

with its paw. It then made contact again and appeared to bite the calf before jumping out of the way of the charging cow, which lowered its head and appeared to hook at the bear with its horns.

The bear reappeared from the swale, holding the calf in its mouth with the cow chasing it. It stopped, dropped the calf, and stood its ground over the calf while facing the cow. Momentarily, the cow stopped pursuing it. It remained 20–30 meters away, circling and occasionally rushing in and hooking its horns at the bear, but always quickly retreated when the bear did not run. After the cow stopped charging, the bear began to consume the calf. The cow stayed nearby and occasionally nibbled grass. After the bear had been feeding on the calf for approximately 15 minutes, the cow abruptly ran north and did not return.

The bear fed on the calf for about 30 minutes, then spent approximately 10 minutes covering the carcass with dirt, grass, and branches it broke from sagebrush. By this time, her cubs had moved across the

slope approximately 300 meters to the east and far up slope from the kill site. The cubs often stood up and looked around. The adult bear then moved directly east up slope to her cubs, and led them up a long draw and into a forested area and out of sight. The adult female grizzly bear and two cubs returned to the carcass at approximately 7:45 P.M., uncovered it, and fed on it at least until 9:30 P.M., when it became too dark to see.

Most bison calves in YNP are born in early May, and calving is generally over by the end of that month, although a few calves are born as late as September. Based on horn size, body size, and coloration, retired Yellowstone biologist Mary Meagher estimated that the bison calf was seven to eight weeks old.

Ungulate meat is one of the most concentrated sources of digestible energy and protein available to grizzly bears in the Yellowstone ecosystem. Grizzly bears obtain ungulate meat primarily through scavenging winter-killed and wolf-killed elk and bison carrion and predation on

elk calves. Although predation on elk calves in Yellowstone by both grizzly bears and black bears has been well documented, we are not aware of any records in the literature of bear predation on bison calves. Given the frequency that park employees and visitors observe grizzly bear predation on elk calves, we believe that predation on bison calves is an infrequent, opportunistic event or it would be reported more frequently. 🌲

Nathan Varley has lived in Yellowstone Park for more than 20 years. In 1994, he earned a M.S. in Fish and Wildlife Management at Montana State University, studying mountain goat ecology in the Absaroka Range. Since then he has worked with a variety of wildlife species including wolves, moose, and otters. More recently, he has been instrumental in the creation of a biological consulting company which specializes in ecological research, filming, and interpretive enterprises in Yellowstone.

Grizzly Bear Attacks Bull Bison

by Travis Wyman

On September 23, 2000, I responded to a common call of a grizzly bear and her two cubs-of-the-year in front of the Lake Lodge. The bears were digging for pocket gophers and grazing vegetation in the meadow adjacent to this facility. Several different bears use this meadow along the lake shore, not only for its concentration of high quality bear foods (*i.e.*, local cutthroat trout spawning streams, vegetation communities, elk calf populations), but also because an old road bed extends from this part of the Lake area to the Yellowstone River 1.5 miles away, serving as a convenient travel corridor between the two locations. These particular bears had frequented the area all season.

A large, wet snow of about six inches had fallen the previous evening, strand-

ing a number of park visitors due to road closures and poor traveling conditions. Therefore, it was an unusually large group of people for the time of year that gathered to watch the bears grub and dig while waiting for road closures to lift and conditions to improve. I monitored the bears for several hours, interpreting them for visitors and watching to make sure that both bears and people were kept safe.

Around noon, the bears began to follow the old road toward the Fishing Bridge area to the east. As this is a regular pattern for bears frequenting the area, I realized that they would most likely reach the main road between the Lake Village and Fishing Bridge Junction sometime in the next hour or so, and asked several rangers to assist with the bear jam which

would probably result. At around 1:00 P.M., the bears showed up at Fishing Bridge Junction. We blocked traffic and allowed them to cross the road safely.

