

Delta Bison Working Group

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Delta Bison Management Plan Update Underway

The Delta Bison Herd (DBH) is managed by The Alaska Department of Fish and Game (ADF&G) according to the *Delta Bison Management Plan*. The plan is updated every few years through a cooperative process involving the Delta Bison Working Group (Working Group). The Working Group is an advisory group that includes hunters, farmers and other people interested in the bison herd. The process also involves state fish and game advisory committees and other interested members of the public.

A major focus of the plan is to identify management actions that can minimize the damage caused by bison to agricultural operations in the Delta area. Herd size is an important component of the plan. The size of the herd influences the level of harvest that can be sustained and the number of bison hunting permits that can be issued. Herd size can also affect the level of bison-caused damage to agricultural operations.

Last winter the Working Group held a series of meetings in Delta to discuss bison management and address possible changes to the plan. Representatives of the Delta agricultural community expressed a higher level of concern about bison-caused crop damage than had been expressed to ADF&G for earlier versions of the plan. In response, ADF&G expanded the planning process to ensure adequate opportunities for input from the agricultural community and others. The Division of Agriculture has become actively involved in the planning process as well. The Working Group is seeking to make every effort to evaluate all information and ideas and bring forth strategies to minimize conflicts between the bison and agriculture and to address other management issues.

Meetings will continue this fall and there will be opportunity for public review and comment on a draft plan. The draft plan and any hunting regulation proposals that may be developed will also be reviewed through



Photo by Steve DuBois

(Continued on page 2)

(Continued from page 1)

the state fish and game advisory committee process. The goal is to submit a proposed final plan to the Board of Game in March 2010. It is possible that the proposed plan will include recom-

mendations for actions by other agencies and decision-makers including the U.S. Army, the Division of Agriculture and/or the Alaska Legislature.

Background and History: Delta Bison Herd and Agricultural Development

Bison

In 1928 twenty three plains bison (*Bison bison bison*) were transplanted from the National Bison Range in Montana to the Delta Junction area. They were released on the Delta River near the mouth of Jarvis Creek because abundant forage was present in the area. Bison prospered and numbers steadily increased until 1950 when a hunting season was established to stabilize the size of the herd.

Although migration patterns have shifted over the years, currently the Delta Bison Herd (DBH) typically migrates toward the floodplain of the Delta River from mid February to early March (Figure 1). The majority of the cows calve from late April to early June on the floodplain. The herd spends the early part of summer along the Delta River floodplain and adjacent uplands between Black Rapids Glacier and the mouth of the Delta River. In July, August, or September, they migrate eastward to the Delta

Junction Bison Range (Bison Range) on the south side of the Alaska Highway. From the Bison Range they move onto private agricultural lands north of the Alaska Highway sometime between mid-July and September. The herd then winters on both private agricultural land and the Bison Range before returning to the Delta River to calve again in early spring.

The management objective for herd size has always been based on the number of bison in the herd before calving occurs (precalving). The number of bison in the



Photo Courtesy of U.S. Army Archives

Convoy of trucks transporting bison to Delta Junction area in 1928

herd increases by about 20% after calving. The first *Delta Bison Management Plan* that was in place between 1980 and 1985 included a herd size objective of 250-300 bison. The herd size objective was increased in subsequent versions of the plan. From 1992 until present the herd size objective has been 360 bison precalving. ADF&G uses hunting as the main tool for managing the size and composition of the DBH. Predation is not a major mortality factor. The DBH hunting permits are among of the most sought after hunting permits in the state, with 10,000 - 15,000 people applying annually for approximately 100–150 permits. The current hunting season is from July 20 to March 31; however, ADF&G does not allow hunting until October 1, unless needed as a tool to reduce bison crop destruction. Some farmers concluded that crop damage by bison was accelerated when they were being hunted; therefore in recent years hunting has not been allowed prior to October 1.

Most hunting occurs on private agricultural land and state land in the Bison Range; however, a small amount occurs on federal land. The

ability of hunters to have access to the DBH on private land is dependent on the willingness of private landowners to allow access. Landowners have a significant role in managing herd size because without allowing hunters on their land it would be much more difficult for ADF&G to manage herd size. Hunting on private land has become more difficult for hunters in recent years because of the following: 1) Some landowners charge access fees; 2) other landowners no longer allow hunters onto their property; 3) some landowners allow only one hunter on their property at a time; and 4) the number of individual landowners has increased because farm tracts have been subdivided into smaller parcels which makes determining ownership and obtaining access more difficult.

