Online Appendix: "The Slaughter of the Bison and Reversal of Fortunes on the Great Plains" by Donna Feir, Rob Gillezeau, and Maggie Jones

A. Data Construction and Sample Selection

Additional measures of bison-reliance: Our anthropological measure of bison reliance is generated from anthropological accounts of bison-reliance taken from Waldman (2009). We construct a scale from 0 to 1 in 0.1 increments that range from "no contact with the bison" to "calories being almost completely based on bison products all year." The coding of this variable is given in Tables A1. For those nations that were not included in Waldman (2009), we find additional sources to inform our coding. Please refer to Tables A3, A4, A5, and A6 for the list of sources additional sources used. For tribal names in our data sources that are too broad for reasonable classification of this measure, we use our original measures of bison-reliance. In all data sets, this represents a relatively small fraction of communities, and the correlation between the anthropological measure and the geographical measure is roughly 0.8.

Table A1: Bison-reliance Scale Generated from Anthropological Accounts

Code	Description
0	No contact at all with buffalo
0.1	Some contact with buffalo, though rare, through consumption or trade
0.2	Buffalo were occasionally hunted for food or skins
0.3	Buffalo were consumed as a non-essential food source in a diet centered around other foods
0.4	Buffalo played a small but significant part in the diet centered around other foods
0.5	Buffalo played a significant part in the diet however other food sources reduced dependence
0.6	Buffalo meat was consumed regularly but supplemented by a significant amount of agriculture
0.7	Buffalo were a seasonal staple and provided most of the calories for a significant part of the year
0.8	Buffalo were the primary source of meat and were supplemented by gathering or agriculture
0.9	Majority of calories came from buffalo meat, supplemented by small amounts of gathering or agriculture
1	Nearly all calories were derived from buffalo meat

Notes: These values represent the scale we use to classify individuals as bison-reliant based on the anthropological accounts. They are largely based on Waldman (2009).

We assess the robustness of our long-run results by generating three other proxies for bison-reliance: a measure of the number of cattle per kilometre squared in each tribe's traditional territory using county level data from the 2012 United States Census of Agriculture; the proportion of the traditional territory that is considered part of a temperate grassland ecosystem using the data on the World Wildlife Fund's World Grassland Types (Dixon, Faber-Langendoen, Josse, Morrison, and Louckn, 2014); and self-identification of the importance of the bison to a tribe through modern membership in the InterTribal Buffalo Council (ITBC).[46] The cattle and grasslands measures provide a proxy for the carrying capacity of the land. Unlike the measures constructed from Hornaday's map, these measures account for other factors that may affect bison-density, like the gradient of mountains, the presence of wetlands or lakes, and the diversity of vegetation. Membership in the ITBC is in some ways similar to the anthropological measure of bison-reliance, since membership indicates a degree of self-identified cultural, spiritual, or ecological significance of the bison, and is not based on geography.

[46]Table A7 contains the list of all members that are part of the ITBC, as of the Spring of 2017 and all members (63 tribes) are considered bison reliant while the non-members and considered non-reliant. This information was retrieved from the ITBC website: `http://itbcbuffalo.com/itbc_main_files/itbc_buff_tracksweb_spring_2017.pdf`.

Matching in Boas' Sample to Bison-Reliance: We have matched roughly 60 percent of the observations based on the exact tribal names given in Boas' data and with the tribal names provided in the American Atlas ancestral territories map. The remaining matches are based off both the tribal and band names given in the Boas data. Some of the tribal names given are too broad for an exact match–for example, an observation may be labeled Apache, rather than Tonto Apache or White Mountain Apache–and, in these cases, we construct bison-dependency as a geographically weighted average of all sub-tribal groups. The results are robust to limiting our analysis to our exact matches, but we present the results for the full sample in this paper.

Gridded Population Data: The HYDE 3.1 database uses a number of historical sources to compile comparable estimates of global population density at a 5 minute resolution, including Denevan (1992), Maddison (2001), Lahmeyer (2004), Livi-Bacci (2007), and McEvedy and Jones (1978). One could imagine population to proxy for wealth, as in Acemoglu, Johnson, and Robinson (2001); however, we remain agnostic on its precise meaning, given that nomadic or semi-nomadic societies could hold large territories relative to their population as a sign of their wealth.

Expanded Modern Controls: To proxy for the timing of settlement, ease of access for settlers, exposure to disease, and pace and extent of economic development, we introduce a series of railway controls from Atack (2016). We overlay Atack's railway mappings with ancestral homelands to generate the date the railway first entered the tribal territory. There is a concern that since the railways are likely highly correlated with a loss of traditional resources, like the bison, we will absorb some variation in outcomes through this channel. However, since there are a number of contributing factors to the bison's decline–as discussed in the historical background–we do not expect the railway controls to absorb all of the effect of the rapid loss of the bison. As alternative measures of timing and speed of European settlement and potential contact with disease, we calculate the state that overlaps with the majority of a tribe's ancestral territory and control for the date in which it was admitted to the union. We also compute the maximum population growth of each of these states prior to 1910. We do not present the results using these controls since they are similar to those that condition on our railway controls and we believe they account for the same variation in outcome variables.

We account for differential experiences in treaty-making in our expanded set of controls by including information on the timing of treaty-making from Spirling (2011). We match signatories of treaties using the location of treaty signing in relation to the traditional territories of nations in our data. Since early exposure to European trading may have also disproportionately affected certain nations, we proxy for fur trade involvement by using the proportion of traditional territory that was covered by the historical range of the beaver.[47]

Finally, we add a comprehensive set of modern controls to account for differential levels of economic activity of the reservations and surrounding areas, and access to other financial resources such as casinos. In addition to the presence of a casino, reservation size, adult population share, and population from Dippel (2014), we add the average absolute mobility of counties within a 50 kilometer buffer surrounding each reservation using the absolute mobility index calculated in Chetty et al. (2014).[48] To account for differences in the quality of reservation land allotted to each tribe that may have impacted their long-run development through

[47]We digitize a map of the traditional beaver range from the Canadian Geographic: `https://www.canadiangeographic.ca/article/rethinking-beaver`.

[48]Chetty et al. (2014) calculate two measures of intergenerational mobility. We use absolute upward mobility, which represents the expected income rank of children whose parents are at the 25th percentile of the national income distribution.

their ability to cultivate the land, we construct indicators of soil quality for crop production on each reservation using data from the Harmonized World Soil Database v 1.2 (HWSD) from the Food and Agriculture Organization of the United Nations (Fischer, van Velthuizen, Shah, and Nachtergaele, 2008). The HWSD is a 30 arc-second raster database, containing soil quality along a number of dimensions and each pixel is coded on a scale from 1-7 regarding the suitability of the land for agriculture along the given dimension. This measure is categorical, with 1 representing "no or slight constraints", up to 7 representing "water bodies". We calculate the fraction of non-water pixels in each tribe's reservation that are classified as having "no or slight constraints" for 7 dominant soil quality measures: the nutrient availability of the soil, the nutrient retention capacity, rooting conditions, oxygen availability to roots, excess salts, toxicity, and workability of the soil. Table A2 provides a more detailed description of what each of the soil quality indices captures.

Table A2: Soil quality indicators from the Harmonized World Soil Database v 1.2

Soil Quality Indicator	Description
Nutrient Availability	"Soil texture, soil organic carbon, soil pH, and total exchangeable bases." Nutrient availability is important for low level input farming and for some intermediate input levels.
Nutrient Retention Capacity	"Soil organic carbon, soil texture, base saturation, cation exchange capacity of soil and of clay fraction." The term nutrient retention capacity refers to the capacity of the soil to retain added nutrients against losses caused by leaching, thus it is important for the effectiveness of fertilizer applications. The ability of the soil to retain nutrients is relevant for intermediate and high input cropping conditions.
Rooting Conditions	"Soil textures, bulk density, coarse fragments, vertic soil properties and soil phases affecting root penetration and soil depth and soil volume." Rooting conditions essentially measure soil depth and volume related to the presence of gravel and stoniness. Rooting conditions are of particular importance for yield formation.
Oxygen Availability to Roots	"Soil drainage and soil phases affecting soil drainage." Oxygen availability relates to the drainage characteristics of soils.
Excess Salts	"Soil salinity, soil sodicity and soil phases influencing salt conditions." Soil with a large amount of excess salts inhibits the uptake of water by crops, thus reducing yields, or in high levels killing the crops.
Toxicity	"Calcium carbonate and gypsum." The toxicity of the soil determines the acidity of the soil, which in turn affects the level of micro-nutrients available in the soil.
Workability	"Soil texture, effective soil depth/volume, and soil phases constraining soil management (soil depth, rock outcrop, stoniness, gravel/concretions and hardpans)." There are a number of factors that affect the workability of the soil, including the texture, structure, organic matter content, soil consistence, occurrence of gravel, etc. This has particular consequences for manual cultivation or light machinery.

Notes: The information in this table was taken from the Harmonized World Soil Database v 1.2 from the Food and Agriculture Organization of the United Nations. For more information please see `http://www.fao.org/soils-portal/soil-survey/soil-maps-and-databases/harmonized-world-soil-database-v12/en/`

Nighttime Light Density: Nighttime lights have been used extensively in recent economic literature and have been shown to be good proxies for economic activity at various levels of aggregation: countries (Pinkovskiy and Sala-I-Martin, 2016), ethnic homelands (Alesina, Michalopoulos, and Papaioannou, 2016; Michalopoulos and Papaioannou, 2013), sub- and supranational regions (Henderson, Storeygard, and Weil, 2012), and even at the pixel level (Bleakley and Lin, 2012). Nighttime lights serve as a reasonable proxy for economic activity in the absence of standard national statistics under the assumption that lighting is a normal good

(Donaldson and Storeygard, 2016). We show that this assumption seems likely in our context in Figure A7, which demonstrates that income and light density move in tandem. Nighttime lights are available globally for every year between 1992-2013 from the National Center for Environmental Information: `https://ngdc.noaa.gov/eog/dmsp/downloadV4composites.html`. Measured from satellites at 30 arc second grids–approx. 1 square km at the equator (Pinkovskiy and Sala-I-Martin, 2016)–each pixel is assigned a value between 0 and 63.

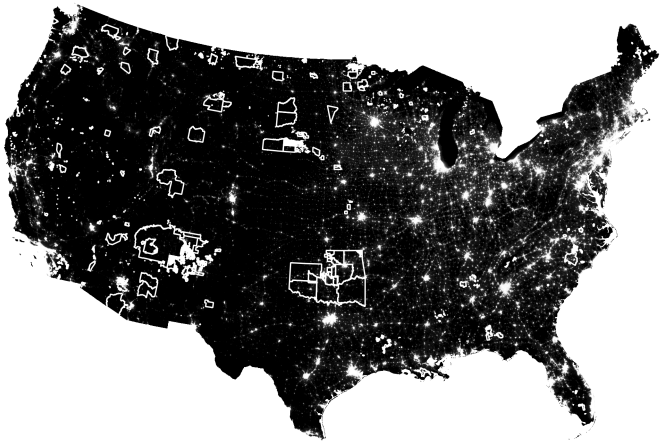

Figure A1: The distribution of nighttime lights in 2000 overlaid with Native American homelands or reservation boundaries in 2013.

Figure A1 displays the geographic distribution of light density overlaid with the 2013 boundaries of Native American homelands or reservations in the United States using the boundary files from the American Indian/Alaska Native/Native Hawaiian Areas (AIANNH) TIGER/Line Shapefile. The boundaries include federal reservations, off-reservation trust land areas, state-recognized American Indian reservations, Oklahoma tribal statistical areas, tribal designated statistical areas, and state designated tribal statistical areas. Only the reservation boundaries (federal and state) are used in the light analysis, as statistical areas can include non-Native cities. We construct our dependent variables as the log of mean light density of all pixels within a reservation's borders in place of income per capita.

