

Chitina River Plains Bison Management Report and Plan, Game Management Unit 11:

Report Period 1 July 2013–30 June 2018, and

Plan Period 1 July 2018–30 June 2023

Heidi L. Hatcher



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2021

Chitina River Plains Bison Management Report and Plan, Game Management Unit 11:

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Plan Period 1 July 2018–30 June 2023

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Species management reports and plans provide information about species that are hunted or trapped and management actions, goals, recommendations for those species, and plans for data collection. Detailed information is prepared for each species every 5 years by the area management biologist for game management units in their areas, who also develops a plan for data collection and species management for the next 5 years. This type of report is not produced for species that are not managed for hunting or trapping or for areas where there is no current or anticipated activity. Unit reports are reviewed and approved for publication by regional management coordinators and are available to the public via the Alaska Department of Fish and Game's public website.

This species management report and plan was reviewed and approved for publication by Todd Rinaldi, Management Coordinator for the Division of Wildlife Conservation.

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Cover Photo: A group of Chitina River bison. ©2016 ADF&G.

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Purpose of this Report

This report provides a record of survey and inventory management activities for the Chitina River plains bison herd in Unit 11 for the 5 regulatory years 2013–2017 and plans for survey and inventory management activities in the following 5 regulatory years, 2018–2022. A regulatory year (RY) begins 1 July and ends 30 June (e.g., RY14 = 1 July 2014–30 June 2015). This report is produced primarily to provide agency staff with data and analysis to help guide and record agency efforts but is also provided to the public to inform it of wildlife management activities. In 2016 the Alaska Department of Fish and Game's (ADF&G, the department) Division of Wildlife Conservation (DWC) launched this 5-year report to report on trends more efficiently and to describe potential changes in data collection activities over the next 5 years. It replaces the plains bison management report of survey and inventory activities that was previously produced every 2 years.

I. RY13–RY17 Management Report

Management Area

The management area for the Chitina River plains bison herd includes the drainages of the Chitina River east of the Chakina River, and south and east of the Nizina River in Game Management Unit (Unit) 11 (Fig. 1). The area is located within Wrangell St. Elias National Preserve (WRST). Access is remote and limited to either small aircraft on undeveloped gravel bars or specialized jetboats to navigate the braided channels of the upper Chitina River.

Summary of Status, Trend, Management Activities, and History of the Chitina River Plains Bison Herd in Unit 11

The Chitina River plains bison herd originated from animals relocated to Delta Junction, Alaska, from The Bison Range (formerly the National Bison Range) in Moise, Montana in 1928. In 1962, 6 bulls and 29 cows were moved from Delta Junction to May Creek in GMU 11. The intention of this introduction was to expand the range of the Copper River Bison herd, as it was expected that the 2 herds would eventually combine (Paul 2009). The herds so far have maintained largely separate ranges. The Chitina herd increased to a minimum of 56 bison in 1985, then declined to a low of 25 observed in 2004 because of increased mortality during winters with deep snowpack. The population rebounded and has continued to grow, reaching a record high of 60 animals observed in 2018.

The department held the first hunt, by drawing permit, for Chitina River bison in RY76. Permit hunts were held for 13 years with an average of 4 bison harvested annually. This continued until the hunt was closed in RY89, when the herd declined after a winter with deep snow. Hunting resumed in RY99 with drawing permits for bulls only. Hunting was prohibited in RY04 and RY05 due to another population decline. Since RY06 drawing permits have provided the opportunity to take Chitina plains bison of either sex. A total of 18 Chitina bison were harvested from RY06–RY17.



Figure 1. Map showing the DI450 bison hunt management area for the Chitina River plains bison herd, Game Management Unit 11, Alaska.

Management Direction

EXISTING WILDLIFE MANAGEMENT PLANS

Management direction set in the plains bison management plan for Southcentral Alaska (ADF&G 1976) has been modified through public comments, staff recommendations, and Board of Game actions over the years. A record of these changes can be found in the division's previous species management reports. The plan portion of this report contains the current management plan for the Chitina River bison herd.

GOALS

- To provide an opportunity to hunt bison under aesthetically pleasing conditions.
- To provide for an optimum harvest of bison.
- To maintain the bison herd within the carrying capacity of its range.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

There was a negative finding by the Alaska Board of Game for customary and traditional uses of plains bison in Unit 11.

Intensive Management

Plains bison are not designated as an intensive management species in the State of Alaska.

MANAGEMENT OBJECTIVES

Maintain the herd at a minimum of 50 overwintering adults by increasing or decreasing human harvests when bison numbers exceed or fail to reach the objective.

