2000
Juneau, AK 99802
(907) 465-4190

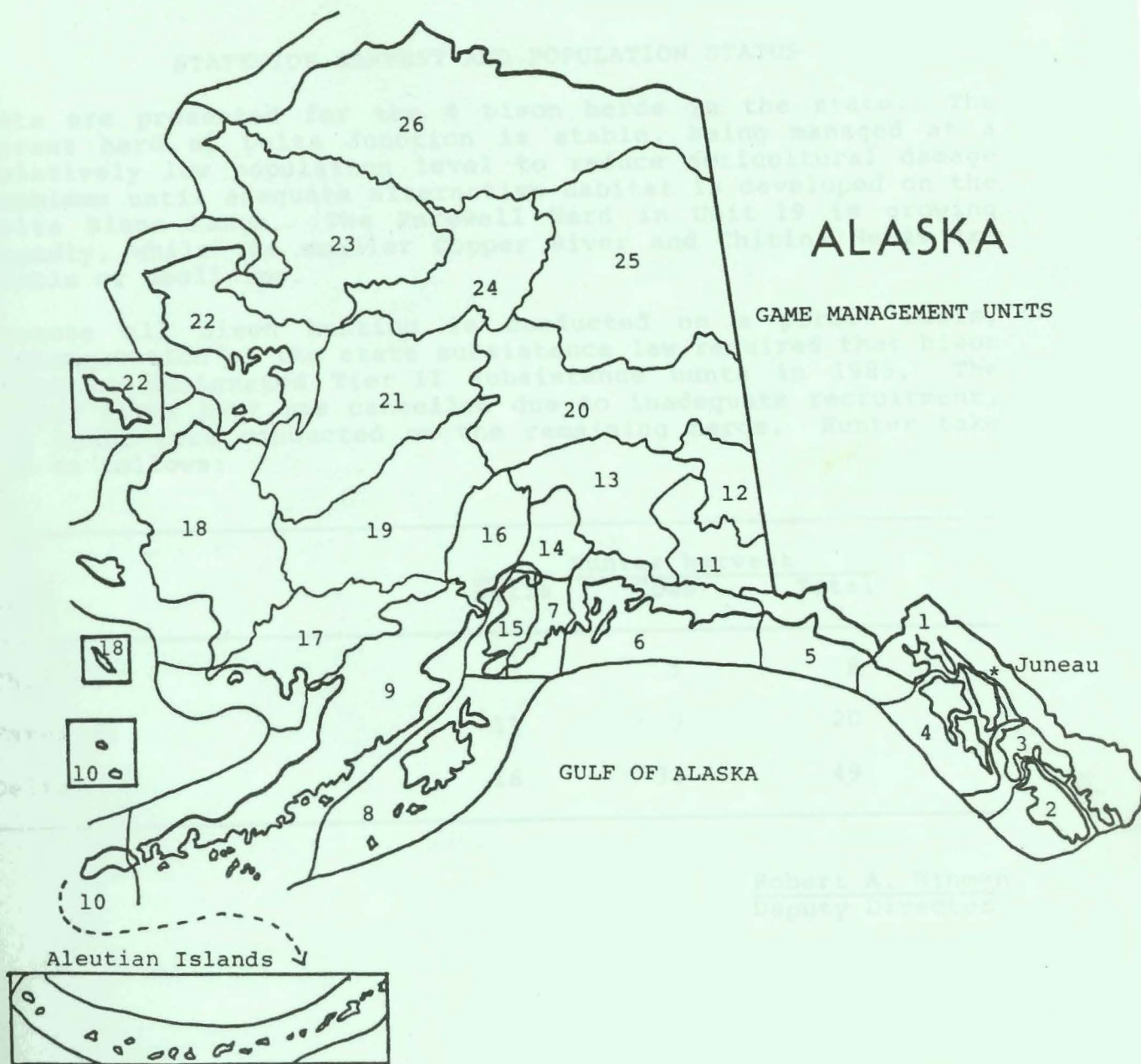
CONTENTS

| | |
|--|-----|
| Game Management Unit Map | ii |
| Statewide Harvest and Population Status. | iii |
| Game Management Unit/Geographical Description | |
| GMU 11 - Chitina River | 1 |
| GMU 11 - Copper River. | 3 |
| GMU 19C and 19D - South Fork of the Kuskokwim River. . . | 5 |
| GMU 20A and 20D - Delta Junction area. | 7 |

ARCTIC OCEAN

ALASKA

GAME MANAGEMENT UNITS



STATEWIDE HARVEST AND POPULATION STATUS

Data are presented for the 4 bison herds in the state. The parent herd at Delta Junction is stable, being managed at a relatively low population level to reduce agricultural damage problems until adequate alternative habitat is developed on the Delta Bison Range. The Farewell Herd in Unit 19 is growing rapidly, while the smaller Copper River and Chitina Herds are stable or declining.