Using nighttime lights as an alternative dependent variable expands our sample from 195 reservation-tribe observations to 338. All specifications include the standard set of controls presented in Table 4, the log of mean light density in the county surrounding the reservation, and an indicator for whether the reservation is a state or federal reservation. In the regressions of GDP per capita, our sample only includes federal reservations.

We also include a control for the population of the reservation using data from the Gridded Population of the World database from NASA's Socioeconomic Data and Applications Centre to account for the fact that reservations with a larger population might mechanically have a higher light density.[49]. We exclude reservations that cannot be clearly mapped to our controls–in particular, the Ethnographic Atlas. A list of additional sources used for these specifications are as follows:

- *Population in 2015:* Population estimates were taken from the Gridded Population of the World (GPW) database. The GPW uses numerous data sources to compute estimates

[49]The gridded population data is available at 5 year intervals from 2000-2015. This data is available for download online from `http://sedac.ciesin.columbia.edu/data/collection/gpw-v4`.

of the world population distribution at a resolution of 30 arc-seconds. Source: Center for International Earth Science Information Network - CIESIN - Columbia University, United Nations Food and Agriculture Programme - FAO, and Centro Internacional de Agricultura Tropical - CIAT. 2005. *Gridded Population of the World, Version 3 (GPWv3): Population Count Grid.* Palisades, NY: NASA Socioeconomic Data and Applications Center (SEDAC). `http://dx.doi.org/10.7927/H4639MPP`. Accessed 05 05 2017.

- *Log Ruggedness Index:* We overlay elevation raster files from the U.S. Geological Survey–available at: `https://viewer.nationalmap.gov/viewer/`–with reservation boundaries and use GIS software to calculate the ruggedness index for each reservation. The ruggedness index is calculated based on the following source: Riley, S. J, S. D. DeGloria, and R. Elliot (1999). A terrain ruggedness index that quantifies topographic heterogeneity. *Intermountain Journal of Sciences 5(4)*, 23-27.

- *Distance Displaced:*This variable was constructed by taking the geodetic distance between the tribal homeland centroid and the reservation centroid.

- *Distance to City:* We compute the geodetic distance from each reservation centroid to the centroid of the closest urbanized area using shapefiles from the U.S. Cartographic Boundary Shapefiles: `https://www.census.gov/geo/maps-data/data/tiger-cart-boundary.html`. Urbanized areas are densely populated territory with 50,000 or more people.

Canadian Sources: We rely on a number of additional sources to estimate our specifications for Canadian tribes. In addition to the Ethnographic Atlas Murdock (1967), and Gridded Population sources, we use the following sources:

- *Reserve Boundaries:* Available from Statistics Canada: `https://www12.statcan.gc.ca/census-recensement/2011/geo/bound-limit/bound-limit-eng.cfm`

- *GDP Per Capita:* We obtain GDP per capita from the 2001 Community Well-Being (CWB) Database: `https://www.aadnc-aandc.gc.ca/eng/1100100016579/1100100016580`. The CWB Database provides a well-being score for each census subdivision (essentially municipality) in Canada. To construct this score, a number of component scores are used, based on housing availability, income, labor force participation, and education. We invert the income component score formula to obtain GDP per capita: Income Score $= \frac{\log(\text{GDP per capita}) - \log(\$2{,}000)}{\log(\$40{,}000) - \log(\$2{,}000)} \times 100$.

- *Bison-Reliance:* Since the National Atlas map of tribal territories does not include Canada, we digitize the Canadian maps from the Handbook of the North American Indian and overlay them with bison-range maps from Hornaday (1889) to construct measures of bison-reliance for Canadian tribes.

- *Log Ruggedness Index:* We overlay elevation raster files from the Food and Agriculture Organization of the United Nations–available at: `http://www.fao.org/soils-portal/soil-survey/soil-maps-and-databases/harmonized-world-soil-database-v12/terrain-data/en/`–with reserve boundaries and use GIS software to calculate the ruggedness index for each reservation. The ruggedness index is calculated based on the following source: Riley, S. J, S. D. DeGloria, and R. Elliot (1999). A terrain ruggedness index that quantifies topographic heterogeneity. *Intermountain Journal of Sciences 5(4)*, 23-27.

- *Modern and Historical Treaties:* A list of bands that signed historical treaties is contained on Indigenous Affairs and Northern Development Canada's Map Room website `https://www.aadnc-aandc.gc.ca/eng/1290453474688/1290453673970`

- *Distance to Nearest CMA:* We compute the geodetic distance from each reserve centroid to the centroid of the closest census metropolitan area using Statistics Canada geographic boundary shapefiles available at the link above. Census Metropolitan Areas are cities whose urban core areas have 100,000 or more people.

Cost Adjusted Distances: We use the transportation costs constructed in Donaldson and Hornbeck (2016).[50] Our instruments are the cost of shipping freight between the county in which the centroid of a tribe's traditional territory is located and the counties containing the cities of St. Louis, Fort Leavenworth, New York, Chicago, and Baltimore. We include the cost of transporting goods to St. Louis, Fort Leavenworth, New York, and Chicago in 1870, as these were the primary cities involved in trading bison robes. We also include the cost of transporting goods to New York and Baltimore in 1890, since these cities were the exit points for hides being shipped overseas. To compute the transportation cost between each tribal territory and Montreal in 1870, we use the cost of transportation to Buffalo, New York from Donaldson and Hornbeck (2016), and then rely on the estimates of transportation costs between Buffalo and Montreal, Canada, from Inwood and Keay (2013, 2015).[51]

Occupational Rank 1900-2010: The occupational rank measure is constructed using the IPUMS occupational income score. This income score ranks occupations using the median incomes for each occupation from data published in the Census Bureau's 1956 special report on occupational characteristics. Apart from minor variations in post-1950 years, which required recoding post-1950 occupational classifications into the 1950 system, the measure of occupational rank is largely invariant across censuses. Unfortunately, data that includes both occupational rank and tribal affiliation is only available for 1900, 1910, 1930, 1990, 2000, and 2010. Therefore, since we require detailed information on the tribal membership of Native Americans in order to determine ancestral dependence on the bison we are restricted our analysis to these years.

Mortality Estimates: These data are accessed through the NBER data portal: `https://www.nber.org/data/vital-statistics-mortality-data-multiple-cause-of-death.html`. The Multiple Cause of Death data report county-level counts of all deaths occurring within the United States. The earliest date for which inclusive county and race data are available is 1988.[52] We overlay county boundaries in 1990 with reservation boundaries in 1990 to determine which reservations were located in each county at this time. We then make the assumption that Native American deaths that are reported in the Multiple Cause of Death database are from individuals whose tribal ancestry comes from the reservation located in their county of residence. This allows us to construct county-level estimates of bison-reliance by averaging over the bison-reliance of all Native groups within the county. We also present alternative estimates at the reservation level for the sample of reservations for which we also have income data. For these specifications, we assume the reservation's mortality rate is determined by the mortality rate of Native Americans in the county in which the reservation is located. If a reservation crosses the border of two counties, then their mortality rate is averaged over both counties.

[50] The transportation cost in Donaldson and Hornbeck (2016) is computed by calculating the combination of railway, wagon, and waterway routes between counties and assigning each route a cost based on the per ton-mile cost of shipping goods by each means.

[51] Inwood and Keay (2013, 2015) focus the cost of shipping pig iron (CAD/Net Ton), while Donaldson and Hornbeck (2016) focus on the cost of transporting grain and meat (USD/Net Ton). We assume an exchange rate of 1 CAD = 1.51375 USD in 1870 (Historical Statistics of the United States, Table EE618).

[52] After 1988 counties with low numbers of deaths are censored.

Table A3: Sources for Anthropological Bison Index in Boas Tribal Data

Tribe Name	Band	Sample Size	Sources in Addition to Waldman 2009
ALASKA		5	http://www.native-languages.org/alaska.htm
BANNOCK	All	97	https://www.britannica.com/topic/Bannock-people; http://www.legendsofamerica.com/na-tribesummary-b.html
BILOXI		18	http://www.bigorrin.org/biloxi_kids.htm
CADDO		62	http://archeology.uark.edu/indiansofarkansas/index.html?pageName=The%20Caddo%20Indians
CARRIER	All	35	http://www.thecanadianencyclopedia.ca/en/article/carrier/
CATAWBA		50	http://catawbaindian.net/about-us/early-history/
CAYUGA		12	http://www.cayuganation-nsn.gov/Culture/Food
CAYUSE		22	http://ctuir.org/history-culture/first-foods
CHITIMACHA		31	http://www.chitimacha.gov/history-culture/tribal-history
CHOCTAW		501	http://www.aihd.ku.edu/foods/choctaw.html
COLUMBIA	All	5	https://www.britannica.com/topic/Plateau-Indian
CREEK		104	http://www.encyclopedia.com/history/united-states-and-canada/north-american-indigenous-peoples/creek
DELAWARE		28	http://www.lenapelifeways.org/lenape1.htm
HOOPA VALLEY		35	https://www.hoopa-nsn.gov/the-tribal-government
HURON		1	http://www.tolatsga.org/hur.html
KLAMATH		267	https://www.warpaths2peacepipes.com/indian-tribes/klamath-tribe.htm
KUTENAI	LOWER	54	http://www.thecanadianencyclopedia.ca/en/article/kootenay/
MENOMINI		274	https://www.mpm.edu/wirp/ICW-36.html
MODOC		1	https://www.warpaths2peacepipes.com/indian-tribes/modoc-tribe.htm
MOHAWK		95	http://www.thecanadianencyclopedia.ca/en/article/mohawk/
MOLALLA		6	http://dibblehouse.org/molala-life.html
OKANAGAN	All	101	Thomson, D. D. (1985). A history of the Okanagan: Indians and whites in the settlement era, 1860-1920 (T). 179-183. University of British Columbia.
ONEIDA	All	250	http://www.exploreoneida.com/culture-and-history/oneidas-way-of-life/
ONONDAGA		75	http://www.onondaganation.org/culture/food/
PUEBLO		43	http://native-american-indian-facts.com/Southwest-American-Indian-Facts/Pueblo-Indian-Facts.shtml
SENECA	All	114	https://sni.org/culture/
SHUSHWAP	All	477	http://www.landoftheshuswap.com/land.html
TENINO	All	138	Murdock, G. (1980). The Tenino Indians. Ethnology, 19(2), 129-149. doi:10.2307/3773268
THOMPSON		143	https://www.aadnc-aandc.gc.ca/DAM/DAM-INTER-BC/STAGING/texte-text/fnmp_1100100021018_eng.pdf
TUSCARORA		87	http://northcarolinahistory.org/encyclopedia/the-tuscarora/
UMATILLA		50	http://ctuir.org/history-culture/first-foods
UTE		10	http://www.legendsofamerica.com/na-ute.html
UTE	CAPOTE	21	http://www.legendsofamerica.com/na-ute.html
UTE	MOACHE	26	http://www.legendsofamerica.com/na-ute.html
UTE	UINTAH	50	http://www.legendsofamerica.com/na-ute.html
UTE	WEEMINUCHE	10	http://www.legendsofamerica.com/na-ute.html
WALLA WALLA		30	http://ctuir.org/history-culture/first-foods
WASHO		12	https://www.warpaths2peacepipes.com/indian-tribes/washoe-tribe.htm
WENATCHI		1	http://www.historylink.org/File/8634
YAKIMA		57	https://www.britannica.com/topic/Yakama
SPOKANE	All	18	http://www.aihd.ku.edu/foods/Spokanes.html
APACHE	COYOTERO	7	http://www.encyclopedia.com/humanities/encyclopedias-almanacs-transcripts-and-maps/western-apache
APACHE	SAN CARLOS	64	http://www.encyclopedia.com/humanities/encyclopedias-almanacs-transcripts-and-maps/western-apache
APACHE	TONTO	64	http://www.encyclopedia.com/humanities/encyclopedias-almanacs-transcripts-and-maps/western-apache
APACHE	WHITE MOUNTAIN	64	http://www.encyclopedia.com/humanities/encyclopedias-almanacs-transcripts-and-maps/western-apache
APACHE	WHITE MOUNTAIN@	1	http://www.encyclopedia.com/humanities/encyclopedias-almanacs-transcripts-and-maps/western-apache
COEUR D'ALENE		49	http://www.cdatribe-nsn.gov/cultural/ancestral.aspx
KALISPEL		12	http://kalispeltribe.com/our-tribe/land-culture
CHEROKEE		699	http://www.tolatsga.org/Cherokee1.html
CHICKASAW		217	https://www.utm.edu/departments/special_collections/wc_hist/chksaw.php
FLATHEAD		38	http://www.flatheadwatershed.org/cultural_history/pend_salish.shtml
WINNEBAGO		191	https://www.mpm.edu/wirp/ICW-52.html
POTAWATOMI		30	http://www.pbpindiantribe.com/tribal-history.aspx
SAUK & FOX		10	https://discover.research.uiowa.edu/meskwaki-culture-and-history
APACHE	MESCALERO	37	https://www.britannica.com/topic/Apache-people
ARIKARA	REE	2	http://plainshumanities.unl.edu/encyclopedia/doc/egp.na.007
MANDAN		1	http://www.ndstudies.org/resources/IndianStudies/threeaffiliated/culture_mandan3.html
MIAMI		2	https://miamination.com/node/11
QUAPAW		3	http://archeology.uark.edu/indiansofarkansas/index.html?pageName=The+Quapaw+Indians
BEAVER		1	http://www.thecanadianencyclopedia.ca/en/article/beaver-native-group/

