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State of Idaho Brucellosis Management Program

Report of Progress to the Governor of Idaho

July 2010 to June 2011

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EXECUTIVE SUMMARY

Introduction

Brucellosis is an infectious disease caused by *Brucella abortus* that affects cattle and other animals. The disease usually causes abortion in the first pregnancy following infection in cattle and some wildlife species. The risk of transmission and infection increases with high concentrations of animals. Transmission of brucellosis between cattle and elk is not common, but did occur in Idaho (2002 and 2005), and in the past in both Wyoming and Montana resulting in the loss of Brucellosis-Free status for these states. The transmission of brucellosis from elk to livestock represents a significant threat to the cattle industry of Idaho as well as its Brucellosis Free Status, even in the uncertainty of development and implementation of new Uniform Rules and Methods within USDA APHIS. After a lengthy eradication effort, the USDA essentially eliminated brucellosis from cattle in the US. Elk and bison in the Greater Yellowstone Area are the only known reservoir of the disease in the US.

This report summarizes the goals and accomplishments of the Brucellosis Management Program between July 2010 and June 2011.

Objectives

The Idaho Brucellosis Management Plan has 3 primary objectives: 1) reduce the risk of transmission of brucellosis in Idaho elk, 2) reduce the risk of transmission from affected elk to livestock, and 3) bring winter elk management into compliance with IDFG Commission policy. In order for this plan to be successful, elk and cattle populations in Idaho must be managed to maintain separation between elk and cattle, winter feeding of elk must only be done under emergency winter conditions, and winter habitat for elk must be improved and managed. Brucellosis management efforts are largely directed towards elk in eastern Idaho to minimize the co-mingling of elk and cattle in the winter by improving winter habitat for elk and excluding elk from haystacks and cattle feeding areas when possible.

Elk management actions in past years have included trapping, testing for exposure to and infection with brucellosis, radio-collaring, translocation of some individuals to establish new winter use areas, and winter habitat improvement. Management of elk-cattle interactions has been accomplished through hazing of elk away from hay stacks and cattle feeding operations, construction of stack yards for stored hay, and fencing of winter cattle feeding sites to prevent elk access to fed hay.

Disease surveillance of elk in Idaho is centered in eastern Idaho and with a background prevalence ranging between 1-6% in most Game Management Units (GMUs, Figure 1) east of Highway 15. The distribution and prevalence of seropositive animals appears to be stable between years.

Efforts to improve and/or increase suitable winter range for elk have targeted specific private lands enrolled in the CRP program and some limited areas on public land. Several landowners are participating in these programs. The U.S. Forest Service and Bureau of Land Management are cooperating to identify opportunities to manipulate vegetation to produce suitable areas for wintering elk on a small scale.

Actions

The winter of 2010-11 came early and stayed late. Elk arrived on winter range early and because of snow depth, a significant number of elk were reported to depredate on hay or to interact with cattle. Responses consisted of hazing, cracker shells, kill permits and depredation hunts. About half of the interactions were resolved relatively quickly, some persisted for weeks to months and feeding sites were established in several locations to lure away from hay or cattle. Several cattle herds required whole herd testing due to these interactions.

Winter range habitat improvement efforts were done on several sites, centering primarily on CRP land or cooperative efforts with BLM and USFS on known wintering areas. The scale and scope of these projects varies with available funding and required cooperation with both private and public land owners and managers.

Future Plans

The Idaho Brucellosis Management Plan is being successful in minimizing the interactions between elk and cattle. Brucellosis in elk appears to be stable and at low prevalence in eastern Idaho. Continued efforts to maintain temporal and spatial separation of wintering elk and cattle are needed to minimize the risk of disease transmission to cattle.

Funding for the Brucellosis Management Plan is largely federal. Federal funding in the future is uncertain. Internal funds for both IDFG and ISDA are limited, but likely adequate for maintenance of the program. Difficult winters like 2010-11 require all available resources which may not be adequate for all aspects of the program.

BACKGROUND

Brucellosis is an infectious disease caused by *Brucella abortus* that affects cattle and other animals. The organism concentrates in the lymph glands of infected animals, particularly those associated with the uterus and udder. Infected females expel large numbers of bacteria during calving or abortion, from which other animals may become exposed to or infected with brucellosis by contact with the expelled tissues, fluids and organisms. Transmission is most likely to occur where animals are concentrated during late pregnancy or calving during late winter and spring.

Brucellosis has been documented in elk in Idaho since 1998. While its occurrence in elk presents some difficult management challenges, brucellosis is unlikely to affect the long term population viability of elk. The disease likely reduces recruitment levels, but whether lowered recruitment affects population levels and hunting opportunity is uncertain. In addition, if the disease in elk is not managed, it could spread to other currently uninfected elk herds. While brucellosis in elk is a serious concern, the problem area is restricted and the number of elk potentially affected by the disease is limited.

The Idaho Department of Fish and Game (IDFG) and the Idaho State Department of Agriculture (ISDA) have been working cooperatively to address the brucellosis issue in Idaho. This report represents the efforts of the past year to manage brucellosis, based largely on the 2006 Idaho Brucellosis Management Plan.

Brucellosis Management Program Objectives

The primary purpose of the Brucellosis Management Program is to provide a framework to plan, implement, and monitor management practices to maintain separation between elk and cattle; decrease and eventually eliminate elk dependence on supplemental winter feed; and conduct brucellosis surveillance in elk and cattle. The program has 4 primary objectives:

1) Manage elk populations within the carrying capacity of available winter habitat and provide for a harvestable surplus.