Because all bison hunting is conducted on a permit basis, implementation of the state subsistence law required that bison hunts be designated Tier II subsistence hunts in 1985. The Copper River hunt was cancelled due to inadequate recruitment, but hunts were conducted on the remaining herds. Hunter take was as follows:

| Herd | Hunter harvest | | |
|----------|----------------|------|-------|
| | Bulls | Cows | Total |
| Chitina | 3 | 5 | 8 |
| Farewell | 11 | 9 | 20 |
| Delta | 16 | 33 | 49 |

Robert A. Hinman
Deputy Director

BISON
SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 11

GEOGRAPHICAL DESCRIPTION: Chitina River

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26.

Population Status and Trend

Fifty-six bison were observed during an aerial survey on 9 June. This year's count is similar to the previous year's count of 54.

Population Composition

Forty-four adults and yearlings and 12 calves (21%) were observed during the 9 June survey.

Mortality

Hunters killed 8 bison (3 bulls and 5 cows) during the season. Twelve permits were issued and 11 permittees reported hunting. Aircraft were used as the method of transportation by 7 successful and 3 unsuccessful hunters; 1 successful hunter used a dog team. Successful hunters reported spending an average of 6.1 days hunting compared with 3 days for unsuccessful hunters.

Management Summary and Recommendations

The Chitina bison hunt was designated a subsistence permit-type hunt by the Board of Game in June 1985. Only Alaska residents were eligible to apply for the drawing permits; however, residents of Units 11 and 13 were given priority in the drawing and received all permits issued.

Since local residents were more familiar with the area and hunt conditions, hunter success was high. If the Chitina hunt remains a subsistence hunt and the harvest remains high, the number of permits issued will have to be reduced.

PREPARED BY:

Robert W. Tobey
Game Biologist III

SUBMITTED BY:

Leland P. Glenn
Survey-Inventory Coordinator

BISON
SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNIT: 11

GEOGRAPHICAL DESCRIPTION: Copper River

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26.

Population Status and Trend

Sixty-eight bison were counted during a 9 June survey of the Copper River Bison Herd. This count was slightly lower than the previous year's count of 72.

Population Composition

The population composition of bison counted during the 9 June survey was 60 adults and yearlings and 8 calves (12%). The number of calves observed was less than the previous year's count of 11 and was the lowest number recorded since 1966, when only 7 were observed.

Mortality

The Copper River bison hunt was cancelled by emergency order in 1985. Survey information indicated calf recruitment was not sufficient to allow both a harvest and the maintenance of 60 overwintering animals.

Management Summary and Recommendations

Calf production and/or survival for the Copper River Herd was the lowest in 19 years. The reason for this decline was unknown; however, abnormally low spring temperatures were probably a contributing factor. The physical condition of 5 adult cows captured on 9 April 1985 was judged to be only fair. There was little body fat along the ribs, backbone, and pelvis. Blood protein (5.8-6.2 gm/100 ml) and packed cell volumes (38-42%) were both in the low-normal range expected during late winter. These condition parameters suggest the cows could successfully overwinter and produce calves; however, the cows would need additional nutrients prior to parturition and lactation. Because of the cold spring, growth of vegetation was

delayed by 2-3 weeks. This delay in availability of the nutrient flush associated with new plant growth could reduce calf survival. Additionally, the amount of predation on bison calves is unknown, but wolves and grizzly bears are numerous in the area. Calves with retarded development due to lower nutrition levels may be more susceptible to predation.

Vegetation studies are needed to evaluate range conditions. The habitat utilized by the Copper River Herd may be experiencing a decline in productivity due to a lack of fire. Periodic fires are necessary to maintain the early successional plant stages utilized by bison. Until range studies are complete, the current management plan should be followed and no changes in season dates or bag limits are recommended.

PREPARED BY:

Robert W. Tobey
Game Biologist III

SUBMITTED BY:

Leland P. Glenn
Survey-Inventory Coordinator

BISON
SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNITS: 19C and 19D

GEOGRAPHICAL DESCRIPTION: South Fork of the Kuskokwim River

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26.

Population Status and Trend

Between 1984 and 1985, the Farewell bison population increased by 17%, and there were at least 223 bison in the herd as of June 1985. Calf production declined to 39 calves per 100 cows in 1985 from the high of 50 calves per 100 cows in 1984.

Population Composition

Composition counts in June 1985 revealed 31 bulls, 105 cows, 46 yearlings, and 41 calves.

Mortality

Overwinter calf mortality apparently was very low because the same number (46) of calves in 1984 were counted as yearlings in 1985; however, some calves were probably born after the counts in mid-June 1984. In addition, there was no evidence of natural mortality of adults. All changes in the adult segment of the population can be attributed to hunting and recruitment.

In 1985, the Farewell Bison Herd hunt was designated a Tier II subsistence hunt by the Board of Game. As a result, the number of applicants dropped from 1,180 in 1984 to 116 in 1985, even though the number of available permits increased from 20 to 40. Although there were applicants from throughout the state, residents of Subunits 19C and 19D received 33 of the 40 permits.