Notes: For nations where different sources were used to construct bison-reliance they are listed. This is not a complete listing of nations.

Table A4: Sources for Anthropological Bison Index in Boas Tribal Data

Tribe Name	Band	Sample Size	Sources in Addition to Waldman 2009
NEZ PERCE		132	https://www.critfc.org/member_tribes_overview/nez-perce-tribe/
OTOE		5	http://www.e-nebraskahistory.org/index.php?title=Nebraska_Historical_Marker:_Oto_Indians
PAWNEE		88	http://www.nebraskastudies.org/0300/frameset_reset.html?http://www.nebraskastudies.org/0300/stories/0301_0107.html
KICKAPOO		5	ttp://www.tolatsga.org/kick.html
KUTENAI	UPPER	43	http://www.thecanadianencyclopedia.ca/en/article/kootenay/
PONCA		83	http://www.encyclopedia.com/history/united-states-and-canada/north-american-indigenous-peoples/ponca
WICHITA	All	37	http://www.wichitatribe.com/history/people-of-the-grass-house-1750-1820.aspx
CHEYENNE		55	Grinnell, G. B. (2008). The Cheyenne Indians: Their History and Lifeways: Edited and Illustrated. 95-99. World Wisdom Inc.
OMAHA		121	http://www.encyclopedia.com/history/united-states-and-canada/north-american-indigenous-peoples/omaha-indians
OSAGE		124	http://www.encyclopedia.com/history/united-states-and-canada/north-american-indigenous-peoples/osage
SAUK		33	https://www.britannica.com/topic/Sauk
CROW		607	http://www.encyclopedia.com/history/united-states-and-canada/north-american-indigenous-peoples/crow-people
GROS VENTRE		9	http://www.encyclopedia.com/history/united-states-and-canada/north-american-indigenous-peoples/gros-ventre
KIOWA		203	http://www.encyclopedia.com/history/united-states-and-canada/north-american-indigenous-peoples/kiowa
SIOUX		1022	http://native-american-indian-facts.com/Great-Plains-American-Indian-Facts/Sioux-Indian-Tribe-Facts.shtml
SIOUX	TETON	6	http://www.nebraskastudies.org/0300/stories/0301_0108.html
ASSINIBOIN		66	http://www.thecanadianencyclopedia.ca/en/article/assiniboine/
COMANCHE		193	http://www.encyclopedia.com/history/united-states-and-canada/north-american-indigenous-peoples/comanche
BLOOD		66	http://www.thecanadianencyclopedia.ca/en/article/blood-kainai/
PIEGAN		122	http://www.thecanadianencyclopedia.ca/en/article/piikuni-peigan-pikuni/
SARCI		21	http://www.thecanadianencyclopedia.ca/en/article/sarcee-tsuu-tina/
ARAPAHO		95	http://www.colorado.edu/csilw/arapahoproject/contemporary/history.htm
BLACKFOOT		29	http://www.aihd.ku.edu/foods/Blackfeet.html
TONKAWA		44	http://www.tonkawatribe.com/meals.html

Notes: For nations where different sources were used to construct bison-reliance they are listed. This is not a complete listing of nations.

Table A5: Sources for Anthropological Bison Index: Tribes Whose bison-reliance is Proxied by Geography in the Anthropological Measure

Tribe Name	Band	Sample Size
APACHE	With no band	123
CHIPPEWA (with no band)	With no bankd	634
CREE	With no band	228
KUTENAI		16
SHAWNEE		24
AGUA CALIENTE		59
AMERICAN VALLEY		1
ANADARKO		2
APACHE	CASSLOLA	1
APACHE	CHERACOW	1
APACHE	CHIRA	1
APACHE	CHIRICAHUA	2
APACHE	MOHAVE	2
ATHIPURE		1
B.C.		13
BENITOO		1
BIG MEADOW		9
BIG MEADOW	NAKUMA	1
BIG VALLEY		1
BROTHERTOWN		1
CALIFORNIA		1
CHEROKEE	WESTERN	1
CHICO		1
CHILLUKUWEYUK		2
CHINESE		5
CHIPPEWA	CASCADES	8
CHIPPEWA	CASS LAKE	6
CHIPPEWA	GULL LAKE	3
CHIPPEWA	LAKE O WOODS	1
CHIPPEWA	LAKE SUPERIOR	1
CHIPPEWA	LEECH LAKE	43
CHIPPEWA	MISS.	38
CHIPPEWA	OTTER TAIL	38
CHIPPEWA	PEMBINA	15
CHIPPEWA	PILLAGER	6
CHIPPEWA	RED LAKE	63
CHIPPEWA	SAULTEAUX	2
CHIPPEWA	SAULTEURS	14
CHIPPEWA	TURTLE MT.	1
CHIPPEWA	VIEUX DE DENT	1
CHIPPEWA	WINNEBEGOSHISH	1
CLACLASEQALA		1
CLEAR LAKE		1
COLUMBIA RIVER		1
CONCOW		61
CONCOW	BIG BAND	1
CONCOW	BLOOMERHILL	1
CONCOW	NEVODAS	1
COTTONWOOD		1
COW		1
COW CREEK		7
COYOTERRA		1
HAT CREEK		2
HAWKWELGETT		1
HOH		2
HUMPTULIPS		1
IROQUOIS	THIC RANY	1
JACOWE		1
JOSHUA		5
KALISPEL LOWER		1
KATSEY		1
KITSAI		2
KITSOP		1
KLAHKANSYU		1
KLAMATH RIVER		18
KOGOALIK		1
KUTENAI	METIS	1
LIPAN		3
LONG TOM		1
MALISQUI		1
MARIPOSA		1
MARYSVILLE		4
MARYVILLE		1
MATSQUI		2
MEQONADINA		1
MIKSOFDO		4
MIKSOFDO	LOW CREEK	1
MISSISSAGUA		291
MOKI (ORAIBE)		8
MOLALI		1
MOORETOWN		6
MORAVIAN		13
MORAVIANTTOWN		1
MUCKLESHOT		1
MUNSEE		101
NALTUNNETUNNE		2
NAQONGYSLISALA		1
NATCHITOCHES		1
NESTUCCA		1

Notes: For Nations were different sources were used to construct bison-reliance they are listed. This is not a complete listing of nations.

Table A6: Sources for Anthropological Bison Index: Tribes Whose bison-reliance is Proxied by Geography in the Anthropological Measure

Tribe Name	Band	Sample Size
NHYNOOTCHIE		1
NOGOOLI		1
OJIBWA		338
OJIBWA	BATSHEWANA	1
OJIBWA	GARDEN RIVER	1
OJIBWA	OTHIPWE	15
OJIBWA (of CATLIN'S COMY)		1
OKA		5
OLOLOFA		1
OMACK		2
OREGON		1
PEND D'OREILLE		12
PITT RIVER		21
PITT RIVER	INDIAN VALLEY	3
PORT MADISON		1
PORT MEDICINE		1
PORTEUR		1
POTTS VALLEY		1
QECTIC		1
QOMOYNE		1
QUMOYUT		1
ROTOMA n. WALLIS IS.		1
ROTUMA		2
SAN JUAN		7
SAN LUIS REY		185
SANTA CLARA		11
SATUS		1
SCOOYAM		1
SCOTCH		1
SEATTLE		6
SHIPEK		9
SHOALWATER BAY		2
SINSLAW		1
SISHIALT		3
SKOATATC		1
SKOATATC	UPSIOW	1
SMELKAMEEN		1
SNAKE		1
SNOYNALUNI		1
SOFERS ID.		1
SQAEEN	(23mi. ab. FT.	1
STOCKBRIDGE		86
TAAM		1
TAOS		45
TARAHUMARA		20
TARAHUMARA	(RARAMUTCHY)	1
TARAHUMARA	GENTIL	2
TEXELIS		1
TEXELS	DOUGLAS	1
THOMPSON	All bands	277
TIETSAUT		1
TIPEHUANAS		1
TIXELIS		1
TLASANQOALA		1
TLASLASIQULA		1
TLASLASIQULE		1
TONGA		1
TOO TOO DINA		1
TOWACONIE		1
TRIAM		4
TSMISHIAN	GINNEHAUGUAK	1
TSMISHIAN	NASXA	2
TSMISHIAN	NISKA	10
TSXELIS		4
TUBAR		4
UNCOMPAGEE		4
UTAINGT		1
UTAMGT		1
UTE	APACHE	1
UTE	DUCHESNE	1
UTSINGT	All bands	3
WALAPAI		2
WALLIS IS.		2
WAPATOO LAKE		2
WAPETOO LAKE		1
WARNUCK		1
WEILACY		1
WIKWEMIKONG		1
YAM HILL		4
Total N		3074

Notes: For Nations were different sources were used to construct bison-reliance they are listed. This is not a complete listing of nations.

