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Surveillance, Preparedness, and  
Response Services

Cattle Health Center

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# **Review of Idaho's Brucellosis Management Plan**

A Review of Idaho's Brucellosis Disease Management and Mitigation  
Activities across the State and within the Designated Surveillance  
Area

## **2018 Review of Idaho's Brucellosis Management Program**

**Dates of the Review:** April 16-20, 2018

### **Review Team Members**

- Dr. Sara Ahola
- Dr. Mark Camacho
- Thomas Broadway

### **Animal and Plant Health Inspection Service (APHIS) Employees Joining In-Person**

- Dr. Cindy Gaborick, Veterinary Services (VS), Assistant Director
- Dr. Kendall Eyre, VS Idaho Boise Area – Veterinary Medical Officer (VMO)
- Angie Yates, VS Idaho, Biological Lab Tech

### **Idaho State Department of Agriculture (ISDA) Employees Joining In-Person**

- Dr. Bill Barton, State Veterinarian
- Dr. Deb Lawrence, VMO, Brucellosis Epidemiologist
- Dr. Dan Salmi, Idaho Animal Health Laboratory (IAHL) Laboratory Chief
- Kelly Mortensen, Agriculture Inspector – Blackfoot, ID
- Cathy Hallowell, Agriculture Inspector – Blackfoot, ID

### **Idaho Department of Fish & Game (IDFG) Employees Joining In-Person**

- Dr. Mark Drew
- Dr. Toby Boudreaux

### **Idaho State Police Brand Inspectors (ISPBI) Employees Joining In-Person**

- Cody Burlile, Brand Inspector – Boise, ID
- Luke Davis, Brand Inspector – Blackfoot, ID

### **Locations Visited**

- ISDA Office, Boise, ID – Dr. Bill Barton and staff
- IAHL, Boise, ID – Dr. Dan Salmi and staff
- APHIS-VS Office, Boise, ID – Dr. Cynthia Gaborick and staff
- Caviness – Simplot (CS) Beef Packers, Kuna, ID – Leonard Oltman
- Blackfoot Livestock Auction, Idaho Falls, ID – Dr. Sarah Jacobsen and market staff

## Executive Summary

Idaho has an active brucellosis program to monitor and control brucellosis in cattle and wildlife. Idaho's Brucellosis Coordination Committee leadership, in combination with State brucellosis regulations, has sufficiently managed the disease to date. Idaho communicates regularly with the other Greater Yellowstone Area (GYA) States to regularly update their brucellosis program and maintain uniformity across State lines to the greatest extent possible.

Idaho monitors brucellosis in their Designated Surveillance Area (DSA) cattle by testing animals that change ownership or leave the DSA. Rather than test a certain percentage of DSA herds every year, their "prior-to-movement" testing strategy seems to be the most palatable approach for Idaho producers and regulatory officials.

Idaho may be at lower risk of brucellosis infection than its GYA neighbors based on comparative data between the States. However, there are some concerning differences regarding Idaho's 18-month minimum testing age that need to be addressed, whereby 17 month old heifers may be sold from an annual production sale, leave the DSA, and cross State lines without a test. Other GYA states have a 12-month minimum testing age to mitigate this risk.

There seems to be excellent cooperation between ISDA and Idaho slaughter plants and livestock markets to participate in the brucellosis program. Testing at these establishments appears to work quite well.

Producers in the DSA seem to be well educated about the brucellosis program and impose some healthy peer pressure on neighbors to vaccinate and test in compliance with regulations. APHIS did observe some producer frustration with IDFG for not being more responsive and helpful in hazing elk off private property.

In summary, the program appears to be functioning well, with the most likely way for brucellosis to escape the DSA being free-ranging elk movements, sales/movement of untested heifers <18 months of age, or private cattle sales that do not go through DSA area markets. Finally, Idaho has not identified any Areas of Concern for elk-cattle interaction outside of their DSA.

### *Overall Strengths*

- ISDA seems to have solid regulatory rules and a common sense approach to administer their brucellosis management plan.
- ISDA and ISPBI cooperate closely with producers within the DSA and at markets serving the DSA to conduct testing on all test-eligible animals.
- Thirty percent annual testing of total DSA cattle is a commendable surveillance statistic.
- The IAHL is a valuable, competent partner in diagnosing and rapidly reporting brucellosis test results.
- Idaho has a smaller geographic DSA and fewer cattle and wild elk, along with a significantly lower seroprevalence of brucellosis within their elk population, than their GYA neighbors.
- Livestock markets that receive DSA cattle seem to operate well and enforce brucellosis test regulations.

- The State appears to have detected the most recent affected herd early based on low intra-herd prevalence.
- A new database that communicates with ISDA and ISPBI will launch in July 2018.
- IDFG is an active and helpful member of the regulatory team implementing the brucellosis management plan.

### *Overall Weaknesses*

- Cattle DSA surveillance is based on an individual animal test approach vs. a whole herd test approach, which may allow some herds with risk to go undetected for a long period of time.
- Idaho has no written rule establishing specific criteria for re-evaluating the DSA boundary. The establishment of the boundary is left solely to ISDA, based on input from IDFG and other stakeholders.
- ISDA lacks the database and ability to monitor compliance and enforce the rules with respect to testing of animals, when required.
- DSA herd risk assessments and herd plans are voluntary within the DSA, and only ~35 percent of herds have elected to participate, potentially leaving some herds at risk with no defined management plan.
- Idaho does not have mandatory county-to-county brand inspection, which allows animals to move between counties without notification.
- Wildlife surveillance seems minimal, with no ability to confirm true infection. As a result, true prevalence of brucellosis is unknown.
- Idaho records retention seems to be less than title 9, *Code of Federal Regulations (CFR)*, which is 60 months.

### **Key Recommendations**

1. Develop a method to monitor, enforce, and report the testing of animals leaving the DSA to ensure compliance with rules and regulations, including the number tested on a herd-level basis. Reporting should occur annually, at a minimum.
2. Create a system that reconciles brand inspection data with animal testing data to easily demonstrate proper surveillance.
3. Implement a formal notification system of ISDA for animals leaving the DSA that require a test.
4. Develop written guidelines based on specific criteria for defining DSA boundaries.
5. Categorize DSA herds into high-, medium-, and low-risk categories. Identify where risk occurs and which herds are on herd plans based on risk level. Continue to target high-risk herds for participation in formal herd plans.
6. Continue State or Federal reimbursement for brucellosis testing for all test-eligible animals moving out of the DSA and support diagnostic abortion testing at IAHL.
7. Reduce minimum testing age within the DSA to 12 months from current 18 months.
8. Maintain or increase elk surveillance to better enact wildlife management strategies to decrease prevalence, when necessary.
9. Increase the length of market, feedlot, and dealer Records Retention in Idaho statutes to match 9 CFR.

10. Finalize the memorandum of understanding (MOU) between APHIS and ISDA and review it annually.

## **Background of GYA Brucellosis Reviews**

Due to the success of the U.S. national brucellosis eradication program, the United States has demonstrably removed *B. abortus* infection in cattle from the country except for the GYA, a small geographic area around Yellowstone National Park, which has endemically infected wildlife. This is based on more than 15 consecutive years of:

- Ninety-five percent blood collection at U.S. Top 40 adult kill slaughter plants (95 percent of all U.S. cull cattle);
- Two to four BRT rounds in all U.S. dairies;
- Ninety-five percent case closure of all MCI traces;
- Mandatory annual State reporting, reviewed by national brucellosis epidemiologists;
- A national surveillance protocol that can detect one case per 100,000 U.S. cattle annually; and
- The last infected cattle herd outside of the GYA was detected in 2011.

