

NOTE

Apparent predation of a bison (*Bison bison*) calf by a Grizzly Bear (*Ursus arctos*) in southwestern Yukon

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Abstract

Grizzly Bear (*Ursus arctos*) predation on American Bison (*Bison bison*)—particularly calves—was likely once common. However, with the range-wide collapse of bison near the close of the 19th century, the two species no longer co-occur across much of their current distributions. Over the past 60 years, efforts to reintroduce bison to their native range have resulted in a few small areas where the two species once again co-occur. Yet, predation of bison by bears is apparently rare and has not been observed outside Yellowstone National Park, where both species have existed for millennia. On 28 June 2023, we observed an adult male Grizzly Bear protecting a buried bison calf that it had apparently killed in Yukon, Canada. This is the first observation of apparent predation of a bison by a Grizzly Bear outside Yellowstone National Park. Our observation further highlights how reintroduced bison are becoming integrated into local food webs, which is a key indicator of ecological restoration.

Key words: American Bison; *Bison bison*; Grizzly Bear; *Ursus arctos*; boreal food web; ecological restoration; predation; predator-prey interactions

American Bison (*Bison bison*) are among the most formidable prey because of their large size, great strength, group defensive behaviour, and hyper-aggressiveness toward predators (Smith *et al.* 2001; Mech *et al.* 2004; MacNulty *et al.* 2014). Gray Wolf (*Canis lupus*), their primary predator, is capable of killing adults and calves when working as a pack (Carbyn and Trottier 1987, 1988; MacNulty *et al.* 2001; Smith *et al.* 2001; Jung 2011; Jung *et al.* 2023b). Grizzly Bear (*Ursus arctos*; Varley and Gunther 2002; Wyman 2002) and Coyote (*Canis latrans*; Smith *et al.* 2001; Sheldon *et al.* 2009) have also been observed killing bison in Yellowstone National Park, usually with a focus on calves. No other contemporary carnivores are known to have killed bison.

Grizzly Bear predation of bison—particularly calves—was likely once common. However, with the range-wide collapse of bison near the close of the 19th century, these species no longer co-occur across much of their current distribution in North America. Predation of bison by Grizzly Bears has not been observed outside Yellowstone National Park, where

both species have existed for millennia.

Over the past 60 years, efforts to reintroduce bison to their native range have resulted in a few areas where the two species once again co-occur. Southwestern Yukon is home to the Aishihik population of reintroduced bison (Jung *et al.* 2015, 2023a; Boonstra *et al.* 2018), which has shared its distributional range with resident Grizzly Bears since 1988. These bison migrate into alpine areas during summer when their calves are young (Jung *et al.* 2018), bringing them into close proximity to resident Grizzly Bears. Over the past 20 years, we have frequently observed large groups of bison in alpine habitat (Jung 2020), sometimes with Grizzly Bears within about 50–250 m of them, often seemingly hiding in tall shrubs or in drainages. However, we had no evidence of bears hunting or killing bison. Here, we provide the first record of apparent predation of a bison by a Grizzly Bear in the mountains of southwestern Yukon.

On 28 June 2023, from a helicopter, we observed an adult male Grizzly Bear protecting a buried carcass in alpine tundra in southwestern Yukon, Canada.

Approximately 2–3 km ahead of the bear and carcass, we observed a group of ~30 bison with calves. We suspected that the carcass was a bison, so we used the helicopter to chase the bear away from the cache site so that we could inspect it. We verified that the carcass was a small bison calf that likely weighed <30 kg. A bloody rib cage was evidence that it was freshly dead and had recently been fed on by the bear (Figure 1). Moreover, freshly displaced vegetation and turf showed that the carcass had been recently buried by the bear (Figure 1). After ~10 min of observation, we left the carcass and site as found.

We cannot confirm whether the Grizzly Bear killed the calf or found and scavenged it. However, the most likely scenario is that the bear preyed rather than found the calf already dead because live calves were more common on the landscape than dead calves and a maternal group of bison was seen nearby. Our observation was not a surprise because we had previously observed Grizzly Bears scavenging carcasses of winter-killed bison in this area. Moreover, during aerial surveys of bison during the summer, when calves are precocious, we had observed Grizzly Bears near bison groups; we interpreted this as bears looking for an opportunity to kill a young or injured bison. Grizzly Bears in our region often prey on neonatal Moose (*Alces americanus*) calves, rather than adults (Larsen *et al.* 1989).