Agriculture

Development of agriculture in the vicinity of Delta Junction began in the 1950s within the area traditionally used by the DBH. About the same time, native bison forage began decreasing as wildfires were suppressed and forests became more abundant. As a result, bison looked for and found better forage on agricultural land. Bison activity began to cause crop damage through both eating and trampling the crops. Most crop damage occurs when bison move onto farms prior to fall harvest.

The Alaska Department of Natural Resources (ADNR) began large scale agricultural land disposals in the Delta area in the winter of 1977-1978 with the Delta I land sale. Some farmers reported that bison had damaged grain crops in 1979. When ADNR conducted the Delta II agricultural land disposal in the early 1980s the sale contracts included a provision advising the purchaser of bison movements in

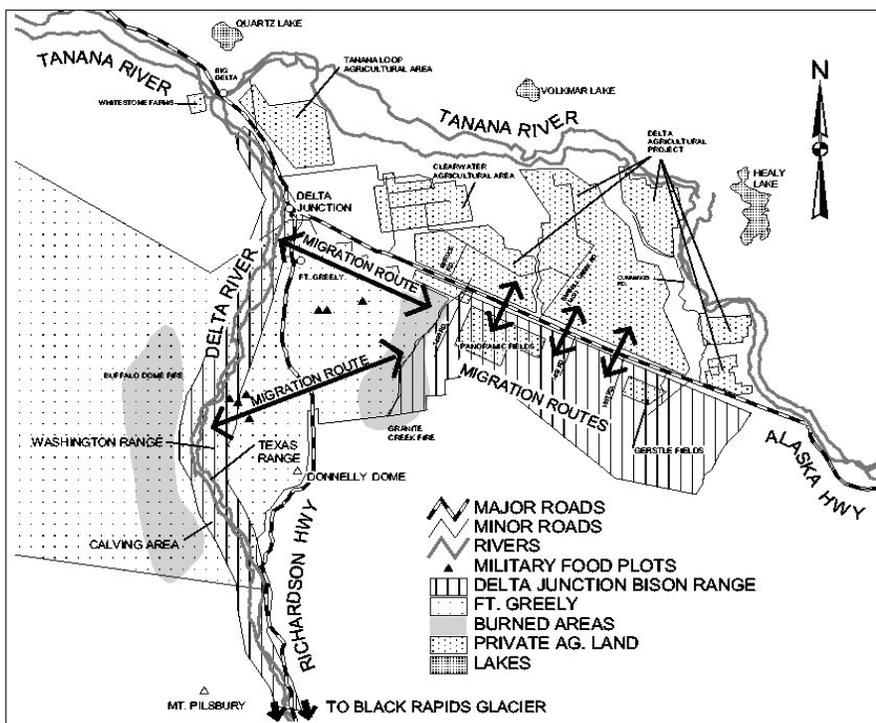


Figure 1. Primary land ownership patterns and bison migration routes

(Continued on page 4)

(Continued from page 3)

the area and that the state is not liable for bison-related crop losses.

Since 1978 the State of Alaska has sold approximately 100,000 acres in over 200 farm tracts in the Delta Junction area. As farms were developed, bison began to include hay and grain crops in their fall and winter diets and crop destruction increased. During the mid to late 1980s, most of the crops were grains. Fewer grass hay crops were grown. The trend in recent years however, has been toward the production of more brome hay. Bison are strongly attracted to hay and oats.

Nearly a half of the acres of the Delta I and Delta II farmland no longer meets USDA crop land requirements because it has too much vegetative regrowth. The remaining acreage is either in production, available for production, or in the federal Conservation Reserve Program (CRP). Major cropping activities include the production of barley, oats, hay, and potatoes. Approximately 10,000 acres of land will come out of CRP in 2010 and the owners must decide whether to re-enroll the land into the CPR program or to put it back into production. There is

an increasing market for oats and potentially other crops like canola within the state of Alaska. Farmers in Delta may be hesitant to take lands out of CRP and plant these crops because of the potential for significant bison-caused crop damage.