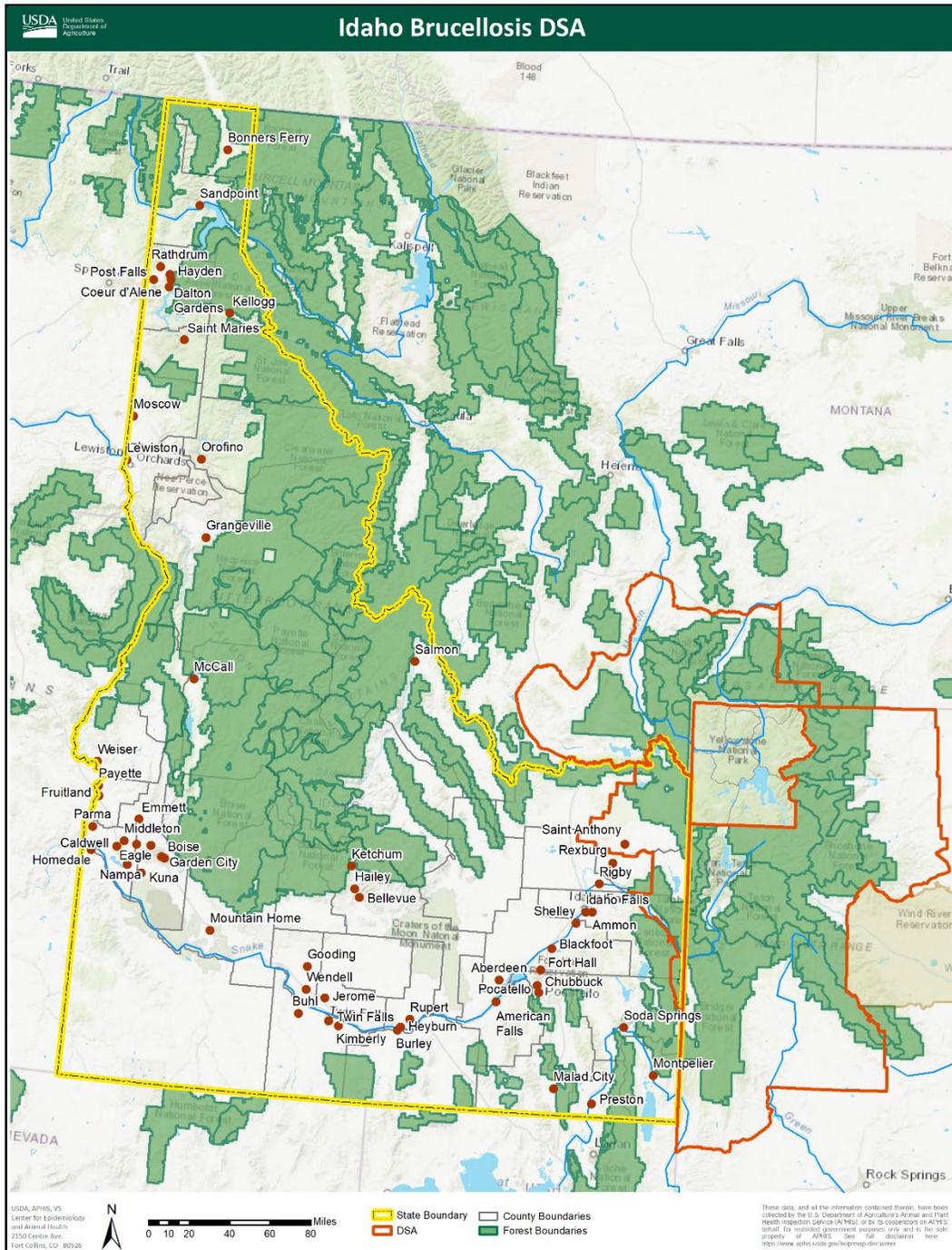
The persistence of brucellosis in wild elk and bison in the GYA is now the only known reservoir of *B. abortus* in the United States and the primary focus of regulatory activity. Current brucellosis law requires that “*any Class Free State or area with B. abortus in wildlife must develop and implement a ‘brucellosis management plan’ approved by the Administrator in order to maintain Class Free status*” which only applies to three GYA States: Montana, Wyoming, and Idaho. APHIS intended to sign an MOU with the GYA States agreeing with their respective brucellosis management plans (BMP); however, this did not occur until April 2018 (Wyoming). Nonetheless, GYA states did develop and implement brucellosis management plans without a signed MOU.

In 2016, the U.S. Animal Health Association adopted a resolution asking USDA to regularly review each GYA State’s brucellosis management plan at least once every 3 years, which is the reason for this review.

## **Review Objectives**

- Review the adequacy of Idaho’s brucellosis rules and infrastructure to prevent the spread of brucellosis beyond the DSA.
- Assess the enforcement of brucellosis rules.
- Assess cattle surveillance, diagnostics/laboratory capability, and producer education and cooperation.
- Assess wildlife surveillance and risk mitigation activities.
- Evaluate DSA boundaries, testing, and movement restrictions for overall effectiveness.

**Map 1: Idaho Brucellosis DSA compared to Montana and Wyoming**



**Background: Brief overview of the Idaho cattle industry**

The Idaho cattle industry is a large industry with almost 2.4 million total cattle and calves. The industry has approximately 1.1 million total cows that calved in 2017, roughly split between dairy cows (600,000) and beef cows (500,000). The Idaho dairy industry is nationally ranked as

the 4<sup>th</sup> largest dairy State, with approximately 1,075,000 dairy cattle and calves on just 568 premises with a remarkable 1,900 head average herd size.

The Idaho beef industry is about the 20<sup>th</sup> largest in the Nation, with roughly 1,275,000 total head on 10,000 ranches. Idaho is also the 10<sup>th</sup> largest State with cattle on feed based in the most recent National Agricultural Statistics Service data.

Approximately 34,000 cattle in ~250 herds, including ~100 seasonal grazers reside within the high-risk DSA in southeastern Idaho. DSA cattle amount to about 2.6 percent of the State's beef cattle. There are also eight small dairies in the DSA, with approximately 400 total head of milk cows.

## **Background: History of Brucellosis in Idaho**

Idaho is a class free State in the GYA. Since 2002, Idaho has found six infected cattle herds, all within their DSA in the far southeastern part of the State bordering Wyoming. Based on epidemiology, all of the infected herds are presumably from exposure to infected wild elk. Historically, Idaho has an incidence rate of about one newly-affected herd every 2-3 years. The most recent herd in 2017 was located in Teton County and was the only certified brucellosis free herd in the DSA with 14 years of negative herd test history. The reason the herd was tested was voluntary pre-sale testing by owner, and only one reactor was found on the whole herd test. Prior to 2017, the last infected cattle herd was found in 2012 near Lemon Lake, ID. Idaho established specific brucellosis rules under the Idaho Administrative Procedures Act (IDAPA) in 2010 along with the boundaries for their DSA. These regulations appear to be adequate to support and administer the brucellosis program.

### **I. Objective One: Review the Adequacy of Idaho's Brucellosis Rules to Prevent the Spread of Brucellosis Beyond the DSA**

#### **Findings and Observations**

##### *Brucellosis Program Leadership and Personnel*

- The brucellosis program in Idaho is primarily directed by Dr. Bill Barton, State Veterinarian, ISDA; Dr. Cindy Gaborick, VS; and Dr. Mark Drew, IDFG. Representatives from these three departments are known as the Brucellosis Coordination Committee and provide leadership and direction to the Idaho program. Dr. Barton answers to the Director of ISDA, Celia Gould.
- Dr. Barton is supported by an Assistant State Veterinarian, Dr. Scott Leibsle, and a field force of two VMOs and seven Agriculture Investigators under the Animal Health section of ISDA. These investigators roles are similar to USDA Animal Health Technicians. ISDA can also call upon six additional Agriculture Investigators assigned to the Dairy section for field work and testing, if needed. Dr. Deb Lawrence is the main ISDA VMO assigned to the brucellosis program and also acts as the State brucellosis epidemiologist.