Twenty bison (11 males and 9 females) were taken by 19 hunters (1 hunter inadvertently shot 2 bulls). Hunter success declined to 63%, primarily due to unfavorable weather during 2 hunt periods. Age composition of the harvest, based on tooth wear and eruption patterns, indicates nearly half the cows were over 5 years old and all bulls were 4 years or younger.

Management Summary and Recommendations

The Farewell Bison Herd continued to increase in the absence of any known natural mortality. To reduce the rate of herd growth, the number of hunting permits was doubled in 1985. The bull:cow ratio (30:100) is lower than that of the Delta Bison Herd. This probably reflects differences in hunter selectivity between Farewell Herd and Delta Herd hunters. It is not clear why no marked bulls from the original transplant have been harvested; 9 marked cows have been taken.

As the herd increases, some bison may disperse to uninhabited range, although areas of suitable bison habitat appear to be limited to the herd's current range along the South Fork of the Kuskokwim. Cooperative efforts involving BLM and DNR resulted in a controlled burn along Windy Creek in 1985. This area is similar to the Bear Creek burn and may produce forage of comparable high quality. An additional 15 bison should be radio-collared to obtain more precise movement and population data as the herd expands.

PREPARED BY:

Robert E. Pegau
Game Biologist III

SUBMITTED BY:

Jerry D. McGowan
Survey-Inventory Coordinator

BISON
SURVEY-INVENTORY PROGRESS REPORT

GAME MANAGEMENT UNITS: 20A and 20D

GEOGRAPHICAL DESCRIPTION: Delta Junction area

PERIOD COVERED: 1 July 1985-30 June 1986

Season and Bag Limit

See Hunting Regulations No. 26.

Population Status and Trend

The 1986 precalving population of the Delta Bison Herd is estimated to be 300 animals. The 1985 estimate was 285 animals. The Delta Bison Management Plan calls for a precalving population level of 275 bison.

Population Composition

A prehunt ground composition count was conducted on 27 September 1985. Classification of 280 bison revealed 15% adult bulls, 49% adult cows, 11% yearlings, and 25% calves.

Mortality

Forty-nine bison (16 bulls and 33 cows) were harvested during the 1985-86 hunt. Two major changes were made in the permit application and allocation system in 1985. The application fee was increased from \$5 to \$10, and bison were classified as a species to which Tier II subsistence hunting regulations applied. Initially, 8,931 applications were received for 55 permits. After these applications were returned because of a court ruling, a second drawing was advertised. Six hundred sixty-five applications were received for the 50 available permits. All permittees were local residents.

In addition to bison taken by hunters, other known mortality consisted of 1 road kill, 3 apparent wounding losses from the hunt, 1 cow that died while calving, and 1 case where cause of death was unknown.

The adult cow that died during calving was apparently unable to expel her calf for 2 or more days. This problem is not uncommon among domestic cattle, but it is the 1st recorded instance among Delta bison. It is interesting to note that the

full-term calf would have been born in early November; Most Delta bison calves are born in May.

Overwinter mortality was probably below average during the report period. Snowfall was average, but temperatures were milder than usual. Substantial amounts of barley were left in farm fields and provided high quality forage.

Movements and Distribution

Bison migrated to their summer range during the traditional March-April period, although small groups may have remained on the winter range later in the season. In the spring of 1985, large numbers of bison remained on the winter range during May and June.

Substantial use of the southern portion of the summer range was documented during the summer of 1985. Use of this area (McGinnis Creek to Black Rapids Glacier) appears to be increasing, possibly as the result of placement of trace-element mineral blocks in the Black Rapids area in 1985.

Range and Habitat

Additional land-clearing totaling approximately 1,100 acres was completed on the Delta Junction Bison Range during the report period. Most of this acreage was cleared approximately 8 miles southeast of the initial development.

One thousand acres were scheduled for planting in 1985, but only 300 acres were planted due to unusually wet soils. Plantings included an annual cover species, barley, with a perennial for permanent bison forage. Additional planting is scheduled for the summer of 1986. The habitat development phase of the Bison Range will be essentially completed in 1987.

Management Summary and Recommendations

Distinguishing yearling cows from 2-year-old cows has always presented a potential for error in bison sex and age composition counts. In 1985, male and female yearlings were classified separately. This procedure tends to result in substantial underestimates of the number of yearling females. This report's composition data for 1985 have been adjusted to compensate for this error.

Bison summer range has continued to deteriorate in quality. Although budget limitations may preclude improvement of the summer range at this time, long-range plans should be formulated to improve this area for bison.

Development of the Delta Junction Bison Range has continued to reduce agricultural depredations by bison. Continued development should keep fall depredations to a minimum. Winter depredations of unharvested crops are becoming a matter of increasing concern to Delta area farmers. Modifications to the Bison Range Development Plan may be necessary to accommodate this new concern.

PREPARED BY:

David M. Johnson
Game Biologist III

SUBMITTED BY:

Jerry D. McGowan
Survey-Inventory Coordinator