Delta Junction Bison Range and Habitat Improvement

In 1979 the Alaska Legislature established the Delta Junction Bison Range (Bison Range) on the south side of the Alaska Highway to “perpetuate free-ranging bison...” and “...to alter seasonal movements of bison herds on the land in order to diminish damage caused by herds to agriculturally developed land.” In 1984 the Alaska Legislature appropriated funds to develop forage on the Bison Range. The same year the Legislature increased the application fees for a Delta bison hunt permit from five to ten dollars. The intent of the increase was to help provide funding for managing the Bison Range. ADF&G developed 2,700 acres of bison forage on the Bison Range in two areas identified as the Panoramic and Gerstle Fields. ADF&G planted perennial bluegrass and annual barley and oats in these fields with the intent of providing high quality forage that will attract bison and delay their movement towards private agricultural lands on the north side of the Alaska Highway.

ADF&G has also worked with the U.S. Army to improve bison forage on military land. Approximately 35 acres of bluegrass forage are in production on Fort Greely. The U.S. Army has allocated funds to develop up to 80 acres next year. The intent is to help keep the bison on their summer range longer and delay their movement toward the Bison Range and private agricultural lands. It is ADF&G’s desire to influence the movements of the DBH to keep bison completely out of private farmlands until October 1 annually, or until all crops are harvested each fall; however, this has not been achieved and conflicts remain.



Photo by Rita St. Louis

Forage turnips grown in 2009 as an experimental crop to help keep bison on the Bison Range



Where We Are Today

Management of the Delta Bison Herd (DBH) poses many challenges. There are no easy solutions to completely eliminate the impact of bison on the agriculture lands while still maintaining hunting opportunities and the free-ranging bison herd stipulated in legislation. Several agencies and groups must work together including ADF&G, Alaska Department of Natural Resources, the U.S. Army, Salcha-Delta Soil and Water Conservation District, Alaska Farm Bureau, Natural Resource Conservation Service, and others. ADF&G is obligated to manage the herd according to legislative intent and other legal requirements, as well as sound principles of wildlife management and within the constraints of available funding.

During Delta Bison Working Group meetings last winter some people questioned whether the legislative intent to maintain the DBH as a free-ranging bison herd is still valid and whether the State of Alaska is liable for damage to agriculture crops caused by Delta bison. The Alaska Department of Law has reiterated its opinion that the

legal mandate to manage Delta bison as a free-ranging herd is still valid and the state is not liable for damage to crops caused by bison or other wildlife.

While several people who came to the Working Group meetings last winter focused on the conflicts between bison and agriculture, others noted the positive aspects of the Delta bison herd. One Delta resident stated, "Bison are what make the Delta area unique." Hunters have generally wanted to maintain the bison herd at its current size or larger and do not support a reduction in bison hunting opportunities. Hunters have also recognized the importance of maintaining access to private agricultural land in the Delta area, not just for bison hunting but for providing opportunities to hunt game birds and waterfowl too.

One problem faced by the Working Group and others seeking solutions to these issues is that there is very little information

(Continued on page 6)

Other issues or questions raised in public meetings include:

- Is the Delta Junction Bison Range serving its purpose of reducing conflicts between bison and agriculture?
- Would additional habitat enhancement on the Bison Range and on the Delta River summer range on military lands help keep bison out of agricultural fields?
- What actions could the Delta farming community take to help reduce bison and agriculture conflicts?
- Should the state provide financial assistance for constructing bison-proof fences around private agricultural lands?
- Should the state compensate farmers for bison-caused crop damage?
- Would reducing the size of the herd help to reduce damage to agricultural crops and, if so, what size of herd would be appropriate?

(Continued from page 5)

available to document the actual level of damage that bison are causing. Some farmers experience no damage while others have significant damage. The amount of crop loss caused by bison — as opposed to insects, other wildlife, weather, weeds and other factors — has not been quantified. As members of the Delta Bison Working Group, Fairbanks Fish and Game Advisory Committee, and others have pointed out, a crop damage assessment is critical to informed decision-making. ADF&G is working with the Division of Agriculture to conduct a pilot program to estimate crop damage caused by bison this year. ADF&G conducted a series of over flights to locate and photograph crop damage after the bison entered the agricultural lands. The Division of Agriculture will use this information, reports from farmers, and onsite inspections to quantify the level of crop damage being caused by bison. Results of this initial assessment should be available this winter and will con-

tribute to the planning process. In addition, the Salcha-Delta Soil and Water Conservation District is working to develop a cost-sharing program for farmers to construct bison-proof fences. These programs could play an important role in helping to better understand the impact of bison on Delta agriculture and reduce the level of conflict between bison and agriculture in the future.