- Dr. Gaborick has three Federal VMOs and one Program Assistant available to assist with the brucellosis program. Dr. Kendal Eyre, based out of Boise, ID, is the most involved VMO in the brucellosis program and is the Federal liaison with the new CS slaughter plant, which collects brucellosis blood samples for testing. In addition, USDA utilizes Ms. Angie Yates at IAHL to assist with brucellosis blood testing. A new VMO will join VS Idaho later this summer and will be located in or near the DSA.
- Finally, ISPBI, a division of the Idaho State Police, has about 12 Brand Inspectors who operate around the DSA and support and educate the producers in the area.

#### *Overall Adequacy of Regulations*

- ISDA administers their brucellosis management program through the following State rules:
  - Title 25, Chapter 2, and
  - Idaho Department of Agriculture administrative rules 04.20, 04.21, and 04.25.
- Table 1 below summarizes Idaho’s brucellosis regulations.
- The language in administrative rule 04.20 defines the boundary of the DSA as: *“An area of Idaho, as ordered by the director or his designee, where brucellosis positive wildlife are known or believed to exist and where comingling of wildlife and livestock may lead to transmission of brucellosis from wildlife to livestock”*.
- In addition to State rules, 9 CFR, part 78 requires that APHIS and Idaho sign an MOU for the management of brucellosis. A working draft was previously agreed upon between the two parties; however, the MOU has not been finalized while the two have undertaken cooperative activities. APHIS will continue working with Idaho to ensure that the MOU is completed.
- ISDA follows the Uniform Methods and Rules whenever possible and consults with USDA before attempting any alternative testing regimens that might work best in a particular situation. The ISDA had well-documented summaries of all regulatory activities on their most recent affected herds for the review team to inspect.

#### *Vaccination Requirements*

- Vaccination is required State-wide for all sexually intact females. Official calfhood vaccination (OCV) is preferred and follows the vaccine label: 4-12 months of age.
  - Raw milk sales are legal if the herd is comprised of three cows or less.
- Adult vaccination (AV) and booster vaccination occur as needed on Idaho-origin females and as approved by ISDA.
- Brucellosis vaccination is part of Idaho’s cattle culture and occurs regularly. In 2017, 316,622 (5,153 in the DSA) cattle/bison were officially calfhood vaccinated.

**Table 1. Summary of ISDA Brucellosis Regulations (IDAPA 02.04.20)**

<b><u>Vaccination</u></b>	
<b>State-wide</b>	OCV required State-wide. Note – raw milk consumption legal if three cows or less. AV allowed if approved by ISDA.
<b>DSA</b>	Same as State-wide.
<b>Exemptions</b>	Direct to an approved feedlot, slaughter, or sold out-of-State where vaccination is not required.
<b><u>Live Animal Testing</u></b>	
<b>Test Eligible Definition</b>	Sexually intact animals 18 months or older residing or grazing within the DSA between January 1-June 15. No county-to-county brand inspection in Idaho, unlike Wyoming.
<b>DSA</b>	Test at change-of-ownership, moving out of the DSA, or to meet destination State requirements.
<b>Timeframe</b>	Required within 30 days prior to movement out of the DSA.
<b>Exemptions</b>	Moving to an approved livestock market for test, or moving to an approved feedlot or direct to slaughter where slaughter samples are collected.
<b>Movement Permit</b>	A permit from ISDA is required to move test eligible cattle out of the DSA.
<b>Brucellosis Ring Test (milk)</b>	All dairies State-wide tested quarterly.
<b><u>Slaughter Testing</u></b>	
<b>State-wide</b>	All test-eligible tested at in-State slaughter facilities.
<b>DSA</b>	Must be tested before leaving the State, either on-farm or at market, as a live animal before moving to slaughter.
<b><u>Identification</u></b>	
<b>State-wide</b>	All vaccinates must be identified by official ID and tattoo. Consistent with animal disease traceability (ADT) rules for out-of-State movement.
<b>DSA</b>	All sexually intact animals of any age must be officially identified. Identification should be linked back to DSA based on premises ID and records.
<b>Exemptions</b>	Moving to a designated feedlot for identification. Non-vaccinated females temporarily leaving DSA for contiguous, seasonal grazing, and returning with no change-of-ownership.

*Testing Requirements and Implementation*

- Idaho does not require a brand inspection to move county-to-county, therefore, an inspection is not required for animals leaving the DSA if they are not changing ownership. However, a prior-to-movement test is required, so it is unclear how regulatory

officials can verify whether direct purchases out of the DSA that don't go through a livestock market are tested.

- Change-of-ownership notification between ISPBI and ISDA is mainly verbal via telephone calls. Their relationship is collaborative, but it also relies heavily on awareness of the Brand Inspectors of movements with relation to ISDA testing requirements.
- Brand inspections capture movement out-of-State, thus notification from ISPBA to ISDA is essential to capture direct-to-slaughter animals. This notification occurs to the two ISDA Livestock Investigators located near the DSA, who follow up with producers directly for test confirmation.
- ISDA is developing a database system that records brand inspection events and brucellosis tests, even though they are in separate State agencies. ISDA already has its own database, whereby producers can request movement permits of cattle out of the DSA. The State has spent \$250,000 to an Idaho software company to develop this new database and dashboard. The functional start is scheduled for July 1, 2018.
- ISDA defines the high-risk period of exposure to brucellosis within the DSA as January 1-June 15, based on observed elk abortion data. Testing must occur within 30 days prior to movement or change-of-ownership when an animal has resided or grazed within the DSA during this time period. Outside of this time period, no test is required.
- There appears to be a problem with the minimum test-eligible age of 18 months within the DSA. The most recently affected Idaho herd, a purebred beef herd, engages in voluntary testing (Brucellosis Certified Free herd) every fall before their annual sale. Due to the timing of their sale, they sell 17 month old bulls and bred heifers for dispersal throughout the western United States. Under current Idaho DSA rules, they only have to officially ID these heifers, but not test them prior to dispersal. The herd owner conducted a voluntary test, which is the only reason that the infected animal was found. VS staff discussed this issue with Dr. Bill Barton in November 2017, as this was an instance where infected animals could leave the DSA. If the testing age was 12 months, as is the case in Wyoming and Montana, all sale animals would have been tested prior to sale.
- ISDA's surveillance strategy is based on individual animal testing, rather than herd-level testing, to detect seropositive animals prior to movement outside of the DSA. ISDA determined this method of disease detection after much discussion with Idaho's cattle industry, IDFG, and their GYA State neighbors. Limits in workforce, appropriations, and industry support prevent the ISDA from taking a more herd-level approach to testing.
- ISDA's pre-movement testing protocol may be entirely appropriate for Idaho's bovine brucellosis prevalence and producer cooperation, but this approach has a few notable weaknesses when compared to regular area herd-level testing, such as:
  - Potential for some herds to go undetected for a long period of time if an appreciable number are not tested;
  - Lack of exposure status in test negative individual animals allowed to move out of the DSA without a herd-of-origin test;
  - Dependence on a regulatory infrastructure that can capture all pre-movement situations and provide the appropriate testing and authorization at the speed of commerce; and
  - Difficulty in documenting to outside regulatory agencies whether all test eligible animals are actually tested prior to movement.