Table A7: Current Members of the InterTribal Buffalo Council that Matched to Our Data

Blackfeet Nation	Nambe O-ween-ga Pueblo	Sandria Pueblo
Cheyenne and Arapaho	Nez Perce Tribe	Santee Sioux Tribe of Nebraska
Cheyenne River Sioux Tribe	Northern Cheyenne Tribe	Shoshone-Bannock
Cochiti Pueblo	Oglala Sioux Tribe	Sisseton Wahpeton Oyate
Crow Creek Sioux Tribe	Omaha Tribe of Nebraska	Southern Ute
Crow Tribe	Oneida Nation of Wisconsin	Spirit Lake Sioux Tribe
Flandreau Santee Sioux	Picuris Pueblo	Spokane Tribe
Fort Peck	Pit River Tribe	Standing Rock Sioux Tribe
Ho-Chunk Nation	Pojoaque Pueblo	Taos Pueblo
Jicarilla Apache Nation	Prairie Band Potawatomi	Turtle Mountain Band of Chippewa
Kalispel Tribe	Prairie Island Dakota Community	Ute Indian Tribe
Lower Brule Sioux Tribe	Rosebud Sioux Tribe	Winnebago Tribe of Nebraska
Leech Lake Band of Ojibwe	Salt River Pima	Yankton Sioux Tribe
Mesa Grande	San Juan Pueblo	Cherokee Nation
Tesuque Pueblo		

Notes: The InterTribal Buffalo Council currently has 63 member tribes. The above list contains the 43 tribes that matched to our main sample. More information can be found at `http://www.itbcbuffalo.com/`

B. Additional Tables

Table A8: Share of Lands Ceded Over Time by bison-reliance

	Not Bison-Reliant	Bison-Reliant	Diff
	(1)	(2)	(3)
Ceded Share 1784-1840	0.05	0.05	-0.00
	(0.17)	(0.13)	
Ceded Share 1840-1860	0.43	0.34	0.10
	(0.42)	(0.37)	
Ceded Share 1860-1870	0.17	0.32	-0.15**
	(0.33)	(0.33)	
Ceded Share 1870-1880	0.09	0.15	-0.06
	(0.24)	(0.29)	
Ceded Share 1880 to Present	0.18	0.25	-0.07
	(0.37)	(0.37)	
Observations	123	72	195

Notes: This table displays sample means with standard errors below in parentheses. For specific variable descriptions and sources please refer to Section III.A and Section A of the online appendix. Bison-reliant communities are those whose traditional territories overlapped with the original bison range by more than 60%. Non-bison-reliant communities are those whose territories overlapped with the original range by less than 60%. Column (1) reports means for non-bison-reliant nations, column (2) reports them for bison-reliant nations, and column (3) reports difference in means tests. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A9: List of Tribes in Dippel (2014) Sample with the Share of Ancestral Territory overlaying the Bison range as of 1730 and 1870

Tribe Name	**Share as of 1730**	**Share as of 1870**
Abenaki	0	0
Achomawi	0	0
Apache Chiricahua	0.32	0
Apache Cibecue	0	0
Apache Jicarilla	1	0.55
Apache Lipan	1	0
Apache Mescalero	1	0.01
Apache San Carlos	0	0
Apache Tonto	0	0
Apache White Mountain	0	0
Arapaho	1	0.84
Bannock	1	0.45
Blackfoot	1	1
Cahuilla	0	0
Cal. Athapaskan Hupa	0	0
Chehalis	0	0
Chemehuevi	0	0
Cherokee	1	0
Cheyenne	1	1
Choctaw	0.2	0
Coeur D'Alene	0.56	0
Creek Muskogee	0.62	0
Crow	1	1
Diegueno	0	0
Havasupai	0	0
Hopi	0	0
Iroquois	0	0
Kalispel	0.25	0
Kickapoo	0.94	0
Klallam	0	0
Luiseno	0	0
Lummi	0	0
Maka	0	0
Maricopa	0	0
Menomine	0	0
Miwuk	0	0
Mohave	0	0
Mono W.	0	0
Navaho	0.53	0
Nez Perce	0.99	0
Nisqually	0	0
Nooksak	0	0
Ojibwa Lake Superior	0.28	0
Ojibwa Mississipi	0.81	0
Omaha	1	0
Ottawa	0	0
Paiute Northern	0.06	0
Paiute Northern Agai	0	0
Paiute Northern Kidu	0.28	0
Paiute Northern Toe	0	0
Paiute Northern Wada	0.29	0
Paiute Owen's Valley	0	0
Paiute Southern	0	0
Paiute Southern Moapa	0	0
Papago	0	0

Continued on next page

Table A9 – continued from previous page

Tribe Name	Share as of 1730	Share as of 1870
Passamoquoddy	0	0
Pima	0	0
Pomo	0	0
Potawatomi	0	0
Pueblo E. Keres	1	0
Pueblo Jemez	1	0
Pueblo N. Tiwa	1	0
Pueblo S. Tiwa	1	0
Pueblo Tewa	1	0
Pueblo W. Keres	1	0
Puyalup	0	0
Quileute	0	0
Shoshone	0.93	0.10
Shoshone Wind River	1	0.83
Sioux Santee Mdewakanton	1	0
Sioux Santee Sisseton	1	0
Sioux Santee Wahpeton	1	0
Sioux Teton Blackfoot	1	1
Sioux Teton Brule	1	1
Sioux Teton Hunkpapa	1	1
Sioux Teton Miniconjou	1	1
Sioux Teton Oglala	1	0.14
Sioux Teton Sans Arc	1	1
Sioux Teton Two Kettle	1	1
Sioux Yankton	1	0.03
Sioux Yanktonai	1	0.57
Skagit	0	0
Skykomish, Souqualni	0	0
Spokane	0	0
Tillamook Siletz	0	0
Twana	0	0
Umpqua Upper	0	0
Ute	0.88	0.14
Ute Southern	0.97	0.10
Ute Wimonuchi	0.69	0
Walapai	0	0
Washo	0.07	0
Winnebago	0.14	0
Yavapai	0	0
Yokuts	0	0
Yokuts of Kings County	0	0
Yuma	0	0
Yurok	0	0
Zuni	0.18	0

Notes: This table lists the tribes in the Dippel (2014) sample and the share of their traditional territories that overlay with the bison's historic range for different time periods. For specific variable descriptions and sources please refer to Section III.A and Section A of the online appendix.

Table A10: Summary Statistics from Boas Data

	Not bison-Reliant	Bison-Reliant	Diff
	(1)	(2)	(3)
Standing Height in cm	156.44	162.01	-5.57***
	(20.40)	(17.11)	
Year Community was Sampled	1892.56	1891.73	0.84***
	(2.11)	(1.19)	
Year of Birth	1867.23	1865.40	1.83***
	(15.14)	(14.30)	
Age	25.33	26.33	-1.00**
	(15.14)	(14.12)	
Canada	0.23	0.15	0.08***
	(0.42)	(0.35)	
# Yrs Since Rail	-0.41	5.69	-6.11***
	(29.46)	(23.29)	
Born After Rail	0.41	0.39	0.02*
	(0.49)	(0.49)	
# Yrs Born After Rail	8.81	6.83	1.98***
	(14.15)	(12.17)	
Born During War	0.03	0.08	-0.06***
	(0.16)	(0.28)	
Only Native American Ancestors	0.80	0.78	0.02**
	(0.40)	(0.41)	
Observations	5104	3684	8788

Notes: This table displays sample means with standard errors below in parentheses. "Years since rail" is the number of rails between an individual's year of birth and the date the first railway went thorough their nation's traditional territory. "Born after rail" is the proportion of the sample that was born after rail went through their traditional territory. "Years born after rail" are the average years of age of someone born after the railway was introduced. Note that the data on wars and railways is only available for American tribes. Thus in our regressions we include a dummy and interaction for Canada to account for missing values. For specific variable descriptions and sources please refer to Section III.A and Section A of the online appendix. Column (1) reports these summary statistics for non-bison-reliant tribes, which we define as having ancestral territory that overlaps less than 60% with the original bison's range. Column (2) reports the summary statistics for bison-reliant tribes, which we define as having ancestral territory that overlaps more than 60% with the original bison's range. Column (3) reports difference in means tests between column (1) and (2), $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A11: Summary Statistics 1900, 1910, 1930: Communities with Traditional Territories Overlapping the Original Bison Range Less than and More than 60 Percent

	Men			Women		
	Not Bison-Reliant	Bison-Reliant	Diff	Not Bison-Reliant	Bison-Reliant	Diff
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: 1900						
Std Occupational Score	-0.01	-0.14	0.13***			
	(0.76)	(0.71)				
Prop Children Surviving				0.81	0.78	0.02***
				(0.25)	(0.25)	
Age	25.61	22.79	2.82***	41.05	39.57	2.15***
	(20.96)	(18.77)		(17.18)	(1486.44)	
Literate	0.26	0.35	-0.09***	0.16	0.32	-0.11 ***
	(0.44)	(0.48)		(0.37)	(0.47)	
Observations	9728	7029	16757	4609	3262	16345
Panel B: 1910						
Std Occupational Score	-0.08	-0.21	0.13***			
	(0.74)	(0.74)				
Prop Children Surviving				0.78	0.77	0.01*
				(0.26)	(0.25)	
Age	24.71	23.01	1.70***	41.01	40.24	1.18***
	(20.48)	(19.20)		(17.24)	(16.26)	
Literate	0.37	0.45	-0.09***	0.29	0.46	-0.10***
	(0.48)	(0.50)		(0.45)	(0.50)	
Observations	11085	8070	19155	5008	3523	18439
Panel C: 1930						
Std Occupational Score	-0.17	-0.19	0.02			
	(0.68)	(0.71)				
Prop Children Surviving						
Age	24.08	23.28	0.80			
	(19.78)	(19.46)				
Literate	0.48	0.58	-0.10***			
	(0.50)	(0.49)				
Observations	3221	2843	6064			

Notes: This table displays sample means with standard errors below in parentheses. The sample includes men between the ages of 20 and 65 and all women who ever had children. Panel A provides summary statistics for 1900, panel B for 1910, and panel C for 1930. There are no summary statistics reported for women in 1930 because there are no indicators for proportion of children born and surviving in this year. For specific variable descriptions and sources please refer to Section III.A and Section A of the online appendix. Column (1) and (4) report these summary statistics for non-bison-reliant tribes, which we define as having ancestral territory that overlaps less than 60% with the original bison's range. Column (2) and (5) report the summary statistics for bison-reliant tribes, which we define as having ancestral territory that overlaps more than 60% with the original bison's range. Column (3) and (6) reports difference in means tests between bison-reliant and non-bison-reliant groups, $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A12: Summary Statistics: Dippel's (2014) Census Tract Sample by Tribe-Reservation in 2000 and Additional Colonial Variables

	Not Bison-Reliant	Bison-Reliant	Diff
	(1)	(2)	(3)
Per Capita Income	10751.89	8629.64	2122.25**
	(5066.94)	(4005.72)	
Percent Bison Coverage 1870	0.00	0.23	-0.23***
	(0.00)	(0.38)	
Indian War	0.50	0.62	-0.13
	(0.50)	(0.49)	
Distance Displaced	11.74	11.97	-0.23
	(1.03)	(0.95)	
No Railway in Territory	0.09	0.01	0.08*
	(0.29)	(0.12)	
Historic Centralization	0.19	0.14	0.05
	(0.39)	(0.35)	
EA Calories Agriculture	1.49	2.68	-1.19**
	(1.85)	(2.90)	
EA Sedentary	3.01	3.42	-0.41
	(1.63)	(2.26)	
Jurisdictional Hierarchy	1.78	1.33	0.45***
	(0.49)	(0.53)	
Wealth Distinctions	1.33	1.03	0.31***
	(0.75)	(0.17)	
Population in 1600	1.94	1.97	-0.03
	(3.47)	(3.24)	
Log Ruggedness	-1.25	-1.64	0.39*
	(1.33)	(0.87)	
Forced Co-existence	0.66	0.65	0.01
	(0.48)	(0.48)	
Nearby Income Per Capita	18473.42	17438.36	1035.06*
	(2927.76)	(2874.21)	
Absolute mobility index	43.58	43.48	0.11
	(2.75)	(1.97)	
Log population	6.61	7.45	0.84
	(1.29)	(1.18)	
Log Distance to Nearest City	3.42	4.07	-0.65***
	(1.14)	(0.81)	
Log Reservation Square KM	3.90	6.68	-2.78***
	(2.83)	(2.30)	
Presence of a Casino	0.68	0.76	-0.08
	(0.47)	(0.43)	
Adult Population Share	63.50	63.91	-0.41
	(5.97)	(5.13)	
Observations	123	72	195