On August 4 Delta Area Biologist Steve DuBois provided a tour of the Delta agricultural area, the Bison Range, and bison food plots on Fort Greely for members of the Working Group and others closely involved in the planning process. The tour was very informative and helped provide an on-the-ground perspective of the issues and challenges discussed during planning meetings. Special thanks to Delta farmers Bob Green, Mike and Scott Schultz, Bryce Wrigley, and Ron Nelson for providing information on their farming operations and bison interactions; to Ron Riesgaard, ADF&G, for the explanation of forage production on the Bison Range; and to John

Haddix for the explanation of the Fort Greely bison food plots and management program.

ADF&G acknowledges that many decisions about Delta bison management involve subjective judgments about things such as what level of bison-caused crop damage is reasonable and acceptable and at what point actions such as reducing the size of the herd should be implemented. As the management plan develops we will do our best to identify specific criteria for triggering changes in the management program; however, we still expect that the Working Group which is composed of representatives of farmers, hunters and other interests, will play an important role in advising ADF&G and the Board of Game on changes to the management program within the framework of the management plan.



Photo by Rita St. Louis

Farmer Ron Nelson sharing information with ADF&G Deputy Commissioner Pat Valkenburg, and Area Biologist Steve DuBois during the tour

Recommendations Being Considered

The Working Group discussed many possible approaches to help reduce the conflicts between bison and agriculture and improve the management program. No decisions have been made up to this point. Some of the main recommendations being considered by the Working Group are outlined below.

Please take a few minutes to read this information and let us know what you think.

A. Herd Size Objective

The herd size objective is one of the most fundamental parts of the Delta Bison Management Plan and is one factor which ADF&G can directly control. Some members of the Working Group indicated that reducing the size of the herd is essential and discussed a herd size objective as low as 250 bison (precalving) from a current precalving objective of 360. Others members of the Working Group disagreed on the need to reduce the size of the herd or indicated they would consider agreeing to reduce the size of the herd only if other actions are also taken.

While many alternative approaches to the herd size objective exist, including maintaining the present number of bison in the herd, members of the Working Group agreed that two alternative approaches to reducing herd size should be circulated for public review and comment. The primary difference in the two alternatives is that under the first alternative possible reductions of herd size would be considered in the future and under the second alternative reductions in herd size would begin as soon as the updated plan is finalized. The minimum herd size under both alternatives would be 250 animals precalving. Both approaches would utilize an on-going crop damage assessment program and the recommendations of the Working Group to help judge the effectiveness of any changes in the management program and how to proceed.

Alternative 1: Maintain the present herd size and consider herd size reductions in the future if bison-caused crop damage is not reduced through other measures.

1. Initiate immediate management actions in summer 2009 to reduce bison and agriculture conflicts.

This summer ADF&G allocated additional funding for Delta Bison management and increased forage production on the Bison Range. An additional 200 acres of oats were planted and the fertilization rate was increased on 700 acres of perennial bluegrass. Thirty acres of forage turnips were planted to evaluate if they were a preferred forage and would help keep bison on the Bison Range longer. Availability of funds for continuing this level of forage production on the Bison Range is not certain. ADF&G also increased aerial surveys to determine if a significant number of bison are remaining in private agricultural lands year-round.

2. Establish an on-going crop damage assessment program.

In order to evaluate whether a reduction in the size of the herd or other management actions help to reduce the level of bison-caused crop damage, it is necessary to have reliable data on the actual level of damage occurring. As previously noted, ADF&G and the Division of Agriculture worked together to initiate a pilot crop damage assessment program this summer. The Division of Agriculture would likely require additional funding to establish and maintain an on-going crop damage assessment

(Continued on page 8)

(Continued from page 7)

program. Even with a crop damage assessment program, quantifying monetary losses caused by bison, relative to other factors such as weather conditions, insects, and other wildlife will be difficult.

3. Expand efforts to increase bison use of summer range on military lands and the Bison Range.

The later the bison move to private agricultural lands the more likely it is that crops can be harvested with less bison damage. The U.S. Army helped establish several food plots on their land which were heavily used by bison this spring and summer. Additional habitat improvement on the summer range depends on cooperation and support by the U.S. Army and available funding. Furthermore, habitat improvement cannot interfere with the training mission of the Army. Because bison are natural wanderers and typically do not consume all available forage before moving on, it is not certain that improving bison forage on their summer range on military lands will result in the DBH's remaining in that area later.