- Given ISDA’s current budget and limited brucellosis spillover into livestock, an individual animal testing approach may be the most cost-effective surveillance system and adequate to mitigate the risk of exporting brucellosis beyond the DSA.
- Recent herd detections imply ISDA is finding herds early with low intra-herd prevalence and before much intra-herd spread. The most recent 2017 herd detected one animal out of 549 head.
- ISDA requires a test at change-of-ownership for test eligible animals. Therefore, if an animal is sold to a slaughter plant, then no slaughter exemption to test exists.
  - If an owner retains ownership to slaughter, all in-State plants test all test-eligible animals.
  - ISDA indicated one large producer that markets cattle direct to an out-of-State plant is tested according to their herd plan, as well as at the out-of-State plant, which participates in national slaughter surveillance.
  - The remaining large producers market culls to the regional DSA markets, which test all eligible animals.
  - ISDA rules test-eligible animals moving direct to slaughter as exempt if the receiving plant collects slaughter samples. In practice, ISDA does not exempt slaughter animals leaving the DSA and still requires a test on DSA test-eligible animals before leaving the State.
- ISDA requires a permit for any animals leaving the DSA. Producers may acquire a permit from the ISDA website or by calling ISDA, at which time producers are reminded of testing requirements prior to movement. Enforcement occurs primarily through ISDA’s two DSA Livestock Investigators.
- Private veterinarians are paid for testing conducted on DSA cattle, so there is an incentive to conduct and report the testing, which occurs regularly.
- Veterinarians testing on-farm receive reimbursement at \$5.00 per head tested. If testing at a livestock market, the veterinarian is paid \$5.00 per head, with an additional \$2.50 per head to cover the market chute fee.
- Custom slaughter plants are not reimbursed for slaughter sampling. APHIS reimburses the Food Safety and Inspection Service (FSIS) at eight Idaho plants at \$1.00 per head sampled. VS-Idaho reported that FSIS is not directly involved in the collection and shipment of samples.
- Out-of-State commuter herds must test according to their origin-State requirements. ISDA works with each State to ensure testing according to risk. The majority of grazing occurs after June 15, when exposure risk decreases.
- ISDA adequately reports testing on a monthly-basis in cooperation with APHIS, breaking out tests by DSA and non-DSA animals, market or on-farm testing, and wildlife.
- The review team could not easily determine if verification of individual animal testing was documented for commuter herds.
- Blackfoot and Idaho Falls livestock markets sell the most DSA-origin animals, and ISDA relies heavily on market veterinarian to conduct testing at the change-of-ownership, including animals destined to slaughter. This process includes livestock inspectors reviewing herd origin (DSA versus non-DSA), market employees sorting animals that need testing and placing all DSA cattle into a DSA pen, and the market veterinarian inspecting animals and conducting testing. Given the economic incentive to test

(\$7.50/head), the market veterinarian is motivated to participate in surveillance and if any animal is believed to be eligible, it is tested.

- Markets beyond the DSA-area may occasionally receive DSA cattle. ISDA noted that these markets are not provided with DSA producer names. As a result, these markets may not know of DSA-origin test-eligible cattle coming through their market.
- ISDA collaborates with VS to implement their brucellosis management activities. VS will station a VMO near the DSA beginning late summer 2018. This position had been previously vacant.

### *Animal Identification Requirements*

- The State-wide requirement for OCV results in nearly all sexually intact females receiving official ID within Idaho. Smaller producers may not comply out of ignorance or unwillingness; however, their animals are vaccinated if sold through a market.
- ISDA rules are consistent with current ADT rules.
- All sexually intact cattle leaving the DSA, regardless of age, must be officially identified.
- If not already identified, official ID is placed and recorded on official test charts when leaving the DSA, much of which occurs at livestock markets.
- Animals may arrive at the market with previous test records conducted on-farm; however, no confirmation of that identification is made at the market. In other words, animals presented for sale are not run through the chute to confirm that they are in fact the animals on the current test-chart. This is simply a matter of business continuity and trust between the seller, State Veterinarian, and market veterinarian.

### **Recommendations**

1. Create a system that reconciles the brand inspection data with animal testing data to easily demonstrate that proper surveillance is being conducted. We hope the new ISDA database, which is scheduled to roll out in July 2018, will accomplish this goal.
2. Incorporate electronic brands when implemented. This will increase information for ISDA to monitor and enforce testing, as well as provide credible information for outside trading partners. Important components to consider include:
  - a. Report the number of test eligible animals leaving the DSA via brand records compared to the number of animals tested on a regular basis annually, at a minimum.
  - b. Reconcile market brand inspections with sale tallies for the two markets serving the DSA.
  - c. Include the number of herds tested and the number of animals tested within each herd.
  - d. Measure how often each individual herd within the DSA receives an individual animal test and what percentage of the herd is tested on an annual basis.
  - e. Measure how long individual herds within the DSA go without having a single movement test.
3. APHIS and the ISDA should finalize and sign an MOU to include a BMP as soon as reasonably possible, preferably by December 31, 2018, to come under full compliance with 9 CFR 78. APHIS and ISDA shall revisit this MOU annually.

4. Continue financial reimbursement for testing to veterinarians and labs to maintain no out-of-pocket expense to producers. This portion of the program is essential to compliance.
5. Reduce minimum testing age within the DSA to 12 months from current 18 months.
6. Keep USDA apprised of the new ISDA database project and the ability to crosscheck brand inspection DSA visits with brucellosis test charts.
7. Consider implementing the use of radio frequency ID (RFID) or other electronic OCV tags and increase their use through measurables (# of tags/year). Target herds within DSA that retain breeding heifers to work towards an all-electronic herd.
  - a. In order to support RFID use, APHIS should provide equipment to ISDA, such as RFID reader wands, for use by private veterinarians servicing the DSA (approximately 12).
8. Work towards the use of electronic capture of data at livestock markets, such as creation of test charts, complete capture of all IDs, etc. Until then, ISDA/USDA should regularly audit test records and animal movements through livestock markets.
  - a. Consider economic incentives for those transmitting electronic test records.
9. If intra-herd prevalence increases in affected herds detected or in the DSA as a whole, then it would be prudent to switch strategies to area whole or fractional (e.g., 20 percent) herd tests.
10. Idaho has enjoyed relatively few brucellosis-affected herds in the last few years, but ISDA should not become complacent, as the risk of brucellosis is steadily increasing via expanding elk populations and range.
11. Consider OCV exemption in cattle located outside the DSA that participate in raw-milk sales.

## II. Objective Two: Assess the Enforcement of Brucellosis-related Rules

### Identification, Livestock Markets, Dealers and Slaughter Plant(s)

- Idaho's identification rules are the same as those listed in 9 CFR, Part 86.4 (a) (1). Animal identification is a mix of NUES tags (vaccination tags and brite tags) and 840 RFID tags.
- All sexually intact animals in the DSA, regardless of age, must be identified with official ID. Identification is applied to animals when an official test is conducted or when animals are vaccinated.
- When a sexually intact female goes through a livestock market, the animal is checked by an accredited veterinarian for identification and evidence of brucellosis vaccination. At a livestock market, if an eligible sexually intact female has not been vaccinated, then the accredited veterinarian will vaccinate the animal and apply official ID.
- Idaho Rules Governing Brucellosis for feedlot records retention state: "Feedlot records shall be retained by the feedlot for a period of not less than one (1) year following removal of the cattle or domestic bison from the feedlot." 9 CFR, Part 86.3 (b) approved livestock facilities must keep movement document for least 5 years.

### *Strengths*

- Idaho ID rules state that all DSA animals must be officially identified.
- Eligible sexually intact females are identified at the time of vaccination.

### *Weakness*

- DSA animals are identified with a mix of NUES tags and 840 RFID tags.
- The current 1 year retention of records does not meet the requirements in 9 CFR, part 86.

### **Recommendations**

1. Require RFID tags to be used in the DSA to assist in ease of movement and to assure accurate entry of animal ID in required documents.
2. Change records retention in State rules to equal those in 9 CFR.