2) Monitor elk and livestock for exposure to and infection with brucellosis and reduce brucellosis prevalence in elk.

3) Improve habitat to ensure adequate areas of high quality winter and spring range necessary to support a stable and harvestable elk population.

4) Maintain separation between elk and cattle during high risk periods.

GOALS FOR 2010-2011

- Hire 2 seasonal IDFG employees to assist with the prevention of elk-cattle interactions.
- Maintain separation between cattle and elk during winter through hazing, depredation hunts and using hay to lure elk away from cattle feeding operations.
- Provide secure winter range areas for elk by decreasing human access and disturbance on these wintering areas in cooperation with the landowners or land managers.
- Secure stored hay and cattle feeding operations to maintain separation between cattle and elk.
- Conduct surveillance for brucellosis in Idaho cattle.
- Vaccinate at-risk cattle herds.
- Improve winter range for elk to ensure separation between elk and cattle.

Elk Population Management

The Idaho Fish and Game Commission established elk population objectives in 1998 based on the potential of a given area to naturally support elk and provide for a surplus of animals for hunting. These objectives were set by geographic areas known as Elk Management Zones which are made up of one or more GMUs. Brucellosis management activities have been concentrated in the Palisades Zone (GMUs 64, 67), Teton Zone (GMUs 62, 65), Tex Creek Zone (GMUs 66, 69) and Diamond Creek Zone (GMUs 66A, 76).

Winter elk population objectives have been established for cows and bulls for the Palisades, Teton, Tex Creek and Diamond Creek Zones. Population estimates indicate that elk numbers in these zones are within or slightly over these objectives (Table 1).

IDFG recommends harvest season frameworks that are consistent with population objectives. Obtaining adequate harvest of elk in the brucellosis affected zones has been a difficult challenge. Many of the elk that winter in Region 6 spend the summer in Yellowstone and Grand Teton National Parks or in Wyoming and do not return to Idaho until late fall or early winter, after or late in the hunting season, which limits access to these animals by Idaho hunters.

Identifying appropriate harvest season frameworks that will target these elk herds is a dynamic and adaptive process. In 2010, IDFG moved the hunt boundary of the late controlled cow hunt in Swan Valley area to force hunters to apply hunting pressure where it was needed most to reduce elk numbers in areas where cattle/elk interactions were likely.

Surveillance for Brucellosis in Elk

The primary objectives of the disease surveillance efforts are to document the prevalence and distribution of brucellosis which provides data for management actions to minimize the risk of disease transmission to other elk herds and to cattle. These data are used to provide input into elk management actions to reduce the risk of brucellosis in wild elk to an acceptable level and to manage livestock-elk interactions to prevent transmission of the disease. Eradication of brucellosis in elk in Idaho is the long-term goal, but political, biological, and technological factors make control and risk reduction a much more practical and attainable mid-range goal.

The surveillance efforts in elk are concentrated in eastern Idaho and include live animal testing and sample collection by hunters. Sampling of live elk is a cooperative effort between IDFG, ISDA and USDA personnel and facilities. The Idaho Brucellosis Management Plan requires that elk from areas that are fed more than three consecutive winters be trapped and tested for brucellosis. Trapped elk are bled and tested on site using the Standard Plate and the Buffered Antigen Plate Agglutination tests. Serum from all animals is retested using the Standard Plate, Rivanol, Complement Fixation, BAPA and Florescent Polarization tests at the ISDA Animal Health Laboratory in Boise. Seropositive elk are removed from the trap site while seronegative elk are released on site or translocated.

Surveillance of elk is also done passively using animals handled by IDFG personnel and hunter collected samples. Holders of select controlled hunt permits are sent blood sample collection kits. The majority of effort is placed on hunt zones in eastern Idaho to better define the geographic distribution of brucellosis in elk (Table 2).

Brucellosis in elk is limited to GMUs 60, 60A, 61, 62, 62A, 64, 65, 66A, 67, and 76 with a general background seroprevalence of 1-6%. Seroprevalence is greatly affected by sample size which is very low in some GMUs. Some animals have shown cross reactions on the brucellosis tests with reactions to *Yersinia* spp., primarily in GMUs 59, 60, 75 and 78. In addition, some animals have tested positive to both *Yersinia* spp. and brucellosis in GMUs 60A, 61, 62, 62A, 62A-1, 64, 66A, 67, 67-3, and 76, which makes interpretation of field brucellosis tests in elk difficult. By using the yersinia test to discriminate between brucellosis and yesriniosis, animals with positive tests for yersiniosis can be separated from the background brucellosis seroprevalence. The geographical distribution of brucellosis in elk in Idaho has remained stable between 1998 and 2010.

A total of 2500 hunter test kits were sent out to elk hunters in eastern Idaho covering GMUs 60-76. Of these, 313 useable samples were returned with 9 seropositive animals including 5 adult cows, 1 calf and 3 adult bulls. Of these, 2 were classified as suspects (1 each from GMU 60A and 76) and 7 were classified as reactors from GMU 61, 62, 62-2, and 67. Results for Yersinia testing are still pending.

A total of 21 adult female elk were captured by IDFG personnel at INEL (GMU 63) and tested for brucellosis during February 2011. All were negative for brucellosis.