This is the first observation of apparent predation of a bison by a Grizzly Bear outside Yellowstone National Park in modern times. The Aishihik reintroduced bison numbered ~1951 adult animals in 2022 (95% CI 1688–2295; Jung *et al.* 2023a) and do not appear to be strongly affected by predation (Jung 2011; Jung *et al.* 2023b). However, a small number of Grizzly Bears that learn to become effective predators of bison calves could begin to limit bison population growth. That said, the frequency of Grizzly Bear predation of neonatal bison calves and the extent to which they affect calf recruitment in the Aishihik population is unknown. Regardless, predation is a natural process that shapes the evolutionary ecology of bison (Laundré *et al.* 2001; Fortin *et al.* 2009) and has the potential to influence local mammal assemblages and food webs (Boonstra *et al.* 2018). Our observation further highlights how reintroduced bison are becoming integrated into local food webs, which is a key indicator of ecological restoration (Sanderson *et al.* 2008; Jung *et al.* 2023b).

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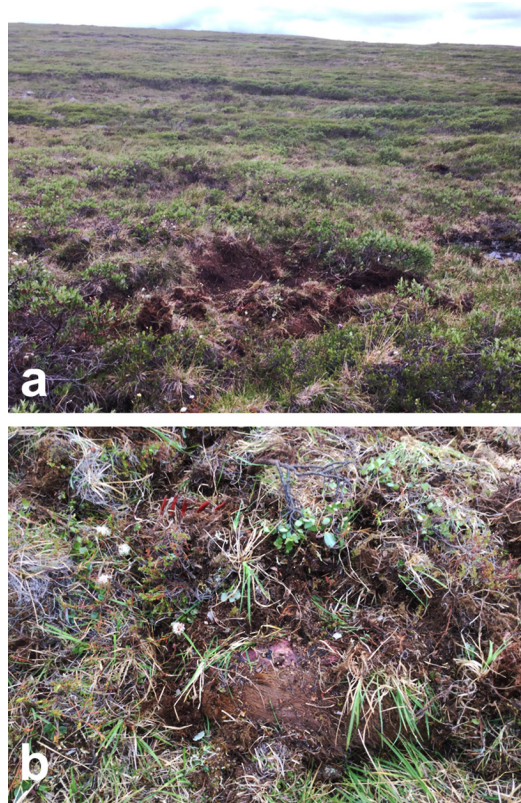


FIGURE 1. a. An American Bison (*Bison bison*) calf apparently killed, buried, and partly consumed by a Grizzly Bear (*Ursus arctos*) in the alpine tundra of southwestern Yukon, Canada. b. Close up of the buried calf carcass showing the rib cage and recently displaced vegetation. Photos: R. Drummond.

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Literature Cited

- Boonstra, R., S. Boutin, T.S. Jung, C.J. Krebs, and S. Taylor. 2018. Impact of rewilding, species introductions and climate change on the structure and function of the Yukon boreal forest ecosystem. *Integrative Zoology* 13: 123–138. <https://doi.org/10.1111/1749-4877.12288>
- Carbyn, L.N., and T. Trottier. 1987. Responses of bison on their calving grounds to predation by wolves in Wood Buffalo National Park. *Canadian Journal of Zoology* 65: 2072–2078. <https://doi.org/10.1139/z87-317>
- Carbyn, L.N., and T. Trottier. 1988. Descriptions of wolf attacks on bison calves in Wood Buffalo National Park. *Arctic* 41: 297–302. <https://doi.org/10.14430/arctic1736>
- Fortin, D., M.E. Fortin, H.L. Beyer, T. Duchesne, S. Courant, and K. Dancose. 2009. Group-size-mediated habitat selection and group fusion–fission dynamics of bison under predation risk. *Ecology* 90: 2480–2490. <https://doi.org/10.1890/08-0345.1>