### **Livestock Markets (Auctions)**

- ISDA has regulatory authority over the livestock markets located in the State. ISDA has livestock inspectors that visit markets regularly, including markets that do not regularly handle animals from the DSA. Livestock inspectors visit the markets 1-2 times per month. For markets that handle DSA animals, inspectors are on site every sale day.
- All livestock markets in Idaho are approved tagging sites and are required to send a list of tags applied to the ISDA office. In Idaho, VS approves all livestock markets, and VS visits these markets at least quarterly for inspection.
- Idaho Brand Inspectors are at all livestock markets and should recognize DSA animals.

### *Cattleman's Livestock Auction, DBA Treasure Valley Livestock Auction, Caldwell, ID*

Treasure Valley Livestock Auction is located outside of the DSA and rarely, if ever, receives animals from the DSA. When animals arrive at the market, they are checked in by market employees and Idaho Brand Inspectors and a back tag is applied to all sexually intact animals 18 months of age or older. All females, regardless of age, are sent to the market veterinarian to check their vaccination status. At one time, the market was provided with a map of the DSA, but when asked, employees were not sure where the map was located. If an animal arrives from the DSA, it is identified by an Idaho Brand Inspector and the Brand Inspector notifies the market. The animal is then sent to the market veterinarian who performs the necessary tasks for the animal to move through the market. Treasure Valley's records are retained in hard copy and on computer. All records are legible and accessible to animal regulatory officials. The VS VMO for that area regularly visits the market.

### *Blackfoot Livestock Auction, Blackfoot, ID*

Blackfoot Livestock Auction is located just outside of the DSA and handles animals from both outside of the DSA and within the DSA. When animals arrive at the market, they are checked in by market employees and Idaho Brand Inspectors and, if an animal is sexually intact 18 months of age or older, then a back tag is applied. All females, regardless of age, are sent to the market veterinarian to check their vaccination status. Blackfoot has a map of the DSA and a dated list of DSA producers located at the main office and the tagging shack. Market personnel and the brand inspector recognize animals from the DSA and send them to the market veterinarian. The market veterinarian performs required tasks, such as official ID, checking required vaccinations, and testing, if needed. The market veterinarian also tests all eligible animals from the DSA for brucellosis. If a DSA animal arrives at the market and has a current brucellosis test, that animal

must be accompanied by a current copy of the test. The market veterinarian will compare the animal's official ID to those listed on the brucellosis test chart. The veterinarian and market do not retain a copy of the brucellosis test chart.

At livestock markets that handle DSA animals, the market veterinarian performs a brucellosis test on all eligible animals. For animals to be released from the market, they must have a negative test result. Blackfoot Livestock Market employs one clinic, which is adjacent to the market and has three veterinarians for their market veterinary needs. The veterinarians are the only personnel authorized to perform the onsite brucellosis test. Blackfoot Livestock does have an adequate brucellosis lab, but due to the location of the clinic, the brucellosis tests are conducted at the clinic next door to the market. The veterinary clinic uses some of their own equipment, such as the centrifuge, because the veterinarian deemed the centrifuge provided at the market lab to be unsafe. When VS staff asked the veterinarian about proficiency testing, she said that the only time she had been asked was during her testing certification.

Blackfoot Livestock has very good records, which are retained as hard copy and on computer. When asked to provide information on a selected back tag, the veterinarian provided the requested information in a very short time.

- Both markets place back tags on sexually intact animals 18 months and older. Both also place the back tags behind the shoulder, with the diagram on the back of the back tag.
- Select markets in Idaho installed RFID readers but never utilized them. Both Treasure Valley and Blackfoot were recipients of RFID readers.
- Most of the cull cattle sold through livestock markets in Idaho, especially those located near the DSA, are sent to Smith Packing, UT; Cargill Meat Solutions, CA; and CS Beef, ID. All of the plants are active in collecting blood for brucellosis surveillance. So far, CS Beef has good sample quality, although they have had some problems in the past with gelled samples.

## **Dealers**

Idaho livestock dealers are regulated through the Brand Inspection office. From the information the review team gathered, the Brand Inspector and ISDA do not currently check dealer records.

### *Strengths*

- Market records are excellent and available to assist in tracing animals.
- ISDA, VS, and the market have a good relationship and all work towards a common goal.
- Animals 18 months and older are back tagged.
- Market personnel, with the assistance of Brand Inspectors, are able to determine if an animal is from the DSA and move those animals to the market veterinarian.
- Maps and a list of DSA producers are available at markets.
- Regulatory officials have a strong relationship with livestock markets.

### *Weakness*

- Markets do not utilize RFID readers.
- If a DSA animal arrives at a market with a current brucellosis test, a copy of the test chart is not retained in the records of the market or veterinarian.

- Animals from the DSA are identified with NUES tags (brucellosis vaccination or brite tag).
- The State does not review dealer's records.
- Not all dealers have approved ID to apply to animals moving to slaughter.

### **Recommendations**

1. Provide markets with DSA maps with an updated list of producers or towns located in the DSA.
2. Move brucellosis market testing back to the area provided by the market so the VS inspector may monitor equipment and supplies. Currently, testing is performed in a private veterinary clinic next door to market
3. Repair or replace faulty or unsafe equipment used for brucellosis testing.
4. Start utilizing the RFID readers in the markets and have data dumped from the readers into databases.
5. Supply dealers with back tags and have them submit a list of tags applied to the regulatory officials.
6. If available, display a poster at the tagging area of all livestock markets that demonstrates the proper placement of back tags.
7. Maintain the working relationships with livestock markets.
8. Reconcile all animals presented at the market with previous test records as the animals are presented for sale. When possible, use electronic means to facilitate rapid collection of animal information to facilitate commerce.
9. Educate all regional markets on the need to test DSA-origin test-eligible animals and inform them of producers located within the DSA.
10. Market veterinarians conducting brucellosis testing should be proficiency tested on a regular basis, as they are in Wyoming and Montana.

### **Slaughter Plants**

- Idaho has a number of slaughter plants located throughout the State, and ISDA requires that they collect blood for brucellosis surveillance on eligible animals. VS staff in Idaho lists all slaughter plants according to 9 CFR, Part 71.21, inspects plants quarterly, and enters inspections into a VS database. VS staff visits some plants more frequently than others.
- CS Beef Packers is a relatively new modern slaughter plant located in Kuna, ID. The plant slaughters approximately 1,700 head per day from several different States, including Idaho. Their primary source of animals is cull cows and bulls, but they also slaughter fat animals from feedlots on an average of about 2 days per week. To date, we have identified seven MCI cattle traces from the Kuna plant – three from Montana, two from Washington State, one from Wyoming, and one from Idaho. None have resulted in an affected herd.
- VS staff in Idaho and CS Beef conducted a tour of the plant for the review team. The tour consisted primarily of the slaughter area, with the areas of blood collection and animal unloading the main interest of the review team. The plant equipped the unloading area and holding pens to allow animals arriving in lots to stay together and move through the plant in lots. The blood collection area is also where carcasses are identified and animal

ID is read for the first time. At CS Beef's blood collection/carcass identification station, there were five plant employees, including:

- One person printing and applying the carcass ID;
  - One person monitoring the carcass for official ID and, if none present, then assigning a plant back tag;
  - One person collecting all manmade ID and tissue for DNA;
  - One person collecting the blood in a tube; and
  - One person placing the blood and ID in a bag and placing the bag on the bag rod.
- There were two other people involved in this process in a separate room. After staff collected about 20 blood samples, a person would take those samples into a separate room and verify the information and sample quality and then wash the tubes and transfer the ID to a second person, who would enter all manmade identification into a computer system connecting it to the carcass ID. The supervisor for that area supervises the unloading and holding area. The supervisor stated that all employees in his area were cross-trained to work in all areas.
  - VS and CS Beef have a very good relationship and work well with each other. VS staff visit the plant regularly, and CS Beef has plans to install an RFID reader.
  - In addition to CS Beef, Idaho has a new plant in Burley, ID (Ida-Beef), who participates in brucellosis sample collection. Annual sampling numbers are not certain at this point due to its newness, but Ida-Beef will likely be the second largest plant in Idaho and is expected to contribute to GYA surveillance.

