

THE AMERICAN BISON IN ALASKA

THE AMERICAN BISON

IN ALASKA

Game Division

March 1980

INDEX

	Page No.
GENERAL INFORMATION.	1
Description	1
Life History.	1
Movements and Food Habits	2
HISTORY OF BISON IN ALASKA	2
Prehistoric to A.D. 1500.	3
A.D. 1500 to Present.	3
Transplants	3
BISON AND AGRICULTURE IN ALASKA.	4
Conflicts at Delta.	4
The Keys to Successful Operation of the Delta Junction Bison Range	5
DELTA JUNCTION BISON RANGE	6
Delta Land Management Plan.	6
Present Status.	7
Bison Range Development Plans	7
DOMESTICATION OF BISON	8
BISON AND OUTDOOR RECREATION	9
Hunting	9
Photography and Viewing	10
AREAS IN ALASKA SUITABLE FOR BISON TRANSPLANTS	10
SUMMARY.	11
MAP.	13

GENERAL INFORMATION

Description

The American bison (Bison bison) is one of the largest and most distinctive animals found in North America. A full-grown bull stands 5 to 6 feet at the shoulder, is 9 to 9 1/2 feet long and can weigh more than 2,000 pounds. Full-grown cows are smaller, but have been known to weigh over 1,300 pounds. A bison's head and forequarters are so massive that they seem out of proportion to their smaller hind parts. Bison have a hump formed by a gradual lengthening of the back, or dorsal vertebrae, beginning just ahead of the hips and reaching its maximum height above the front shoulder. From above the shoulder the hump drops almost straight down to the neck.

The bison's horns curve upward. The horns of the male are larger and heavier than those of the female. In late fall, the bison's coat is a rich, dark brown; as winter progresses, the coat fades and is much paler by spring. When the weather warms, the hair loosens and hangs in patches until it is completely shed and replaced with new hair by late spring. For a short time, a bison appears to be almost completely devoid of hair except for its head, hump and forelegs.

Life History

Some female bison are sexually mature at 18 months, but most cows give birth to their first calf when 3 or 4 years of age. Incidence of pregnancy in adult cows varies between 57 and 86 percent. Maximum reproductive vigor occurs in 3- to 12-year-old cows, and incidence of pregnancy gradually declines in 13-year-old and older cows.

The peak of bison calving occurs during May and June, although there are reports of calves born throughout the year. Twin births are rare. Calves born in May and June have a light reddish-brown pelage until the latter part of July when the coat starts to darken. The molt to a dark brown coat is largely complete by the first of September in these calves. Calves are weaned when 7 to 8 months old. Calf proportion in the herds increases through June, when calving is still occurring, and reaches a maximum of 20 to 30 percent in July, declining in subsequent months. This decline is due both to calf mortality and to bulls joining the herd during the rut. At other times of the year, the bulls are segregated into bull groups and mixed groups. Mortality of yearlings and older subadults is low during years with mild winters. During its first 10 years in Alaska, the Delta herd had an annual recruitment rate of nearly 20 percent. The herd was then young, and the range was lush. Since that time, recruitment has dropped to about 10 percent annually with a natural mortality of about 7 percent.

Breeding occurs from mid-June through September with the peak of breeding in August. Most breeding is done by 6 to 14-year-old bulls. Bulls are sexually mature at 2 to 3 years of age, but young bulls are prevented from breeding by older bulls. Cows are apparently bred by only one bull, although one bull may breed many cows. The gestation period is 9 to 9-1/2 months.

Movements and Food Habits

Most bison travel periodically, and the timing and destination of each herd's movements generally are predictable. Apparently, the primary objective of seasonal movements is to seek different pasturage. Superimposed on these are seasonal movements to a traditional calving area, seasonal aggregations during the rut, periodic trips to mineral licks or salt deposits, to water, and sheltered areas to avoid high winds.

