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## Appendix N. Response to management by Baird's Sparrow.

Responses to management type, i.e., cattle grazing, unless otherwise noted as bison, fire, and mowing, by Baird's Sparrow breeding in the grasslands of the Northern Great Plains.

Management Type	Response to Management <sup>a</sup>	Region	Grassland Type	Reference
Grazing				
Heavy/continuous	-	AB	Mixed-grass	Owens and Myres (1973)
Light/Moderate in wet years	+			Wershler et al. (1991)
Grazing and Mowing: Mowed and winter grazing	- (avoided)		Native hayfields	Mahon (1995)
Early-season tame Early-season native Deferred-grazed native Season-long native grazed	0 <sup>b</sup>		Mixed-grass	Prescott and Wagner (1996)
Heavy/continuous	-	MB		De Smet and Conrad (1991)
Heavy/continuous	-			Davis (1994)
Ungrazed	+			Bleho (2009)
Grazed	-			
Heavy/Continuous	-	ND		Kantrud (1981)
Light/Moderate in wet years	+			
Mowed hayland	+			
Light/Moderate in wet years	+			Renken (1983)
Light/Moderate in wet years	+			Messmer (1990)
Rotational	+			
Season long	-			
Short duration	-			
Moderate	+			Salo et al. (2004)
Heavy/Continuous	-	SK		Dale (1983)
Light/Moderate in wet years	+			
Heavy/continuous	-			Anstey et al. (1995)
Light/ Moderate in wet years	+			
Light or Moderate	0 <sup>c</sup>			Lusk (2009), Lusk and Koper (2013), Pipher et al. (2016)
Grazed	+ <sup>d</sup>			Lusk (2009)
Ungrazed	-			

Management Type	Response to Management <sup>a</sup>	Region	Grassland Type	Reference
Ungrazed	+	SK	Mixed-grass	Sliwinski (2011)
Moderate/Heavy	-			
Grazed (bison)	- <sup>c</sup>			
Grazing and Fire: Undisturbed	+			Richardson et al. (2014)
Grazed/burned	- (lowest abundance)			
Mowing/Haying				
Grazing and Mowing: Mowed and winter grazing	- (avoided)	AB	Native hayfields	Mahon (1995)
Native hayland	+	MB	Hayland	De Smet and Conrad (1991)
Tame hayland	-	ND		Kantrud (1981)
Native hayland	+			
Tame hayland	-			
Annual	+	SK	Tame hayfields dominated by non-natives	Dale et al. (1997)
3-8 year intervals	-			
Unhayed	+ (maximum) <sup>a, c</sup>	SK	Mixed grass	
Annually hayed	+ <sup>a</sup> - 3 weeks post mowing <sup>c</sup>			
Periodic hayed	- <sup>a</sup>			
Idle cultivated hayland	- <sup>a</sup> , + <sup>c</sup>			
Fire				
Burned 4x in 15 yrs	+	ND	Mixed-grass	Madden et al. (1999)
Burned 1-2 times in 15 yrs	+			
Unburned	- (absent)			
4 times in 24 yrs	+			Winter (1999)
No burn	- (absent)			
Twice in 24 yrs	-			
Grazing and Fire: Undisturbed	+	SK		Richardson et al. (2014)
Grazed/burned	- (lowest abundance)			

Management Type	Response to Management <sup>a</sup>	Region	Grassland Type	Reference
1-2 years post burn	-	NGP <sup>f</sup>	Mixed-grass	Pylypec (1991), Winter (1994), Madden (1996), Johnson (1997), White (2009), Richardson (2012)
2-5 years post burn	+			

<sup>a</sup> = Grazing effects on abundance: + increase, - decrease, 0 = no effect, as reported by authors. Effects refer to abundance, unless otherwise noted above.

<sup>b</sup> = Occurrence

<sup>c</sup> = Grazing effects on nesting success or productivity

<sup>d</sup> = Grazing effects on number of young fledged per nest (all nests) and young fledged per successful nest

<sup>e</sup> = Grazing by bison caused significant local declines vs. cattle grazing

<sup>f</sup> = NGP is Northern Great Plains