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August 4, 2014

Dear Montana Hunter:

Montana Fish, Wildlife, and Parks (FWP) and the University of Montana (UM) are conducting a study about Montana elk management. You were randomly selected as a Montana hunter to receive this survey – your response will help FWP better manage elk across Montana.

This survey asks about elk management as it relates to a disease called Brucellosis. In Montana, some elk in and around Yellowstone National Park are infected with Brucellosis. Brucellosis can be transferred to cattle which can cause some cows to abort their calves. A cattle vaccine is widely applied by producers, but it only prevents abortion and does not prevent infection. To date, no population impacts from Brucellosis have been detected in Montana's elk population. However, Brucellosis can significantly affect cattle ranchers, both financially and operationally.

The questions in this survey will ask about your concerns regarding Brucellosis, general beliefs about elk management, your wildlife-related activities, and the acceptability of different elk management actions under different scenarios. Your participation in this survey is completely voluntary and you may stop at any time or skip any question you do not wish to answer. All your answers will be confidential – we will only report summaries of our findings. The identification number on your survey is there so we can check your name off the mailing list when you return your questionnaire.

It should take about 15-20 minutes to complete the questionnaire. When you are done, please use the postage-paid envelope to return the questionnaire to us. By completing and returning the questionnaire, you imply your consent to participate in this study.

If you have any questions, please contact us at the addresses below.

Sincerely,

Dr. Elizabeth Metcalf, University of Montana  
College of Forestry and Conservation  
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(406) 243-4448

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Informational Copy

**Montana Elk Management in Areas with Brucellosis**

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**SECTION 1:**

1. Before receiving this survey, how much had you heard about Brucellosis as it relates to elk and cattle in Montana?  
 (Please check only one box.)

- None
  A little
  Some
  A lot

2. On a scale of 1 to 4 (where 1 is “Not at All Concerned” and 4 is “Extremely Concerned”), how concerned are you that Brucellosis might lead to the following in Montana (MT)? (For each row, please circle only one number.)

	Not at All Concerned	Slightly Concerned	Moderately Concerned	Extremely Concerned	Unsure
A decline in MT’s overall state economy	1	2	3	4	<input type="checkbox"/>
Increased costs for FWP to manage elk in MT	1	2	3	4	<input type="checkbox"/>
A decline in local area economies in MT	1	2	3	4	<input type="checkbox"/>
Health impacts to humans	1	2	3	4	<input type="checkbox"/>
A decline in MT’s cattle industry	1	2	3	4	<input type="checkbox"/>
A decline in MT’s elk numbers	1	2	3	4	<input type="checkbox"/>
A decline in elk hunting opportunities in MT	1	2	3	4	<input type="checkbox"/>
Increased costs for ranchers to raise cattle in MT	1	2	3	4	<input type="checkbox"/>

3. FWP is currently managing Brucellosis risk as it relates to elk and cattle in Montana. On a scale of 1 to 7, (where 1 is “Highly Unacceptable” and 7 is “Highly Acceptable”), how acceptable are the following FWP actions?  
 (For each row, please circle only one number.)

	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Preventing co-mingling of cattle and elk using lethal removal of elk	1	2	3	4	5	6	7
Assessing the effectiveness of elk management efforts to reduce the risk of transmission from elk to cattle	1	2	3	4	5	6	7
Research to better understand Brucellosis and transmission risks	1	2	3	4	5	6	7
Working with the MT Department of Livestock to manage Brucellosis risk to cattle from elk	1	2	3	4	5	6	7
Public communication/outreach about Brucellosis risk management	1	2	3	4	5	6	7
Monitoring elk movement/distribution in areas of high transmission risk	1	2	3	4	5	6	7
Preventing co-mingling of cattle and elk using non-lethal means	1	2	3	4	5	6	7
Working with local groups to implement risk management efforts in the local area	1	2	3	4	5	6	7

