

Briefing Statement

Bureau: National Park Service
Issue: Summary of Bison Quarantine Operations, 2018-2019
Park Site: Yellowstone National Park
Date: February 13, 2019

Current Status

- We initially captured 130 male and female bison for quarantine. Only 71 male bison and 25 female bison entered serial testing. The remaining bison were transferred to slaughter by mid-April.
- One animal died during handling.
- 11 of 71 (15%) males and 2 of 25 (8%) females have tested positive for brucellosis and have been removed from quarantine. Three animals that tested suspect (2 males, 1 female) for brucellosis were also removed. Currently, 58 males and 21 females (about 32 months old) remain in quarantine.
- These animals have been tested 9 different times, about every 30-45 days, since March 2018 to identify animals that show indication of brucellosis infection. Animals exhibit delayed responses to infection which necessitates regular testing over several months, if not longer, to identify all infected animals. We are following quarantine procedures outlined in the Uniform Methods and Rules for Brucellosis Eradication and are being assisted by APHIS and the Montana Department of Livestock.
- Status of Male Group:
 - Last known reactor was removed from the male group on August 3, 2018 and negative tests for the remaining group were confirmed on August 3 and September 6, 2018.
 - However, one male tested suspect during October and was removed on December 5, 2018. Negative tests for the remaining group were re-confirmed on December 5, 2018 and January 18, 2019.
- Status of Female Group:
 - Last known reactor was removed from the female group on September 5, 2018.
 - Lab tests revealed that a suspect animal remained after testing on September 5, which was removed on October 23, 2018.
 - We have not documented two negative tests on females, due to lab tests revealing a new suspect animal on December 4, 2018. This suspect animal remains within the group.
 - We intend to keep this animal within the group because it likely will convert back to negative. We will need to obtain two group-negative tests in late spring prior to introducing a male into the female group for breeding.
- We do not intend to test quarantined animals while winter management operations are occurring to reduce the possibility of their exposure to brucellosis.

Contact:

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Table 1. Chronology of bison occupying the quarantine facility within Yellowstone National Park.

	Testing Dates	Action	Males		Females
			10 mo	22 mo	22 mo
Candidate Selection	February 27 - March 15, 2018	<ul style="list-style-type: none"> Selected 130 juvenile bison based on a negative fluorescence polarization assay (FPA) result determined trap-side 10 month (i.e., calf) and 22 month (i.e., yearling) old males were selected and 22 month old (i.e., yearling) females were selected. Male and female bison were combined into a single quarantine holding pen on March 15 	31	73	26
	March 13, 2018	<ul style="list-style-type: none"> One female was euthanized due to illness/injury prior to official enrollment 	31	73	25
	April 9, 2018	<ul style="list-style-type: none"> 31 male calves were removed to a separate holding pen, and consigned to slaughter on April 11 3 male yearlings were removed to a separate holding pen and consigned to slaughter on June 28: 2 animals classified as negative trap-side during March were identified as positive based on laboratory tests (National Veterinary Services Laboratory, Ames, Iowa) and 1 animal was identified as positive based on FPA result determined trap-side on April 9 Male and female bison remained in a single quarantine holding pen 	0	70	25
Serial Screening	May 15, 2018	<ul style="list-style-type: none"> 3 males were removed to a separate holding based on a positive FPA result determined trap-side and consigned to slaughter on June 28 1 female died during handling/bleeding likely due to heat stress Male and female bison were separated into two distinct holding pens 		67	24
	June 26-27, 2018	<ul style="list-style-type: none"> Sera from female (June 26) and male (June 27) bison were collected on separate days 2 males were removed to a separate holding based on positive laboratory tests from May sample collection and consigned to slaughter on June 28 Trap-side testing was not conducted during June-October to reduce handling time and associated heat stress 		65	24
	August 2-3, 2018	<ul style="list-style-type: none"> Sera from female (August 2) and male (August 3) bison were collected on separate days 5 males were removed to a separate holding based on positive laboratory tests from June sample collection and consigned to slaughter on September 10. 1 female was removed to separate holding pen based on a positive laboratory test from June, euthanized, and the carcass remained inside YNP 		60	23
	September 5-6, 2018	<ul style="list-style-type: none"> Sera from female (September 5) and male (September 6) bison were collected on separate days 1 female was removed to separate holding pen based on a positive laboratory test from August, euthanized, and the carcass remained inside YNP 1 male was removed to a separate holding based on 		59	22

		suspect laboratory tests from August sample collection and consigned to slaughter on September 10.		
	October 23-24, 2018	<ul style="list-style-type: none"> Sera from female (October 23) and male (October 24) bison were collected on separate days 1 female was removed to separate holding pen based on a suspect laboratory test from September, euthanized, and the carcass remained inside YNP 	59	21
	December 4-5, 2018	<ul style="list-style-type: none"> Sera from female (December 4) and male (December 5) bison were collected on separate days 1 male was removed to separate holding pen based on a suspect laboratory test from October, euthanized, and the carcass remained inside YNP 1 female tested as low suspect on CF and due to the government shutdown we did not receive this result until early February 	58	21
	January 18, 2019	Sera from male bison were collected; Females were not tested	58	21