A total of 28 adult female elk were captured and sampled at Sand Creek WMA (GMU 60A) in December 2010. All were negative for brucellosis.

Surveillance for Brucellosis in Cattle

Surveillance of beef and dairy cattle is conducted by ISDA and is part of the USDA Brucellosis Eradication Program. Continued surveillance of cattle in Idaho is essential to maintain the Brucellosis Free Status of Idaho, however, USDA is revising the Brucellosis Eradication Program and may eliminate the Free Status system. The USDA is developing a Brucellosis Designated Surveillance Area (DSA) to define the areas within Idaho, Montana, and Wyoming (GYA states) where brucellosis is present in wildlife and poses a risk to cattle. In response to those changes, starting in July 2011, passive surveillance using the Market Cattle Identification (MCI) system for states other than GYA states will be conducted at only 17 selected USDA slaughter plants in the US. The MCI system is used to test adult cattle that go to slaughter. All slaughter plants in GYA states will continue to test adult slaughter cattle. Adult live cattle from the DSA in eastern Idaho that change ownership or leave the DSA will be tested per IDAPA 02.04.20. Dairy cattle herds in Idaho are tested at least three times per year using the Brucellosis Ring Test on milk samples.

Active surveillance is conducted by whole herd testing of cattle on premises where interaction of cattle with elk that are known or suspected to be infected with brucellosis occurs. Testing has been done based on risk and known interactions. It is critical to ensure that transmission of brucellosis from elk to cattle does not occur and quickly identify infections in cattle if transmission does occur. In 2011, 11 herds with a total of 1200 cattle were tested for brucellosis. Four herds were known to have interactions with elk during the winter, three herds were tested due to MCI traceback investigations, and three herds were tested due to quarantine or surveillance needs. No seropositive animals or herds were found.

There is a mandatory statewide vaccination for eligible cattle using RB51 and import rules that require official calfhood vaccination of breeding female cattle as evidenced by a legible tattoo.

Passive surveillance testing in 2010-2011 using the Market Cattle Identification program for cattle resulted in testing of 183,580 cattle, of which 183,546 (99.98%) were negative; 34 animals (0.02%) tested seropositive.

In 2010-11, the Brucellosis Ring Tests were conducted on 602 dairy herds. Each herd was tested at least 3 times and all 602 herds were negative.

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Management of Elk-Cattle Interactions

IDFG Region 4

Wood River Valley area

Val Ashton north of Shoshone, ID had 14 elk eating from his haystack in early January. The stack was wrapped with Tensar and cattle panels which appeared to solve the problem.

Richard Barney north of Shoshone, ID had 6-8 elk eating from his haystack in mid January. The stack was wrapped with Tensar which appeared to solve the problem.

Tom O'Guerra, Rocky Sherbine, Larry Schoen and John Dondero, west of Picabo, ID had 150-200 elk in their alfalfa from late August through mid-September. Hazing with crackershells was done early, but had limited success. They took advantage of a Landowner Permission Hunt (depredation hunt) with reasonable success.

Bliss – Glenns Ferry area

Daniel Butler, just north of Bliss, ID had approximately 30-60 elk in his silage corn and alfalfa from June through February. Hazing with crackershells was done early, but had limited success. In August, Daniel took advantage of a Landowner Permission Hunt (depredation hunt), but had limited success because of poor access to animals.

Tom Faulkner and his neighbor Robert Meyers, just north of Bliss, ID had approximately 100 elk in his silage corn from July through February. Tom took advantage of a Landowner Permission Hunt (depredation hunt), but had limited success because of poor access to animals.

Jerry Caven (Half Moon Ranches), north of Hammett, ID had approximately 200 elk in his silage corn from early January through February. Hazing with crackershells was done early, but had limited success.

Bill Novinger, north of Gooding, ID had approximately 80 elk in his silage corn and alfalfa from early November through February. Bill took advantage of a Landowner Permission Hunt (depredation hunt) and directed hunters, but had limited success because of poor access to animals.

Camas Prairie area

Clare Olson, south of Hill City, ID had up to 400 elk in his alfalfa from mid July through late October. Clare took advantage of a Landowner Permission Hunt (depredation hunt) with moderate success.

Near Buhl, ID

Jeff Claar, farmer for Big Sky Dairy, had elk in his silage corn in early September. Big Sky Dairy took advantage of a Landowner Permission Hunt (depredation hunt) with some success.

Near Twin Falls, ID

Darrell Funk (Funk Dairy) had a small number of elk in his silage corn in mid-October and was asked to allow general hunters on his property.

John Beukers had 30-40 elk in his silage corn in early October. Hunters were directed to his property.

Joe Tugaw, south of Murtaugh, ID had elk in his potatoes and silage corn in late September. Joe was asked to take advantage of general hunters and successful controlled hunt applicants were allowed to hunt early in a pseudo-depredation hunt.

Burley – Rupert area

Justin Young had 30-40 elk in his silage corn and stacked hay in mid-November. A depredation hunt was established and had limited success because of poor access to animals.

IDFG Region 5

Winter hit in full force during the final week of November, 2010. Several elk herds were creating problems for hay or cattle interactions by early December. Plans for elk baiting onto emergency feeding sites were started by the end of December and feeding began during the first week of January 2011. Hazing, kill permits, and depredation hunts were used extensively to move elk away from any potential cattle interaction areas. Herds with known or possible interactions, as well as herds with a history of previous interactions are listed below:

Banida Area

Swan Lake: Elk showed up north of Swan Lake early in December. They did not respond to hazing, so a depredation hunt was started on December 10th. This early response appears to have been successful.