Bison are predominantly grazing animals, although they do browse shrubs to some extent. Summer range is generally at a higher altitude than winter range, with summer pastures usually located on upland dry meadows, in open aspen or balsam poplar forests, around the margins of wet areas within forests, or on well-drained alluvial soils. Preferred forage of bison is chiefly grasses and legumes on well-drained alluvium; grasses, forbs, and willow twigs on dry meadows; and sedges in wet areas. Bison avoid areas of extensive, boggy ground during the summer. In Alaska, bison summer ranges are created by fire, silt deposition and changes of stream channels, and are lost through successional changes of vegetation. Dense forests are used by bison during periods of high wind and blowing dust but are probably not a requirement of summer range. A source of water within several hours walk of summer pastures is probably a habitat requirement. Areas of natural salt deposition or artificial salt blocks are often visited by bison during the summer and fall. It is not known whether mineral licks are a habitat requirement.

Bison winter ranges in northern latitudes are usually poorly drained bogs, stream banks, and the margins of sloughs and ponds. These areas are characterized by a lush climax growth of sedges and grasses. Bison generally do not move onto their winter ranges until the topsoil is solidly frozen, usually in October. Because the climax vegetation on these ranges changes very little and it is protected from overgrazing by the boggy substrate during the summer, winter pastures of bison are generally stable under natural conditions. Dry meadows with willow shrubs and dense, tall grasses are also utilized by bison from early fall through the winter.

Bison can apparently tolerate 3 feet or more of loose snow in areas where forage is abundant and relatively tall; however, several instances of large-scale winter starvation have been recorded. Factors contributing to these mortalities were snow depths of 4 feet or more, crusting, exceptional cold, and sparse forage. The impact of winter on bison may be predicted by the number and amplitude of these factors. The snow depth in subalpine, windswept areas used by bison seldom exceeds 2-1/2 feet. Snow in these windswept areas drifts and consolidates relatively rapidly, however, and bison stay in timbered areas during very cold and windy days. This may be why windswept, subalpine meadows are not utilized by Delta bison herds until late winter when the coldest days have passed.

HISTORY OF BISON IN ALASKA

A very large species of bison occupied Alaska thousands of years ago in the company of mastodons, sabre-toothed tigers and dire wolves. At some point, modern bison (Bison bison) evolved or arrived in Alaska. For

tens of thousands and perhaps for hundreds of thousands of years, bison were the most common large land mammal in Alaska.

Prehistoric to A.D. 1500

Modern bison occurred in Alaska until about A.D. 1500 or later. It is not yet known exactly why bison died out, but scientists speculate that deeper winter snows and a shifting of moisture from autumn to spring with an accompanying encroachment of forest on to what were once large grasslands over much of Alaska, were responsible.

A.D. 1500 to Present

Alaska's existing bison population stems from a transplant in 1928. The project to transplant bison to Interior Alaska was an alternate proposal to appease Alaska citizens who had voiced an interest in having deer and elk transplanted to the Interior. The U.S. Bureau of Biological Survey, as administrators of the National Bison Range at Moiese, Montana, agreed to ship bison to Alaska, charging only for crating and handling. Twenty-three animals (6 males and 17 females) were shipped about the middle of June and arrived June 27, 1928 at College, Alaska. Nineteen were released near McCarty (now Delta Junction) in June 1928, and three were held at the University of Alaska and released in June 1930. Two bison died after being released at McCarty and another died at the University.

The herd grew rapidly and reached its peak in the early 1940's. It then decreased to an estimated low of 250 animals about 1950. Limited harvests were permitted in 1951, 1952 and 1953 by the U.S. Fish and Wildlife Service. Since statehood, limited harvests have been allowed in 1961, 1963 through 1965 and 1968 through 1979. Interest in hunting bison has been high and in 1979, for example, there were in excess of 4,000 applicants for the 25 permits allowed for the Delta herd.

Sometime in the mid-1940's a few bison from the Delta herd began using the area near Healy Lake, some 29 miles east of Delta. This "herd" now numbers approximately 20-30 animals and apparently is merely a wintering segment of the Delta herd.

