Copper River Plains Bison Management Report and Plan, Game Management Units 11 and 13D:

Report Period 1 July 2013–30 June 2018, and

Plan Period 1 July 2018–30 June 2023

Heidi L. Hatcher

2021

Alaska Department of Fish and Game Division of Wildlife Conservation

Species Management Report and Plan ADF&G/DWC/SMR&P-2021-21

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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.

Species management reports and plans are available via the Alaska Department of Fish and Game's public website (www.adfg.alaska.gov) or by contacting Alaska Department of Fish and Game's Division of Wildlife Conservation, PO Box 115526, Juneau, AK 99811-5526; phone: (907) 465-4190; email: dfg.dwc.publications@alaska.gov. The report may also be accessed through most libraries, via interlibrary loan from the Alaska State Library or the Alaska Resources Library and Information Services (www.arlis.org).

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Please contact the authors or the Division of Wildlife Conservation at (907) 465-4190 if you have questions about the content of this report.

Cover Photo: ADF&G staff project a biopsy dart at a Copper River bison. ©2017 ADF&G. Photo by Heidi Hatcher.

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Purpose of this Report

This report provides a record of survey and inventory management activities for the Copper River plains bison herd in Units 11 and 13D 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 Copper River plains bison herd includes portions of Game Management Unit (GMU) 11 between the Klawasi and the Kotsina rivers, and GMU (Unit) 13D north and east of the Edgerton Highway, encompassing 1,128 square miles (Fig. 1). The area is a unique patchwork of state lands, federal lands, and Native Alaskan corporation lands accessible by aircraft, by boat in the fall, or potentially by snowmachine in the winter, subject to the dangerous and unpredictable freeze-up of the Copper River.