Notes: This table displays sample means with standard errors below in parentheses. For specific variable descriptions and sources please refer to Section III.A and Section A of the online appendix. Column (1) reports these summary statistics for non-bison-reliant tribes, which we define as having ancestral territory that overlaps less than 60% with the original bison's range. Column (2) reports the summary statistics for bison-reliant tribes, which we define as having ancestral territory that overlaps more than 60% with the original bison's range. Column (3) reports difference in means tests between column (1) and (2), $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A13: The Impact of the Loss of the Bison on Male Native American Height

	(1)	(2)	(3)	(4)	(5)	(6)
I(Born After 1870)X Shr lost btw 1730-1870	-2.051**			-2.116*		
	(0.966)			(1.145)		
	[1.092]			[1.227]		
I(Born After 1886)X Shr lost btw 1870-1889		-5.507**	-9.435**		-4.467**	-4.606
		(2.316)	(3.543)		(2.161)	(3.607)
		[2.134]	[2.894]		[2.080]	[3.018]
Main Controls	X	X	X	X	X	X
Railway Controls				X	X	X
Observations	8788	3684	2597	8788	3684	2597
Adjusted R^2	0.875	0.861	0.868	0.877	0.863	0.870
# of Clusters	132	49	47	132	49	47

Notes: This table reports OLS estimates of the difference-in-differences specification relating height to bison-reliance (equation 1). The dependent variable is standing height in centimetres. In addition to the controls displayed, we include a full set of age dummies in all columns. Note that the data on wars and railways is only available for American tribes. Thus specifications reported in columns 4-5 include a dummy and interaction for Canada to account for missing values. Column (1) and (4) use the full sample, while column (2), (3), (5), and (6) restricts the sample to include only bison-reliant tribes, which we define as having ancestral territory that overlaps more than 60% with the original bison's range. Standard errors clustered by tribe are in parentheses, $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$. Standard errors computed based on the methodology of Conley (1999) are in brackets. We assume a weight of 1 for tribes whose ancestral territories were up to 5 degrees apart, and 0 otherwise.

Table A14: The Loss of the Bison on Male Native American Height: Alternative Bison-Reliance Measure

	(1)	(2)	(3)
I(Born After 1886) X Bison-Reliance	-1.959	-3.604	-3.953
	(1.737)	(2.499)	(2.598)
Bison-Reliance	3.333***	1.910	2.628
	(0.644)	(3.860)	(3.403)
I(Still had bison in 1870)	-1.001	-1.754	-3.183
	(4.135)	(4.838)	(4.534)
I(Born After 1883)	1.688**	1.793	2.736
	(0.852)	(1.997)	(2.407)
Bison-Reliance X I(Still had bison in 1870)	0.717	1.977	3.272
	(4.827)	(5.909)	(5.519)
Year of Birth	-1.414***	-1.663***	-1.676***
	(0.343)	(0.045)	(0.051)
Year Sampled	1.229***	1.367***	1.593***
	(0.337)	(0.109)	(0.107)
Canada	-1.061	-0.263	-0.241
	(0.773)	(0.383)	(0.419)
Only Native Ancestors	-1.067***	-0.498	-0.421
	(0.319)	(0.409)	(0.408)
# Yrs Since Rail			0.00209
			(0.011)
Born After Railway			0.0491
			(0.554)
# Yrs Born After Rail			-0.184***
			(0.050)
Born During War			1.364*
			(0.765)
Observations	8788	2830	2830
Adjusted R^2	0.878	0.865	0.868
# of Clusters	132	45	45

Notes: This table reports OLS estimates of the difference-in-differences specification relating height to bison-reliance using our anthropological definition of bison-reliance (equation 1). The dependent variable is standing height in centimetres. In addition to the controls displayed, we include a full set of age dummies in all columns. Note that the data on wars and railways is only available for American tribes. Thus specifications reported in columns 4-5 include a dummy and interaction for Canada to account for missing values. Column (1) and (4) use the full sample, while column (2), (3), (5), and (6) restricts the sample to include only bison-reliant tribes, which we define as having ancestral territory that overlaps more than 60% with the original bison's range. Standard errors clustered by tribe are in parentheses, $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A15: The Impact of the Loss of the Bison on Female Native American Height

	(1)	(2)	(3)	(4)	(5)	(6)
I(Born After 1870)X Share lost btw 1730-1870	-0.189			-0.317		
	(0.745)			(0.852)		
I(Born After 1886)X Share lost btw 1870-1889		1.385	-10.69**		1.688	-8.022**
		(1.898)	(4.243)		(1.821)	(3.390)
Share lost btw 1730-1870	0.970			0.769		
	(0.960)			(1.011)		
Share lost btw 1870-1889		1.506	1.586		0.613	0.362
		(0.908)	(0.995)		(1.035)	(1.078)
I(Born After 1870)	-0.331			-0.199		
	(0.892)			(0.907)		
I(Born After 1886)		-2.282	-1.568		-4.204	-4.619
		(3.139)	(3.764)		(2.672)	(2.873)
Year of Birth	-1.692***	-1.187***	-1.641***	-1.664***	-1.119***	-1.607***
	(0.061)	(0.065)	(0.056)	(0.067)	(0.048)	(0.060)
Year Sampled	1.492***	0.866**	1.421***	1.449***	1.236***	1.849***
	(0.093)	(0.323)	(0.410)	(0.099)	(0.159)	(0.199)
Canada	-0.616	0.450	0.460	-0.611	0.336	0.166
	(0.653)	(0.616)	(0.749)	(0.524)	(0.628)	(0.676)
Only Native Ancestors	-0.396	0.00886	-0.0202	-0.413	0.0215	0.00343
	(0.329)	(0.515)	(0.488)	(0.306)	(0.483)	(0.466)
# Yrs Since Rail				0.000362	0.0359***	0.0565**
				(0.018)	(0.012)	(0.026)
Born After Rail				1.370***	0.0212	0.0344
				(0.517)	(0.565)	(0.669)
# Yrs Born After Rail				-0.0530**	-0.103***	-0.128***
				(0.026)	(0.020)	(0.026)
Born During War				1.733*	1.607	1.485
				(0.947)	(1.129)	(1.164)
Observations	5205	1937	1498	5205	1937	1498
Adjusted R^2	0.861	0.843	0.831	0.863	0.846	0.836
# of Clusters	122	44	44	122	44	44

Notes: This table reports OLS estimates of the difference-in-differences specification relating height to bison-reliance (equation 1). The dependent variable is standing height in centimetres. In addition to the controls displayed, we include a full set of age dummies in all columns. Note that the data on wars and railways is only available for American tribes. Thus specifications reported in columns 4-5 include a dummy and interaction for Canada to account for missing values. Column (1) and (4) use the full sample, while column (2), (3), (5), and (6) restricts the sample to include only bison-reliant tribes, which we define as having ancestral territory that overlaps more than 60% with the original bison's range. Standard errors clustered by tribe are in parentheses, $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A16: The Impact of the Loss of the Bison on Cohort Size

	(1)	(2)	(3)	(4)	(5)	(6)
I(Born After 1870)X Shr lost btw 1730-1870	35.65			34.69		
	(22.878)			(22.962)		
I(Born After 1886)X Shr lost btw 1870-1889		-37.60	-25.14		-38.09	-25.18
		(27.043)	(17.957)		(28.144)	(18.102)
Shr lost btw 1730-1870	17.84			18.68		
	(12.103)			(12.132)		
Shr lost btw 1870-1889		-24.94	-32.18		-24.76	-32.53
		(18.267)	(23.815)		(17.838)	(24.701)
I(Born After 1870)	-11.35*			-9.740		
	(6.732)			(7.139)		
I(Born After 1886)		14.19	9.833		14.19	9.753
		(10.681)	(7.248)		(10.812)	(7.203)
Year of Birth	0.854***	1.006**	1.579**	0.814***	1.013**	1.663*
	(0.233)	(0.446)	(0.676)	(0.236)	(0.461)	(0.896)
Year Sampled	-0.317	-0.547**	-1.149***	-0.141	-0.647*	-1.309*
	(0.207)	(0.258)	(0.396)	(0.381)	(0.369)	(0.778)
Share Female				-0.319	1.017	2.292
				(1.564)	(2.184)	(2.800)
Share Literate				-9.795	6.122	4.493
				(12.089)	(13.889)	(14.913)
Observations	8666	3575	1967	8666	3575	1967
Adjusted R^2	0.058	0.048	0.035	0.059	0.048	0.035
# of Clusters	131	50	50	131	50	50

Notes: This table reports OLS estimates of the difference-in-differences specification relating cohort size to bison-reliance (equation 1). The dependent variable is cohort size. In addition to the controls displayed, we include a full set of age dummies in all columns. Column (1) and (4) use the full sample, while column (2), (3), (5), and (6) restricts the sample to include only bison-reliant tribes, which we define as having ancestral territory that overlaps more than 60% with the original bison's range. Standard errors clustered by tribe are in parentheses, $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A17: Summary Statistics from Historical Statistics Population Data

	N	Pop 1907	Pop 1780	Pop Change
	(1)	(2)	(3)	(4)
Non-bison-reliant	45	224.42	1137.78***	-913.36**
		(274.65)	(274.65)	(388.41)
Bison-reliant	20	1199.00***	4592.25***	-3393.25***
		(411.97)	(411.97)	(582.61)
Difference	65	974.58*	3454.47***	-2479.894***
		(495.13)	(495.13)	(700.21)

Notes: This table displays OLS estimates from a difference-in-differences specification of population on bison-dependence, where we define bison-reliant communities as those whose traditional territories overlapped with the original bison range by more than 60%. For specific variable descriptions and sources please refer to Section III.A and Section A of the online appendix. Estimates were obtained by running the difference-in-differences specification and constructing linear combinations of the parameter estimates to compute standard errors for each group. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A18: Correlation between the Share of Bison Covering Traditional Territory and Income Per Capita by Reservation in 2000

	(1)	(2)	(3)	(4)	(5)
Original share	-2529.9***				
	(829.359)				
Shr lost btw 1730-1870		-1590.5*		-1966.4**	
		(899.832)		(898.331)	
Shr lost btw 1870-1889			-3841.5***	-4293.5***	-2571.1***
			(591.900)	(675.093)	(615.889)
Constant	10992.1***	10477.9***	10289.8***	10957.7***	9212.5***
	(623.846)	(603.806)	(444.061)	(629.644)	(499.558)
Observations	195	195	195	195	72
Adjusted R^2	0.052	0.013	0.036	0.059	0.045
# of Clusters	99	99	99	99	37

Notes: This table reports OLS estimates of the relationship between income per capita and bison-reliance (equation 3). The dependent variable is income per capita at the reservation-tribe level. Columns (1)-(4) use the full sample, while column (5) restrict the sample to include only bison-reliant tribes, which we define as having ancestral territory that overlaps more than 60% with the original bison's range. For specific variable descriptions and sources please refer to Section III.A and Section A of the online appendix. Standard errors clustered by tribe are in parentheses, $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A19: Correlation between Bison-Loss and Income Per Capita by Reservation in 2000

	Full Sample			Bison-Reliant		
	(1)	(2)	(3)	(4)	(5)	(6)
Share lost btw 1730-1870	-1304.9	-1618.0**	-1393.0*			
	(831.196)	(765.026)	(792.797)			
	[900.409]	[743.297]	[814.474]			
Share lost btw 1870-1889	-4663.6***	-3714.1***	-2862.6***	-2677.4***	-1809.5	-1551.0
	(799.784)	(895.968)	(871.810)	(946.595)	(1155.132)	(959.504)
	[839.829]	[847.577]	[895.843]	[583.795]	[874.636]	[802.948]
Pre-Contact, Colonial, Ruggedness	X	X	X	X	X	X
Wars and Distance Displaced		X	X		X	X
Nearby Income Per Capita			X			X
Observations	195	195	195	72	72	72
Adjusted R^2	0.060	0.300	0.332	-0.027	0.262	0.293
# of Clusters	99	99	99	37	37	37

Notes: This table reports OLS estimates of the relationship between income per capita and bison-reliance (equation 3). The dependent variable is income per capita at the reservation-tribe level. Columns (1)-(3) use the full sample, while columns (4)-(6) restrict the sample to include only bison-reliant tribes, which we define as having ancestral territory that overlaps more than 60% with the original bison's range. We include the same set of controls as in Table 4. For specific variable descriptions and sources please refer to Section III.A and Section A of the online appendix. Standard errors clustered by tribe are in parentheses, $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$. Standard errors computed based on the methodology of Conley (1999) are in brackets. We assume a weight of 1 for tribes whose ancestral territories were up to 5 degrees apart, and 0 otherwise.