Transplants

In 1950, the U.S. Fish and Wildlife Service conducted the first transplant of bison from the Delta area. Procedures used to capture the bison were similar to those employed in other parts of North America. A sturdy corral was constructed and the animals were herded into the enclosure. The bison were then crated, loaded on trucks and transported to the release site at Slana in the Copper River Valley. In this transplant effort, 17 bison (5 males and 12 females) were released in several separate groups. A small number of these became established on the Copper River in the vicinity of Lower Tonsina. This herd slowly increased to a high of about 119 animals in 1970 then declined to about 80 animals in 1971. Limited harvests, by permit only, were conducted in 1967, 1968, 1969 and 1970. No harvests were allowed in 1971 or 1972 because of reduced herd productivity during this period. It appears that this trend in lowered production, beginning in 1968, is the result of range deterioration and successive severe winters. The herd in-

creased again in the early 1970's but declined somewhat in recent years. The herd now numbers less than 100 animals.

In 1962, the Alaska Department of Fish and Game attempted to extend the range of the Copper River bison herd by planting animals in the Chitina River drainage. Bison were captured at Fort Greely and transported by air to May Creek, an airstrip near the Chitina River. Thirty-nine were shipped; four died en route, and several succumbed during the first winter which was unusually severe. The herd now numbers about 50 animals.

The Farewell Lake bison herd stems from two separate transplants. In August 1965, 18 bison (5 males and 13 females) were trapped on the Fort Greely Army Reservation, crated and flown by C-123 aircraft furnished by the Air National Guard to the Farewell airstrip. The second transplant to the Farewell area was conducted August 1968, and consisted of 12 cows and 8 bulls.

It appears that the Farewell area may be well suited for bison. Counts in 1971 showed that the Farewell bison herd contained 70 to 75 animals, including at least 15 calves. However, only four calves were produced in 1972, apparently because of the severe 1971-72 winter. The first hunt on this herd was conducted in September and October 1972 and resulted in the harvest of 11 animals (10 bulls and 1 cow). Because recent range studies indicate that no more than 100 bison can be sustained in this area, maintenance of the herd at approximately this size is the Department's goal. It is about that size today.

BISON AND AGRICULTURE IN ALASKA

Conflicts at Delta

Shortly after their arrival in the Delta area in 1928, a pattern of annual bison movements began to emerge. During summer, the animals spent their time on the gravel bars along the Delta River, and in fall they gradually moved to the Delta area to take advantage of open forests. Later in the winter, they slowly moved back toward Delta River. This basic movement pattern continues today.

From 1933 until about 1952, early winter range for these bison consisted of a 7-mile long dry creek channel of Jarvis Creek--the "99 mile dry bar"--as well as tall grass and sedge meadows adjacent to and south of Clearwater Creek. When small farms were developed in that area in the early 1950's, this movement pattern was already well established, and the farms were squarely in the the bison's path.

Most of the farming at that time was in response to the requirement of the Federal Homestead Act necessitating that a portion of the homestead be farmed. After the homesteads were "proved up" and farming slowed down in the early 60's, the bison depredation complaints largely ceased.

Some farming continued through the 1960's, but agricultural development did not really expand until the early 1970's. Bison continued to use the area for their early winter range.

The large, unfenced farms which were developed beginning in the early 1970's have continually experienced some problems with crop depredations. Farms that were properly fenced have had fewer problems from the outset.

As crop depredations increased in the 1970's, the Department of Fish and Game began to take steps to minimize losses to farmers. Salt blocks have been placed on their fall range to hold the bison longer; and as the bison begin to move toward the farming area, they are harassed using a variety of techniques including herding by horsemen, aircraft and helicopters, and (beginning in 1979) automatic propane fired noise cannons. Hunting also begins at about this time, and in the fields where landowners permit hunting (most of the farmers cooperate), bison damage is reduced.