Treasureton: Elk ripped wood paneling off of a hayshed in Treasureton, but otherwise the area was pretty quiet.

Oxford: The Banida herd journeyed down to the Oxford slough several times, but there were no reports of this causing any interactions with hay or cattle.

Ranch Hand Area

8th Street, Montpelier: X-tag hunters were directed into the Ranch Hand herd throughout the month of December. On December 26th, approximately 40 elk moved west across the highway into an area with several livestock herds on the north edge of Montpelier. Hazing was initiated immediately and late season muzzleloader hunters were directed to the elk. This is not a desirable location for elk at any time, so when the elk were still in the area the next day, a kill permit was issued to Randy Lancaster and Don Johnson, the most affected ranchers, on December 27th. The elk moved to Bennington when the kill permit was used that night. During January, 2011 a few elk did try to move back to this area. The kill permit was renewed and IDFG staff and volunteers continued hazing. Small groups (5-10) of elk were also herded to the feeding site by snow machine on several occasions – this required ISP and local law enforcement to close the highway.

Response to elk presence by both ranchers and IDFG in this area was prompt and elk and cattle had little time to interact.

Bennington: The 8th Street elk joined approximately 100 more elk at Rhett Phelps haystacks on December 28th. X-tag hunters were aided by Mr. Phelps and harvested approximately 10 animals during the following week. IDFG and volunteers also conducted extensive hazing on numerous nights. The 120+/- elk remaining around Phelps joined another herd that had begun to depredate on sainfoin hay at Kent Crane's dairy. At this point, hazing was effective for about 30 minutes and there were nearly 300 head. Lethal removal was not practical due to proximity to houses and livestock. IDFG supplied hay tarps for the haystacks, but it became evident that a feeding site would be necessary to prevent further interactions. A feeding site was initiated in the hills behind the Ranch Hand around January 10th. Bennington was relatively quiet until February when a snow storm trapped about 50 head of mostly young elk near town. These elk were able to go up a ridge and away from any possibility of herding with snow machines, but were not able to cross the drifts to get to the feeding site. These 50 elk tried on several occasions to access hay at the Crane dairy, but they were met with extensive hazing and eventually moved to Morton Hunter's. Eventually, a smaller feeding site was initiated in Bennington Canyon, approximately 1/2 mile from the other feeding site to keep them out of Morton Hunter's steers.

Banks Valley:
Rocky Point: Approximately 250 elk moved south across the highway near Rocky Point in late December. They staged at Martin Mast's property before crossing the railroad tracks. IDFG attempted to haze them back into Banks Valley, but they scattered in all directions. Since there were numerous cattle operations nearby, no options to move the elk out of the Bear River marshes and Dingle Swamps, and Mr. Mast did not have any cattle, IDFG set up a temporary feeding site near Rocky Point to hold the elk until a feeding site could be established in Banks Valley. It required several attempts to herd the elk to the Banks Valley feeding site, but eventually the elk went and stayed in the area. IDFG had no reports of these elk getting through into the Dingle area.

Wardboro: Several hundred more elk came west off of Banks Valley into the Wardboro area and the south end of Montpelier beginning in late December. These elk were hazed extensively at Keetch's, David Jensen's, Paul Nelson's, Lee Nelson's, Brad Woolstenhulme's, and other properties. Several were killed by trucks on the highway. IDFG was able to get most of the elk onto the Banks Valley feeding site without notable interaction with cattle, but a few small herds were problematic. There were about a dozen elk that made it across the tracks into Cody Coombs and Keetch's cattle feeding area. They had access to willows and swamp ground which prevented pursuit and herding. There were another dozen elk that moved toward Montpelier and repeatedly hit Brad Woolstenhulme's hay stacks. IDFG did not have enough panels to fence Woolstenhulme's. IDFG tried on several occasions to herd the elk to Banks Valley, but they always came back. The elk were hazed hard whenever IDFG found them anywhere near cattle and the elk eventually took refuge in a large herd of horses, where

they stayed. Another dozen elk broke off into Montpelier Canyon. They got into Bryce Boehme's cattle feed a couple times, but were quickly hazed out.

Geneva Summit: There were about 100 elk that stayed on Geneva Summit. Initially they tried to come down into Loertscher's, but they were hazed and IDFG worked with Richard Loertscher to panel all of his hay. After that, the elk tended to leave Loertscher's alone, but there were about 20 animals that would often break off and go down to Joel Teuscher's sheep operation at night. The rest of Geneva is pretty well fenced and the remaining depredation concern in the area is with growing crops.

Raymond: There were a lot of elk in and around Raymond, but all of the larger cattle operations have put up permanent fences and did not have problems. There were about 40 elk wandering around the Thomas Fork on the west side of Raymond that were hazed out of a couple small cattle operations. There were a few market haystacks that were hit by elk, but they were not in proximity to cattle.

Soda Springs:
Rabbit Hill: There were about 100 elk on Rabbit Hill through the winter. The only cattle operation in the area, Odell Christman, completed stackyard fencing last year and except for a few interactions with hobby horses and sheep, this herd was pretty well behaved.