Table A20: Correlation between Share of Bison Covering Traditional Territory and GDP per capita by Reserve in Canada in 2001 (CAD)

	(1)	(2)	(3)	(4)	
Shr lost btw 1730-1870	-5724.9***	-4998.2***	-4231.5***	-2641.3**	-3187.8***
	(859.224)	(1177.422)	(1449.693)	(1152.100)	(1081.904)
Shr lost btw 1870-1889	-4162.5**	-3001.9	-1753.0	710.6	-608.9
	(2001.206)	(2723.392)	(3016.870)	(2957.988)	(2486.491)
Historic Centralization		-4362.3**	-4270.8**	-3193.9	-1538.1
		(1978.286)	(1934.718)	(1991.319)	(2025.033)
EA Calories Agriculture		-224.8	81.72	-321.8	14.88
		(1512.450)	(1537.976)	(1519.706)	(1419.552)
EA Sedentary		1347.2	1238.1	1508.3*	1242.8**
		(810.279)	(766.577)	(835.869)	(572.900)
Jurisdictional Hierarchy		-2540.7***	-2449.3***	-1929.7***	-862.7
		(822.307)	(795.478)	(618.131)	(539.439)
Wealth Distinctions		1757.8***	1701.5***	1055.7	-777.7
		(589.903)	(523.634)	(671.482)	(998.540)
Avg Pop Density in 1600		11189.2	8916.3	15953.5	9244.2
		(13043.593)	(13175.344)	(11872.605)	(14010.135)
Log Ruggedness			-481.0	-157.4	-561.6*
			(415.469)	(405.258)	(331.210)
Signed a Historic Treaty				-2704.1**	-2733.8***
				(1074.662)	(774.655)
Signed a Modern Treaty				1741.4*	3428.3***
				(916.117)	(626.418)
Log distance to closest CMA					-1167.8***
					(388.747)
Longitude					-60.99**
					(28.629)
Latitude					27.89
					(71.496)
Constant	12603.5***	11265.6***	13622.9***	11930.2***	13361.9***
	(774.822)	(1525.919)	(2027.724)	(1975.178)	(3290.206)
Observations	313	313	312	312	312
Adjusted R^2	0.242	0.350	0.361	0.428	0.508
# of Clusters	49	49	49	49	49

Notes: This table reports OLS estimates of the relationship between income per capita and bison-reliance (equation 3) in Canada. The dependent variable is income per capita at the reserve-tribe level. All columns use the full sample. For specific variable descriptions and sources please refer to Section III.A and Section A of the online appendix. Standard errors clustered by tribe are in parentheses, $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A21: Correlation between Alternative Bison Measures and Income Per Capita by Reservation in 2000

	(1)	(2)	(3)	(4)	(5)
Original share	-1963.6**				
	(897.868)				
Share left by 1870	-2305.1***				
	(638.795)				
Anthropological dependence		-1693.2*			
		(1015.106)			
Anthro dependence x Share 1870		-3084.6***			
		(816.537)			
Short grasses share			-3286.5**		
			(1326.464)		
Short grasses share x Share 1870			-955.1		
			(1312.848)		
Log cattle density in traditional territory				-413.9	
				(462.260)	
Log cattle density x Share 1870				-1348.4***	
				(235.982)	
Member of ITBC					-1067.1
					(751.545)
Member of ITBC x Share 1870					-2867.1***
					(703.501)
Constant	10957.4***	10695.3***	10530.9***	11088.2***	10534.6***
	(629.657)	(581.362)	(466.157)	(1045.245)	(523.675)
Observations	195	195	195	195	195
Adjusted R^2	0.059	0.044	0.054	0.039	0.039
# of Clusters	99	99	99	99	99

Notes: This table reports OLS estimates of the relationship between income per capita and bison-reliance (equation 3) using a number of different measures of bison reliance. The dependent variable is income per capita at the reservation-tribe level. All columns include the full sample. We include the same set of controls as in Table 4. "Anthropological dependence" is a measure from 0 to 1 of the degree of bison-reliance collected from Waldman (2009). "Original share" measures the degree to which a tribe's traditional territory was covered by bison as of 1730. "Short grasses share" is the share of ancestral territory that overlaps with temperate grassland ecosystems. "Log cattle density in traditional territory" is the logarithm of the number of cattle per square kilometre in 2012 within the borders of a tribe's traditional territory. "Member of ITBC" equals 1 if the tribe belonged to the Intertribal Buffalo Council in 2017. All measures are also interacted with the share of a tribe's traditional territory that still overlapped with the bison's range as of 1870, at the start of the rapid slaughter. For specific variable descriptions and sources please refer to Section III.A and Section A of the online appendix. Standard errors clustered by tribe are in parentheses, $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A22: Correlation between the Share of Bison Covering Traditional Territory and Income Per Capita by Reservation in 2000: Full Result Robustness Checks

	(1)	(2)	(3)	(4)	(5)
Shr lost btw 1730-1870	-1896.1*	-1993.9**	-2769.9***	-1113.0	-980.2
	(1018.942)	(963.423)	(954.485)	(1116.442)	(1102.157)
Shr lost btw 1870-1889	-3832.7**	-4666.4***	-5222.6***	-2519.4	-2004.5
	(1641.293)	(1619.316)	(1695.520)	(1760.065)	(1758.769)
Historic Centralization	2803.0**	3306.7**	2980.9**	1625.4	1195.7
	(1194.975)	(1282.252)	(1283.974)	(1129.451)	(1166.978)
EA Calories Agriculture	-379.9	-497.7	-418.8	-700.9**	-724.2**
	(386.582)	(384.205)	(379.303)	(315.980)	(322.140)
EA Sedentary	-285.3	-144.0	-117.6	101.3	81.12
	(174.619)	(196.691)	(193.839)	(268.477)	(271.328)
Jurisdictional Hierarchy	-532.8	-701.5	-738.6	269.6	417.1
	(774.298)	(805.791)	(808.084)	(727.821)	(662.009)
Wealth Distinctions	1396.8***	1370.9**	1437.7***	695.1	622.0
	(478.131)	(525.602)	(530.383)	(636.395)	(621.524)
Population in 1600	-53.20	-43.69	-30.12	74.00	44.87
	(86.148)	(93.916)	(95.944)	(87.481)	(102.918)
Log Ruggedness	505.6*	426.2	425.0	621.7**	643.5**
	(289.886)	(277.844)	(280.427)	(240.469)	(297.296)
Forced Co-existence	-5707.9***	-5839.9***	-5854.3***	-4701.4***	-4714.8***
	(1053.606)	(1068.459)	(1078.110)	(941.329)	(938.611)
Indian War	-1129.8*	-783.4	-952.2	-879.1	-829.0
	(593.221)	(688.887)	(686.689)	(744.788)	(786.340)
Distance Displaced	339.7	424.3	398.0	264.8	186.5
	(308.355)	(320.710)	(330.929)	(373.508)	(400.192)
Rail b/w 1830-1840	6309.4**	5312.1*	4958.0	332.5	550.9
	(2959.374)	(3055.501)	(3050.124)	(3272.349)	(3184.980)
Rail b/w 1840-1850	2414.3	1412.9	1394.0	1110.5	2647.4
	(2637.465)	(2767.857)	(2782.024)	(2844.571)	(2992.124)
Rail b/w 1850-1860	4075.2***	4041.1**	4421.2***	1916.1	1677.7
	(1361.346)	(1584.643)	(1625.014)	(2390.539)	(2500.559)
Rail b/w 1860-1870	1088.2	1265.4	1414.6	-1490.8	-831.8
	(1193.492)	(1252.941)	(1241.460)	(1628.355)	(1647.807)
Rail b/w 1870-1880	3830.8***	3848.2***	3940.8***	1148.7	1519.5
	(1059.921)	(1110.625)	(1086.697)	(1375.518)	(1246.611)
Rail b/w 1880-1890	1056.3	960.5	1112.9	-855.9	-487.6
	(745.862)	(804.820)	(776.506)	(1141.665)	(1052.703)
Rail after 1890	466.9	48.22	279.5	-1367.3	-1211.4
	(822.977)	(1058.173)	(1050.327)	(1181.182)	(1169.347)
Great Basin	1594.5	1735.5	1886.6	2392.5**	2307.9**
	(1091.729)	(1174.110)	(1172.877)	(1196.338)	(1146.858)
Northeast	2215.2	2638.1	1427.2	1235.5	1601.9
	(1638.380)	(1899.826)	(2134.049)	(2054.214)	(2152.003)
Northwest	1078.7	2554.1	2643.3	-739.5	-182.2
	(1121.015)	(2103.647)	(2114.860)	(2110.247)	(2270.244)
Plains	3216.5*	4414.1**	4551.9**	3738.5*	2774.2
	(1772.531)	(2013.052)	(1972.363)	(2041.934)	(2019.697)
Plateau	270.9	1596.3	1273.6	947.1	943.0
	(1559.808)	(1605.257)	(1644.172)	(1432.993)	(1541.475)
Southeast	2425.6	4586.3	5365.8	1408.6	1525.1
	(3093.967)	(3648.755)	(3720.998)	(3604.879)	(3629.874)
Southwest	3417.6	3957.6*	4054.3*	3765.8**	4000.2**
	(2168.986)	(2247.589)	(2249.901)	(1737.508)	(1764.909)
Treaty Signed post-1880		-1796.3*	-1805.5*	-463.7	-466.6
		(1030.095)	(1023.572)	(1029.360)	(1027.200)