In the course of their annual migration, the bison move east from the Delta River at a point approximately east of Fort Greely (see map in appendix) and south of the Alaska Highway until they are south of the farming area. From there they move north across the highway and into the fields.

The Keys to Successful Operation of the Delta Junction Bison Range

There are three keys to the successful operation of the bison range: attractive forage, access and encouragement. Without each of these, chances for success are slim.

Forage is an obvious necessity. Bison annually visit the farming area because they have learned over the past 50 years that fall and winter forage is available there. Even before farms were established in the Clearwater area, bison wintered there--the farms have just made the area more attractive. Bison have to learn that equally attractive forage is available on the bison range, and they will also have to learn that it is to their advantage to use the range rather than the Clearwater farms, at least during September.

Access will be extremely important in the early years of the bison range operation. Bison now use traditional migration corridors that take them over most of the farming country. Until an access corridor is established, bison cannot be expected to find the newly created fields.

High initial use of bison range fields is important to reduce crop depredation in the agriculture project. From this aspect, a trail is important to reduce the time it will take the bison to learn of the fields. Such a trail is now being cut from existing bison trails across Fort Greely to the Bison Range boundary and will be completed by spring 1980.

Encouragement is the most difficult of the three. Bison have established their fall migration routes over the past 50 years, and it will be difficult to break this habit.

Encouraging the bison to change their movements will require both the "carrot" and the "stick." The bison range fields and the baited trails will be the carrot, while active harassment will be the stick.

The operational plan for fall 1980 includes both elements. Sixty-five acres have already been cleared and planted. More land will be cleared and planted, and bison trails will be baited with salt. Active monitoring of bison movements followed by harassment is being planned.

Implementing the "stick" will require regular observations of key fields. When bison approach these fields, the propane cannons and other harassment techniques will begin. Game Division personnel will monitor herd movements and arrange these harassment activities to always move the herd toward the bison range rather than allow it to go north of the Alaska Highway.

Hunting will also help. Bison don't like being shot at, and hunters actively pursuing bison in the fields (where farmers allow access) will help keep the bison out.

Radio-collaring lead cows to accurately monitor movements, horse and jeep patrols, aircraft surveillance and similar activities are being discussed now as possible additions to the steps outlined above. Such activities will require additional manpower and funding.

DELTA JUNCTION BISON RANGE

Delta Land Management Plan

The Delta Land Management Plan is the result of several years' combined effort by the community of Delta Junction, the State of Alaska, and other interested parties. Although the final version of the Delta Plan is not complete, the Plan's major elements have been agreed upon and published.

One of the major issues resolved in the planning process was how to accommodate both large-scale agriculture and a free-ranging bison herd. The agreed upon action was to establish a bison range south of the Alaska Highway and east of Fort Greely. The intended purpose of the bison range was to provide fall and winter food sources sufficient to support the Delta bison population, and to attract bison away from the Delta agricultural area by planting barley or other crops in a series of small fields. In addition, the range would supply shelter and water requirements for the herd. Range management activities would provide both grasslands and shrublands through careful use of controlled burning or land clearing. These habitat types would benefit bison soon after clearing, and the later shrub stages would benefit moose, sharp-tailed grouse, and other wildlife important to local people.

Although the citizen's council was strongly in favor of retaining as wildlife habitat all of the study lands south of the Alaska Highway and east of Fort Greely, the final recommendation of the planning team was to place the 2,200 acre "Tract A" south of the highway. This agricultural land superimposed upon the bison range complicates bison range management. With "Tract A" in its present position (see map section), bison must not only be kept south of the psychological (to bison) barrier presented by the highway, they must be kept south and east of Tract A. The bison range and Tract A are adjacent.

Another part of the planning process complicating this matter was the fact that the "ad hoc" committee was planning for agricultural development at the same time. The citizen's council endorsed this development, but, because of their concern for the future of their community, the council made it clear that the pace of the development should be slow and the scale should be small. There is considerable concern in Delta that agricultural development interests have ridden roughshod over concerns for wildlife, air and water quality and lifestyle.