MANAGEMENT ACTIVITIES

Assessing population trends and monitoring harvest are integral components of management programs in Unit 11. Survey and inventory (S&I) management activities used to monitor the Chitina River bison herd in Unit 11 are described below.

1. Population Status and Trend

ACTIVITY 1.1. Monitoring bison abundance and population composition.

Data Needs

Trends in the size of the Chitina River herd and annual composition data are necessary to determine population status in relation to management objectives and available harvest for

permitting purposes. These data inform an index of annual productivity and sustainable harvest potential, as well as provide insight into population trends and fluctuations that occur due to factors such as increased predation or harvest pressure; severe winters; or changes in habitat, including nutritional availability.

Methods

Aerial surveys using fixed-wing aircraft are conducted to estimate both the minimum population size of the herd and to evaluate its composition of adults versus calves following the spring calving period. Surveys are conducted in early June, when bison are aggregated in open areas along the Chitina River floodplain. Each bison or group of bison that is observed during the survey is circled by the plane to determine age classification and number of animals present. A waypoint is recorded for each observation and a digital photograph may be taken to confirm bison numbers and classification for that waypoint upon return to the office.

Results and Discussion

Minimum counts of the Chitina River herd suggest that the herd has numbered above 50 animals during most RY13–RY17 and reached a minimum of 60 animals in 2018, which represents the most animals in the history of the herd (Table 1).

Table 1. Chitina River plains bison observed during spring surveys, calendar years 2014–2018, Alaska.

Calendar year	Adults	Calves (% of total)	Minimum population size
2014	40	3 (18)	43
2015	52	5 (17)	57
2016	52	5 (16)	57
2017	52	2 (16)	54
2018	51	9 (8)	60

Plains bison ecology indicates that the behavior of a herd (grazing, trampling, wallowing) can significantly affect the vegetative structure of the habitat, suggesting that bison may alter the surrounding habitat as they expand their range, potentially creating additional favorable habitat for the herd as the herd grows (Truett et al. 2001). However, the Chitina River floodplain in which the Chitina River plains bison currently reside is bounded by rugged terrain and does not provide a lot of opportunity for the bison herd to readily expand its range. Furthermore, the dynamic nature of the floodplain affects the amount of vegetated habitat that is available to the bison over time as river channels shift (Stantorf 2014). In 1988 and 2004 the Chitina River herd experienced declines associated with deep snowpack and winter starvation. During each of these instances there were around 40 overwintering adults in the herd. Given the history of declines, combined with the dynamic nature of the Chitina River floodplain, as well as the potential for the herd to expand its range, it is unclear what the maximum size of the Chitina River herd should be. More recently the herd has stabilized with over 50 overwintering adults. Until further research can be done on the status of the range and the behavioral ecology and health of the herd at this size, it would be prudent to maintain the herd at above 30 but below 50 overwintering adults.

Recommendations for Activity 1.1

As the Chitina River bison herd grows larger than has been previously observed, the herd may begin expanding its use of range and habitat. Because this herd makes seasonal migratory movements along the Chitina River, satellite collars would greatly improve documentation and understanding of the herd's movements as it grows. Collars would improve the timing and success of minimum count attempts, and potentially aid in bison photocensus attempts. Implementation of collars in the Chitina River bison herd for management purposes will be considered to improve future abundance and composition survey results.

2. Mortality-Harvest Monitoring and Regulations

ACTIVITY 2.1. Monitor and evaluate bison harvest through hunter harvest reports.

Data Needs

It is critical in sustained yield management to understand hunter effort and success through monitoring and analyzing harvest data for the Chitina River herd on an annual basis.

Methods

Under current regulations a maximum of 12 Chitina River bison permits (DI450) may be awarded annually under the ADF&G draw hunt lottery system. Hunters are required to report successful hunts in person or by phone to the Glennallen ADF&G office within 3 days of leaving the hunt area, or within 5 days of the end of season if unsuccessful.

A single governor's permit (SI450) is auctioned in some years for the Chitina River bison herd. Harvest report requirements for SI450 are the same as those for DI450.

Season and Bag Limit

The hunting season for residents and nonresidents for both DI450 and SI450 in Unit 11 is 6 September–30 November. The bag limit is 1 bison every 10 regulatory years for residents while nonresidents are allowed only 1 bison per lifetime.

Results and Discussion

Harvest by Hunters

During RY13–RY17 hunters harvested a total of 9 bison with a 100% success rate (Table 2). Bulls represented 100% of the harvest each year.

