

Bear Attacks

Their Causes and Avoidance

STEPHEN HERRERO



Nick Lyons Books

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The Dangers Of Garbage And Habituation

A new noise, sight or smell usually catches an animal's attention and it responds in some way. But if the stimulus is presented repeatedly and nothing good or bad happens, then the animal becomes used to the stimulus, and attention and response wane. The animal has become habituated to the stimulus. If a bear regularly encounters quite a few people, but doesn't get food from them and isn't harmed, it simply gets used to people, will tolerate them at closer distances than before, and sometimes ignores them. Such a bear is habituated to people. Throughout this book, when I use the term "habituated" bears, I refer specifically to bears that have become used to people.

A habituated bear that also eats people's food or garbage behaves differently than a bear that is only habituated. Such a bear forms a simple association—"people" may be followed by "food." I refer to a bear with this expectation as being "food-conditioned." While habituation may occur without food conditioning, the food-conditioned bear is almost always somewhat habituated to the smell or sight of people.

Habituation combined with food conditioning has been associated

with a large number of injuries. Inside the national parks it was probably the most frequent circumstance associated with injury.¹ Outside national parks, however, it is only rarely associated with injury. Outside parks, habituated, food-conditioned bears are usually shot and killed by hunters or poachers. Habituation by itself, without food conditioning, also can be dangerous, and it has been associated with at least one or two campers being killed by a grizzly bear (see pp. 69–70, 72).

How are habituation and food conditioning of grizzly bears, and their injuring people, related? One of the general rules of animal behavior is that animals are wary of strangers and are cautious regarding the unknown. Curiosity sometimes draws a grizzly into a person's camp, but grizzlies that are not accustomed to people normally avoid campgrounds and other areas of human activity.² If, however, these developments are located near regularly used grizzly bear habitat, then the unknown may become familiar. Grizzlies will explore such areas for all possible sources of food. If a campground offers them anything to eat, some grizzlies may begin regular nocturnal visits there in search of food.

Once a grizzly bear has learned that campground foraging seems to be all right, its close association with people may lead to confrontation or, more rarely, predation. However, even habituated and food-conditioned bears seldom injure people. The low rates of grizzly bear-inflicted injury in national parks are evidence of this. Most grizzly bears avoid direct contact with people and are much more interested in food than in trouble. Those bears that do injure people are usually trapped and killed.

My research showed that habituation and food conditioning of grizzly bears, and the consequent increased chances of injury, were most prevalent in major national park campgrounds that had motor vehicle access, especially when these campgrounds were near grizzly bear habitat. But the problem also occurs in backcountry areas where campers are careless with their garbage or storage of food.

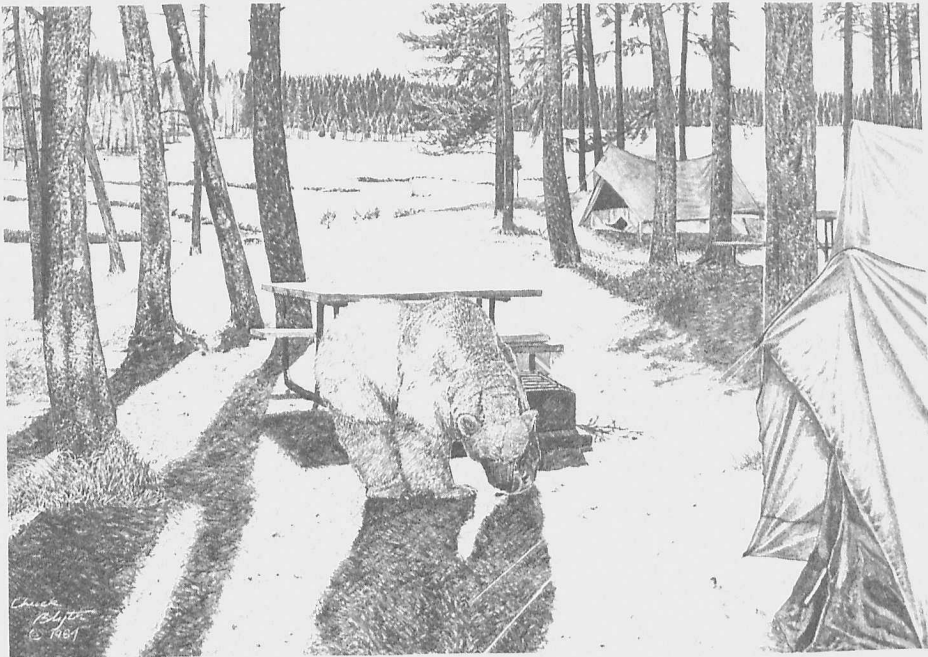
Up to 1970, I calculated that inside the national parks, habituated, food-conditioned grizzlies were responsible for approximately two-thirds of all injuries inflicted on people.³ About 90 percent of these injuries occurred in developed campgrounds in Yellowstone National Park.⁴ Overall, Yellowstone has had more grizzly bear-inflicted injuries than any other park. Why? The answer to this question reveals the single most important thing that we have learned about situations leading to injury.