The Delta bison herd has responded to past habitat changes mainly by changing its movement patterns to take advantage of new and better feeding areas, most of which have been farms. Bison presently enter the Clearwater farming area early in September in search of high quality feed. Once in the farming area, bison seek out fields of good feed during evening, night and early morning. During the day they may travel several miles to favored watering places and timbered areas. The bison may spend 4 to 5 late fall and winter months on unfenced agricultural lands, and have occasionally broken through less than substantial fences. Crop damage occurs when bison reach the farms before crops have been harvested. Grazing on stubble fields after the harvest causes few, if any, conflicts. By providing new feeding areas on the bison range where human activity is minimal, and by continuing the use of hunting to discourage bison movements into the agricultural areas, fall bison depredations should be largely averted. Herd size would be maintained at 250 adults to insure that the range could adequately support the herd.

In 1979, the Alaska Legislature passed legislation creating the "Delta Junction Bison Range." The Range encompasses some 70,000 acres south of the Alaska Highway and southeast of Delta Junction. The Range generally conforms to the recommendations of the Delta Land Management Plan but has a August 1982 "sunset" provision.

Present Status

In spring 1979, the Department contracted for the clearing of 5 fields totalling 65 acres on the western edge of the range. Weal barley was planted as part of the contract.

Bison probably did not use the fields during 1979, although some did pass near them. Biologists believe they will probably use the fields sometime during the winter. Earlier use of the fields could have been encouraged if a trail from existing bison trails west of the range to the fields could have been constructed prior to the harvest. When the bison "learn" about the clearings, they should use them heavily each year.

Bison Range Development: Plans

The Bison Range legislation requires that development of the range be done in accordance with a management plan drawn up by the Department of Fish and Game following input by citizens. A public meeting for that purpose was held in December 1979, and a management plan was drawn up.

The plan calls for clearing and planting a series of 15- to 30-acre

fields along the east-west axis of the proposed range. These fields will be spaced 1/4 to 1/2 mile apart and will be connected by trails. Plantings of barley and oats will be used initially, but perennials may be used in succeeding years. The east-west pattern of field development is designed to encourage the bison to cease their current movement north across the Alaska Highway to the Clearwater area. Current movement patterns will be further discouraged by hunting and harassment outside of the Range.

If funding is available, the long-term plan is to clear and plant about 500 acres annually, so that an area of 5,000 acres will be under cultivation within 10 years. This would provide the basic fall-winter food supply for bison. Because not all of the crops may be needed to support the bison herd, sharecropping by local farmers is a possibility. Some local farmers have expressed interest in a sharecropping arrangement.

Controlled burning to enhance grassland and shrub habitats could be done on as much as 2,000 to 5,000 acres annually. This would benefit moose and other species as well.

Preliminary soil surveys by the Soil Conservation Service indicate adequate agricultural soils are available to support the planned planting regime.

There are three main sources of water located within the bison range. At no point will any of the bison range fields be more than 4-1/2 miles from one of these sources of water. This distance, in terms of normal bison use, is minimal.

DOMESTICATION OF BISON

Domesticated bison in Alaska come from two sources. Most are purchased outside of Alaska from commercial bison ranches. The other source was a mid-1960's grant of 34 bison to Alaska residents by the Department of Fish and Game under the authority of AS 16.40.010.

Of these 34 bison and their offspring, only three are known to remain alive. Two are hybrids from a cattle/bison cross, one is an old cow.

One grantee, Merle Mercer of Healy, received 3 males and 3 females. Over a period of several years he was able to raise several young bison, and his herd size eventually reached 10 animals. His herd was killed in a single night on the Alaska Railroad after the animals escaped their corral. The corral was damaged by moose which made a hole large enough for the bison to escape.