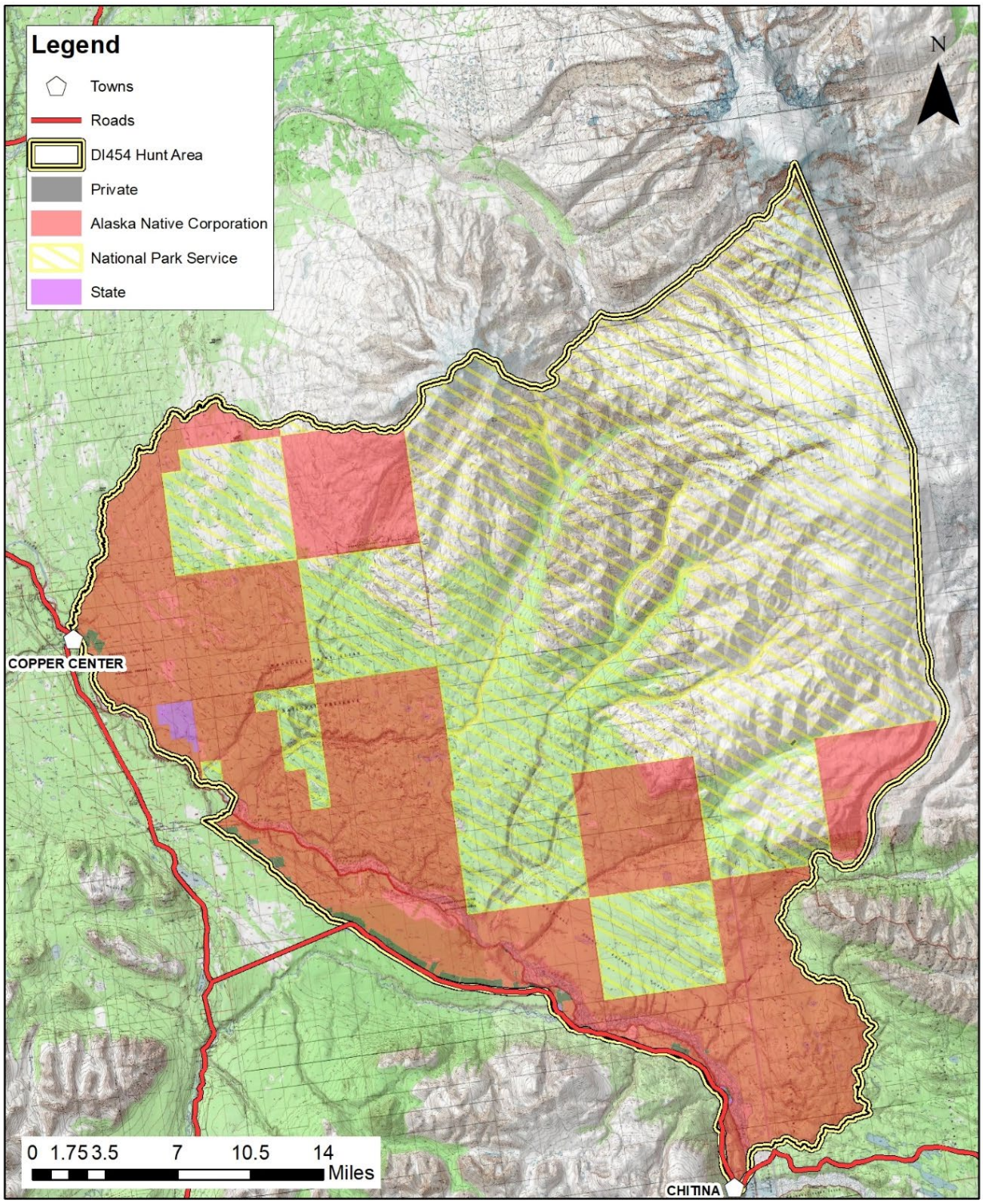

Figure 1. Management Area for the Copper River Plains Bison Herd, Units 11 and 13D, Southcentral Alaska.

Summary of Status, Trend, Management Activities, and History of the Copper River Plains Bison Herd in Units 11 and 13D

The Copper River plains bison herd originated from animals relocated to Delta Junction, Alaska from the National Bison Range in Moise, Montana in 1928. In 1950, 5 bulls and 12 cows were moved from the Delta herd to Slana in the northern portion of Unit 11. These bison moved away from the release site, and by 1961 they had relocated down the Copper River to the Dadina and Chetaslina river drainages, where they remained. Throughout the years, herd estimates have varied from a low of 51 bison in 1967 to a high of 225 bison in 2017. The most important known factors controlling herd size are snow depth and hunter harvest.

The department held the first hunt, by registration permit, for Copper River bison in RY64. Between RY64 and RY88 hunters harvested 217 bison from the herd. The hunt was closed in RY89 by emergency order because of a decline in herd size after a winter with extremely deep snowpack. Hunting remained closed until RY99, when herd size and productivity increased enough to resume annual harvests. Harvests since RY99 have occurred under a drawing permit hunt.

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 Copper River bison herd.

Goals

- To provide an opportunity to hunt bison under aesthetically pleasing conditions.
- To provide for an optimum harvest of bison.
- To stabilize the size of the herd through hunter harvest.

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 and are not identified as important for providing high levels of harvest for human consumptive use.

MANAGEMENT OBJECTIVES

Maintain the herd at a minimum of 60 overwintering adults.

MANAGEMENT ACTIVITIES

Assessing population trends and monitoring harvest are integral components of the bison management program in Unit 11. Survey and inventory (S&I) management activities used to monitor the Copper River bison herd in Units 11 and 13D are described below.

1. Population Status and Trend

ACTIVITY 1.1. Conduct aerial surveys to monitor bison abundance and estimate population composition on an annual basis.

Data Needs

In order for area managers to assess whether management objectives have been met and determine harvestable surplus, population abundance and composition data are needed. These data inform an index of annual productivity and potential for sustainable harvest, as well as providing insight into population trends that occur due to factors such as increased predation, harvest pressure, severe winters, or changes in habitat, including forage availability.

Methods

Aerial surveys using fixed-wing aircraft are conducted to estimate the minimum population size of the herd and evaluate its composition of adults in proportion to calves following the spring calving period. Between 1984 and 1992 radio collars were used to help locate the herd during spring surveys. Currently there are no radio collars in this herd. Surveys are conducted in early June, when bison are most aggregated in open areas along the Dadina and Chetaslina rivers. Each bison or group of bison observed during the survey is circled by the airplane to classify age and define the 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. In some years surveys are not possible due to poor survey conditions (e.g., high winds or low visibility), limited resources, or behavior of the herd. When animals are scattered in timbered areas then an adequate count cannot be accomplished.

Results and Discussion

Minimum counts of the Copper River herd suggest that the herd has numbered near or above 200 animals during most of this reporting period (RY13–RY17) which represents the largest number of animals documented in the history of the herd (Table 1).

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

Calendar year	Adults	Calves (% of total)	Minimum population size
2014	94	21 (18)	115
2015	151	30 (17)	181
2016	164	32 (16)	196
2017[a]	188	37 (16)	225
2018	147	12 (8)	159

[a] During the June flight, only 66 animals were observed. Bison were observed during a sheep survey in late July, and a second survey attempt was conducted during which 225 animals were observed.