Alexander: A herd of about 150 elk, which may have included part of the Rabbit Hill herd, wintered near the Thunder Mountain Elk Ranch. These elk came down to a cattle feedlot, owned by Larry Simons, on a nightly basis. IDFG issued a kill permit on January 5th which was filled and subsequently renewed. The kill permit provided relief for a couple weeks, but in February, elk were observed walking over a steaming gut pile on their way to the hay mangers. These elk were hazed extensively, and eventually began feeding around Alexander Reservoir, but the problem continued to come and go through the winter.

Crow Creek: Several herds, totaling about 300 elk, came into the Simplot Ranch from the north and south in late December. By the time the ranch manager (Jed Nield) called IDFG, the elk were resistant to hazing. IDFG initiated a depredation hunt on January 3rd and 10 elk were harvested which provided some relief, but it did not completely resolve the problem. Jed moved his breeding cattle into town away from the elk, but didn't have anywhere to move his steers and horses, so the elk continued to clean up feed left in those mangers. This is an area that becomes even more remote for IDFG personnel to respond to problems during winter. After talking to Jed, it appears that there have been elk interactions at this small cattle operation every winter but usually the numbers are tolerable from the landowners' perspective and IDFG has not been called for assistance. IDFG will work with him to get a fenced area for the cattle when the elk show up.

Nounan: Elk began hitting Nounan in early December. They were promptly hazed and about a dozen were harvested by late season hunters. Approximately 50 head settled

into Phil Bartschi's steers in late January. Since the hay stacks were fenced, interactions were low, and these were non-breeding cattle, this depredation became a lower priority than others. IDFG and volunteers still hazed approximately 10 nights and the landowner hazed "all the time".

Georgetown:
Georgetown Summit: The elk herd that usually winters on the WMA did not stay last year. They found hay at several locations on the north end of town. In February, after paneling, tarping, or moving stack after stack, the elk found silage at the Albert Johnson dairy. They were hazed nightly at 1 hour intervals for about 2 weeks before they stayed in the hills. It didn't look like the elk ever got into hay mangers or interacted with any cattle at the dairy.

Drue Smith: There were initially about 100 elk hanging around Drue Smith's operation, but in January 2011, another 150 elk joined them from Bryce Crane's horse pasture which is about 1 mile south. They broke into a paneled hay stack and fed at the mangers with some horses, steers, and possibly some bulls. Drue's heifers and dairy cows are heavily fenced and no interactions were observed.

Grace/Niter:
Rasmussen: A herd found some hay stacks near feeding operations at Lynn Rasmussen's in December. The haystacks were promptly paneled and the elk moved off.

Bench: There were several small elk herds getting into small operations along the Niter bench. IDFG directed several late season hunters into these elk. Ross Harris, Kent Clegg, and Bob Jardine had elk in their yards on several occasions and they were hazed. Elk did not appear to go to any places with cattle.

Swensen and 2 Mile Road: There were about 150 head that bounced back and forth between Frank Swensen's feedlot and Jim Hubbard's dairy on 2 Mile Road. They got into the corrals at Swensen's and fed at the mangers on Hubbard's. IDFG hazed extensively and authorized the landowners to haze, including herding them on snow machines so they didn't just run to the neighboring operation. There were also tracks around Jarom Hubbard's a couple times, but his operation is pretty secure and the elk didn't stick around.

Auburn: In early December, Greg Draney found elk tracks going around his stackyard fence and into his dairy via the county road entrance. IDFG delivered panels to block the entrance and the elk soon left with no further incidents. Tim Moyer also had elk show up in December, but after IDFG authorized hazing they soon left.

Freedom: Hal Heiner and Curtis Weber had haystack fences breached by elk. Both were patched with panels. Hal is going to replace his 20+ year old stackyard fence this summer. Otherwise Freedom was pretty quiet.

St. Charles: Elk hit several stacks that were quickly paneled around St. Charles and the elk settled in at the Transtrum ranch south of town. They were hazed and herded back onto the mountain numerous times. Transtrum changed the timing and location of their feeding which significantly reduced interactions, but IDFG couldn't get the elk to leave until the snow melted.

IDFG Region 6

Winter conditions during the winter of 2010-2011 were severe. There were nearly 40 complaints of elk/cattle or elk/hay interactions in the region centered primarily in the Teton Valley, Swan Valley and Iona Hill. Elk interactions were reported on the outskirts of Idaho Falls. Responses included provision of panels and fencing materials, depredation hunts, and hazing. About half of the responses failed to resolve the interaction problems (Table 3).

Significant issues developed in dealing with several elk hazing operations in obtaining permission from land owners to cross their property to get to elk or to move elk across land.

The permanent L-shaped fenced built on Breckinridge's property was not successful in preventing elk from accessing hay fed to cattle in the winter. Depredation hunts, hazing and kill permits were issued and hay was fed in an adjacent area to draw elk away from the cattle feeding area. The interaction was not completely resolved.

Winter Habitat Improvement

The primary objective of habitat improvement efforts is to ensure the availability of quality winter habitat that is secure from human disturbance. The winter habitat improvement efforts have been directed to eastern Idaho in three programs: 1) reduce human disturbance; 2) enhance private land habitats; and 3) enhance public land habitats.

Region 5

IDFG initiated a number of projects in 2009-10 mainly through the Mule Deer Initiative, but which also benefit wintering elk. These projects have mainly involved forb seeding and planting shrub seedlings on approximately 660 acres on 11 properties at a cost of $84,000.