**SECTION 2:**

**PLEASE READ THIS INFORMATION BEFORE ANSWERING THE NEXT QUESTIONS**

The Fish and Wildlife Commission has recently approved additional management actions to help manage Brucellosis risk. The approved actions could be implemented on individual cattle ranches in Montana where there is a significant potential for elk to co-mingle with cattle during the Brucellosis risk period (January 15<sup>th</sup> – June 15<sup>th</sup>). We want to understand how acceptable these actions would be in six *hypothetical situations*. Some of the hypothetical situations refer to the elk “*population objective*.” FWP is required by law to manage for a specific number of elk (this is called the “*population objective*”) in each management area based on elk ecology, public expectations, and agricultural tolerances.

Some of the possible actions could take place during the following time periods:

**December 1<sup>st</sup> – January 15<sup>th</sup> : After the fall hunting season and before the Brucellosis risk period**

**January 15<sup>th</sup> – February 15<sup>th</sup> : During the traditional game damage hunt period\***

**February 15<sup>th</sup> – June 15<sup>th</sup> : After the traditional game damage hunt period\* and up to the end of the Brucellosis risk period**

\* During the “traditional game damage hunt period” a minimal number of elk are harvested in order to reduce crop and property damage by re-distributing game animals.

For each of the following six hypothetical situations, please rate the acceptability of management actions that could be used to address the situation. Please rate the acceptability on a scale of 1 to 7, where 1 is “Highly Unacceptable” and 7 is “Highly Acceptable.”

**Hypothetical Situation 1:** Imagine a MT ranch where Brucellosis *has been* detected in elk, but *not* in cattle. Elk populations are *below* the population objective and the landowner here *allows* public access for hunting.

4. Based on this situation, how acceptable are the following actions? (For each row, please circle only one number.)

	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Take no action	1	2	3	4	5	6	7
Monitor the situation	1	2	3	4	5	6	7
Permanently fence haystacks to keep elk out	1	2	3	4	5	6	7
Temporarily fence feed lines or pastures to prevent elk from co-mingling with cattle	1	2	3	4	5	6	7
Provide a small number of kill permits to the ranch owner to harvest and move some elk away from cattle from Jan. 15 – Feb. 15	1	2	3	4	5	6	7
Provide a small number of kill permits to the ranch owner to harvest and move some elk away from cattle after Feb. 15	1	2	3	4	5	6	7
Haze elk away from cattle from Dec. 1 – June 15	1	2	3	4	5	6	7
Allow a limited number of hunters to harvest some elk to move elk away from cattle from Jan. 15 – Feb. 15	1	2	3	4	5	6	7

Allow a limited number of hunters to harvest some elk to move elk away from cattle after Feb. 15	1	2	3	4	5	6	7
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**Hypothetical Situation 2:** Imagine a MT ranch where Brucellosis *has been* detected in elk, but *not* in cattle. Elk populations are *below* the population objective and the landowner here *does not allow* public access for hunting.

5. Based on this situation, how acceptable are the following actions? (For each row, please circle only one number.)

	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Take no action	1	2	3	4	5	6	7
Monitor the situation	1	2	3	4	5	6	7
Permanently fence haystacks to keep elk out	1	2	3	4	5	6	7
Temporarily fence feed lines or pastures to prevent elk from co-mingling with cattle	1	2	3	4	5	6	7
Provide a small number of kill permits to the ranch owner to harvest and move some elk away from cattle from Jan. 15 – Feb. 15	1	2	3	4	5	6	7
Provide a small number of kill permits to the ranch owner to harvest and move some elk away from cattle after Feb. 15	1	2	3	4	5	6	7
Haze elk away from cattle from Dec. 1 – June 15	1	2	3	4	5	6	7
Allow a limited number of hunters to harvest some elk to move elk away from cattle from Jan. 15 – Feb. 15	1	2	3	4	5	6	7
Allow a limited number of hunters to harvest some elk to move elk away from cattle after Feb. 15	1	2	3	4	5	6	7

**Hypothetical Situation 3:** Imagine a MT ranch where Brucellosis *has been* detected in elk, but *not* in cattle. Elk populations are *above* the population objective and the landowner here *allows* public access for hunting.

