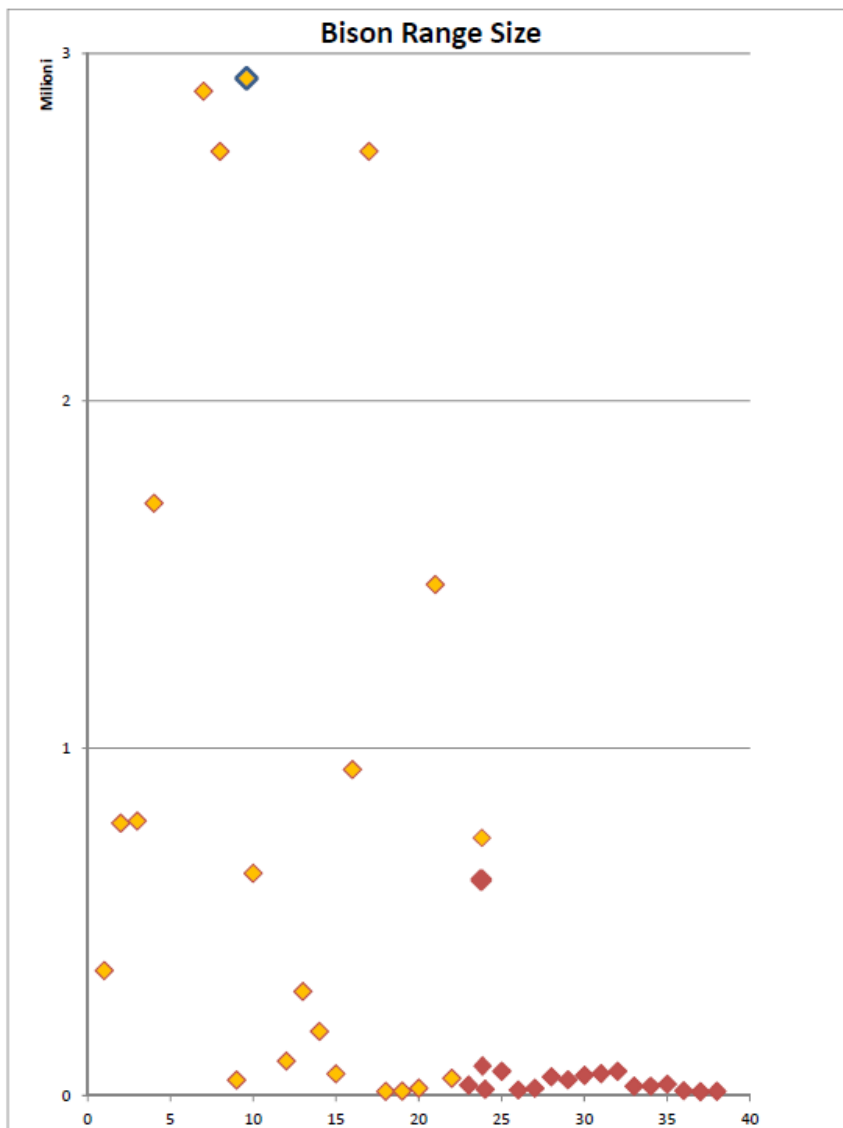


## American Bison (*Bison bison*)



**Figure 1.** Size of ranges (acres) used by free-ranging bison in North America, 2016.

**Table 1. IUCN Red List Process for American Bison - key for classifying bison populations into three categories.** The IUCN Red List of Threatened Species™ is produced and managed by the IUCN Species Survival Commission (SSC), the IUCN Global Species Programme and the Red List Partnership. In order to maintain the credibility of the IUCN Red List, the process by which species can be included on the Red List is formalized in the document Rules of Procedure IUCN Red List Assessment Process 2013-2016. *The Guidelines for Using the IUCN Red List Categories and Criteria* (Version 10 February 2013:6) prescribes that "in the case where a taxon comprises both domesticated and wild individuals [as is the case with bison], only the wild population may be assessed and included; feral animals derived from a domesticated source should not be included". The meaning of the term wild may be inferred from the IUCN definition of the Red List category 'Extinct in the Wild': "a taxon is Extinct in the Wild when it is known only to survive in cultivation, in captivity or as a naturalized population (or populations) well outside the past range" (ibid p.10). The purpose of this key is to provide a formal, repeatable system of criteria for deciding which bison populations to include in the Red List Assessment (see definition of a "wild bison population" below). Criteria consider the physical environment in which a population exists (e.g. range resources), species patterns (e.g. genetics, demography), reproductive and natural selection processes (e.g. mating system, resource competition, resource selection, predation), and social factors that may influence the persistence of a wild population (e.g. laws, policies, societal support). The key is purposefully simple; it employs a limited number of criteria and binomial (yes or no) responses.

Based on this system a bison population may be classified into one of three categories:

- 1) Functioning as a wild population;**
- 2) Functioning as a wild population with limitations** (see criteria 2.2 and 3.3 indicated with gray shading); or
- 3) Not functioning as a wild population.**

The Red List Assessment process is applied to populations in categories 1 and 2, and excludes populations in category 3.

	Criteria	Yes or No	Comments
<b>1</b>	<b>Physical environment (range resources)</b>		
1.1	Range area and resources can sustain an minimum viable population (MVP) or larger population <b><i>without supplementation.</i></b>	If No then not wild	See definitions below (range, range area, MVP, large population, sustainable population)