The BLM has continued progress with restoration work in the Soda Hills in Caribou County, mainly to improve the productivity and reduce fuel loading of mountain brush and aspen habitat; a few hundred acres per year. BLM is also in the planning stages of projects in Bannock County at Two and a Half Mile and Downey to do similar work.

The Caribou-Targhee National Forest (CTNF) is collaborating with IDFG and others through the Eastern Idaho Aspen Working Group to plan a series of projects in the McCoy Creek drainage in Bonneville County. These projects will mainly benefit fawning/calving habitat or summer range. The West Side Ranger District has begun

planning brush treatment projects in the Stone King area of western Caribou County that will be of a scale similar to the McCoy Creek project and will involve mostly summer range, but some winter range for deer, elk and moose.

Region 6

In the Tex Creek Habitat District, the BLM continues to enforce a human entry closure in the Heise area. This has some potential to help keep elk on the hill away from stored hay and or wintering cattle. In addition, there was a wildfire on critical elk and deer winter range in summer, 2010. In spring 2011, deer and elk utilized the burned area heavily.

The habitat section of Region 6 and the Environmental Staff biologist have been engaged with the wind energy developers in monitoring animal use in the wind energy project areas. Mitigation for one project has been secured and the wind energy company is planning to buy an identified property and donate title to IDFG. IDFG will continue to coordinate with Bonneville County and with the wind energy companies to reduce impacts to all wildlife.

In the Sand Creek District the Egin-Hamer winter human entry closure remains in force. IDFG personnel helped to monitor opening day and were active, along with BLM and Fremont County, in enforcing the closure.

In the Cartier District, several projects on private land, funded by USDA State Areas for Wildlife Enhancement (SAFE), came on line and are providing forage for wintering elk.

The Teton Regional Land Trust has been working with landowners along the Henrys Fork, South Fork and Teton Valley to protect open space and agricultural landscapes from development.

Winter Feeding of Elk

IDFG Commission has an existing policy for emergency winter feeding of deer and elk. There are a few isolated sites in the state where IDFG feeds elk to minimize depredation problems on stored hay or cattle feeding operations. Historically, IDFG fed annually at 3-6 sites along the South Fork of the Boise River in GMU 43, but the combined effects of changes in elk distribution and milder winters has reduced the frequency and number of elk needing emergency feeding. Several feeding sites in the Garden Valley and Lowman areas in IDFG Region 3 are used for emergency winter feeding sites when the need arises.

There are numerous feeding operations maintained by private landowners in many areas of the state for both deer and elk. ISDA rules prohibit the private feeding of elk in areas where brucellosis is known to occur, but some feeding still occurs. ISDA is committed to working with IDFG to ensure that when feeding occurs in the brucellosis area, effective solutions are found to eliminate both intentional and non-intentional feeding of elk.

Given the association with brucellosis, congregation of elk at winter feeding sites should be discouraged. ISDA has the authority to prevent feeding of big game by private landowners in the brucellosis risk area of eastern Idaho. Separation of elk and cattle and preventing elk access to stored hay are important to minimize the risk of transmission of brucellosis from elk to cattle. Continual public education efforts are needed to limit private winter feeding of elk and to encourage the improvement of winter and spring elk habitat.

Region 4

The region is continuing to make progress discouraging winter elk feeding operations by private entities. Only 2 private feed sites remain in the Big Wood (Timber Gulch and Eccles Ranch) compared to a dozen or so 15 years ago. At Timber Gulch >200 elk were fed and at the Eccles Ranch about 75 were fed. During the past 3 years, the only Department feeding has been at Bullwhacker, west of Ketchum. Last winter 180 elk were fed at Bullwhacker.

Region 5

No winter feeding of elk sponsored by IDFG occurred in the region, although as noted above, several temporary feeding sites were used to draw elk away from hay or cattle. No private feeding operations were known.

Region 6

No winter feeding of elk sponsored by IDFG occurred in the region, although as noted above several temporary feeding sites were used to draw elk away from hay or cattle. No private feeding operations were known.