6. Based on this situation, how acceptable are the following actions? (For each row, please circle only one number.)

	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Take no action	1	2	3	4	5	6	7
Monitor the situation	1	2	3	4	5	6	7
Permanently fence haystacks to keep elk out	1	2	3	4	5	6	7
Temporarily fence feed lines or pastures to prevent elk from co-mingling with cattle	1	2	3	4	5	6	7
Provide a small number of kill permits to the ranch owner to harvest and move some elk away from cattle from Jan. 15 – Feb. 15	1	2	3	4	5	6	7
Provide a small number of kill permits to the ranch owner to harvest and move some elk away from cattle after Feb. 15	1	2	3	4	5	6	7
Haze elk away from cattle from Dec. 1 – June 15	1	2	3	4	5	6	7

Allow a limited number of hunters to harvest some elk to move elk away from cattle from Jan. 15 – Feb. 15	1	2	3	4	5	6	7
Allow a limited number of hunters to harvest some elk to move elk away from cattle after Feb. 15	1	2	3	4	5	6	7

**Hypothetical Situation 4:** Imagine a MT ranch where Brucellosis *has been* detected in elk, but *not* in cattle. Elk populations are *above* the population objective and the landowner here *does not allow* public access for hunting.

7. Based on this situation, how acceptable are the following actions? (For each row, please circle only one number.)

	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Take no action	1	2	3	4	5	6	7
Monitor the situation	1	2	3	4	5	6	7
Permanently fence haystacks to keep elk out	1	2	3	4	5	6	7
Temporarily fence feed lines or pastures to prevent elk from co-mingling with cattle	1	2	3	4	5	6	7
Provide a small number of kill permits to the ranch owner to harvest and move some elk away from cattle from Jan. 15 – Feb. 15	1	2	3	4	5	6	7
Provide a small number of kill permits to the ranch owner to harvest and move some elk away from cattle after Feb. 15	1	2	3	4	5	6	7
Haze elk away from cattle from Dec. 1 – June 15	1	2	3	4	5	6	7
Allow a limited number of hunters to harvest some elk to move elk away from cattle from Jan. 15 – Feb. 15	1	2	3	4	5	6	7
Allow a limited number of hunters to harvest some elk to move elk away from cattle after Feb. 15	1	2	3	4	5	6	7

**Hypothetical Situation 5:** Imagine a MT ranch where Brucellosis *has been* detected in *both elk and cattle*; the landowner here *allows* public access.

8. Based on this situation, how acceptable are the following actions? (For each row, please circle only one number.)

	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Take no action	1	2	3	4	5	6	7
Monitor the situation	1	2	3	4	5	6	7
Permanently fence haystacks to keep elk out	1	2	3	4	5	6	7
Temporarily fence feed lines or pastures to prevent elk from co-mingling with cattle	1	2	3	4	5	6	7
Provide a small number of kill permits to the ranch owner to harvest and move some elk away from cattle from Jan. 15 – Feb. 15	1	2	3	4	5	6	7
Provide a small number of kill permits to the ranch owner to harvest and move some elk away from cattle after Feb. 15	1	2	3	4	5	6	7

Haze elk away from cattle from Dec. 1 – June 15	1	2	3	4	5	6	7
Allow a limited number of hunters to harvest some elk to move elk away from cattle from Jan. 15 – Feb. 15	1	2	3	4	5	6	7
Allow a limited number of hunters to harvest some elk to move elk away from cattle after Feb. 15	1	2	3	4	5	6	7

**Hypothetical Situation 6:** Imagine a MT ranch where Brucellosis *has been* detected in *both elk and cattle*; the landowner here *does not allow* public access.