Once across the road, the sow walked into an area where a young adult bull bison was laying under a tree. The bison stood up abruptly, which startled the bears. The sow then stood up on her hind legs, and the cubs followed her example. The bison assumed an alerted posture, with his tail raised and his head lowered, and stood his ground approximately 15 feet away from her. The bear lunged forward as if in a bluff charge, probably in defense of her cubs. This convinced the bison to turn and start trotting away, along a bench directly above the road to Fishing Bridge. The sow engaged in a slow chase, appear-

ing more curious than anything else, while I followed them down the road and watched from below the skyline of the bench.

After about 50 yards, the bison began running at full speed, and the bear gave chase. At the crest of the hill above the Yellowstone River, the bear swiped its right paw across the bison's hindquarters, kicking its back legs out from under it. The bison, now inverted and completely off the ground, struck a tree with its front quarters and slid down a social trail toward the bridge boardwalk. Meanwhile, the sow leapt onto the underside of the bison and skidded down the hill on top of it while attempting to bite at its neck.

When they came to a stop on the boardwalk of the bridge, the bear continued to bite and pull at the bison's neck as the bison tried to get back onto its feet. In spite of the bear's continued attempts to tug and pull it back down to the ground, the bison succeeded in standing up, and then struggled to remain up. It was evident that the bear had inflicted a severe injury to the bison's hindquarters, and the animal soon buckled under its own weight. The bear took advantage of this, jumping onto the bison's back while biting and clawing at it, inflicting a number of wounds around the bison's hump and lower back region. With a quick head motion, however, the bull managed to free itself from the bear and stood up once again. A second injury was evident at this time, with a noticeable fracture of the bison's left front leg. The bison, fighting to continue to stand, fought off the bear with its horns for several minutes.

At one point, the bear stood up and swiped its paws and claws at the bison. The bison reared and



Unfortunately, Travis only had a disposable panoramic camera available. Although of poor quality, this photo depicts the adult grizzly attacking the adult bison. NPS photo.

fell backward into a ditch adjacent to the boardwalk. The ditch provided the bison with a position of advantage from which it could fend off the bear with its horns during subsequent attacks, and the bison managed to keep the bear at bay for several hours in this way.

The two cubs observed from the top of the hill during most of the incident, and stood nearby for an additional two hours while we managed crowds and traffic. During this time, the bison struggled to keep upright while bleeding profusely from its back and hindquarters. The bear made several attempts to finish off the bison, but was unsuccessful. The bears then left the area for several minutes and returned, at which point the sow attempted another attack, but was rebuffed once again. The bears left and came back several times in this way, with the time interval increasing between each visit.

After the last occasion, I investigated the bison in the ditch. It was startled by my approach, and attempted to climb out. The bison fell down due to its injuries, however, and was unable to pull itself out of the mud. A decision was made to dispatch the bison, because of its relatively unsafe location in view of the public, and the high potential for a bear-human conflict that could occur during the night while the site was unattended by park staff. The carcass was moved a short distance away so that the bear could return to it during the night.

The next morning, the sow and her two cubs returned to the area where the attack had occurred. The bear behaved aggressively toward several visitors who were trying to get pictures close to the attack site. I was called out again to manage the bears and keep visitors away. The sow behaved in an agitated and aggressive manner as it investigated the site where the bison once was, probably because traces of blood were still present from the dispatching activities the evening before. Personnel agreed that the bear danger was too high for further activity of this nature to continue, and the bear was run off with aversive conditioning measures.

Several days later, a large boar grizzly was seen scavenging on the carcass and eventually consumed most of the remains. A week after that, a large male black bear sat with the carcass for an additional week. The sow and her two cubs were not seen during the remainder of the season.

A necropsy was done on the remaining carcass. The bison was determined to be a bull of about three years of age. It appeared to have been in good health prior to the attack and, although slightly skinny, had no major evident health faults that would have hampered its ability to function normally. 🌐

Travis currently works for the NPS in Yellowstone as a biological science technician in the Bear Management Office. He's been in the park since 1974, and worked for the NPS since 1991 in various capacities. He attended San Diego State University where he played baseball for three years before transferring to and graduating from Iowa State University.