Mr. Mercer also bred about a dozen Highlander cattle with the bison bulls, and he sold the pregnant cattle to a Delta resident who raised several "cattalos." These were sold or butchered. None remain in the State.

Mr. Mercer intends to attempt to raise bison again, using stock obtained from outside Alaska.

Lee Fett of Delta owns the only remaining bison from the grant. He

received two cows, which he bred with beef cattle. He now has one bison and two "cattalos."

Domesticated bison are readily available outside of Alaska. Cost is about 20 percent higher than beef cattle. Approximately 35,000 bison are privately owned in the lower 48 states in herds ranging in size from one or two to about 3,500. Average herd size is probably less than 10.

Most domesticated bison are in the western plains states where pasture is available.

There are fewer than 50 domestic bison in Alaska today.

BISON AND OUTDOOR RECREATION

Hunting

Bison were returned to Alaska in the 1920's. Interior residents had heavily hunted moose for red meat for the gold camps, and moose numbers were down. They wanted another species to hunt. White-tailed deer, elk, antelope and other species were proposed, but only bison were available at the time.

Bison thrived in the Delta area and limited harvests began in 1951, 23 years after the original transplant. Other hunts were allowed in 1952 and 1953, and 1961 through the present except for 1962, 1966 and 1967, and 1973. The bison harvest and number of permit applications for the past 10 years are summarized below.

DELTA BISON HUNT

<u>Year</u>	<u>No. of Permits</u>	<u>Total Applications</u>	<u>Application Fee</u>
1979	25	3930	\$5
1978	50	3555	\$5
1977	70	2121	\$5
1976	35	3694	free
1975	35	3662	free
1974	35	3939	free
1973	no hunt held this year		
1972	20	2650	free
1971	20	2650	free
1970	20	3470	free
1969	15	2019	free

Generally, the total number of applications has increased in the past decade. A sharp decline was experienced in the number of applicants after a \$5 application fee was instituted in 1977. Numbers increased again after that to near-record highs in 1979.

Application fees are a small but important source of revenue. In 1979 applications for the Delta bison hunt alone brought nearly \$20,000 to the Fish and Game Fund. Most of these funds are used in administration of permit hunts, drawings and related activities. They are important

because they free other funds that would otherwise be used for those activities.

Traditionally, most of the applicants for the buffalo hunts are Alaska residents (fewer than 5 percent are nonresidents). There are opportunities for bison hunting outside Alaska, but they are generally limited to private bison ranches.

Most hunters are interested in bison for their high quality meat. Taste is excellent, and many hunters prefer bison meat to beef.

Beginning in the 1970's, the Department began allowing permittees to hunt bison without being accompanied by a Fish and Game representative. Previously, due to the difficulty of killing the animals and because of the large amount of private land in the area, some assistance from the department was believed necessary. In 1979, none of the 25 hunters were accompanied. Few problems were reported, so this situation will likely continue.

Farmers are generally cooperative and allow hunters access to their land. Hunting is important in discouraging bison from using farm fields.

Photography and Viewing

Bison are relatively easy to photograph in the late fall, and more and more photographers are taking advantage of this fact. Because of light snowfall and wind, photographers with permission from the landowner can drive across frozen farm fields to get quite close to the animals.

During the summer, the animals are more difficult to photograph because of access problems. They can, however, be seen from a vantage point on the Richardson Highway where the Department of Fish and Game maintains a bison information sign. At that point the bison are about 5 miles away, across the Delta River.

In the fall, the bison move across the Delta toward the farming area, and in the process most Delta residents see them several times. Nearly everyone has a buffalo tale in Delta and, in fact, the town was once named Buffalo Center.

AREAS IN ALASKA SUITABLE FOR BISON TRANSPLANTS

Future bison transplants in Alaska will, necessarily, be limited. With few exceptions, bison range in Alaska is limited to river bars created by glacial streams. Bison summer on such bars almost immediately below the glaciers feeding the streams. In winter, they migrate downstream to the lower reaches of the rivers where wind is essential to prevent excessive snow accumulation.