#### *Strengths*

- CS Beef's commitment to brucellosis surveillance.
- CS Beef having enough personnel collecting blood so there is less chance of missing a sample or not collecting all manmade ID.
- Ida-Beef will likely become the second largest plant in Idaho and will also collect blood samples for brucellosis.

#### *Weakness*

- RFID reader not installed to read RFID tags.

#### **Recommendations**

1. Continue collecting samples from all eligible animals in slaughter plants.
2. Continue the working relationship between VS/ISDA and CS Beef.

### **III. Objective 3: Assess Cattle Surveillance, Diagnostics/Laboratory Capability, and Producer Education in Place to Support the Program**

#### *Cattle Brucellosis Surveillance*

- Current slaughter surveillance is robust due to collection of samples from the aforementioned Idaho plants, as well as plants in California, Nebraska, Minnesota, and Utah. Idaho also samples high-risk DSA cattle due to mandatory brucellosis program regulations. This combined level of brucellosis surveillance seems adequate and necessary for Idaho's geographic proximity to the GYA.

- Idaho records show that roughly 30 percent of all DSA cattle are tested per year due to brucellosis specific regulations for movement and change-of-ownership (see section 5 of this report). While this statistic seems excellent at first glance, it is unclear how many of the 250 total cattle herds within the DSA are actually tested per year. This uncertainty remains a weakness of the surveillance program, but ISDA argues that a more robust surveillance system is not warranted based on the risk of brucellosis in the DSA. Visual evidence of wild elk commingling with cattle is the best indicator of risk and the need for a whole herd test. Testing individual animals prior-to-movement is effective, but not as effective as whole herd testing of a portion of DSA herds per year.

#### *Laboratory/Diagnostics*

- IAHL is located next door to the ISDA offices in Boise, ID, and is under the supervision of Dr. Dan Salmi. Angie Yates, Lab Technician, VS, does an excellent job overseeing the brucellosis testing program at the lab. All brucellosis serologic samples go through the Idaho lab before any non-negatives go to the National Veterinary Services Laboratories (NVSL) for confirmation. The lab is up to date on all proficiency testing and is approved to run the Card, RAP, BAPA, SPT, and FPA tests on blood, as well as HIRT and BRT on milk.
- IAHL performed 46,424 brucellosis tests on cattle and bison in 2016. This number jumped to 193,995 brucellosis tests in 2017 after blood collection started at the CS Beef slaughter plant on May 31, 2017.
- IAHL reported a responder rate of 900 per 100,000 samples tested for their screening test, which was considerably higher than the national average of 25 responders per 100,000 samples tested at our national slaughter surveillance lab. This high rate caused increased time and expense to clear these samples. The review team discussed Idaho's definition of "non-negative" and instructed them to contact the Kentucky Federal Brucellosis Lab and NVSL to compare their definitions/protocols and reduce their responder rate closer to the national average.
- All samples are reported out from the laboratory for classification by a brucellosis epidemiologist.
- The IAHL does include brucellosis in their standard diagnostic abortion panel of tests on fluids and serum from animals involved in abortion events.
- Bacterial cultures are typically sent to NVSL, but laboratory has the capability to do their own testing.

#### *Producer Education*

- The State Veterinarian, Brand Inspectors, and ISDA Livestock Investigators work together to speak to and educate producers on the Idaho Brucellosis Program every year. ISDA employees speak at producer meetings, industry meetings, and production sales to provide their message to the public.
- The Brand Inspectors and Livestock Investigators said that DSA producers are well educated on the brucellosis program and a healthy amount of peer pressure exists for producers to vaccinate, test, and haze elk from their herds.

## Recommendations

1. Continue the current level of cattle surveillance and producer education for the brucellosis program.
2. Idaho should contact the National Brucellosis Surveillance Laboratory in Kentucky to compare and modify their protocols for calling samples non-negative to ensure they are in line with national labs.

