

## References

- ALLIE, W. C., O. PARK, A. E. EMERSON, T. PARK, and K. P. SCHMIDT. 1949. *Principles of animal ecology*. W. B. Saunders Co., Philadelphia, Pa. 837 p.
- ANON. 1909-11. *Reports*. In: File No. 21 & 22. Buffalo. Yell. Natl. Park Archives.
- \_\_\_\_\_. 1912-13. *Reports*. In: File No. 21 & 22. Buffalo. Yell. Natl. Park Archives.
- BAILEY, VERNON. 1930. *Animal life of Yellowstone National Park*. Charles E. Thomas, Springfield, Ill. 241 p.
- BAILEY, VIRGINIA L., and N.E. BAILEY. 1949. *Woody plants of the western national parks*. University Press, Notre Dame, Ind. 274 p.
- BARLOW, J. W., and D. P. HEAP. 1872. *Report of a reconnaissance of the basin of the upper Yellowstone in 1871*. U. S. Gov't. Printing Office, Washington, D.C. 43 p.
- BARMORE, WILLIAM J. 1968. *Bison and brucellosis in Yellowstone National Park: a problem analysis*. Yell. Natl. Park. Typed report. 73 p.
- BERGSTROM, R. C. 1964. *Competition between elk and phytophagous insects for food in the Lamar Valley, Yellowstone National Park*. Ph.D. Thesis. Univ. of Wyoming, Laramie. 107 p.
- BLACKMORE, WM. (LORD). 1872. *Diary-fourth visit to the United States*. (Transcription, Western Range Cattle Industry Study. State Museum, Denver, Colo.) Yell. Natl. Park Library. Photocopy.
- BOONE and CROCKETT CLUB. 1964. *Records of North American big game*. Holt, Rinehart & Winston, New York. 398 p.
- BOOTH, W. E. 1950. *Flora of Montana. Part I. Conifers and monocots*. The Research Foundation at Montana State College. Bozeman. 232 p.
- BOOTH, W. E., and J. C. WRIGHT. 1959. *Flora of Montana. Part II. Dicotyledons*. 1966. The Research Foundation at Montana State Univ., Bozeman. 305 p.
- BOZEMAN AVANT-COURIER. 1883. *Game features of the Yellowstone Park*. 11 January.
- \_\_\_\_\_. 1883. *Park pencillings*. 22 February.
- BURGER, JOHN F. 1967a. *Diptera: Rhagionidae. Effect of abundance on wildlife*. Rept. to the Natl. Park Serv. Yell. Natl. Park Library. Typed. 2 p.
- \_\_\_\_\_. 1967b. *Letter to Sup't. McLaughlin*. Yell. Natl. Park, 13 March 1967. Yell. Natl. Park Library. Typed. 4 p.
- BURGESS, F. 1898-99. *Scout diary*. Yell. Natl. Park Archives.
- CAHALANE, VICTOR H. 1944. Restoration of wild bison. *Trans. N. Am. Wildl. Conf.* 9:135-143.
- CHOQUETTE, LAURENT P. E., J. GUY COUSINEAU, and ERIC BROUGHTON. 1966. *Pathology*. Can. Wildl. Ser. Annual Report. p. 75-80.
- CHRISTMAN, GENE N. 1971. The mountain bison. *The American West* 8(3):44-47.
- COLE, GLEN. 1969. *The elk of Grand Teton and southern Yellowstone National Parks*. Research Report GRTE--N-1. Mimeo. 192 p.
- CONNER, A. H., and ROBERT CORNELL. 1958. Brucellosis in bison, elk, and moose in Elk Island National Park, Alberta, Canada. *Can. J. Comp. Med., Vet. Sci.* 22:9-20.
- COOK, CHARLES W., DAVID E. FOLSOM, and WILLIAM PETERSON. 1869. An exploration of the headwaters of the Yellowstone River in the year 1869. In: Haines, Aubrey ed. 1965. *The valley of the upper Yellowstone*. University of Oklahoma Press, Norman.
- DELACY, WALTER W. 1876. A trip up the south Snake River in 1863, p. 113-143. In: *Contributions to the Historical Society of Montana*. V. I. Rocky Mountain Publishing Co., Helena.