Continued on next page

Table A22 – continued from previous page

(1)	(2)	(3)	(4)	(5)	
Treaty Signed 1870-1880		0	0	0	0
		(.)	(.)	(.)	(.)
Treaty Signed 1860-1870		-39.32	153.8	841.9	617.2
		(894.311)	(899.983)	(958.441)	(894.073)
Treaty Signed 1850-1860		-1427.6	-1519.2	-861.4	-622.8
		(1570.797)	(1564.330)	(1368.017)	(1270.427)
Treaty Signed pre-1850		-704.6	-276.4	1272.8	1480.7
		(1384.047)	(1357.338)	(1317.108)	(1342.047)
Beaver Share of Territory			1603.4	1835.7	1421.3
			(1154.419)	(1137.742)	(1131.206)
Log Reservation Square KM				-365.5*	-469.7**
				(212.741)	(234.950)
Nearby Income Per Capita				0.296**	0.298**
				(0.127)	(0.144)
Mobility of Surrounding County				-27.02	-26.06
				(94.651)	(86.442)
Log Distance to Nearest City				-584.1	-447.2
				(401.997)	(392.123)
Presence of a Casino				2978.1*	3053.1*
				(1639.121)	(1687.931)
Log population				111.2	177.3
				(250.779)	(241.743)
Adult Population Share				66.31	80.28
				(52.789)	(51.573)
Shr land no excess salts					2216.9***
					(779.749)
Shr land nutrients avail					-877.7
					(966.399)
Shr land nutrient retention					2171.6
					(1348.646)
Shr land good rooting cond					891.1
					(1316.974)
Shr land oxygen					560.2
					(1376.070)
Shr land non toxic					-1721.6
					(1854.878)
Shr land workable					327.1
					(1252.556)
Observations	195	195	195	195	195
Adjusted R^2	0.315	0.311	0.310	0.426	0.428
# of Clusters	99	99	99	99	99

Notes: This table reports OLS estimates of the relationship between income per capita and bison-reliance (equation 3). The dependent variable is income per capita at the reservation-tribe level. All columns include cultural region fixed effects which include: California, the Great Basin, the Northeast, the Northwest, the Plains, the Plateau, the Southeast and the Southwest. All columns use the full sample. For specific variable descriptions and sources please refer to Section III.A and Section A of the online appendix. Standard errors clustered by tribe are in parentheses, $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A23: Correlation between Share of Bison Territory Lost and Light Density in 2013

	Full Sample		Bison-Reliant	
	(1)	(2)	(3)	(4)
Share lost btw 1730-1870	-0.549***	-0.341		
	(0.208)	(0.211)		
Share lost btw 1870-1889	-1.036***	-0.719***	-0.450*	-0.532*
	(0.226)	(0.211)	(0.233)	(0.267)
Constant	2.179***	2.651***	2.256*	3.340***
	(0.565)	(0.502)	(1.142)	(0.929)
Observations	195	338	72	109
Adjusted R^2	0.404	0.371	0.437	0.386
# of Clusters	99	128	37	46

Notes: This table reports OLS estimates of the relationship between nighttime light density in 2013 and bison-reliance (equation 3). The dependent variable is the log of mean nighttime light density at the reservation-tribe level. Figure A8 shows that similar conclusions are drawn if we use the log of mean nighttime light density measured in alternative years. All columns include the full set of controls in Table 4, but with mean light density in the counties surrounding the reservation in replace of mean per capita income in nearby counties and a control for whether the reservation is federal or state. Columns (1)-(2) use the full sample, while columns (3)-(4) restrict the sample to include only bison-reliant tribes, which we define as having ancestral territory that overlaps more than 60% with the original bison's range. Column (1) and (3) use the sample of lights for which income per capita is also available, and column (2) and (4) use the full lights sample. For specific variable descriptions and sources please refer to Section III.A and Section A of the online appendix. Standard errors clustered by tribe are in parentheses, $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A24: Robustness: IV First Stage

	(1)	(2)
Cost to Chicago in 1870	1.004**	1.051***
	(0.396)	(0.227)
Cost to Fort Leavenworth in 1870	0.210	0.226
	(0.276)	(0.266)
Cost to New York in 1870	-0.431	-0.385***
	(0.337)	(0.118)
Cost to St. Louis in 1870	-0.869	-0.897*
	(0.521)	(0.503)
Cost to Montreal in 1870	0.0798	
	(0.582)	
Cost to Baltimore in 1890	6.569**	6.564***
	(2.438)	(2.396)
Cost to New York in 1890	-6.548**	-6.544***
	(2.438)	(2.396)
Historic Centralization	-0.169	-0.169
	(0.169)	(0.167)
EA Calories Agriculture	-0.0957	-0.0987
	(0.085)	(0.074)
EA Sedentary	0.0216	0.0251
	(0.096)	(0.089)
Jurisdictional Hierarchy	0.0457	0.0490
	(0.064)	(0.060)
Wealth Distinctions	-0.733	-0.720*
	(0.442)	(0.423)
Population in 1600	-0.0674*	-0.0679*
	(0.040)	(0.037)
Log Ruggedness	0.0407	0.0392
	(0.030)	(0.029)
Forced Co-existence	-0.0615	-0.0564
	(0.081)	(0.082)
Indian War	-0.293*	-0.285
	(0.174)	(0.197)
Distance Displaced	0.230***	0.227***
	(0.064)	(0.068)
Nearby Income Per Capita	0.0000172*	0.0000176*
	(0.000)	(0.000)
Constant	3.316	4.065**
	(5.265)	(1.866)
Observations	72	72
Adjusted R^2	0.678	0.683
# Clusters	37	37

Notes: This table reports the first stage results depicting the relationship between the cost-adjusted distance instruments and bison-reliance (equation 3). The dependent variable is the share lost between 1870 and 1889 at the reservation-tribe level. Both columns restrict the sample to include only bison-reliant tribes, which we define as having ancestral territory that overlaps more than 60% with the original bison's range. For specific variable descriptions and sources please refer to Section III.A and Section A of the online appendix. Standard errors clustered by tribe are in parentheses, $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A25: Robustness: IV Reduced Form

	(1)	(2)
Cost to Chicago in 1870	4618.2	976.8
	(4914.672)	(2521.926)
Cost to Fort Leavenworth in 1870	1063.6	-207.8
	(3439.301)	(3234.125)
Cost to New York in 1870	1375.7	-2163.0
	(4940.496)	(1689.830)
Cost to St. Louis in 1870	-788.7	1421.2
	(6489.408)	(6097.198)
Cost to Montreal in 1870	-6237.5	
	(7846.300)	
Cost to Baltimore in 1890	-1483.4	-1112.1
	(22499.050)	(22703.272)
Cost to New York in 1890	1406.8	1032.6
	(22496.330)	(22699.108)
Historic Centralization	2103.4*	2067.1*
	(1164.394)	(1159.967)
EA Calories Agriculture	-189.0	45.04
	(1050.488)	(1002.398)
EA Sedentary	-1156.4	-1425.9
	(1316.941)	(1255.199)
Jurisdictional Hierarchy	-1083.1	-1339.3
	(1241.084)	(1174.896)
Wealth Distinctions	4138.2*	3124.4*
	(2371.118)	(1670.541)
Population in 1600	-182.5	-142.4
	(279.277)	(271.243)
Log Ruggedness	-238.0	-126.4
	(637.286)	(577.792)
Forced Co-existence	-6904.7	-7297.3*
	(4422.766)	(4163.976)
Indian War	-4.170	-621.3
	(1414.988)	(1123.004)
Distance Displaced	-248.7	-79.69
	(1226.233)	(1184.659)
Nearby Income Per Capita	0.410	0.379
	(0.262)	(0.255)
Constant	80686.4	22198.5
	(70143.805)	(21248.951)
Observations	72	72
Adjusted R^2	0.304	0.309
# Clusters	37	37

Notes: This table reports the reduced form relationship between the cost-adjusted distance instruments and income pre capita (equation 3). The dependent variable is income per capita at the reservation-tribe level. Both columns restrict the sample to include only bison-reliant tribes, which we define as having ancestral territory that overlaps more than 60% with the original bison's range. For specific variable descriptions and sources please refer to Section III.A and Section A of the online appendix. Standard errors clustered by tribe are in parentheses, $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A26: Top Five Occupations by Share of the 20 to 65 Population by Race and Year

Rank by Share	1900 (1)	1930 (2)
	Panel A: White Men	
1	Farmers (owners and tenants)	Farmers (owners and tenants)
2	Laborers (n.e.c.)	Laborers (n.e.c.)
3	Farm laborers, wage workers	Managers, officials, and proprietors (n.e.c.)
4	Managers, officials, and proprietors (n.e.c.)	Operative and kindred workers (n.e.c.)
5	Operative and kindred workers (n.e.c.)	Salesmen and sales clerks (n.e.c.)
Observtions	353,556	3,091,819
	Panel B: Native American Men	
1	N/A (blank)	Farmers (owners and tenants)
2	Farmers (owners and tenants)	Farm laborers, wage workers
3	Other non-occupational response	N/A (blank)
4	Farm laborers, wage workers	Laborers (n.e.c.)
5	Laborers (n.e.c.)	Farm laborers, unpaid family workers
Observtions	14,851	5,150

Notes: This table displays the top occupations for white men (panel A) and Native American men (panel B) in 1900 (column (1)) and 1930 (column (2)). Ranks are calculated for men aged 20-65. For specific variable descriptions and sources please refer to Section III.A and Section A of the online appendix.

C. Additional Figures

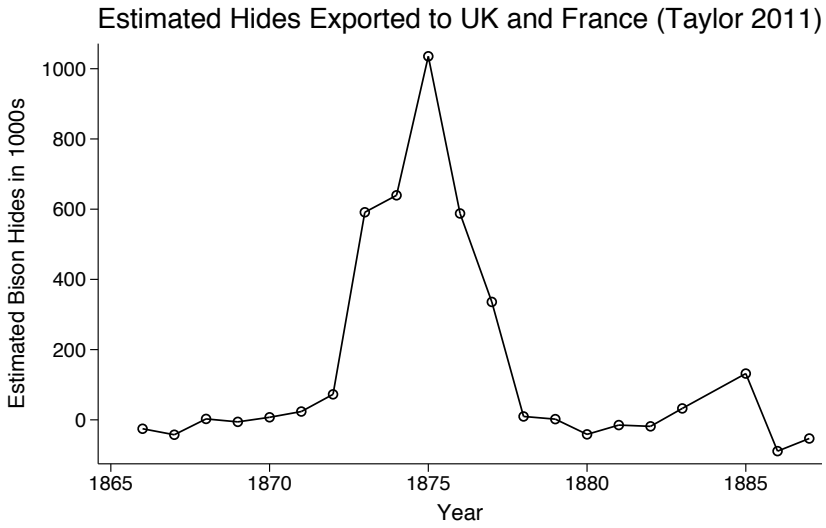

Figure A2: Meaures of hide exports to England and France. See Taylor (2011) for details.

Figure A3: This map illustrates the timing and original range of the North American bison and is found in Hornaday 1889, "Extermination of the North American Bison with a Sketch of its Discovery and Life History," in the Report of the National Museum under the direction of the Smithsonian Institution, pp. 367-548. Washington: Government.