4. In fall 2010 evaluate the success of measures to encourage the bison to delay entering private agricultural lands.

In fall 2010 there will be two years of baseline data on the level of crop damage at the current herd size. There will also be information on whether increased forage production on the Bison Range and military lands will help delay the movement of bison onto private agricultural lands.

5. If crop damage is not reduced and significant bison/agriculture conflicts persist, reduce the herd size to 300 precalving beginning with the 2011-12 hunting season.

The Working Group would help evaluate the success in reducing bison-caused crop damage and whether a reduction in the size of the herd should occur.

6. In fall 2014 re-evaluate whether bison-caused crop damage has been reduced and determine if a further reduction in the size of the herd should occur.

It will likely take a minimum of three years to evaluate whether a change in the herd size has helped to reduce bison-caused crop damage. This is partly because it will likely take two hunting seasons to reduce the herd size. If there is no significant reduction in level of bison-caused crop damage after three years at a herd size of 300, then reduce the herd size to 275 for the next three years.

7. In fall 2017 re-evaluate whether bison-caused crop damage has been reduced and whether a further reduction in the size of the herd should occur.

If there is no significant reduction in the level of bison-caused crop damage after three years at a herd size of 275, reduce the herd size to 250 for the next three years.

8. Continue to re-evaluate whether reducing the herd size has significantly reduced bison-caused crop damage.

As herd size is incrementally reduced ADF&G and the Working Group would evaluate the success in reducing the level of bison-caused crop damage. At any point in the process, if reducing the herd size is not shown to be effective in helping to reduce bison-caused crop damage, the Working Group could consider recommending the herd size remain stable or be increased.

9. The minimum herd size under this alternative would be 250 bison precalving.

Alternative 2: Reduce the herd size as soon as possible and then evaluate the need for further adjustments.

Under this alternative ADF&G would begin reducing the herd size in the 2010-11 hunting season, after the updated plan has been reviewed by state fish and game advisory committees and the public and approved by the Board of Game. This alternative would also depend on establishing an on-going crop damage assessment program and incorporate the same three-year cycle of evaluation and possible modification of the herd size objective as the first alternative. This approach may result in the most immediate reduction of bison-caused crop damage but would also result in an earlier reduction in bison hunting opportunities. As with Alternative 1, if the herd size reductions do not result in a significant reduction in the level of bison-caused crop damage, the option would exist to increase the herd size again in the future.

- 1. Beginning with the 2010-11 hunting season ADF&G would seek to reduce the Delta Bison Herd to 300 bison precalving.**
- 2. In fall 2014 re-evaluate whether bison-caused crop damage has been reduced and whether a further reduction in the size of the herd should occur.**

If there is no significant reduction in bison-caused crop damage after three years at a herd size of 300, reduce the herd size to 250 for the next three years.

- 3. In fall 2017 re-evaluate whether bison-caused crop damage has been reduced and whether a further reduction in the size of the herd should occur.**

The herd size objective could remain at 250 or could be increased.

- 4. The minimum herd size under this alternative would be 250 bison precalving.**

Possible effects of reducing the size of the herd include:

- Initially more hunting permits would be issued to reduce the size of the herd.
- Once the herd was reduced to 300 bison precalving there would be approximately 70 permits issued each year (compared to the present average of 100-150 permits).
- If the herd were reduced to 250 bison precalving about 60 permits could be issued each year.
- Hunter crowding should be reduced and hunter success rates might improve.
- It would be possible to evaluate whether the reduced density of bison on the summer range and the Bison Range prolongs bison use of those areas and reduces bison-caused crop damage on private agricultural lands.

(Continued on page 10)

(Continued from page 9)

B. Increase the application fee for Delta bison hunting permits from \$10 to \$20.

The intent of this action would be to increase funding for bison habitat improvement on the Bison Range and summer range on U.S. Army lands. A secondary purpose of the fee increase would be to discourage permit applicants who are not fully dedicated to taking a bison. This could help to ensure that the harvest objective is achieved and the herd remains at the herd size objective.

Legislative action would be required to increase the permit application fee, and by law the legislature could not permanently dedicate the funds specifically for Delta bison management. This is essentially the same process successfully used since the Delta bison permit application fee was raised from five to ten dollars in 1984.

C. Expand the bison hunting season to allow hunting from July 1 – May 31.

The current hunting season authorized by the Board of Game is July 20 – March 31. The intent of this recommendation is to provide additional flexibility to harvest bison early in the summer or late in the spring.