Table 2. Epidemiological status of bison in individual test groups undergoing quarantine within Yellowstone National Park. Bison were split into individual test groups on May 15, 2018. Table abbreviations are negative (N), suspect (S), and positive (P). Totals represent the numbers of animals released back into quarantine pens after testing on each date. Serology status is the epidemiological classification that was determined through testing at NVSL and interpretation by APHIS epidemiologists, which occurred after animals were released back into pens.

Date	Male Test Group						Female Test Group						Notes
	Remained in Quarantine			Removed from Quarantine			Remained in Quarantine			Removed from Quarantine			
	P	N	S	P	S	N	P	N	S	P	S	N	
April 9, 2018	0	68	2	3	0	0	0	25	0	0	0	0	All bison penned in one group
May 15, 2018	2	65	0	3	0	0	0	22	2	0	0	1	Female died during handling
June 26-27, 2018	5	52	8	2	0	0	1	23	0	0	0	0	
August 2-3, 2018	0	60	0	5	0	0	1	21	1	1	0	0	Male with suspect FP test classified as negative
September 5-6, 2018	0	59	0	0	0	1	0	21	1	1	0	0	Removed male with suspect FP test
October 23-24, 2018	0	58	1	0	0	0	0	21	0	0	1	0	Removed female with suspect FP test
December 4-5, 2018	0	58	0	0	1	0	0	20	1	0	0	0	Removed male with suspect FP test
January 18, 2019	0	58	0	0	0	0	N A	N A	N A	N A	N A	N A	Only males were tested

* Last test with male classified as reactor within test group occurred on August 3, 2018

** Last test with female classified as reactor within test group occurred on September 5, 2018

Table 3. Chronology of testing, classification, removal, euthanasia and culture analysis of animals removed from quarantine. We do not report a date of first positive serology test for animals that tested suspect.

	Official ID	Sera collected	Epidemiological classification	Removed from Test Group	Date of death	Culture Analysis
1	840003145763457, 81BEH9838	2/28/2018	4/9/2018	4/9/2018	6/28/2018	Submitted to NVSL
2	840003145763589, 81BEH9872	3/7/2018	4/9/2018	4/9/2018	6/28/2018	Submitted to NVSL
3	840003145763432, 81BEH9866	4/9/2018	4/30/2018	4/9/2018	6/28/2018	Positive
4	840003145763603, 81BEH9853	5/15/2018	6/8/2018	5/15/2018	6/28/2018	Submitted to NVSL
5	840003145763535, 81BEH9701, (lost) 81BEH9825	5/15/2018	6/8/2018	5/15/2018	6/28/2018	Submitted to NVSL
6	840003145763440, 81BEH9857	5/15/2018	6/8/2018	6/27/2018	6/28/2018	Submitted to NVSL
7	840003150808498, 81BEH9808	5/15/2018	6/8/2018	6/27/2018	6/28/2018	Positive
8	840003145763534, 81BEH9712, (lost) 81BEH9845	5/15/2018	6/8/2018	5/15/2018	6/28/2018	Submitted to NVSL
9	840003145763583 81BEH9889	NA	NA	NA	5/15/2018	Died during handling; samples destroyed when freezer failed
10	840003145763594, 81BEH9717, (lost) 81BEH9851	6/27/2018	7/23/2018	8/3/2018	9/10/2018	Submitted to NVSL
11	840003150808503, 81BEH9806	6/27/2018	7/23/2018	8/3/2018	9/10/2018	Submitted to NVSL
12	840003145763508, 81BEH9875	6/27/2018	7/23/2018	8/3/2018	9/10/2018	Submitted to NVSL
13	840003145763433, 81BEH9858	6/27/2018	7/23/2018	8/3/2018	9/10/2018	Submitted to NVSL
14	840003145763437, 81BEH9859	6/27/2018	7/23/2018	8/3/2018	9/10/2018	Submitted to NVSL
15	840003145763546, 81BEH9884	6/26/2018	7/16/2018	8/2/2018	8/2/2018	Submitted to NVSL
16	840003150808502, 81BEH9893, (lost) 840003145763489	8/2/2018	8/15/2018	9/5/2018	9/5/2018	Submitted to NVSL
17	840003145763537, 81BEH9823			9/6/2018	9/10/2018	Epidemiological classification of negative; exhibited suspect FP test in August; submitted to NVSL
18	840003145763518, 81BEH9877			10/23/2018	10/23/2018	Epidemiological classification of suspect; submitted to NVSL
19	840003145763492, 81BEH9831			12/5/2018	12/5/2018	Submitted to NVSL