- Jung, T.S.** 2011. Gray Wolf (*Canis lupus*) predation and scavenging of reintroduced American Bison (*Bison bison*) in southwestern Yukon. *Northwestern Naturalist* 92: 126–130. <https://doi.org/10.1898/10-07.1>
- Jung, T.S.** 2020. Investigating local concerns regarding large mammal restoration: group size in a growing population of reintroduced bison (*Bison bison*). *Global Ecology and Conservation* 24: e01303. <https://doi.org/10.1016/j.gecco.2020.e01303>
- Jung, T.S., R. Drummond, S.D. Taylor, K. Kuba, R. Osborne, C. Pinard, and T.J. Grantham.** 2023a. Results of the 2022 mark-resight survey of the Aishihik bison (*Bison bison*) population. Report SR-23-01. Fish and Wildlife Branch, Government of Yukon, Whitehorse, Yukon, Canada.
- Jung, T.S., N.C. Larter, C.J. Lewis, C. Thacker, and S.D. Taylor.** 2023b. Wolf (*Canis lupus*) predation and scavenging of reintroduced bison (*Bison bison*): a hallmark of ecological restoration to boreal food webs. *European Journal of Wildlife Research* 69: 50. <https://doi.org/10.1007/s10344-023-01676-0>
- Jung, T.S., N.C. Larter, and T. Powell.** 2018. Early and late births in high-latitude populations of free-ranging bison (*Bison bison*). *Canadian Field-Naturalist* 132: 219–222. <https://doi.org/10.22621/cfn.v132i3.1983>
- Jung, T.S., S.A. Stotyn, and S.M. Czetwertynski.** 2015. Dietary overlap and potential competition in a dynamic ungulate community in northwestern Canada. *Journal of Wildlife Management* 79: 1277–1285. <https://doi.org/10.1002/jwmg.946>
- Larsen, D.G., D.A. Gauthier, and R.L. Markel.** 1989. Causes and rate of Moose mortality in the southwest Yukon. *Journal of Wildlife Management* 53: 548–557. <https://doi.org/10.2307/3809175>
- Laundré, J.W., L. Hernández, and K.B. Altendorf.** 2001. Wolves, elk, and bison: reestablishing the “landscape of fear” in Yellowstone National Park, USA. *Canadian Journal of Zoology* 79: 1401–1409. <https://doi.org/10.1139/cjz-79-8-1401>
- MacNulty, D.R., A. Tallian, D.R. Stahler, and D.W. Smith.** 2014. Influence of group size on the success of wolves hunting bison. *PLoS ONE* 9: e112884. <https://doi.org/10.1371/journal.pone.0112884>
- MacNulty, D.R., N. Varley, and D.W. Smith.** 2001. Grizzly Bear, *Ursus arctos*, usurps bison calf, *Bison bison*, captured by wolves, *Canis lupus*, in Yellowstone National Park, Wyoming. *Canadian Field-Naturalist* 115: 495–498. <https://doi.org/10.5962/p.363829>
- Mech, L.D., R.T. McIntyre, and D.W. Smith.** 2004. Unusual behavior by bison, *Bison bison*, toward Elk, *Cervus elaphus*, and wolves, *Canis lupus*. *Canadian Field-Naturalist* 118: 115–118. <https://doi.org/10.22621/cfn.v118i1.892>
- Sanderson, E.W., K.H. Redford, B. Weber, K. Aune, D. Baldes, J. Berger, D. Carter, C. Curtin, J. Derr, S. Dobrott, and E.V.A. Fearn.** 2008. The ecological future of the North American Bison: conceiving long-term, large-scale conservation of wildlife. *Conservation Biology* 22: 252–266. <https://doi.org/10.1111/j.1523-1739.2008.00899.x>
- Sheldon, J.W., G. Reed, A.C. Burnett, K. Li, and R.L. Crabtree.** 2009. Coyote, *Canis latrans*, predation on a bison, *Bison bison*, calf in Yellowstone National Park. *Canadian Field-Naturalist* 123: 260–261. <https://doi.org/10.22621/cfn.v123i3.974>
- Smith, D.W., K.M. Murphy, and S. Monger.** 2001. Killing of a bison, *Bison bison*, calf by a wolf, *Canis lupus*, and four Coyotes, *Canis latrans*, in Yellowstone National Park. *Canadian Field-Naturalist* 115: 343–345. <https://doi.org/10.5962/p.363796>
- Varley, N., and K.A. Gunther.** 2002. Grizzly Bear predation on a bison calf in Yellowstone National Park. *Ursus* 13: 377–381.
- Wyman, T.** 2002. Grizzly Bear predation on a bull bison in Yellowstone National Park. *Ursus* 13: 375–377.

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