Anecdotal evidence suggests that the herd extends its range as the size of the herd increases, utilizing more of the available habitat in the surrounding area. Plains bison ecology also indicates that the behavior of a herd (e.g., 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 as the herd grows (Truett et al. 2001). Therefore, it is unclear what the maximum size of the Copper River herd could be. Historically the herd declined after reaching 100 animals in the late 1960s and early 1970s, and again in the mid-1980s; but the herd has maintained more than 100 animals since 2000, and only recently seems to have stabilized near 200 animals.

Recommendations for Activity 1.1

As the Copper River bison herd grows larger than has been observed in the history of the herd, the herd is likely expanding its use of range and habitat. Until further research can be done on the status of the range, behavioral ecology, and health of the herd at its current size, it would be prudent to maintain a herd size between 60 and 150 overwintering adults. Because this herd makes seasonal migratory movements up and down the Copper River, satellite collars would greatly improve our understanding of the herd's movements as the herd grows. Radio collars would improve timing and success of survey attempts and would aid in bison photocensus attempts. Deployment of collars in the Copper 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

In sustained yield management it is critical to understand hunter effort and success. For the Copper River herd, this is best accomplished through monitoring and analyzing harvest data on an annual basis.

Methods

Under current regulations a maximum of 24 Copper River bison permits may be awarded annually under the ADF&G draw hunt lottery system. Individuals who are awarded a Copper River bison draw permit (DI454) must notify the Glennallen office of their intent to hunt. If a

hunter declines the opportunity, a permit is offered to the next potential winner to maximize the potential permit success for the hunt. Hunters who indicate that they intend to utilize their DI454 permit are then sent an informational packet which includes details on the unique land status and access challenges specific to the hunt. Hunters are required to pick up permits in person at the Glennallen office, unless they speak directly to Glennallen staff about their upcoming hunt and arrange for an alternative method of obtaining their permit. Hunters are required to report successful hunts in person or by phone to the Glennallen office within 5 days of leaving the hunt area, or within 15 days of the end of season if unsuccessful.

A single Governor's permit (SI454) is auctioned in some years for the Copper River bison herd. Harvest report requirements for SI454 are the same as those for DI454.

Season and Bag Limit

The hunting season for residents and nonresidents for both DI454 and SI454 in Units 11 and 13D is 1 Sep–31 Mar. 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 an average of 9 bison annually (Table 2). Bulls represent 50% or more of the harvest each year. Hunter success approaches that of road-accessible bison hunts in Alaska, with an average of 57% hunter success during RY13–RY17.

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

Regulatory year	Permits issued	Applications	Did not hunt	Hunter success	Bulls (% of total)	Cows	Total harvest
2013[a]	24	1,575	42%	36%	3 (60)	2	5
2014[a]	25	2,239	44%	57%	4 (50)	4	8
2015[a]	31	2,342	23%	48%	6 (55)	5	11
2016[a]	25	2,180	32%	65%	6 (55)	5	11
2017	30	2,968	50%	80%	6 (50)	6	12

[a] Includes hunt data from single SI454 permit issued.

Hunter Residency and Success

Nonresident hunters typically have high success rates, as they often employ a registered guide or other commercial services for their hunt. Compared to residents, however, very few nonresidents draw permits (Table 3). Hunter success rates of local residents and nonlocal residents are fairly similar, but few local residents typically draw permits.

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

	Local residents[a]		Nonlocal residents		Nonresidents	
Regulatory year	Hunter success	Total hunted	Hunter success	Total hunted	Hunter success	Total hunted
2013[b]	50%	2	40%	10	0%	2
2014[b]	–	0	54%	13	100%	1
2015[b]	67%	3	44%	18	100%	1
2016[b]	0%	1	64%	14	100%	2
2017	–	0	80%	15	–	0

[a] A local resident is defined as a resident of either Unit 11 or 13.
[b] Also includes hunt data from single SI454 permit.

Harvest Chronology and Transport Methods

The majority of successful harvest by hunters occurs in either September or March, with February also being a popular month in some years (Table 4). The lack of harvest in November, December, and January can be attributed to short days, cold temperatures, and unreliable travel conditions along the Copper River. Harvest timing and hunter transportation are connected, as most successful hunters in September and October access the hunt area via boat, while other hunters may choose to wait until February or March to access the hunt area via snowmachine (Table 5). Airplane is also a popular method of transport, and this method is used by some hunters on wheels in the fall and other hunters on skis in the winter.