## IV. Objective 4: Wildlife Surveillance and Mitigation

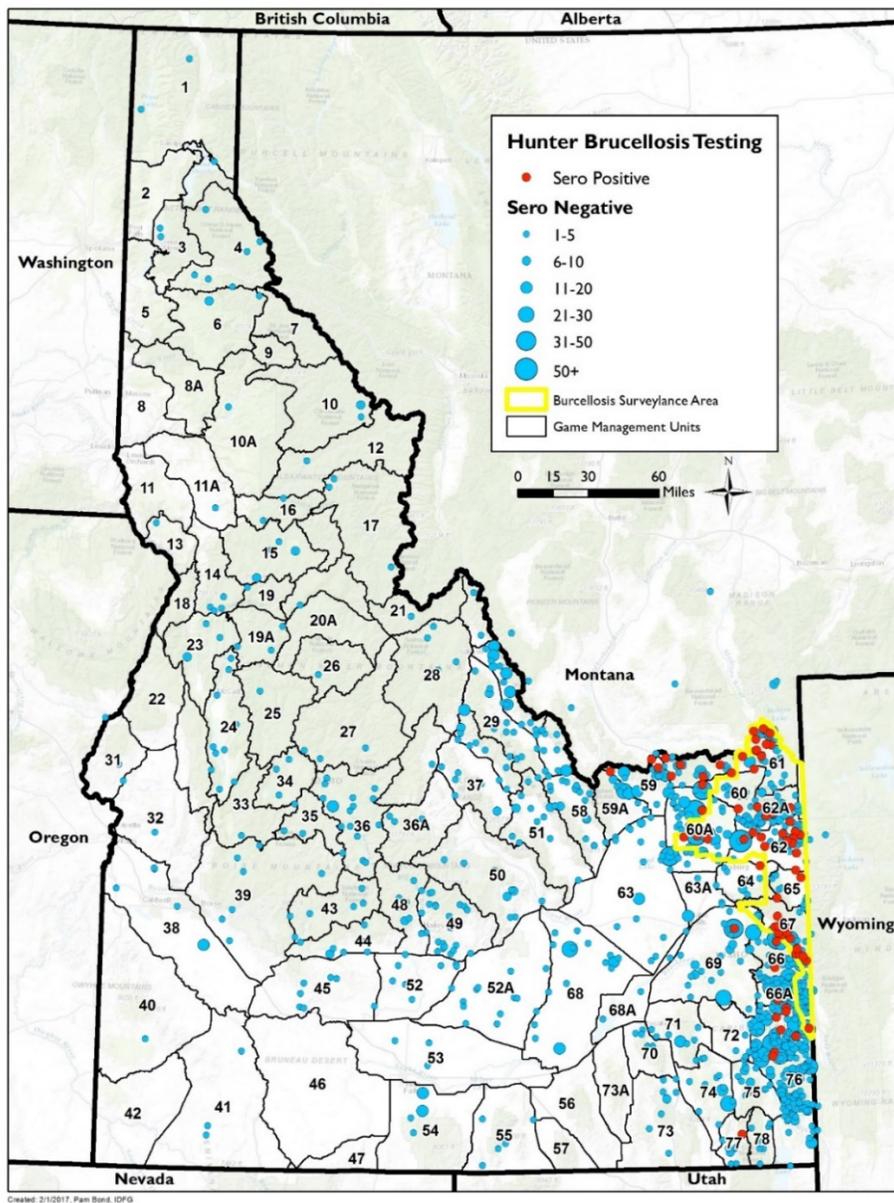
### *Wildlife Surveillance*

- Wildlife brucellosis surveillance in Idaho amounts to ~100-200 hunter-harvested elk samples a year, plus a few captured elk samples submitted by IDFG for testing. With this system, there is virtually no ability to culture non-negative elk to determine true disease status, while only providing an estimate of elk seroprevalence. However, this annual sample size is sufficient to detect a seroprevalence of around 2 percent, which may be adequate in this particular situation.
- In the last few decades, Idaho has only managed to obtain 1-2 cultures from elk (biovar 4 from positive elk killed at the Rainey Creek feed ground). There is a real need to obtain a positive culture from an Idaho “non-feed ground” elk to prove it still exists in “normal” elk in the DSA. The State could focus hunter tissue sampling using:
  - 1) a trained field tech to harvest quality tissues and keep the link to blood samples intact;
  - 2) sample elk during opening week in hunting districts with highest seroprevalence; and
  - 3) by storing tissue until it can be linked to positive sample.
- IDFG sends out sample collection kits, primarily to regular hunt permit holders (typical rifle hunters), youth hunters, archery hunters, and muzzleloader hunters to target elk cows. In eastern Idaho, IDFG offers about 2000 elk permits annually and typically receives back about 10-15 percent of the sample kits sent out. Of those kits, only about 50 percent of those samples are testable quality, resulting in a sample size of about 100-200 per year.
- IDFG collects elk samples on a 3 year rotating basis from:
  - 1) within the DSA;
  - 2) just outside the DSA in the northern desert area; and
  - 3) just outside the DSA in the southern Idaho region.
- Summary data from 1998-2018 shows that 3,811 elk were sampled, with 2,595 being of testable quality. A total of 113 elk tested positive for brucellosis during this time for an overall seroprevalence of 4.35 percent. For the purposes of delineating the boundary of the brucellosis surveillance zone for USDA and ISDA, elk surveillance and radio-collaring represents the least expensive and most comprehensive method of defining the known distribution of brucellosis exposure in elk in Idaho. This method also helps assess the possibility of elk-cattle interactions during the risk period. Seroprevalence appears to be stable and the geographic distribution remains largely within the DSA.
- Idaho appears to be at lower risk of brucellosis infection than its GYA neighbors. Historically, Idaho only has about 5,000-6,000 elk in their DSA during the high-risk calving period of January 1-June 15, compared to ~27,000 elk in the Montana DSA and ~45,000 elk in the Wyoming DSA. In addition, Idaho has only one State feed ground in their DSA compared to 22 State feed grounds in Wyoming. IDFG has established a

baseline seroprevalence of only 3-6 percent in wild elk in the Idaho DSA, albeit from fewer samples than other GYA States, while Wyoming estimates their DSA elk seroprevalence at about 26 percent.

- USDA awards ISDA an annual umbrella cooperative agreement, which includes funding for brucellosis and other activities. In the 2017 agreement (project period April 1, 2017-March 31, 2018), ISDA allocated \$15,000 in contractual funds to IDFG for wild elk brucellosis surveillance, hunter test kits, elk-cattle interaction mitigation, and fencing materials. In the agreement, ISDA listed spending \$6,000 on hunter test kit materials and \$7,000 on fencing materials. Internal discussion within the Brucellosis Coordination Committee recommended using \$5,000 for brucellosis test kits and \$10,000 for fencing materials within the DSA going forward.

**Map 2: Idaho Hunter-harvested Elk Surveillance**



### *Wildlife Mitigation Activities*

- IDFG follows a standard protocol to address calls from producers about elk in haystacks or commingling with cattle, including:
  - IDFG first determines the number of elk involved and assesses the threat (whether it is just feed or cattle are involved.)
  - If there is a haystack predation, IDFG takes measures to protect the haystack with temporary materials, such as wire panels. They may also issue noise makers, such as propane cannons, cracker shells, and rubber bullets, to the landowner. IDFG usually gives permission to haze elk away from haystacks.
  - If temporary methods are not successful for the landowner, then IDFG personnel will assist with hazing and kill permits. At this point, the State may issue the landowner a kill permit.
  - For large scale issues involving multiple landowners, IDFG may also issue emergency depredation hunts.
- If the problem involves elk-cattle interaction, then IDFG must respond immediately to come up with solutions to further prevent interactions. If a landowner calls and indicates that elk are in the vicinity, but have not yet interacted with cattle, then IDFG will make efforts to monitor the elk in the area and determine whether they should be moved or left alone based on distance from cattle. Generally, ISDA is notified that elk are in proximity to cattle but have not yet interacted with them. They may issue kill permits to the landowner at this point as a preemptive measure, especially if there is no way of protecting the feed yard, pasture, or feed lines with temporary material.
- If a confirmed elk-cattle interaction has occurred, IDFG informs ISDA within 24 hours so they can contact the landowner to assess the situation. If the Department has not already issued kill permits to the landowner, then they are issued at this time. Department personnel will then make all efforts to haze and harvest animals to keep them away from cattle. Again, emergency depredation hunts can be administered if multiple landowners and large numbers of elk are involved. With landowner kill permits and depredation hunts, blood test kits are provided to the greatest extent possible. ISDA also works with the landowner to provide blood test kits.
- Long-term solutions for haystacks and feed yards involve permanent fencing, which has proven to be an effective solution. Haystack fencing is generally much cheaper than fencing feed yards, so landowners and the Department usually attempt to fence off feed to alter elk habits of coming to stacks to feed. If IDFG determines that the feed yard or feed area needs to be fenced, then they consult with ISDA to design and fund the fencing, which may become expensive. In both cases of haystack and feed yard fencing projects, the IDFG works and communicates with ISDA on these projects. There are about 150 resident cattle herds inside the DSA, with only 75 of those fenced to keep out elk.
- In spite of these standard protocols, cattle producers voiced criticism of IDFG for not responding more quickly or with more assistance for removing elk from cattle herds around the DSA. A common complaint was producers waiting 72 hours before their calls were returned by IDFG. Producers are sensitive to seeing elk with their cattle and want better response and mitigation strategies; however, current IDFG funding may limit what assistance they can provide producers.

