

# Buffalo slaughter left lasting impact on Indigenous peoples, economics study finds

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The mass slaughter of North American bison by settlers of European descent is a well-known ecological disaster. An estimated eight million bison roamed the United States in 1870, but just 20 years later fewer

than 500 of the iconic animals remained.

The [mass slaughter](#) provided a brief economic boon to some newly arriving settlers, hunters and traders of the Great Plains who sold the hides and bones for industrial uses.

In contrast, Indigenous peoples whose lives depended on the bison suffered a devastating economic shock—one that still reverberates in these communities today, an economic study finds.

*The Review of Economic Studies* published the findings by economists at Emory University, the University of Toronto and the University of Victoria. The researchers quantified both the immediate and long-term economic impacts of the loss of the bison on Indigenous peoples whose lives depended on the animals.

Changes in the average height of bison-related people is one striking example of the fallout. Adult height across a population is one proxy of wealth and health given that it can be impacted by nutrition and disease, particularly early in development.

Bison-reliant Indigenous men stood around six feet tall on average, or about an inch taller than Indigenous men who were not bison-reliant.

"They were among the tallest people in the world in the mid-19th century," says Maggie Jones, assistant professor of economics at Emory University and a co-author of the paper. "But after the rapid near-extinction of the bison, the height of the people born after the slaughter also rapidly declined."

Within one generation, the average height of Indigenous peoples most impacted by the slaughter dropped by more than an inch.

"That's a major drop, but given the magnitude of the economic shock it's not necessarily surprising," Jones says.

## **Reverberating effects**

By the early 20th century, the paper shows, the child-mortality rate of bison-dependent Indigenous nations was 16 percentage points higher and the probability of a working-age male reporting an occupation was 19 percentage points lower compared with Indigenous nations that were never reliant on bison.

And income per capita remained 25% lower, on average, for bison-reliant nations compared to other nations through the latter half of the 20th century to today. The persistent gap could not be explained by differences in factors such as agricultural productivity, self-governance or application of the Dawes Act of 1887, which authorized the breakup of reservation land into small allotments parceled out for individual ownership.

The researchers find that limited access to credit was one factor that curtailed the ability of some bison-reliant nations to adjust economically following the near-extinction of the bison.

"One role of economists is to provide quantitative evidence that people can turn to when trying to design more effective policies," Jones says. "By providing data that benchmarks disparities among bison-reliant people and the sources and evolution of these disparities, we hope to support efforts to improve the situation."

The paper's other co-authors are economists Donn Feir (University of Victoria) and Rob Gillezeau (University of Toronto).

## **An overlooked economic shock**

Jones' economic research focus includes history, labor and education. She uses quantitative tools from these areas to better understand the persistence of socioeconomic inequalities between groups in North America.

The economic effects of the bison slaughter are an overlooked piece of the history of Indigenous peoples that she and her co-authors decided to investigate.

For more than 10,000 years, bison served as the primary source of the livelihood for many Native Americans in regions of the Great Plains, the Northwest and the Rocky Mountains. Along with nutrition, the animals provided hides for clothing, lodging and blankets as well as bones for tools and implements. Nearly every part of the animal was used, including the brains to obtain grease for tanning hides and the stomach for creating bags and water containers.

Evidence suggests that bison-reliant Indigenous societies enjoyed living standards comparable to, or in some cases better than, their European contemporaries.

A gradual decline of the bison population started with the introduction of the horse and the arrival of Europeans. By 1870, however, mass slaughter of the animals began. Factors that drove the kill-off included the completion of the transcontinental railroad, improvements in European tanning technology that made bison hides more desirable and encouragement by the U.S. Army to eliminate the animals to help in their efforts to force Indigenous peoples onto reservations.

In some regions, the bison was eliminated in a little more than a decade. Jones and her co-authors describe the slaughter as one of the largest and

most rapid losses of a critical industry in North American history.

"Centuries of human capital were built around the use of the bison, and within 10 to 20 years this economic underpinning disappeared," Jones says. "And many channels of economic adjustment were cut off for Indigenous populations."

Indigenous people were forced onto reservations, their movements were restricted and they were not allowed to become citizens of the United States until 1924, the authors note.

## **Drawing from existing data**

Among the sources Jones and her colleagues drew on to quantify the impacts of the bison slaughter are data collected by anthropologists and published in the 15-volume Smithsonian Handbook on Native American Populations.

The economists defined nearly 24 Indigenous nations as "exposed to the slaughter," based on geographic location and whether bison served as their primary food source.

In their quantitative analysis of bison-reliant nations with Indigenous nations that were not bison-reliant, they controlled for factors such as differences in self-governance status of communities, differences in forms of [agricultural productivity](#) and the suitability of the land for agricultural production, the effects of the Dust Bowl and differential application of the Dawes Act.

To measure the persistent effects of the bison's decline on economic outcomes, the researchers drew from several sources: the Bureau of Indian Affairs (beginning in 1945), the U.S. Census (1980, 1990, 2000) and American Community Surveys (2007-2012 and 2015-2019).

The data showed that the income of formerly bison-reliant nations remained 25% lower than those of other Indigenous nations through 2019.

The researchers find relatively more favorable trajectories for bison-reliant communities that were located nearer to [financial institutions](#) in 1870 when the mass slaughter of the bison began.

"Proximity to a bank and access to credit appeared to be one important factor to help alleviate some of the financial hardship generated by the bison's decline," Jones says. "Many Indigenous communities are still located in banking deserts. That makes it more difficult to adjust to any kind of hardship that comes your way."

The researchers are now exploring the potential role of psychological trauma on the economic outcomes of bison-reliant nations.

"Bison were not just key to the economies of some Indigenous nations," Jones says. "The [bison](#) were also important cultural and spiritual symbols. You would expect a psychological impact when they were ripped away. That's an important part of the story that this paper didn't get to tell."

**More information:** Donn L Feir et al, The Slaughter of the Bison and Reversal of Fortunes on the Great Plains, *Review of Economic Studies* (2023). [DOI: 10.1093/restud/rdad060](https://doi.org/10.1093/restud/rdad060)

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