1.2	Bison have unrestricted access to resources within the entire range area.	If No then not wild	Fencing or other artificial structures or herding are not used to constrain daily or seasonal resource selection within the range area. This criteria does not apply to population distribution limits imposed for management purposes outside the range area.
<b>2</b>	<b>Species patterns</b>		
2.1	Sustainable population normally exceeds 1,000 > 1 year old.	If No then must be Yes in next box	Large populations exceed 1,000. See definition of "sustainable population" below.

	Criteria	Yes or No	Comments
2.2	*Sustainable population normally exceeds, or has the potential to equal or exceed 400 > 1 year old, but is less than 1,000.	If Yes then functions as wild with limitation	MVP: Populations > 400 but < 1,000 function as a wild population with limitation. Range area must have the potential to sustain 400 or more bison > 1 year.
2.3	Adult sex ratio: mature male: female ratio > 20:100.	If No then not wild	Mature males are 6 years and older. Mature females - 2 years and older. See explanations below.
2.4	Sufficient infra-specific genetic variation exists for natural selection to operate on.	If No then not wild	Requires using multiple tests for heterozygosity and allelic richness employing current molecular technologies.
2.5	Very low or low level of historic cattle gene introgression.	If No then not wild	Requires tests based on current molecular technology. Very low means < 1% cattle gene markers. Low means < 2%.
<b>3</b>	<b>Reproductive and natural selection processes</b>		
3.1	Reproductive selection: No artificial selection of mates, either male or female	If Yes then not wild	Mate selection is achieved through competition among males, and female choice, NOT by importation, bull rotation, or other artificial means.
3.2	Natural selection: spatial and temporal variation in resource abundance and quality are important factors influencing reproduction and survival.	If No then not wild (see exception)	No supplemental forage is provided to sustain the population. Minerals or water are not intentionally provided to sustain the bison population. Baiting with forage for capture is not considered supplementation.
3.3	*Large carnivores are present in the range	If No then functions as wild with limitation	A bison population without large carnivores present may function as a wild population with limitation
<b>4</b>	<b>Potential for maintaining environment, patterns and processes over meaningful evolutionary time</b>		
4.1	Legislation, regulations, policies, or legal agreements do not threaten the perpetuation of an MVP or larger wild population.	If Yes then not wild	This criterion relates to the potential for a wild population less than 400 and not allowed to increase above that threshold because of legislation, policy or regulation.

