



Yellowstone's iconic bison are caught in the middle of an economic and ecological battle between cattle ranchers, campaigners and park officials. The result is a controversial and sometimes gruesome scheme to capture and kill one of the country's most treasured animals.

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One freezing dawn last March, I stood in Yellowstone National Park's Stephens Creek facility with a small group of journalists and conservationists. We watched as park rangers and biologists went to work on one of the nation's most iconic and impressive animals. It was an uncomfortable scene to watch. One by one, dozens of American bison were forced into squeeze chutes. They roared in pain and fear as their enormous bodies were trapped by a brutish metal clamp called the Silencer. Many bled and their horns were ripped off as they tried to escape.

Methodically, the biologists drew blood samples and weighed the immobilised giants, then sorted them into pens: on one side, animals that would be kept in quarantine for an undetermined period; on the other, those that would be loaded on a trailer. These were the less fortunate ones – their

final destination a slaughterhouse in Montana.

The Stephens Creek facility, just inside the park's northern border, near Gardiner, Montana, is infamous among wildlife advocates. Every year since 2000, park authorities have culled hundreds of bison (also known as buffalo) at the behest of the state of Montana. For years, conservation groups and members of the public have been demanding the right to witness the event. Finally, a small group of us was allowed in last year. Fencing and wood boards partially obscured our view. This year's cull will be larger. Its aim: to drastically reduce the size of this last herd of wild bison.

At one time, up to 60 million roamed the plains of the western US. That was before they were brought to the edge of extinction by European settlers in the 19th century: by 1890 just a few hundred remained. Then, their fortunes reversed. Some were

protected by private individuals who feared they would otherwise be wiped out. In Yellowstone, a lone herd of 25 wild bison was given reprieve at the turn of the 20th century. Today, that population numbers 5000, the highest it has been in more than a century.

But for all the awe and reverence buffalo inspire – President Barack Obama officially declared them the national mammal last May – American bison have an uneasy relationship with people. They have out-grown the park's winter grazing ranges, says Keith Aune of the Wildlife Conservation Society. As a result, the animals have started roaming outside its borders during the winter months in search of food.

In 1995, the state of Montana sued the National Park Service because buffalo were moving onto its state lands. Agriculture is king in Montana and cattle its biggest commodity, worth \$4.5 billion annually. With the



Left: Each year, hundreds of wild bison are prodded through the wood and metal maze of Stephens Creek facility in Yellowstone National Park

Above: The Silencer (centre) is a metal clamp that holds the enormous beasts in place while biologists take blood samples. From here, the vast majority are shipped to a slaughterhouse in Montana

state's blessing, many of the cattle graze on public lands. Roaming bison were competing for the grass. Ranchers say they also spread brucellosis, a damaging and costly bacterial disease (see page 40).

The cull is part of a plan, introduced after the 1995 lawsuit, to control the wild herd. It seeks to bring numbers down to 3000, which park officials say is Yellowstone's carrying capacity. But bison advocates say this number is too low and is politically driven in a state that favours the profits of cattle production over the well-being of a wild species. For Aune, the figure reflects a "human tolerance capacity" rather than the ecological capacity of the landscape.

The International Union for Conservation of Nature (IUCN) has called the American bison "the most neglected icon", and listed it as "near threatened" as a result of habitat loss, genetic manipulation and depopulation – all of which are a

direct result of human intervention. Aune and a team of conservation biologists studied the health of eight wild populations in North America for an upcoming report for the IUCN. They found numbers were healthy: according to the IUCN, a bison herd needs at least 400 individuals to be viable, which makes the Yellowstone population demographically viable.

However, only two of the eight populations studied were deemed genetically stable – the wood bison in Canada and the Yellowstone plains bison. Declining diversity as a result of inbreeding highlights the genetic value of the Yellowstone herd and the extent to which the future of the species depends upon it.

Bison campaigners are categorical: "3000 is a politically derived figure," says Dan Brister of the Buffalo Field Campaign, adding that the wider habitat should matter more than the parks' arbitrary borders.