154 Bison of Yellowstone National Park

- DOANE, G. C. 1875. The report of Lieut. Gustavus C. Doane upon the so-called Yellowstone Expedition of 1870 to the Secretary of War. Appendix M. In: Cramton, Louis C. 1932. *Early history of Yellowstone National Park and its relation to national park policies*. U. S. Gov't Printing Office, Washington, D.C.
- \_\_\_\_\_. 1876. *Expedition of 1876-1877*. Yell. Natl. Park Library. Typed. 44 p.
- DUNRAVEN, EARL OF. 1876. *The great divide*. Chatto & Windus, London, England. 382 p.
- ETKIN, WILLIAM. 1964. Types of social organization in birds and mammals, p. 256-297. In: Etkin, William, ed. 1964. *Social behavior and organization among vertebrates*. University of Chicago Press. Chicago, Ill.
- FRICK, E. J. 1951. Parasitism in bison. *J. Am. Vet. Med. Assoc.* **119**:386-387.
- FRYXELL, FRITIOF M. 1926. A new high altitude limit for the American bison. *J. Mammal.* **7**:102-109.
- FULLER, W. A. 1959. The horns and teeth as indicators of age in bison. *J. Wildl. Manage.* **23**:342-344.
- \_\_\_\_\_. 1960. Behavior and social organization of the wild bison of Wood Buffalo National Park, Canada. *Arctic.* **13**: 3-19.
- \_\_\_\_\_. 1961. The ecology and management of the American bison. *Extrait de la Terre et la Vie.* **2-1961**:286-304.
- \_\_\_\_\_. 1962. The biology and management of the Bison of Wood Buffalo National Park. *Can. Wildl. Serv. Wildl. Manage. Bull. Ser. 1, No. 16.* 52 p.
- GARRETSON, MARTIN S. 1938. *The American bison*. New York Zool. Soc. 254 p.
- GILMAN, N. L., and JOHN L. MCAULIFFE. 1956. Brucellosis, p. 538-556. In: Fincher, M. G., ed. 1956. *Diseases of cattle*. American Veterinary Publishers, Inc., Evanston, Ill.
- GRIMM, RUDOLF L. 1939. Northern Yellowstone winter range studies. *J. Wildl. Manage.* **3**:295-306.
- GRINNELL, GEO. BIRD. 1876. Zoological report, p. 66-89. In: Ludlow, William. 1876. *Report on a reconnaissance from Carroll, Montana Territory, on the Upper Missouri, to the Yellowstone National Park*. U. S. Gov't. Printing Office, Washington, D. C.
- HAGUE, ARNOLD. 1893. The Yellowstone Park as a game reservation, p. 240-270. In: *American big game hunting, the book of the Boone & Crockett Club*. Forest & Stream Publishing Co., New York.
- \_\_\_\_\_. 1899. *Geology of Yellowstone National Park*. U. S. Geo. Survey. Monograph 32, Part 2. U. S. Gov't. Printing Office, Washington, D.C. 893 p.
- HAINES, AUBREY, ed. 1955. *Osborne Russell's journal of a trapper*. Oregon Historical Society, Portland. 179 p.
- \_\_\_\_\_. 1963. History of Yellowstone National Park, p. 84-136. In: *A manual of general information on Yellowstone National Park*. Yell. Natl. Park. Mimeo.
- HALLORAN, A. F. 1968. Bison (Bovidae) productivity on the Wichita Mountains Wildlife Refuge, Oklahoma. *Southwest Nat.* **13**:23-26.
- HENDERSON, A. BART. 1870. *Narrative of a prospecting expedition to the East Fork and Clark's Fork of Yellowstone...1870*. (Original in Coe Collection, Yale Univ. Library.) Yell. Natl. Park Library. Typed transcript.
- HOFER, T. E. 1927. *Letter to LeRoy Hill*. 5 February. Yell. Natl. Park Archives.
- HOLMES, W. H. 1878. *Exploration of the Yellowstone National Park by the U. S. Geological and Geographical Survey of the Territories, 1878*. Yell. Natl. Park Library. Typed transcript. 43 p.
- HOLT, PETER. 1899-1901. *Scout diary*. Yell. Natl. Park Archives.
- HOUGH, EMERSON. 1894. *Forest and Stream's Yellowstone Park expedition of 1894*. Yell. Natl. Park Library. Newspaper account.
- HOUSTON, DOUGLAS B. 1968. *The Shiras moose in Jackson Hole, Wyoming*. Grand Teton Natural History Assoc. Grand Teton Natl. Park. 110 p.
- JONES, WILLIAM A. 1875. *Report upon the reconnaissance of Northwestern Wyoming including Yellowstone National Park, made in the summer of 1873*. U. S.