Prior to their suspension in 1941, grizzly and black bear "Feeding

Shows" were sanctioned by the National Park Service in Yellowstone. Park visitors seated in bleachers could watch bears eating freshly brought garbage, or even performing tricks to get choice tidbits (see p. 96). Open-pit garbage dumps, which grizzly bears regularly visited, were also used for many years in Yellowstone.⁵ Many black bears were found along the roadsides, begging for handouts, although grizzly bears, always more shy of people, seldom did this.

Until the 1960s, garbage in Yellowstone Park was treated much like it was in other rural areas. Garbage cans were placed throughout the campgrounds. During the 1950s and 1960s, when most grizzly bear-inflicted injuries occurred in Yellowstone, grizzly bears regularly prowled several of the park campgrounds under cover of darkness, threading their way among campers sleeping inside tents. The hard-sided recreational vehicle was not common at campgrounds until the late 1960s. Edible garbage and casually stored human foods brought grizzly bears close to people, and the inevitable sometimes occurred. A camper on his way to the toilet in early morning might bump into a four-hundred pound grizzly bear; or a grizzly, smelling food in a tent, might rip into it and, when confronted with a person, attack.

Grizzly bears and campgrounds shouldn't mix.



Yellowstone has recently led the way into a new era in which garbage, human foods, and grizzlies are more effectively separated. The abrupt closing of the garbage dumps inside the park in 1970, combined with enforcement of strict sanitation in the campgrounds and an effective bear-monitoring program, has reduced the number of grizzly bear injuries (see p. 15). Rangers at Yellowstone now have to trap only a few grizzlies each year for control actions. They do have a large trapping and radio-collaring program related to ongoing research.⁶ Garbage and the availability of people's foods outside of the park continues to be a problem.

The problem of habituated, food-conditioned grizzly bears is not superficial. In the worst cases these circumstances have been associated with grizzly bear-inflicted deaths. Between 1967 and 1980, nine deaths occurred in Glacier, Yellowstone, and Banff National Parks. Eight of these deaths were caused by seven different grizzly bears, all of whom were habituated and food conditioned. The ninth incident was caused by a habituated grizzly bear that didn't have a known history of feeding on people's food or garbage (see pp. 69–70). These tragedies were probably avoidable.

Harry Walker and his friend Phillip Bradberry (nicknamed Crow) encountered a habituated and food-conditioned grizzly bear on the night of June 24, 1972.⁷ Together they had hitchhiked into Yellowstone Park on June 22. A young woman, Vikki Schlicht, who worked as a chambermaid for the Old Faithful Inn, gave them a ride. Because she regularly entered and left the park, she did not receive the standard information handed out to visitors entering for the first time during a season. For this reason, Walker and Bradberry did not receive the warning literature about bears. Vikki Schlicht later testified, however, that she had warned the men about bears. Despite this warning, they chose to make an illegal campsite in the woods about a half-mile from the Old Faithful Visitor Center and sixteen miles from the nearest authorized campsite.