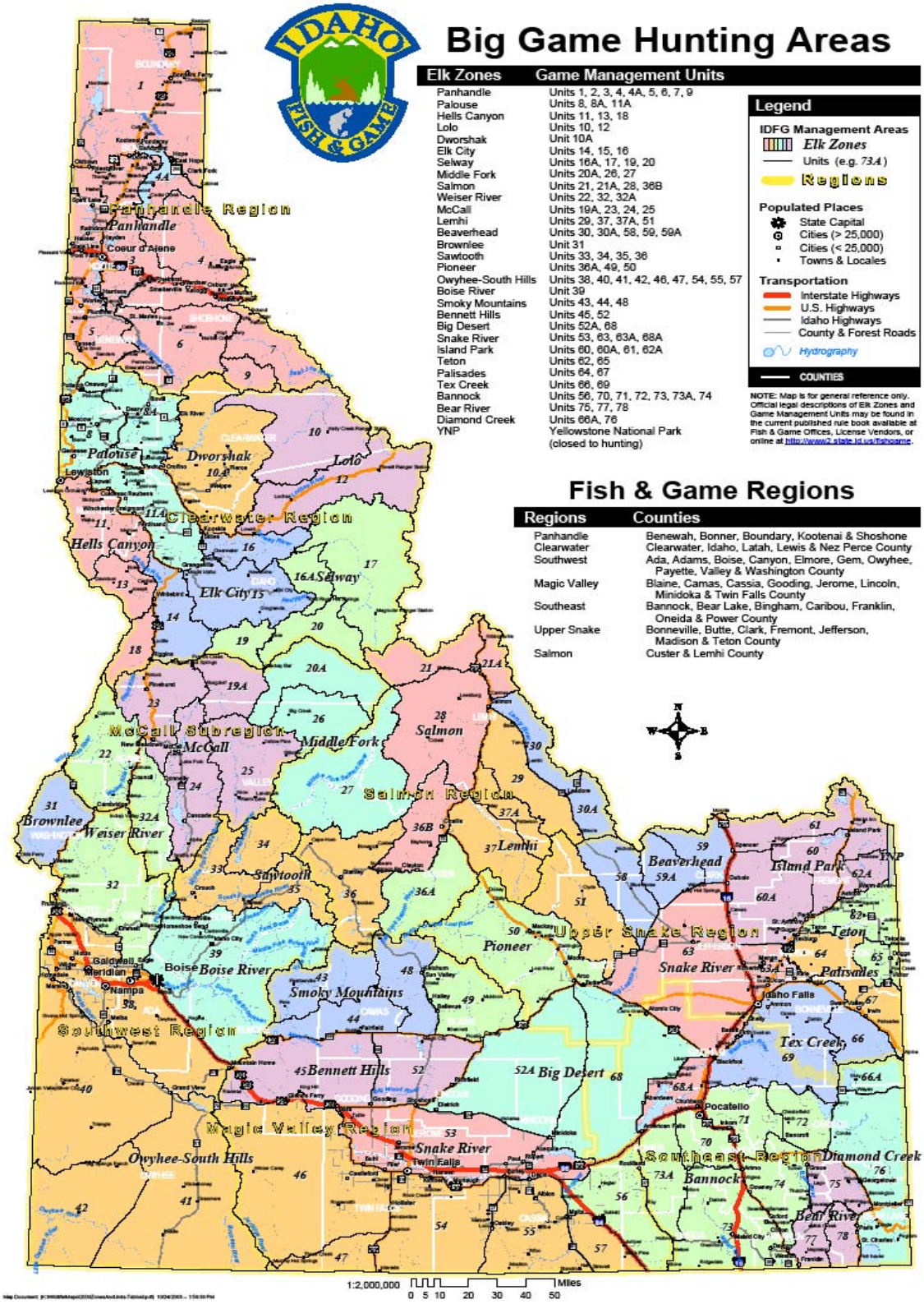

Figure 1. Game Management Units, Idaho.

Table 1. Elk population objectives and estimates, eastern Idaho.

		Population estimate				Population objective		
Zone	GMU	Cows	Bulls	Adult Bulls	Year	Cows	Bulls	Adult Bulls
Bannock	56	125	75	50		100-150	30-50	20-30
	70	100	40	25		50-75	5-15	5-10
	71	50	20	20		50-75	5-15	5-10
	72	300	100	60		50-75	5-15	5-10
	73	150	50	30		100-150	20-30	10-20
	73A	10	5	5		10-20	1-5	1-5
	74	300	100	60		150-200	25-35	15-25
Diamond Creek	66A	50	25	20		40-60	15-25	5-15
	76	2059	934	373	2005	1260-1900	385-575	250-350
Bear River	75	226	70	nd	2006	200-300	40-60	25-35
	77	41	5	nd	2006	100-150	20-30	10-20
	78	112	16	nd	2006	100-150	20-30	10-20
Island Park	60	1476	313	190	2010	1200-1800	400-575	250-375
	60A							
	61							
	62A							
Teton	62	135	41	31	2011	150-250	35-55	15-35
	65							
Palisades	64	461	195	152	2009	400-600	125-200	75-125
	67							
Tex Creek	66	2277	577	325	2010	2000-3000	425-625	250-350
	69							

Table 2. Summary results for brucellosis testing of elk blood collected through hunter samples by GMU and hunt area, 1998-2010.

GMU/Hunt Area	Total Sample[a]	N[b]	S[c]	R[d]	Yer[e]	Yer + Bruc[f]	Prev (%)[g]	Comments
11	1	1	0	0	nd[h]	nd[h]	0	
22	1	1	0	0	nd	nd	0	
24	32	32	0	0	nd	nd	0	
24-1	6	6	0	0	nd	nd	0	
24-2	2	2	0	0	nd	nd	0	
29	29	29	0	0	nd	nd	0	
29-2	25	25	0	0	nd	nd	0	
30	96	96	0	0	nd	nd	0	
30-2	9	9	0	0	nd	nd	0	
30A	12	12	0	0	nd	nd	0	
36	10	10	0	0	nd	nd	0	
37	34	34	0	0	nd	nd	0	
37A	23	23	0	0	nd	nd	0	
39	4	4	0	0	nd	nd	0	
43	27	27	0	0	nd	nd	0	
49	1	1	0	0	nd	nd	0	
50	5	5	0	0	nd	nd	0	
51	24	24	0	0	nd	nd	0	
58-1	5	5	0	0	nd	nd	0	
58-2	4	4	0	0	nd	nd	0	
59	76	75	1	0	1	0	1.3	Yersinia
59A	13	13	0	0	nd	nd	0	
59B	2	2	0	0	nd	nd	0	
60	111	110	1	0	1	0	0.9	Yersinia
60-1	2	2	0	0	nd	nd	0	
60-2	146	146	0	0	nd	nd	0	
60-3	22	22	0	0	nd	nd	0	
60A	242	238	0	4	2	0	1.7	Yersinia
60A-2	45	45	0	0	nd	nd	0	
61	145	137	3	5	2	1	5.6	Yersinia + Brucellosis
62	112	95	2	15	0	2	15.2	Yersinia + Brucellosis
62-2	30	28	0	2	nd	nd	6.9	
62A	81	78	1	2	2	0	3.7	Yersinia
62A-1	17	16	0	1	nd	nd	5.9	
62A-2	3	3	0	0	nd	nd	0	

Table 2 - continued.