## Recommendations

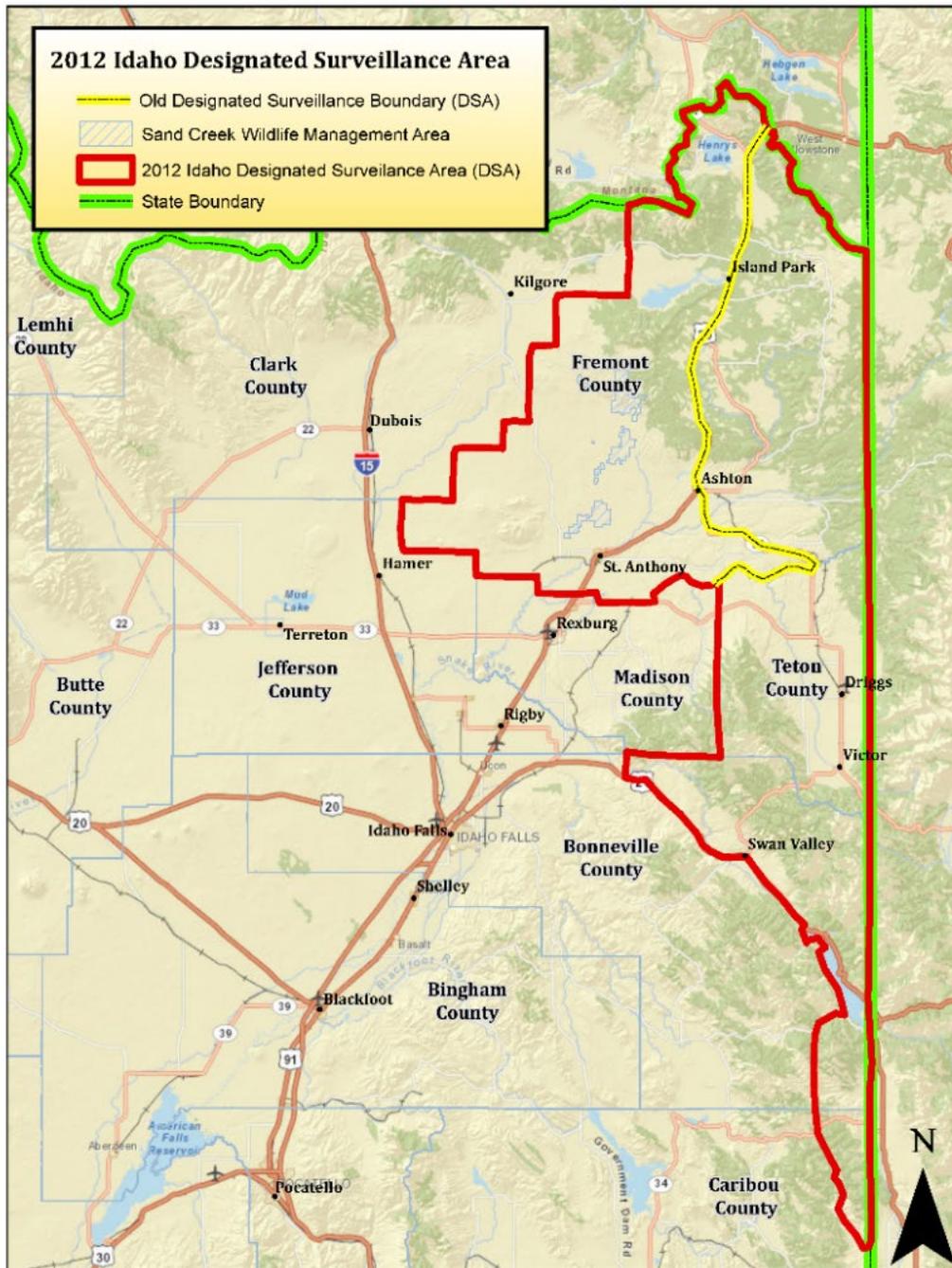
1. Respond more quickly to public reports of elk commingling with cattle.
2. Continue the annual Brucellosis Coordination Committee meetings where stakeholders give updates, report progress, address problems and develop plans for the future.
3. Request more Federal cooperative agreement funding to support IDFG wildlife mitigation strategies, including more haystack materials available to producers in and around the DSA.
4. Continue to work closely with ISDA and DSA producers to mitigate risks from elk contact with cattle in and around the DSA.
5. Culture seropositive elk using:
  - trained field tech to harvest quality tissues and keep the link to blood samples intact; or
  - sample elk during opening week in hunting districts with highest seroprevalence; or
  - store tissue until it can be linked to positive sample.
6. Maintain or request more Federal funding to support wildlife brucellosis surveillance to keep track of potential changes in seroprevalence and assess DSA boundaries. Continue to capture 60-80 elk for radio-collaring to monitor wildlife movements.

## V. Objective 5: Evaluate DSA Boundaries, Testing, and Movement Restrictions for Overall Effectiveness

### *Idaho DSA Boundaries, Testing, and Movement Restrictions*

- Idaho law defines their DSA as: “*an area of Idaho, as ordered by the director or his designee, where brucellosis positive wildlife are known or believed to exist and where comingling of wildlife and livestock may lead to transmission of brucellosis from wildlife to livestock.*”
- Changes to Idaho’s DSA boundaries would only occur following detailed consultation and concurrence among the Brucellosis Coordination Committee, as described previously, but the authority to change it lies with the Director of ISDA.
- Proposed changes to the DSA boundaries would be based on data such as the detection of an infected cattle herd(s) outside of the current DSA boundary or, if warranted, by a thorough epidemiological evaluation showing risk outside of the DSA.
- A change could also occur due to a dramatic increase in wild elk seroprevalence in an area outside of the DSA. Currently, 100-200 wild elk samples every year seems sufficient to detect changes in elk seroprevalence trends within and without of the zone.

**Map 3: Idaho Brucellosis DSA Boundaries**



- Similarly, if appropriate surveillance indicated that wild elk seroprevalence within the current DSA had decreased dramatically in a specific area and no transmission of brucellosis had occurred to cattle for a specified period of time, then decreasing the size of the DSA may be justified.

- Once the determination to change the DSA boundary is made, the State would conduct appropriate outreach with the Idaho cattle industry to make them aware of the proposed change prior to implementation.
- Idaho estimates that there are approximately 250 cattle herds within their DSA. The number of herds per county is outlined in the table below:

**Table 2: Idaho DSA cattle herds by County**

County	# of Cattle Herds
Caribou	3
Fremont	106
Swan Valley	9
Teton	45
Seasonal Grazers	37
Seasonal Exempt	50
<b>Total</b>	<b>250</b>

Within the above herds, Idaho estimates the total number of cattle in their DSA to be around 34,395 head. The demographics look like this:

<b>Resident:</b> Cows	13,782	<b>Grazers:</b> Cows	14,247
Bulls	540	Bulls	594
Heifers	2,624	Heifers	2,608
<b>Total</b>	<b>16,946</b>	<b>17,449 = 34,395 cattle</b>	

- Idaho records show that the average number of DSA cattle tested per year for the last 2 years is 10,243, resulting from movement or change-of-ownership testing. If you compare this number with the total number of cattle that reside in the DSA (34,395 total) then you can easily calculate the percent of DSA cattle tested per year:

$$10,243 \text{ cattle tested} \div 34,395 \text{ total DSA cattle} = 29.7\% \text{ DSA cattle tested per year}$$

This is excellent annual surveillance within their zone, and VS hopes this robust surveillance continues into the future. This level of testing should allow Idaho to detect infection and following disease trends in their zone.

- DSA cattle producers seem to be well informed about the brucellosis program and the potential risk from wildlife to their cattle. Producers seem highly motivated to abide by current regulations to prevent brucellosis infection in their herds. The most likely way that brucellosis could get out of the DSA is through infected elk migration, sale/movement of untested heifers < 18 months, or a private ranch-to-ranch cattle sale that bypasses a livestock market and the owners avoid an individual animal test or a latent heifer sale.

## **Recommendations**

1. Develop written guidelines based on specific criteria for defining the boundary of the DSA. Base the boundaries on the following:
  - a. Elk range/location, changes in observed elk seroprevalence or culture positive elk, elk-livestock interface, or other risk factors.
  - b. Establish criteria that would trigger a change in the DSA based on these risk factors.
2. Categorize DSA herds into high-, medium-, and low-risk categories. Identify where risk occurs and which herds are on herd plans based on risk level, continue to target high-risk herds for participation in formal herd plans, and include medium- and low-risk herds when possible. Defining what constitutes high-, medium-, and low-risk will be necessary to create these categories.
3. Reduce minimum testing age within the DSA to 12 months from current 18 months.

## **Conclusion**

APHIS appreciates the hospitality and cooperation from ISDA, IDFG, and VS Idaho staff to conduct this review. The Idaho Brucellosis Coordination Committee seems to be conducting an effective brucellosis management plan given their risk level, Federal funding, and industry cooperation. Collaboration with the other GYA States also seems to be very helpful in keeping the Idaho BMP effective and updated.

Smaller elk numbers and a much lower brucellosis seroprevalence within the DSA seems to indicate less risk of infection to Idaho cattle when compared to other GYA States. APHIS will continue to work with Idaho by providing cooperative agreement funds as available, reviewing brucellosis management plans, and supporting activities, personnel, and other resources as needed on an annual basis. APHIS looks forward to working closely with Idaho to enact these recommendations and improve the Idaho brucellosis program going forward.