- Gov't. Printing Office, Washington, D.C. 331 p.
- KITTAMS, WALTER H. 1947-58. *Northern winter range studies*. 2 Vol. Yell. Natl. Park Library. Typed.
- . 1949. *Preliminary report on Hayden Valley bison range*. Yell. Natl. Park Library. Typed. 8 p.
- LAKE STATION. 1898-1911. *Station record*. Yell. Natl. Park Archives.
- . 1911-18. *Station record*. Yell. Natl. Park Archives.
- LE HARDY, PAUL. 1873. *Autobiography of Paul Le Hardy*, p. 95-104. (Typescript copied from handwritten 247 p. autobiography.) Yell. Natl. Park Library.
- LIVINGSTON ENTERPRISE. 1885. *News article*. Mar. 7:3; Dec. 12:1; Dec. 19:3.
- LOCKER, BETTY. 1953. Parasites of bison in northwestern U.S.A. *J. Parasitol.* 39:396-397.
- MACARTHUR, ROBERT, and JOSEPH CONNELL. 1966. *The biology of populations*. John Wiley & Sons, New York. 200 p.
- MCHUGH, TOM. 1958. Social behavior of the American Buffalo (*Bison bison bison*). *Zoologica*. 43, Part 1. 31 March 1958. 40 p.
- MCDougALL, W. B., and HERMA A. BAGGLEY. 1956. *Plants of Yellowstone National Park*. Yell. Library and Museum Assoc. Yell. Natl. Park, Wyo. 186 p.
- MARBLE, CHARLES. 1932. *Fifty years in and around Yellowstone National Park and miscellaneous notes*. Yell. Natl. Park Library. Typed. 36 p.
- MEAGHER, M. 1966. *Lungworm (Dictyocaulus sp.) in bison of Yellowstone National Park*. Yell. Natl. Park Library. Typed. 8 p.
- MECH, L. DAVID. 1966. *The wolves of Isle Royale*. Fauna of the Natl. Parks of the U.S. U.S. Gov't Printing Office, Washington, D.C. 210 p.
- MORRISON, JAMES. 1897-98. *Scout diaries*. 2 Vol. Yell. Natl. Park Archives.
- MURRI, ERNEST. 1968. *Interview of 5 May 1968 by Natl. Park Service personnel*. Yell. Natl. Park Archives. Tape recording.
- NOWLIN, D. C. 1912. *Report on wild buffalo and elk, Yellowstone Park, July 22-30*. Typed. 5 p. In: File No. 21 & 22. Buffalo. 1909-11 inc. Yell. Natl. Park Archives.
- OLDEMEYER, JOHN L. 1966. *Winter ecology of bighorn sheep in Yellowstone National Park*. M. S. Thesis. Colorado State Univ., Fort Collins. 107 p.
- PARK, ED. 1969. *The world of the bison*. J. B. Lippincott Co., Philadelphia. Pa. 161 p.
- PATTEN, D. T. 1963. Vegetational pattern in relation to environments in the Madison Range, Montana. *Ecol. Monogr.* 33:375-406.
- PATTIE, DONALD L., and NICOLAAS A. M. VERBEEK. 1967. Alpine mammals of the Beartooth Mountains. *Northwest Sci.* 41:110-117.
- PIERREPONT, EDWARD. 1884. *Fifth avenue to Alaska*. G. P. Putnam Sons, New York. 329 p.
- POTTER, MRS. LENA. 1962. *Notes from an interview*. Yell. Natl. Park Archives. Tape recording.
- QUORTRUP, ERLING R. 1945. *A report on brucellosis investigations, Yellowstone National Park*. Dec. 1-20, 1944. Yell. Natl. Park Library. Mimeo. 27 p.
- RAYMOND, ROSSITER W. 1880. *Camp and cabin: sketches of life and travel in the west*. Fords, Howard & Hulbert, New York. 242 p.
- RAYNOLDS, W. F. 1867. *Report of Brevet Colonel W. F. Reynolds, U. S. A., Corps of Engineers, on the exploration of the Yellowstone and Missouri Rivers in 1859-1860*. 40th Congr., 1st Sess. Senate Ex. Doc. No. 77. U. S. Gov't. Printing Office, Washington, D. C. 174 p.
- ROBINETTE, W. LESLIE, JAY S. GASHWILER, DALE A. JONES, and HAROLD S. CRANE. 1955. Fertility of mule deer in Utah. *J. Wildl. Manage.* 19:115-136.
- ROE, FRANK GILBERT. 1951. *The North American buffalo*. University of Toronto Press, Canada. 957 p.
- RUSH, W. M. 1932a. Bang's disease in Yellowstone National Park buffalo and elk herds. *J. Mammal.* 13:371-372.
- . 1932b. *Northern Yellowstone elk study*. Mont. Fish Game Comm., Helena. 131 p.
- SCOUTS. 1908-14. *Monthly reports*. Yell. Natl. Park Archives.
- SKINNER, CURTIS K. 1941. *Special report on Yellowstone National Park bison*. Yell.

