Looking Back To See Our Future: Managing Bison In The Greater Yellowstone Ecosystem[tws]

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Bison management within and near Yellowstone National Park (YNP) has been a source of public controversy since the park was established in 1872. An early census in 1880 indicated that about 600 wild bison remained in YNP, and sport hunting became illegal in the park by 1883. Because of an intractable bison-poaching problem, the U.S. army managed Yellowstone from 1886 until 1918. By 1902 only 40-50 bison remained within YNP, so the herd was augmented with 21 bison from Texas and Montana herds. Introduced bison were carefully husbanded at holding facilities in Mammoth and the Lamar Buffalo Ranch. Until 1967 YNP's bison were intensively managed, which frequently included herding or transporting among various habitats within YNP to enhance genetics, distribution, and

demographics. When brucellosis was identified in bison in 1917, various attempts were made to eradicate the disease: (1) bison testing positive for brucellosis for several decades were sent to slaughter; (2) in the early 1960s bison testing negative for the disease were vaccinated; and (3) various culling measure were implemented that included transplanting bison testing negative for brucellosis to habitats outside of YNP or to commercial bison ranches. After 1967, when the National Park Service emphasized managing free-ranging bison through natural population regulation, all of these activities ceased. Despite 50 years of intensive manipulation and 30 subsequent years of minimal management that coincided with periodic culling outside the park, YNP's bison herd continues to thrive and now numbers > 4200 animals. Management applied to YNP bison over ~100 years has significantly impacted genetics, distribution, movements, and numbers of the present population. We thoroughly examined management history of YNP bison to identify future management tools. The robust nature of YNP's bison herd and its diverse genetic make-up offer an appropriate source for future restoration projects. Chronic presence of brucellosis is the only significant factor inhibiting use of YNP herds for restoration. We propose that modern testing and rigorous monitoring protocols be developed and tested to explore the feasibility of extracting brucellosis free bison from YNP. Removing bison from this robust population through quarantine procedures to establish new conservation herds is consistent with historical models of wildlife conservation, the history of restoration projects using bison and other wildlife from YNP, and a need to regulate numbers and distribution of bison in this system.