Table 2. Chitina River plains bison harvest data, regulatory years 2013–2017, Alaska.

Regulatory year	Permits issued	Applications	Did not hunt	Hunter success	Bulls	Cows	Total harvest
2013	2	513	0	100%	2	0	2
2014	2	945	0	50%	1	0	1
2015	2	825	1	100%	1	0	1
2016	2	678	0	100%	2	0	2
2017 ^a	3	960	0	100%	3	0	3

^a Includes hunt data from single SI450 permit issued.

Hunter Residency and Success

During RY13–RY17, 1 nonresident received a DI450 permit and was successful. One nonresident was awarded an SI450 permit and was successful. All other hunters were residents of Alaska; and all but one resident hunter was successful (Table 3). No residents local to Units 11 or 13 were awarded permits.

Table 3. Chitina River plains bison hunter residency and success, regulatory years 2013–2017, Alaska.

Regulatory year	Nonlocal residents		Nonresidents	
	Hunter success	Total hunted	Hunter success	Total hunted
2013	100%	2	—	—
2014	50%	2	—	—
2015	—	0	100%	1
2016	100%	2	—	—
2017 ^a	100%	2	100%	1

^a Includes hunt data from single SI450 permit issued.

Harvest Chronology and Transport Methods

All successful DI450 hunters during RY13–RY17 harvested in September with 75% of the harvest occurring in the first week of the open season. The latest date of harvest was 24 September. The SI450 hunter harvested in October. All hunters used airplanes to access their hunt areas.

Alaska Board of Game Actions and Emergency Orders

No actions were taken during RY13–RY17.

Recommendations for Activity 2.1.

Continue. No recommended changes.

3. Habitat Assessment-Enhancement

Habitat assessment was conducted by Wrangell St. Elias National Preserve (WRST) in 1984 when it was determined that the range had recovered from previous over-grazing by livestock and the current herd of 50 bison was not negatively impacting the vegetation (Miquele 1985).

There are not currently any habitat assessment activities incorporated into the Chitina River plains bison management program. Habitat assessment will be considered to determine if and how the bison herd is affecting its range if satellite collars are deployed to better track herd movements.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Data Recording and Archiving

- State bison harvest data is stored on ADF&G's Wildlife Information Network (WinfoNet; <http://winfonet.alaska.gov>).
- Bison survey data forms are stored in the filing cabinet labeled "Bison" which is located in the assistant area wildlife biologist's office at the Glennallen ADF&G office.
- Data are entered and stored electronically with survey waypoints, survey tracks, and PDF files of the scanned data sheets on the Glennallen shared drive (O:\DWC\BGDIF\Bison)
- All electronic files are backed-up nightly to offsite storage maintained on State of Alaska (SOA) servers.
- An internal report on survey results including cost, conditions, dates flown, and count information is written and transmitted to appropriate staff and supervisors in memorandum format.

Agreements

A data sharing agreement is in place to provide bison (and other species) harvest data to Wrangell-St. Elias National Park and Preserve for RY90 through RY20 (Appendix A).

Permitting

Not applicable.

Conclusions and Management Recommendations

Chitina River bison surveys indicate that the herd remains stable at this time; but is at a larger herd size than has been documented in the past. Harvest pressure remains intentionally low to allow the herd to stabilize to a size above the current management objective. Without additional information on habitat and range use, harvest should increase to stabilize the population at a level below this historic high. Given the history of the herd, management objectives will be modified to maintain a herd between 30 and 50 overwintering adults, until additional information can be gathered to suggest that additional habitat is available to sustain a larger herd.

II. Project Review and RY18–RY22 Plan

Review of Management Direction

MANAGEMENT DIRECTION

The management direction for the Chitina River plains bison herd should be modified to incorporate a maximum herd size until further information can be gathered regarding the quantity and quality of available habitat and the effects of the herd on its range. The following modifications are recommended for the Chitina River bison herd and coincide with statewide goals within the frameworks of sustained yield and species conservation.

GOALS

- To provide an opportunity to hunt bison under aesthetically pleasing conditions.
- To provide for an optimum harvest of bison.
- To maintain the bison herd within the carrying capacity of its range.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

Same as the RY13–RY17 report.

Intensive Management

Same as the RY13–RY17 report.

MANAGEMENT OBJECTIVES

The proposed management objectives are as follows:

- Maintain the herd at a minimum of 30 overwintering adults and a maximum of 50 overwintering adults by controlling the number of bison taken by hunters.