Above: Blood samples are taken from each corralled bison and tested for brucellosis, but the on-site tests can only show if the animal was exposed to the disease, not if it is infected

Right: Bison are an important part of Native American culture. Tribal members are allowed to hunt bison outside national park boundaries



Ranchers on the margins of Yellowstone National Park blame bison for transmitting bovine brucellosis to their cattle herds. This claim is not without irony given studies showing it was probably cattle that passed the disease to wild bison in the early 20th century.

Brucellosis is a bacterial disease which triggers abortions in pregnant females and is highly contagious. It is passed on primarily after birth when other animals in the herd lick the infected placenta. The disease is of such concern to the cattle industry that the US has a programme to eradicate it.

But there is little evidence to support the ranchers' claim that wild bison pose a risk to their herds. Aune says the brucellosis argument is "a regulatory vehicle" which ranchers use to keep bison off state lands. Transmission from bison to cattle has only been demonstrated in captivity, but there are no

documented cases in the wild. And last May, a study by the US Department of the Interior and the US Geological Survey looking at 30 years of data on brucellosis concluded that elk are the most likely source of transmission to livestock.

The study found that four of the five strains of the bacteria are mainly associated with elk and originated in the National Elk Refuge in Wyoming, just south of Yellowstone. The fifth strain was linked to the Yellowstone bison, but was found to spread less rapidly than the elk strains.

Nonetheless, blood samples continue to be collected from each animal corralled out of the wild herd at Stephens Creek. The trouble is, the on-site test is for antibodies to the bacterium and so only shows if the animal has been exposed, not if it is infectious. For that, samples need to be grown in the lab, which takes weeks – by which time the animal's fate has already been sealed. Most

are killed and their meat is given to Native American tribes.

On the two days I witnessed the sorting at Stephens Creek, 150 animals were processed and two-thirds were taken to be culled. The remaining animals were kept for a new quarantine and relocation programme. None of the animals captured at Stephens Creek will ever roam in Yellowstone again.

Pressure groups working to protect the American bison claimed a victory in December 2015. After two decades of pressure from the Buffalo Field Campaign (BFC) and people living near the park border, the governor of Montana granted bison year-round access to Horse Butte, to the west of Yellowstone. This is an area that herds use for calving, and from 15 May each year, the authorities had been hazing bison back into Yellowstone to stop them eating grass.

BFC welcomed the decision, but is less keen on another initiative. Of the 150 bison I witnessed being captured, park officials held 57 yearlings back for a 50-year relocation plan. After a period of quarantine to make sure they aren't infected, the buffalo will be shipped to other parts of the country, to boost wild or conservation herds. Conservation herds live behind fences and are used for education or tourism. The quarantined animals

could also be used for plans to establish fenced-in "cultural" herds on tribal lands and reservations.

The BFC and other groups see these plans as a path to domestication. Aune agrees that is likely to happen if the programme runs over generations, but argues that without captive restoration there would be no animals left in the wild. "Wildlife is over if we start saying we can't do this stuff because it domesticates them," he says.

Another option for controlling the population would be to introduce hunting quotas. Hunting is currently forbidden inside the park and there are strict quotas for hunting bison outside its boundaries. Some Native American tribes have proposed that they be permitted to hunt inside the park as well. They say that they do not meet their quotas from the bison that spill out over its borders.

US government services are also testing vaccines, including the RB51 vaccine against brucellosis and

another one that sterilises females. But Darrel Geist of BFC is vehemently opposed, not least because the work is run by a branch of the Department of Agriculture which he says should have no role in managing wild buffalo. "Federal livestock bureaucracy is the driving force behind the slaughter of America's last wild buffalo in Yellowstone and Montana," he says.

Eleven months have passed since that cold morning in Stephens Creek. Eleven months during which the cull has continued, as more animals have been herded into the area for testing and sorting. In total, 900 animals were slaughtered last year – short of the annual target of 1000. In September, the BFC and two other wildlife conservation groups sued the federal government for failure to list the Yellowstone bison under the Endangered Species Act. Undeterred, park officials announced the 2017 cull quota would be raised to 1300. It is already under way. ■