Walker and Bradberry stayed in the general area for two days. On the night of June 24, 1972, they visited with several young women, including Vikki Schlicht, at the Old Faithful Inn. At about midnight they were returning to their camp, talking quietly to one another. They started to walk into their campsite when Bradberry heard something in front of them and saw a bear coming at them fast. When he first saw that it was a bear, the animal was "approximately five feet away." Bradberry dove to his left and rolled down an embankment. At about the same time Walker shone his flashlight toward the bear. Bradberry got to his feet and ran. Walker ran also, but the bear soon

caught him. Bradberry heard his friend cry out, "Help me, Crow, help me," and then there was silence. Bradberry heard more ruffling and reported that it sounded like the bear was coming toward him. He ran all the way to the Inn where he fell to the floor shouting, "Bear! Bear! Has my friend."

A search party found the campsite and Walker's body at about 5:00 A.M. A careful description and photographs of the site were made, Walker's body was removed, and snares were set to capture the bear. At 7:45 the next morning, a grizzly bear was trapped at the campsite. It was subsequently killed. Upon autopsy, human hairs, identified to be those of Walker, were found in its digestive system.

Michael Weinblatt, a park ranger for the Old Faithful District, investigated the site where the attack occurred. He called it "the dirtiest I have ever seen." He found a pot of "rice stew combination" in the crotch of a tree about "eleven feet from the tent at a level of about five feet off the ground." Weinblatt described the smell as "putrid." He also noted "cooked food in the fire pit, which was directly in front of the tent." Next to the tent there was also cooked food in pots and pans, and there were also other stored foods.

The bear that killed Walker was an old female, about twenty years, without cubs. She had broken and worn canine teeth, and her molar teeth had been flattened by wear. She weighed 232 pounds and was normally fat considering the time of year. Rabies was not detected. This bear had a previous documented history of garbage feeding and had been trapped in the garbage-holding area behind the Old Faithful Inn almost two years before, on October 14, 1970. At that time she was given tag number 1792 and was transplanted eighteen miles to Gibbon Meadows.

My interpretation of the facts related to Walker's death is that the grizzly bear was attracted to the camp by the odors of the foods left around it. The bear probably had little reluctance to enter such a place, despite human odors being mixed with food odors, because this bear had previous experience with eating human food and garbage. When the men suddenly confronted the bear at close range, she responded as if she were defending a food supply, much the same as if she had been defending a carcass.

Walker died of apparent suffocation caused by extensive damage to his trachea. Had he curled up on the ground when attacked and put his face between his knees and his hands behind his neck, he might have been spared the fatal injuries.

Clearly the major culprits in the death of Harry Walker were ignorance of the ways of bears, resulting in negligence by the men,

their choice of an illegal campsite, and the long history of garbage and human-food feeding by many of Yellowstone's grizzly bears.

In nearby Glacier National Park, Montana, grizzly bears killed six people between 1967 and 1980. Before 1967 there had been no recorded fatalities, and there had also been relatively few visitors, small volumes of garbage, and most travel was by horse rather than on foot. Before 1941 only one person had been injured there by a grizzly bear.⁸ Montana had had only two other recorded bear-inflicted fatalities since the days of the Lewis and Clark expedition.

Glacier Park is unique in the lower forty-eight states because it has the most hiking and camping in backcountry areas that are also the home of grizzly bears. A number of Glacier Park bears have had some experience feeding on human foods or garbage. However, the food-garbage-bear problem at Glacier has never been as extensive as it was in Yellowstone. Subsequent to the two grizzly bear fatalities in 1967, Glacier has generally managed food and edible garbage well. But only a few problems with garbage can lead to tragedy.

The first clues that something was wrong in Glacier Park came on August 13, 1967, when two young women were killed by different grizzly bears on the same night. A male companion of one of the young women was seriously injured. Both of these incidents are mentioned in the Introduction and have been described in narrative form in Jack Olsen's book, *Night of the Grizzlies*. A Park Service report on them also exists.⁹

Granite Park Chalet is a backcountry lodge approximately four miles from the nearest road, high in the subalpine meadow-forest zone of the park. The area's scenic beauty had for many years attracted parties on horseback, but by the late 1960s the clientele had mainly shifted to hikers. Most overnight visitors stayed in the quaint chalet. Less than a quarter-mile from the chalet, the Park Service had established a campground.