9. Based on this situation, how acceptable are the following actions? (For each row, please circle only one number.)

	Highly Unacceptable	Moderately Unacceptable	Slightly Unacceptable	Neither	Slightly Acceptable	Moderately Acceptable	Highly Acceptable
Take no action	1	2	3	4	5	6	7
Monitor the situation	1	2	3	4	5	6	7
Permanently fence haystacks to keep elk out	1	2	3	4	5	6	7
Temporarily fence feed lines or pastures to prevent elk from co-mingling with cattle	1	2	3	4	5	6	7
Provide a small number of kill permits to the ranch owner to harvest and move some elk away from cattle from Jan. 15 – Feb. 15	1	2	3	4	5	6	7
Provide a small number of kill permits to the ranch owner to harvest and move some elk away from cattle after Feb. 15	1	2	3	4	5	6	7
Haze elk away from cattle from Dec. 1 – June 15	1	2	3	4	5	6	7
Allow a limited number of hunters to harvest some elk to move elk away from cattle from Jan. 15 – Feb. 15	1	2	3	4	5	6	7
Allow a limited number of hunters to harvest some elk to move elk away from cattle after Feb. 15	1	2	3	4	5	6	7

**SECTION 3:**

The following questions contain statements about who should be responsible for managing Brucellosis risk, different ways to approach managing Brucellosis risk, and how people feel about fish and wildlife in general. Some people agree with these statements – others disagree with them. Some of these statements are fairly ‘neutral’ while others are very ‘one-sided.’ Understanding if people agree or disagree with these statements can help us determine the acceptability of different risk management approaches.

10. On a scale of 1 to 5 (where 1 is “Strongly Disagree” and 5 is “Strongly Agree”), please indicate how much you agree or disagree with the following statements. (For each row, please circle only one number.)

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
Hunters should share some of the financial costs for managing Brucellosis risk from elk to cattle	1	2	3	4	5
FWP should be responsible for managing elk to reduce Brucellosis risk from elk to cattle	1	2	3	4	5

The entire Montana public should share some of the financial costs of managing Brucellosis risk from elk to cattle	1	2	3	4	5
Reducing the risk of Brucellosis transmission from elk to cattle should be a priority for FWP	1	2	3	4	5
Ranchers should share some of the financial costs of managing Brucellosis risk from elk to cattle	1	2	3	4	5
The federal government should share some of the financial costs of managing Brucellosis risk from elk to cattle	1	2	3	4	5

11. On a scale of 1 to 5 (where 1 is “Strongly Disagree” and 5 is “Strongly Agree”), please indicate how much you agree or disagree with the following statements. (For each row, please circle only one number.)

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
It is never okay for elk and cattle to co-mingle when Brucellosis is in the area	1	2	3	4	5
As long as fencing is temporary, it is okay for FWP to help fund fencing of private property to reduce the risk of Brucellosis transmission from elk to cattle	1	2	3	4	5
It is never okay to hunt elk after bulls have dropped their antlers	1	2	3	4	5
More landowner education is needed to help with Brucellosis management	1	2	3	4	5
It is never okay to hunt cow elk in late winter and spring during the late stages of pregnancy	1	2	3	4	5
Public hunting access to private land will help manage Brucellosis risk from elk to cattle	1	2	3	4	5
If elk numbers need to be reduced, only hunters should be allowed to shoot elk	1	2	3	4	5
It is okay for FWP to help fund permanent fencing of private property to reduce the risk of Brucellosis transmission from elk to cattle	1	2	3	4	5
Elk should never be killed to protect cattle from Brucellosis	1	2	3	4	5
More hunter education is needed to help with Brucellosis management	1	2	3	4	5
Current efforts by FWP to manage Brucellosis risk from elk to cattle are excessive	1	2	3	4	5
Current efforts by FWP to manage Brucellosis risk from elk to cattle are insufficient	1	2	3	4	5

12. How much do you participate in the following activities? (For each row, please check only one box.)

	Not at All	Occasionally	Frequently
Gardening	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Elk hunting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scenic driving	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ranching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Elk viewing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bird watching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fishing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Wildlife viewing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other hunting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13. To what extent do you agree or disagree with the following statements about fish and wildlife? Please indicate your response on a scale of 1 to 7, where 1 is “Strongly Disagree” and 7 is “Strongly Agree.”  
(For each row, please circle only one number.)