During Working Group meetings there was extensive discussion about difficulties involved in harvesting enough bison to keep the herd within the herd size objective. Concerns about exceeding the herd size objective were diminished by the end of the hunting season because with the either sex permits, a greater number of cows were taken.

There was also testimony about a group of approximately 30 bison that reportedly reside year-round in private agricultural lands. During over flights of the agricultural fields this summer ADF&G identified two bison bulls in the Gerstle River area but was unable to locate any significant number of bison that remained in the agricultural area throughout the year.

Early or late hunting would be authorized only when necessary and would be targeted specifically at bison that may remain north of the Alaska Highway in the private agricultural areas year-round. Concerns were expressed about the implications of hunting bison during calving season or with recently born calves.

D. Allow use of herbicides to improve forage on the Delta Junction Bison Range.

In the past there was public opposition to the ADF&G using the herbicide Roundup to control unwanted vegetation on the Bison Range. Not using herbicides reduced the ability to produce high quality forage on the Bison Range comparable to that in private agricultural fields where herbicides are commonly applied. Use of herbicides on the Bison Range would require a permit from the Alaska Department of Environmental Conservation and public notice. ADF&G is currently cooperating with the U.S. Department of Agriculture, Agricultural Research Service and the University of Alaska Fairbanks to conduct experiments on the use of a “wet blade mower” technique for applying herbicides very selectively. Initial results appear to be promising and the technique may be useful for improving forage on the Bison Range. Some people have expressed desire to eat wild meat that does not contain herbicides, pesticides, or hormones. However, herbicides are used on agricultural crops that the bison do eat. It is unknown what the level of public controversy might be involved with a proposal to routinely use herbicides on the Bison Range.

E. Support establishing an on-going program to assess Delta bison-caused crop damage.

As noted above, having the ability to assess the level of crop damage caused by bison as opposed to other causes such as weather, insects, and other wildlife, is critical to making informed decisions about the trade-offs involved in reducing the size of the Delta bison herd and in seeking additional funding to help reduce bison/agriculture conflicts. It is also an important component of the two alternatives outlined above involving reductions in the size of the Delta Bison Herd. The Division of Agriculture is working with ADF&G to conduct a pilot crop damage assessment program this year and would be the logical entity to operate such a program. The Division of Agriculture would likely require supplemental funding from the legislature to establish an on-going bison-caused crop damage assessment program.



Photo by Steve DuBois

Bison and bison trails through grain fields

F. Support state funding to help support a cost-sharing program to fence private agricultural lands.

The Salcha-Delta Soil and Water Conservation District is working to develop a program to share the costs of constructing bison-proof fences with private agricultural land owners. The program will include provisions to ensure the funds are used as intended and fences are maintained for a period of twenty years. There is likely to be limited funding available for the program through the Soil and Water Conservation District and additional state funding could make the program available to more landowners. The logical administrators of this program would be the Division of Agriculture in cooperation with the Soil and Water Conservation District. Funds for this purpose would have to be allocated by the legislature and legislation may be required for the Division of Agriculture to use funds for this purpose. Fencing farms in the Delta I and Delta II agricultural areas may result in the DBH shifting their range to other agricultural areas near Delta Junction such as the Clearwater area and the Tanana Loop area. If a shift in DBH range use occurs, additional fencing may be required for these areas.

G. Allocate a portion of Delta bison hunting permits to landowners who allow bison hunting on their lands.

Farmers in the Delta area rarely succeed in drawing a permit to hunt the bison on their land. Several other states have programs where landowners who allow access for hunting are awarded hunting permits. This type of program could be used to help compensate Delta farmers for the losses they incur through bison-caused crop loss. This type of program would have to be established by the Alaska Legislature and many details would have to be worked out.



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adfg=planning.main](http://www.wildlife.alaska.gov/index.cfm?adfg=planning.main)

Public Comment Invited on Delta Bison Management

This newsletter is intended to inform people about Delta bison management issues and to provide an opportunity for public comment. Several important topics are being considered.

Please take some time to review the background information and preliminary ideas outlined in this newsletter. Let us know what you think. Your input will help the Delta Bison Working Group develop recommendations for the best bison management objectives including ways to minimize conflicts between bison and agriculture as well as to address other important issues.

We would appreciate your sending comments to Rita St. Louis (listed above) before October 31, 2009.

Let us know of other people who would like to be added to the mailing list to be kept informed about the planning process and opportunities for public involvement.



Photos by Steve DuBois

Delta Bison