156 Bison of Yellowstone National Park

- Natl. Park Bio. Files. 715-03. Buffalo (General). Typed.
- SKINNER, CURTIS K., and WAYNE B. ALCORN. 1942-51. *History of the bison in Yellowstone Park*. Yell. Natl. Park Library. Typed report.
- SKINNER, MORRIS F. 1965. *Letter to Dr. J. D. Love, U.S.G.S.* 19 Nov. Yell. Natl. Park Museum Files.
- SKINNER, MORRIS F., and OVE C. KAISEN. 1947. The fossil *Bison* of Alaska and preliminary revision of the genus. *Bull. Am. Mus. Nat. His.* 89: 127-256.
- SNAKE RIVER STATION. 1897. *Monthly report, August*. Yell. Natl. Park Archives.
- SODA BUTTE STATION. 1898. *Station record*. Yell. Natl. Park Archives.
- SOIL CONSERVATION SERVICE. 1963. *Site condition survey, northern Yellowstone*. Yell. Natl. Park Bio. Files.
- . 1964. *Site condition survey, Hayden-Pelican Creek*. Yell. Natl. Park Bio. Files.
- STEVENSON, DONALD. 1915-16. *Scout diary*. Yell. Natl. Park Archives.
- SUPERINTENDENTS of the Yellowstone National Park. 1877-1915. *Annual reports*. Yell. Natl. Park Library.
- . 1903-21. *Journal*. Yell. Natl. Park Archives.
- THUMB STATION. 1898-1916. *Station record*. Yell. Natl. Park Archives.
- TIMMONS, WILLIAM. 1962. *Twilight on the range*. University of Texas Press, Austin. 223 p.
- TUNNICLIFF, E. A., and H. MARSH. 1935. Bang's disease in bison and elk in the Yellowstone National Park and on the National Bison Range. *J. Am. Vet. Med. Assoc.* 86:745-752.
- U. S. DEP. AGRIC. SOIL CONSERV. SERV. 1919-67. *Summary of snow survey measurements*. Wyoming, Casper. 152 p.
- U. S. DEP. COMMER. WEATHER BUREAU. 1930-59. *Climatological summary for Yellowstone National Park*. Climatography of the U.S. No. 20-48. 2 p.
- WHITTAKER, GEORGE. 1897-99. *Scout diaries*. 4 Vol. Yell. Natl. Park Archives.
- WOOLF, ALAN. 1968. *Summer ecology of bighorn sheep in Yellowstone National Park*. M. S. Thesis. Colorado State Univ., Fort Collins. 112 p.
- YOUNT, HARRY. 1880. Report of gamekeeper, p. 50. In: *Superintendents of the Yellowstone National Park, 1880*. Annual report. Yell. Natl. Park Library.
- . 1881. Report of gamekeeper, p. 62-63. In: *Superintendents of the Yellowstone National Park, 1881*. Annual report. Yell. Natl. Park Library.

