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Key points:

- Predictions in the FEIS for the IBMP substantially underestimated the actual abundance, distribution, migration, and number of bison culled during boundary risk management operations.
- Large migrations of bison into the Gardiner basin and Horse Butte areas highlight the importance of these low-elevation wintering areas for conserving this iconic resource.
- Increased tolerance for bison outside the park during winter should be attainable given the removal of cattle from most of the Gardiner basin and Horse Butte area.
- Large, non-random culls of bison since the IBMP have almost certainly altered the demographic (age, sex) and genetic structure of the population and make it difficult to predict future trends.

Parameter	Assumption in FEIS (2000)	New Knowledge by 2008
Bison abundance	Population would be actively managed towards 3000 bison	Abundance exceeds 5000 bison under favorable conditions
	Abundance would increase to about 3700 bison and stabilize	Abundance fluctuates erratically between 2400 and 5000 due to occasional large culls and exponential population growth
Bison distribution	17% of bison in the northern breeding herd and 83 % in the central herd	Bison evenly distributed between herds by 2008 due to differential culling and emigration from the central herd.
	Two distinct groups or sub-populations (central interior and northern)	Some central bison migrate to the northern winter range, and some remain for breeding
Migratory movements	Northern range bison move to the Gardiner basin; central bison move to West Yellowstone	Up to 30% of central bison move to the Gardiner basin (or elsewhere on the northern range) during most winters. Northern bison only move to the Gardiner basin during severe winters.
Peak abundance in IBMP management zones	Never more than 100 bison in zone 2 due to active capture and culling.	Bison numbers reach 300-600 in zone 2, including bison hazed back into park.
Proportion of bison migrating to boundary areas	16-23% of northern herd 6-8% of central herd	0-60% of northern herd 50-90% of central herd
Cattle in IBMP management zones	147 cattle on Horse Butte allotment	No cattle on Horse Butte allotment
	300 cattle on the Royal Teton Ranch and 90 cattle on the Sentinel Butte, Park, and Green Lake allotments	No cattle on the Royal Teton Ranch or Sentinel Butte and Park allotments

Year	ACTUAL					PREDICTED					
	Management culls		Hunter Harvest		Total	FEIS Model predictions					
	North	West	North	West		North	West	Total	North	West	Total
	Deterministic Model			Stochastic Model							
1997	725	358	0	0	1083	0	55	55			
1998	0	11	0	0	11	0	56	56			
1999	0	94	0	0	94	38	20	58			
2000	0	0	0	0	0	39	0	39			
2001	0	6	0	0	6	0	0	0			
2002	0	202	0	0	202	0	0	0			
2003	231	13	0	0	244	106	53	159			
2004	266	14	0	0	280	109	56	244 ¹			
2005	1	114	0	0	115	109	56	246 ¹			
2006	947	56	32	8	1043	109	56	245 ¹			
2007	0	4	47	12	63	109	56	245			
2008	1404	158	59	107	1728	109	56	245			
Total					4869			1592			3467²

¹ Includes additional opportunistic removal of 68 to 70 bison at either boundary to reduce the population to 3000.

² Annual calculations not available for stochastic model assessment. Total calculated by taking 2/3 (12/18) of the total estimated for the 18 year estimate reported in FEIS. Stochastic model calculated 1382 would be sent to slaughter and another 3792 would be sent to quarantine over 18 years.

Figure 1. Comparison of actual management culls (including hunter harvests) with predictions made in the FEIS for the IBMP with a deterministic model (Angliss 2003).