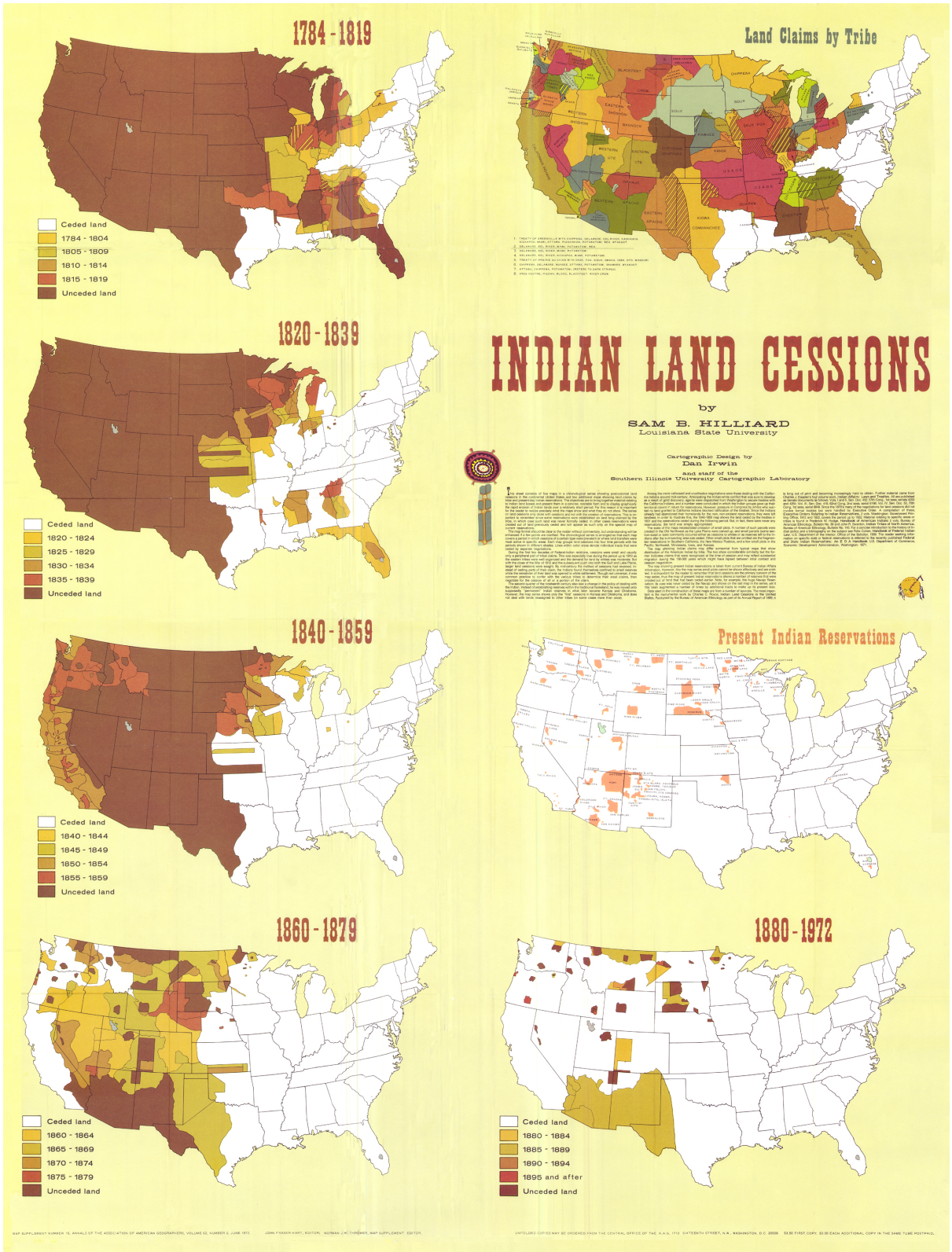

Figure A4: This map illustrates the timing of land succession and can be found as Map supplement number 16, Annals of the Association of American Geographers, Volume 62, Number 2, June 1972.

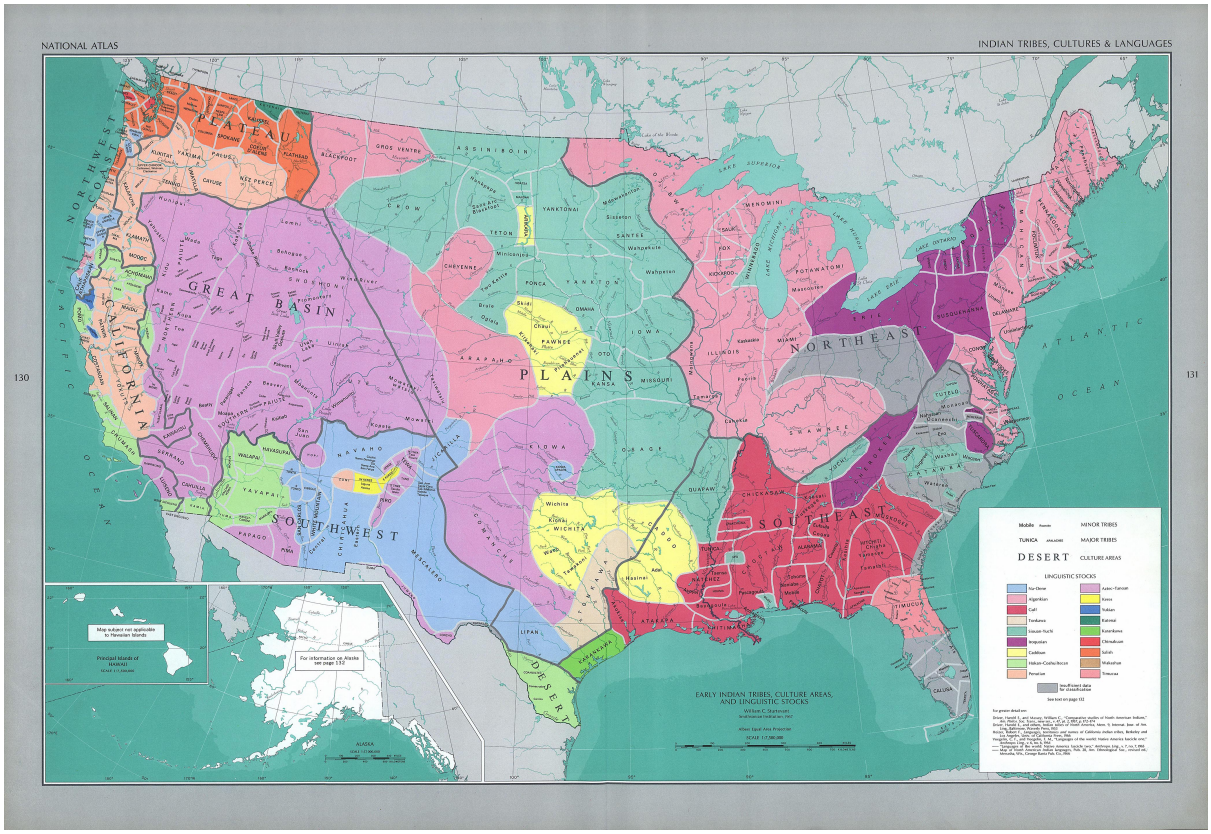

Figure A5: This map illustrates the ancestral territories from the National Atlas of the United States 1970 (Gerlach, 1970).

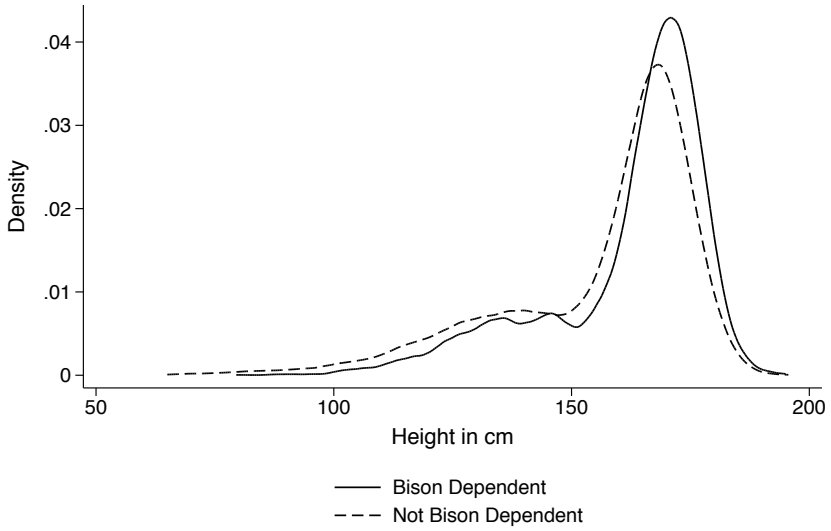

Figure A6: This figure plots the density of standing height from Franz Boas' sample 1890 to 1903. Societies are classified as bison-reliant when more than 60% of their ancestral territory was covered by the historic bison range and non-bison-reliant if it was less than 60%. For specific variable descriptions and sources please refer to Section III.A and Section A of the online appendix.

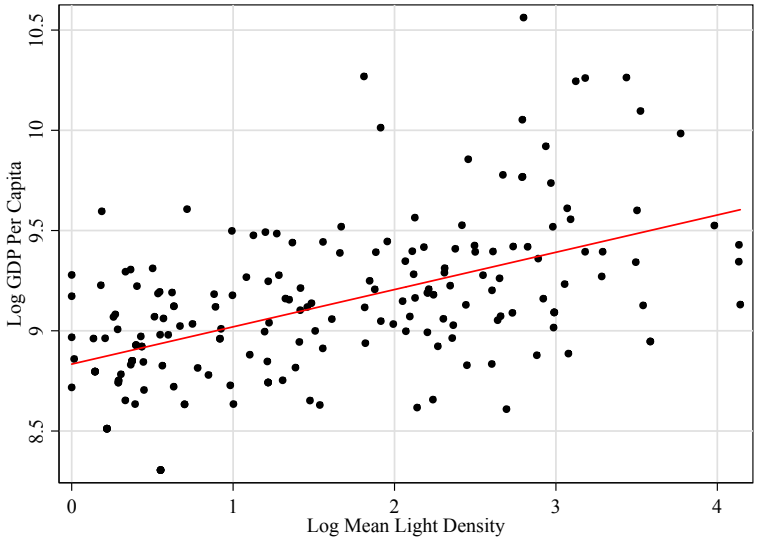

Figure A7: Log of GDP per capita and log of mean light density at the reservation level. For specific variable descriptions and sources please refer to Section III.A and Section A of the online appendix.

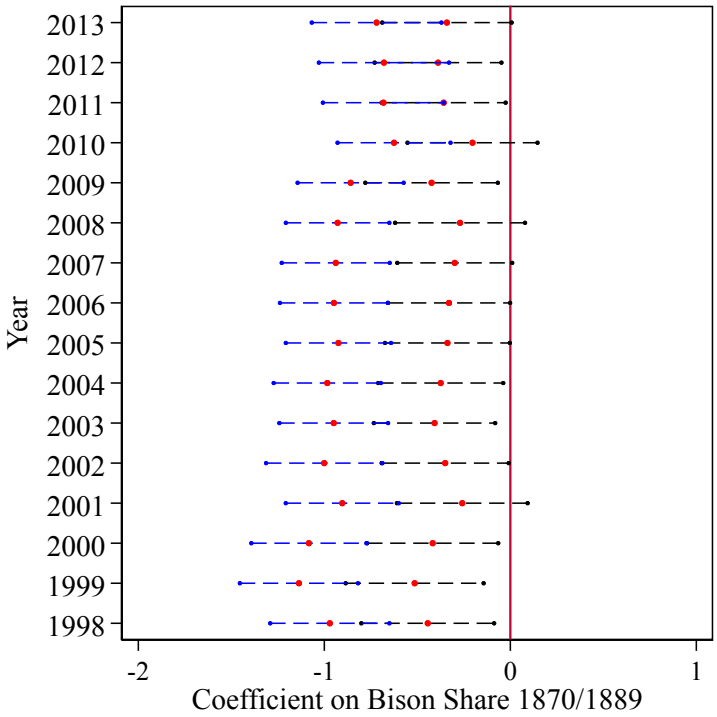

Figure A8: Coefficient estimates on "Share lost between 1730-1870" (black) and "Share lost between 1870-1889" (blue) using the log of mean light density as the dependent variable for several available years. All regressions include the full set of controls from Table A23. For specific variable descriptions and sources please refer to Section III.A and Section A of the online appendix.