# Index

	Page		Page
Accidents	74	Brown, Larry	66
Anthrax	70	Browse species	93,94
Barmore, William	109	Brucellosis infection	
Bechler Meadows	3,5	Examination for	2
Summer range	23	Control	71
Wintering	33, 88	Effect on productivity	71
Winterkill	74	First reported	70
Biotic disclimaxes	108	Rate of	54
Bison behavior		Buffalo Ranch	39,67,71
Breeding activity	47,76,77	Buffalo trails	25
In snowstorms	47	Bulls	
"Tending bonds"	51	Distribution	36,37
Winter movement	73	Free-ranging	29,31
<i>Bison bison</i> Linnaeus	1,13	Groups	46,84,98
Skulls	16,17	Horning of trees	104
<i>Bison bison</i> Linnaeus	1	Insects	83
Bison characteristics	38-49	Movements	78,85
Color	38	Physical characteristics	38
Hair	38	Population ratio	60
Horns	38	Reductions	29
Longevity	46	Sexual maturity	51
Sight	47	Show herd	29
Smell	47	Solitary	46
Speed	47		47,49,81,84,85,89,98,99
Weight	38,39	Thermal areas	105
<i>Bison occidentalis</i>	13	Wallows	104,105
Bison population		Weight	39
Breeding activity	47,76,77	Winter ranges	81,99,100
Composition	27,29	Wintering apart	37,96,99
Distribution	13,32,34,35,37	Calves	
Estimates	67	Calving	75,76
Group structure	46,90	Coat color changes	38
Interbreeding	85,88,89	Dominance hierarchy	111
Intermingling	29,88	Fetal size range	75
Isolation	89	Mortality	62,64
Movements	36,73	Numbers	60,63
see also Migratory movements		Nursing	51,54
Origin	1,13,14,26	Sex ratio	58
Reproduction	50-57	Survival rates	51,54,111
see also Reproduction entries		Wild herd	26,27
Blackflies ( <i>Simulium venustum</i> )	69	Chapman, W. S.	31
Blacktrail Dee Creek	104	Childs, Frank	13