Table 4. Copper River plains bison harvest chronology, regulatory years 2013–2017, Southcentral Alaska.

	Percent of harvest (%)							
Regulatory year	Sep	Oct	Nov	Dec	Jan	Feb	Mar	*n*
2013[a]	40	20	0	0	0	20	20	5
2014[a]	13	0	0	0	0	38	50	8
2015[a]	36	9	0	0	0	18	36	11
2016[a]	27	9	0	0	0	18	45	11
2017	42	8	0	0	0	42	8	12

[a] Also includes hunt data from single SI454 permit.

Table 5. Copper River plains bison harvest by transport method, regulatory years 2013–2017, Southcentral Alaska.

	Percent of harvest (%)							
Regulatory year	Airplane	Horse or dog team	Boat	ATV	Snowmachine	Highway vehicle	Airboat	*n*
2013[a]	20	0	40	0	40	0	0	5
2014[a]	25	0	13	0	63	0	0	8
2015[a]	55	0	36	9	0	0	0	11
2016[a]	18	0	36	0	45	0	0	11
2017	17	0	50	0	33	0	0	12

[a] Also includes hunt data from single SI454 permit.

Alaska Board of Game Actions and Emergency Orders

No Board of Game actions were taken and no emergency orders were issued during RY13–RY17.

Recommendations for Activity 2.1

Regulatory changes will be pursued in order to allow for additional Copper River bison permits annually, as current harvest is not sufficient to mediate the size of the herd.

3. Habitat Assessment-Enhancement

There are no habitat-related activities incorporated into the Copper River plains bison management program. If satellite collars are deployed in the future to better track herd movements, habitat assessment will be considered to determine if and how the bison herd is affecting its range .

NONREGULATORY MANAGEMENT PROBLEMS OR NEEDS

Data Recording and Archiving

- State bison harvest data is stored on ADF&G's wildlife information network (WinfoNet) server (http://winfonet.alaska.gov).
- Bison survey data forms are stored in the "Bison" filing cabinet located in the assistant area biologist's office at the ADF&G office in Glennallen.
- Data are entered and stored electronically with survey waypoints, survey tracks, and PDF files of 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 unpublished report with 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

Copper River bison aerial surveys indicate that the herd remains stable at this time but at a larger herd size than has been previously observed. Harvest pressure remains low due to a limit of 24

allowable permits in regulation. Without additional information on habitat and range use, harvest should increase to stabilize the population at a level below this historic high. Management goals of optimizing allowable harvest and stabilizing the population through hunter harvest cannot be achieved under the current regulatory framework. A change in regulation will be pursued, and if unsuccessful then goals and objectives for this herd will likely need to be modified in the future.

II. Project Review and RY18–RY22 Plan

Review of Management Direction

MANAGEMENT DIRECTION

The management direction for the Copper 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 Copper River bison herd. Recommendations coincide with statewide goals and are 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 stabilize the size of the herd through hunter harvest.
- Provide an opportunity for nonconsumptive uses such as viewing and photographing bison.

CODIFIED OBJECTIVES

Amounts Reasonably Necessary for Subsistence Uses

Same as the RY13–RY17 report.

Intensive Management

Same as the RY13–RY17 report.

MANAGEMENT OBJECTIVES

Maintain the herd at a minimum of 60 overwintering adults and a maximum of 150 overwintering adults by controlling the number of bison taken by hunters.

REVIEW OF MANAGEMENT ACTIVITIES

1. Population Status and Trend

ACTIVITY 1.1. Conduct aerial surveys to monitor bison abundance and estimate population composition on an annual basis.

Data Needs

No change from the RY13–RY17 report.

Methods

In addition to current aerial survey methods used in RY13–RY17, the implementation of satellite collars into the herd will be pursued in order 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 the RY13–RY17 report.

Methods

No change from the RY13–RY17 report.

3. Habitat Assessment-Enhancement

Habitat assessment activities will be considered for the next reporting period 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 the RY13–RY17 report.

Agreements

No change from the RY13–RY17 report.

Permitting

No change from the 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.

Truett, J. C., M. Phillips, K. Kunkel, and R. Miller. 2001. Managing bison to restore biodiversity. Great Plains Research 11(1): 123-144. 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


ALASKA
DEPARTMENT OF FISH AND GAME