GMU/Hunt Area	Total Sample[a]	N[b]	S[c]	R[d]	Yer[e]	Yer + Bruc[f]	Prev (%)[g]	Comments
63	8	8	0	0	nd	nd	0	
63A	4	4	0	0	nd	nd	0	
64	19	18	0	1	nd	nd	5.3	
65	26	24	0	2	nd	nd	7.7	
66	35	35	0	0	nd	nd	0	
66A	231	228	3	0	2	1	1.3	Yersinia + Brucellosis
66A-2	8	8	0	0	nd	nd	0	
67	21	19	0	2	nd	nd	9.5	Yersinia + Brucellosis
67-2	6	6	0	0	nd	nd	0	
67-3	4	3	0	1	nd	nd	25	Limited sample
67A	2	2	0	0	nd	nd	0	
68	4	4	0	0	nd	nd	0	
69	30	30	0	0	nd	nd	0	
69-1	2	2	0	0	nd	nd	0	
74	7	7	0	0	nd	nd	0	
75	34	33	1	0	1	0	2.9	Yersinia
76	370	365	2	3	1	2	1.3	Yersinia + Brucellosis
76-1	71	71	0	0	nd	nd	0	
76-3	1	1	0	0	nd	nd	0	
76-4	14	14	0	0	nd	nd	0	
76A	2	2	0	0	nd	nd	0	
77	3	3	0	0	nd	nd	0	
78	16	15	1	0	1	0	6.3	Yersinia
66A/76	2	2	0	0	nd	nd	0	
Unknown	85	78	2	5	2	0	8.2	Yersinia + Brucellosis
Total	**2402**	**2342**	**17**	**43**	**24**	**5**	**2.6**	

[a] - total samples tested, does not include unsuitable/degraded samples

[b] – negative

[c] - suspect

[d] - reactor

[e] - positive for *Yersinia*

[f] - positive for *Yersinia* and brucellosis

[g] - prevalence = (suspect + reactor)/total sample

[h] - no test conducted for *Yersinia*

Table 3. Elk/hay and elk/cattle interactions, Region 6, Idaho winter 2010-11

Name:	Location:	Action	Depredation Hunt	Kill permit	feed	successful
Gordon Gallup	Antelope Flat	7- 16', 15 - 8' approx				yes
Curt Reese	Teton Valley	25- 8'				yes
Johnny Bevins	Teton Valley	10- 8'				yes
Terry Kay	Victor	1 roll tensar				yes
Kirk Jacobs Farms- Jason	Hamer	4 rolls tensar	x			yes
Wendall Campbell	Tetonia	~5-16'				yes
Robert Bybee	Hamer	4 rolls tensar				yes
Randy Little	Teton Valley	10- 16', 20- 8' ?				yes
Reed Longhurst	Iona Road	10-16', 10- 8'				yes
Matt Ferguson	Ririe	6- 8', ~6-8', 1 roll tensar		x		no
Mike Ereckfeld	Iona Hill/Ririe	7-16', 7-8'				no
Wade Williams	Howe	8- 4'x50' rolls				yes
Jerry Dalling	Hamer	260- 16', 42- 8', 10 rolls 4'x50' snowfence, 5 rolls tensar.	x	x		no
George Newby	Heise	~2- 16', ~10- 8'		x		yes
Stillman Buzzle	Heise	2 tarps				yes
Brett Ball	Swan Valley Bison	15- 16', ?15-8'				no
Terry Pressler	Ririe	1 tarp				yes
Bob Guinn	Ririe	1 tarp				yes
Chris Avery	Iona	1 roll tensar				yes
Jerry Hansen	Iona	2 roll tensar				yes
Verl Haderlie	Iona	zon guns				no
Charles Scoresby	Iona	hazing				no
Ron Meyer	Iona	hazing/ tarped hay				yes
Fosters	Heise	kill permit		x		yes
Carol Albertson	Teton Valley	hazing			x	yes
Kim Ferguson	Ririe	hazing				no
Robert Smith	Ririe	hazing				no
Roger Luthy	Ririe	hazing/ surrounded hay with straw				no
Travis Weeks	Swan Valley	hazing		x		no
Steven Campbell	85th	hazing				no
Vance Avery	85th	hazing				no
Jim Douglas	Teton Valley	supplied hay to feed			x	no
David Breckinridge	Teton Valley	supplied hay to feed	x	x	x	no
Conant valley ranch	Swan Valley	hazing				no
Ken Dunne	Teton Valley	supplied hay to feed			x	no
Tom Walsh	Swan Valley	hazing				no
Chuck Traughber	Swan Valley	hazing				no