REVIEW OF MANAGEMENT ACTIVITIES

1. Population Status and Trend

ACTIVITY 1.1. Monitoring bison abundance and population composition.

Data Needs

No change from RY13–RY17 report.

Methods

In addition to current aerial survey methods, the implementation of satellite collars on bison in this herd will be considered to better inform survey timing according to seasonal movements and herd distribution.

2. Mortality-Harvest Monitoring

ACTIVITY 2.1. Monitor and evaluate bison harvest through hunter harvest reports.

Data Needs

No change from RY13–RY17 report.

Methods

No change from RY13–RY17 report.

3. Habitat Assessment-Enhancement

Habitat assessment activities will be considered for RY18–RY22 if satellite collars are deployed in the herd to better inform herd movements and habitat use.

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Data Recording and Archiving

No change from RY13–RY17 report.

Agreements

No change from RY13–RY17 report.

Permitting

No change from RY13–RY17 report.

References Cited

- Alaska Department of Fish and Game. 1976. Alaska wildlife management plans: A public proposal for the management of Alaska's wildlife: Southcentral Alaska. Draft proposal subsequently approved by the Alaska Board of Game. Division of Game, Federal Aid in Wildlife Restoration Project W-17-R, Juneau.
- Miquele, D. 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. Department of Interior, National Park Service, Region Research/Resources Management Report AR-8, Anchorage, Alaska.

- Paul, T. W. 2009. Game transplants in Alaska. Alaska Department of Fish and Game, Division of Wildlife Conservation, Technical Bulletin No. 4, 2nd edition, Juneau.
- Stantorf, C. 2014. Unit 11 Chitina River herd plains bison management report. Pages 9–16 [In] P. Harper, editor. Plains bison management report of survey and inventory activities 1 July 2011–30 June 2013. Alaska Department of Fish and Game, Species Management Report ADF&G/DWC/SMR-2014-2, Juneau.
- Truett, J. C., M. Phillips, K. Kunkel, and R. Miller. 2001. Managing bison to restore biodiversity. Great Plains Research 11(1):123-44. <http://www.jstor.org/stable/23775644> (Accessed March 2021).

Appendix A. Alaska Department of Fish and Game data sharing agreement for wildlife data with National Park Service (NPS).

**AGREEMENT FOR USE OF WILDLIFE DATA
BETWEEN
ALASKA DEPARTMENT OF FISH & GAME (ADF&G)
AND
WRANGELL-ST. ELIAS NATIONAL PARK AND PRESERVE**

This agreement covers the following two files to be transferred to Wrangell-St. Elias National Park and Preserve: 1) harvest data files for bison, black bear, brown bear, caribou, moose, mountain goat, sheep, and wolves in Game Management Units 11 and 12 by UCU, including location of kill by major and minor subdivisions, method of take, date of kill, horn, skull, or antler morphometric data, and sex for the regulatory years 1990–1991 through 2014–2015; and 2) a .shp file delineating UCU boundaries. ADF&G will provide harvest data for species listed for regulatory years 2015–2016 through 2020–2021 upon request by Wrangell St Elias National Park.

This information is released to, and may be used by, Wrangell-St. Elias National Park and Preserve under the following conditions:

1. The information will be used to monitor harvest of bison, black bear, brown bear, caribou, moose, mountain goat, sheep, and wolf populations within the Park boundaries.
2. Harvest information will not be published, publically disseminated, or presented by the NPS or its contractors at the spatial resolution of latitude and longitude of a kill site or by watershed defined as a Uniform Coding Unit (UCU) in ADF&G data.
3. The information will not be released to others except to persons in a contractual relationship with Wrangell-St. Elias National Park and Preserve who will be performing work for or on behalf of Wrangell-St. Elias National Park and Preserve, on a need-to-know basis, in which case Wrangell-St. Elias National Park and Preserve will require the contractors to agree to and abide by the conditions in this document.
4. The NPS agrees that the harvest location data is protected from disclosure under state law and will make every effort to keep it confidential under federal law, and will notify ADF&G if there is a Freedom of Information Act request for the data.

Under the above conditions, ADF&G agrees to release the attached information, and Wrangell-St. Elias National Park and Preserve agrees to receive and use it.

Signature on file _____

Date April 4, 2016

Maria Gladziszewski, Deputy Director, Division of Wildlife Conservation, ADF&G

Signature on file _____

Date 4/7/2016

Eric Veach, Acting Superintendent, Wrangell-St. Elias National Park and Preserve