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither	Slightly Agree	Moderately Agree	Strongly Agree
We should strive for a world where humans, fish, and wildlife can live side by side without fear	1	2	3	4	5	6	7
Wildlife are like my family and I want to protect them	1	2	3	4	5	6	7
Hunting is cruel and inhumane to the animals	1	2	3	4	5	6	7
The needs of humans should take priority over fish and wildlife protection	1	2	3	4	5	6	7
Fish and wildlife are on earth primarily for people to use	1	2	3	4	5	6	7
I feel a strong emotional bond with animals	1	2	3	4	5	6	7
Hunting does not respect the lives of animals	1	2	3	4	5	6	7
Animals should have rights similar to the rights of humans	1	2	3	4	5	6	7
People who want to hunt should be provided the opportunity to do so	1	2	3	4	5	6	7
I value the sense of companionship I receive from animals	1	2	3	4	5	6	7
I care about animals as much as I do other people	1	2	3	4	5	6	7
We should strive for a world where there's an abundance of fish and wildlife for hunting and fishing	1	2	3	4	5	6	7
Humans should manage fish and wildlife populations so that humans benefit	1	2	3	4	5	6	7
I view all living things together as part of one big family	1	2	3	4	5	6	7

#### SECTION 4:

14. During how many of the past five years have you hunted elk in Montana? (Please check only one box.)

None..... IF NONE, skip to question 16 on the following page.

- 1       2       3       4       5

15. Have you harvested an elk in Montana during the past five years? *(Please check only one box.)*

- Yes       No

16a. Below is a list of property types where hunting typically occurs in Montana. Check all property types that you hunt on. *(Please check all boxes that apply.)*

- A. Publicly owned land (e.g., FWP, DNRC/state, Forest Service, Bureau of Land Management, Fish & Wildlife Service lands, etc.). [Block Management is NOT publicly owned land.]
- B. Private land enrolled in Block Management. [All Plum Creek Timber Company lands in the western part of the state are enrolled in Block Management. Sieben Ranch Company located 15 miles north of Helena is enrolled in Block Management.]
- C. Non-Block Management private land (without a fee) that is owned by your family, relatives, a close friend, or friends of your family/relatives
- D. Non-Block Management private land (without a fee) that is NOT owned by your family, relatives, a close friend, or friends of your family/relatives
- E. Private land (guided by a hunting outfitter)
- F. Private land with access fee charged (e.g., hunting lease, fees charged per hunter or group of hunters, hunting club, etc.)

16b. From the above list, please choose the type of property that best represents where you primarily hunt. *(Please write in the letter of the property type):* \_\_\_\_\_

**SECTION 5:**

17. How would you describe where you live? *(Please check only one box.)*

- City       Suburb       Town       Rural Area

18. What is the highest grade of school you have completed? *(Please check only one box.)*

- Grade school       High school graduate/ GED equivalent       Some college
- College graduate       Post graduate

19. What is your gender?  Male  Female

20. In what year were you born? \_\_\_\_\_ (year)

21. What is your zip code? \_\_\_\_\_ (zip code)

22. How many years have you lived in Montana? \_\_\_\_\_ (total number of years)

23. What is your approximate annual household income before taxes (optional)? (Please check only one box.)

- Less than \$10,000     10,000 to \$19,999     \$20,000 to \$39,999     \$40,000 to \$59,999  
 \$60,000 to \$79,999     \$80,000 to \$99,999     \$100,000 to \$119,999     \$120,000 to \$139,999  
 \$140,000 or more     Refused/don't know

Thank you for taking this survey. If you have any comments, please include them in the space below: \_

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**Thank you!**