158 Bison of Yellowstone National Park

	Page		Page
Climate	8	Thermal sites	97,108,113
Effect of wind and cold	56	Use of areas	96-103
Seasons	9	Forbs in forage	92-94
Colter, John	12	Goodnight herd	26
Cows		Grass species	91-95
Abortions	54,70	Great Plains bison	14
Brucellosis	70	Grizzly ( <i>Ursus horribilis</i> )	72
Calving	75,76	Hague, Arnold	15
Low reproductive rates	56	Haines, Aubrey	13
Pregnancy rates	54	Hayden Valley	3
Sexual maturity	50	Area	5
Winter range preference	89,90	Breeding activity	77
Crystal trap	2,58	Bulls wintering	36
Dominance hierarchy	111	Calving	76
Effects on habitat	103-109	Counts	33
Plant cover	106	Grass species	94
Trails and wallows	104,105	Horning, rubbing	103,104
Trampling	105,107	Insects	83
Trees and treeline	103,104	Interbreeding	86
Upland sites	108	Migratory patterns	78,84
Elk ( <i>Cervus canadiensis</i> )	47	Summer range	23,81,89
	104,107,108	Thermal areas	100,102
Elk Island National Park	69	Vegetation	10
Face fly ( <i>Musca autumnalis</i> )	70	Wallows	105,106
Fenced herd	27-30	Winter range	23,33,96
Composition	28,30	Hemorrhagic septicemia	70
Discontinued	32	Herd reductions	1
Intermingling	29		2,29,32,52,66,67,72,88
Fetal sex ratio	55,56	Methods used	2
Firehole region	2,3	Hornfly ( <i>Haematobia irritans</i> )	70
Area	5	Horse and deer flies (Tabanidae)	69
Calving	76	Hot springs or fumaroles	102
Effects of bison	106	Insects, biting	69,70
Interbreeding	86	Summer movement	82,83,97
Mary Mountain area	32	Lacey Act	12,17
Migratory pattern	78,84	Lamar region	1,3,12
Thermal areas	100,102	Area	4
Vegetation	10	Brucellosis	54,70
Food habits	2,90,93	Bulls	60
Foraging areas	96-98	Calving	75
Composition data	94	Increase	67
Effect on plant cover	106-109	Management practices	26,32
Forbs and browse	94	Movement	82
Forested sites	97	Poaching	17
Snow depth	73	Reduction	32,65,66

	Page		Page
Summer range	23	Trails	105
Trapping	58	Vegetation	10
Vegetation	10	Wild herd	26
Winter range	23	Mixed herd groups	23
	31,33,36,89	Bulls	47
Lungworm ( <i>Dictocaulus</i> sp.)	69	Calf numbers	60,63
Madison Plateau	3.5,33	Distribution	23,32,34
Elk	194	Group size	46
Summer range	23,65	Group structure	90
Management objectives	71	Migratory pattern	77,78,90
Management practices	1,2,12,26	Population shifts	87,88
Aerial counts	32,36,60	Survival factors	113
Buffalo ranch	67	Thermal areas	98,100,102
Change to natural preservation	32	Winter movements	84,85,89,90
Cows and calves removed	52,53	Moose ( <i>Alces alces</i> )	56
Hay-baiting	31,67	Mortality	
Herding by helicopter	33	Accidents	74
Population counts	32	Bulls	65
Reductions	29,32,52,67	Calves	62,64
Roundup	29	Disease-caused	70
Tagging	2	Natural	65,67
Mary Mountain herd	31,32	Predation	72
Age classes	60,64	Subadults	64,74
Breeding	76	Winterkill	73,74
Increase	65,68	Mosquitoes ( <i>Aedes</i> sp.)	69
Interbreeding	86	Mountain bison	14
Reduction	66	Characteristics	14,15
Semidomestication	68	Distribution	17,18
Sex ratio	60	History	15-17
Wintering	33,89,90	Increase	29
Migratory movements	77,97	Migrations	15
Beyond park boundaries	85	Numbers (1902)	17
Biting insects	82	Skulls	17
Patterns	90,97	Subspecies	89
Spring and fall	78,84	Mountain buffalo history	15-17
Summer	81,82,84	Mule deer ( <i>Odocoileus hemionus</i> )	56
Winter	84	Murphy, R	85
Mirror Plateau	3,4	Muscidae	69,70
Area	4	Mushpots-Mudkettles	97
Breeding activity	76	National Bison Range	69
Fossil cranium	13	Conjunctivitis	70
Migratory pattern	78	Nez Perce trap	2,33,58
Rubbing of trees	103	Brucellosis	70
Skull	17	Helicopter drive	84,89
Summer range	23,31,36	Norris	15,17,25