### Definitions

**Wild bison population** = patterns of adaptation and geographic variation arising from species formational processes and occurs in locations where ecological and socio-ecological conditions support reproductive and natural selection and continued evolution of the species in the long term (centuries).

**Range** (or range area) = the area within which a wild population (MVP or larger) roams and is sustained by range resources without human-imposed spatial limits on movements. The range area excludes locations where population distributional limits are imposed for management purposes.

**Sustainable population** = the size of a population that can be sustained as a functioning wild population in the range area without nutritional supplementation.

**Mature male** = males 6 years and older. Bulls in this class suppress breeding by younger males and compete primarily against each other for mating opportunities.

**Mature female** = females 2 years and older. Breeding activity is typical as two years olds, with the first calf produced at three years.

**MVP** = minimum viable population: 400 to 1,000 bison > 1 yr, with mature bull : mature cow ratio > 20:100

**Large population** = a population that exceeds 1,000 bison > 1 yr, with mature bull : mature cow ratio >20:100

**Adult survivorship** = after 1 year, survivorship approximates adult survival.

**Table 2.** Twenty one free-ranging bison populations for Red List Status Assessment (2017).

Country (Subsp.)	Jurisdiction	Status	Managing Authority	Range Size	N	Trend
United States (Plains Bison)	Grand Teton National Park/Nat. Elk Refuge	Functioning as wild	Federal/State	360,000	825	Decreasing
United States (Plains Bison)	Yellowstone National Park	Functioning as wild	Federal/State	784,559	4,875	Stable
Canada (Plains Bison)	Pink Mountain	Functioning as wild	Provincial	790,737	877	Stable
Canada (Wood Bison)	Hay-Zama	Functioning as wild	Provincial	1,750,027	644	Increasing
Canada (Wood Bison)	Greater Wood Buffalo National Park*	Functioning as wild	Federal Territorial	14,332,112	4,885	Decreasing/ Stable
Canada (Wood Bison)	Mackenzie Bison Sanctuary	Functioning as wild	Territorial	5,189,212	714	Decreasing
Canada (Wood Bison)	Nahanni	Functioning as wild	Territorial	2,891,132	431	Increasing
Canada (Wood Bison)	Aishihik	Functioning as wild	Territorial	2,718,159	1,470	Increasing
United States (Plains Bison)	Delta Junction	Wild limited population	Provincial	90,000	342	Stable
United States (Plains Bison)	Farewell Lake	Wild limited population	State	640,000	400	Increasing
Canada (Wood Bison)	McCusker River	Wild limited population	Federal	185,329	150	increasing
United States (Plains Bison)	House Rock State Wildlife Area-Grand Canyon NP	Wild limited population	State	100,000	400	Increasing
United States (Plains Bison)	Henry Mountains	Wild limited population	State	300,000	325	Increasing
Canada (Plains Bison)	Prince Albert National Park	Wild limited population	Federal	185,329	244	Decreasing
Canada (Wood Bison)	Etthithun Lake	Wild limited population	Provincial	62,764	250	Increasing
Canada (Wood Bison)	Chitek Lake	Wild limited population	Provincial	939,000	300	Increasing
Canada (Wood Bison)	Nordquist	Wild limited population	Provincial	2,718,159	193	Increasing

<b>Country (Subspp.)</b>	<b>Jurisdiction</b>	<b>Status</b>	<b>Managing Authority</b>	<b>Range Size</b>	<b>N</b>	<b>Trend</b>
United States (Plains Bison)	Chitina	Wild limited population	State	12,784	32	Stable
United States (Plains Bison)	Copper River	Wild limited population	State	12,874	143	Increasing
United States (Plains Bison)	Crowe Tribe	Wild Tribal	Tribal	22,000	1,000	Stable
United States (Plains Bison)	UTE Tribal- Book Cliffs	Wild Tribal	Tribal/State	1,471,000	600	Increasing

\* Includes Slave River Lowlands, Ronald Lake, Wenzel Lake, and Wabasca.