Limited reconnaissance in the 1960's indicated that there were at least a few areas where small numbers of bison may be able to exist. An exhaustive statewide survey of suitable sites has not been made. Because of the exacting habitat requirements mentioned above, there are probably few, if any, areas that would support large numbers of these animals.

If transplants are seriously considered in the future, new on-the-ground suitability surveys should be conducted.

SUMMARY

The American bison is one of the two remaining species of bison in the world. Bulls may reach 6 feet at the shoulder and weigh as much as 1 ton. Cows are smaller. Coloration varies with time of year and the sex of the animal. Most cows give birth to their first calf at 3 or 4 years of age. Bison may live up to 35 or more years of age. Breeding is during mid-June through September. Peak of calving is during May and June. Timing and destination of bison movements are generally predictable, and movements are primarily to seek different pasturage. Bison are predominantly grazing animals but they eat some shrubs. Summer range requirements include relatively open forests or meadows containing grasses and legumes on well-drained soils; grasses, forbs and willow twigs on dry meadows; and sedges in wet areas. Bison summer range is created by fire, silt deposition and changes in stream channels. Dense forests are rarely used during summer. Winter range is typically on poorly drained soils. Bison do not move onto this range until after freeze-up. During the winter, bison mortality is caused by snow in excess of about 4 feet, snow crusting, exceptional cold and sparse forage.

Bison were endemic to Alaska until at least A.D. 1500. Alaska's existing bison originated from a 1928 transplant from Montana to near the present day Delta Junction. The herd grew rapidly in the 30's and 40's. Hunting has been permitted since the early 1950's. Bison herds at Copper River, Chitina, and Farewell resulted from transplants from the original herd at Delta.

Shortly after their arrival in the Delta area in 1928, the bison established an annual migration pattern that took them to the present farming area during early winter. Until the early 1950's, there were few, if any, conflicts with agriculture. In the 50's and 60's, small farms grew up in the area to fulfill requirements of the Federal Homestead Act. When the pace of farming slowed down in the 1960's, problems diminished. Agriculture began in earnest in the 1970's in the Delta area, and bison/agriculture conflicts began again to increase.

There are three keys to the successful and early operation of the bison range: attractive forage, access, and encouragement.

Additional clearings will be developed and planted on the bison range in 1980. A trail, now largely complete, will be developed from existing bison trails to the bison range. Various harassment activities are being planned for the 1980 season to exclude bison from private farm fields and keep them moving toward the bison range.

The Delta Land Management Plan was the culmination of several years of efforts by State and Federal agencies and Delta residents. The major issue resolved by the Plan was how to accommodate both large-scale agriculture and free-ranging bison. The agreement was to establish a bison range south of the Alaska Highway and east of Fort Greely. The 1979 Alaska Legislature established the Delta Junction Bison Range. The

range conforms to the land management plan, but has a 3-year sunset provision. Plans for the development of the range call for clearing 500 acres annually over a 10-year period. Each field would be 15 to 30 acres in size. Development of the range would also benefit moose and other species. Bison did not use the range in 1979, but should find the fields in early 1980. A trail to the range, constructed in January 1980, should lead them to special fields on the range during the 1980 harvest period.

Bison are a popular animal for viewing, photography and hunting. More than 3,000 Alaskans annually apply for the 25-50 permits available. Hunters are primarily interested in bison meat. Department representatives accompanied each hunter in the field until recent years. Most farmers are cooperative, and hunting generally discourages bison use of the fields during the harvest period. Bison can easily be seen and photographed in the Delta area in the summer, fall, and early winter. They are a popular species among Delta residents.

LATE SUMMER-FALL MOVEMENTS

RICHARDSON HIGHWAY

DELTA JUNCTION
AKASHA HIGHWAY

RICHARDSON

LODE BOUNDARIES
APPROXIMATE
SCALE 1:12,500