160 Bison of Yellowstone National Park

	Page		Page
Pablo-Allard herd	26	Pregnancy rates	51,54,111
Parasites	69,70	Sex ratios	55,56
Pelican region	3	Sexual maturity	50,56
Area	4	Research	1
Brucellosis	54,70	Methods used	2
Calving	75	Rocky Mountains	89
Herd fluctuation	66,67	Rubbing of trees	103,104
Maximum population	113	Rumen samples	2,90-93
Migratory pattern	82	Russell, Osborne	14
Reductions	110	Sagebrush-grassland	113
Separation	88	Seasons	9
Vegetation	10,96	Sedge	90-93
Wild herd	26	Species	94,95
Winter range	23,33,36,96,102,108	Thermal influence	102
Pierson, Dave	36	Winter forage	96,100
	47,54,71,72,78	Skulls	16,17,39
Pitchstone Plateau	3,5	Slaughter operations	2
Summer range	23,65	Snipe flies ( <i>Rhagionidae</i> )	69
Plains bison	1	Snow	8,9
Subspecies	26,27	Trapping	84
Wild herd	26,27	Winter foraging	73
Poaching	17,110	Soils	5,6
Ponumpta Hot Springs	36,99	Erosion	107
Population regulation	110-113	Stable fly ( <i>Stomoxys calcitrans</i> )	70
Counting practices	32,33	Stradley, Jim	32,33,36,66,85,102,113
Natural regulation	110,111	Subspecies	13,14,26,27
Neckbands	2,36	Rocky Mountains	89
Numbers (1902)	17	Summer ranges	31,36,65
Numbers (1964)	33,108	Historic	23
Reductions	2	Survival factors	113
	29,50,60,65,71,110	Symphoromyia	69,83
Slaughter operations	2	Tape worm ( <i>Moniezia benedini</i> )	69
Tagging	2	Thermal areas	9,96-98
Population structure	8,58-60,89	Survival factor	113
Age classes	58-60,64	Thermal influence	102,103
Fluctuations	67	Trampling	105
Interbreeding	85,86	Use of	99,100,108
Sex ratio	58,60	Wintering sites	97,98
Trends	68	Trapping	58
Wild strain	29	Population shifts	88
Predation	72	Sex and age structure	59
Quortrup, E.R.	75	Tuberculosis	70
Reproduction	50-57	U.S. Forest Service	10
Calving	75,76	Upland sites	108
Effect of winter	56		



	Page		Page
Upper Lamar region	3,4	Winterkill	73,74
Area	4	Wire rush	94
Summer ranges	23,31,36	Wolves ( <i>Canis lupus</i> )	72
Trails	105	Wood Buffalo National Park bison	51
Vegetation	9-11	Diseases	70,71
Plant species	11	Parasites	69
Visitors' best viewing	48	Reproductive rates	56
Wallows	104,105	Sex ratio	60
Wild herd	1,12,26,68	Winter climate	56
Present composition	27	Wolves	72
Reproduction rate	51	Yearlings	54
Wild strain estimate	29	Moose	56
Wildlife protection	12	Mortality	64,111
Wilson, Richard	14	Trapping	58
Wind, effect of	56	Yellowstone National Park	3-12
Winter ranges		Bison range	3
Effect on plant cover	106,108	Climate	8
Factors of suitability	112,113	Geologic history	3
Habitual	89,90	History	10
Sedges	94,96	Indians	10
Thermal sites	97,98	Nine regions	3-5
		Seasons	9

U. S. Department of the Interior



National Park Service