Julie Hegelson and her companion, Roy Ducat, were both summer concessionaire employees at East Glacier Lodge, which was run by Glacier Park Incorporated. On their days off in mid-August 1967, they hiked to Granite Park Chalet and eventually set their sleeping bags out in the campground. They did not have a tent. Just before going to bed, Ducat cached a couple of leftover sandwiches under a big log about two hundred yards away. He left his pack, which contained two candy bars and two packs of chewing gum, near their sleeping bags.

At about 12:45 A.M., screams were heard by guests staying at the Chalet. The Glacier National Park report on the incident describes what occurred:

While in a sound sleep he [Roy Ducat] remembered being awakened by Julie who was nearby. She told him to pretend he was dead. Roy stated that he and Julie were suddenly knocked about five feet outside of their sleeping bags by a blow. He recalled being on his stomach facing down. Julie was about two feet away. The bear "gnawed" into his right shoulder. Roy made every effort to remain still and kept his eyes closed. The bear then went to Julie and chewed on her, but soon returned and chewed on Roy's left arm and the back of both legs near his buttocks but he did not once utter a sound. The bear again returned to Julie and chewed on her. Roy recalled hearing her say, "It hurts," on two occasions. She then yelled, "Someone help us." She started to scream. Roy then heard the bear dragging her away rapidly down the hill. All the time she continued to scream. Her voice faded away as though the bear were dragging her a long distance away.

The attack left Julie Hegelson near death. Although the bear later abandoned her, she died shortly after she was found early the next morning. Roy Ducat's wounds were serious, but he recovered after hospitalization and surgery.

The country around Granite Park Chalet attracts grizzly bears during summer and early fall. They come to eat the abundant huckleberries and to dig the corms of glacier lilies. While they must have done this for thousands of years, a major change in their food supply occurred with the construction and operation of the Chalet. As the Chalet became popular and attracted more and more tourists, garbage overflowed. An incinerator was installed during the mid-1960s but it was inadequate to handle the volume of garbage. During 1967 there was a table-scrap pile only two hundred feet from the Chalet. Six grizzly bears, including one female with cubs, were known to feed on the garbage. In the past, but apparently not during 1967, grizzly bears had been hand-fed by tourists standing on the upper balcony of the Chalet. Park naturalists complained in writing that this practice could lead to human injury.¹⁰

After Julie Hegelson was killed, two adult grizzlies returned the next night to feed on the garbage. These bears, possible suspects, were killed. The next night the female with cubs appeared. She was known to be an old and experienced garbage feeder. She too was killed. Strong circumstantial evidence linked her to the attacks. When autopsied she was negative for rabies but did have a deep laceration on one hind foot. I doubt that this cut would have led to the attack. Aside from the cut the bear appeared to be healthy, though old. She weighed 265 pounds, which is normal during August for adult female grizzly bears in this area.

Why did the attack occur? Because the bear was a female with cubs, the Park Service report suggested that she may have been protecting her young. But this is inconsistent with the nature of the attack and with its continuance despite the fact that both Ducat and Hegelson played dead for quite a while. Furthermore, mother grizzlies defending their young seldom drag off a live person.¹¹ Julie Hegelson was dragged 342 feet from where she was attacked.

Other theories suggested that the attack was related to hot, dry weather and numerous lightning strikes and fires that were occurring at the time. These theories couldn't be rejected since on the same night another girl, elsewhere in the park, was killed by another grizzly. Odor was also suggested as causing the attack on Julie Hegelson and Roy Ducat. The couple had in their immediate possession lipstick, toothpaste, insect repellent, and Chapstick, although whether they used these was unknown. The young woman carried two tampons with her, suggesting that her period was about to begin.

While the cause of the attack must remain speculative I believe that the most probable contributing circumstance was the relationship between this particular grizzly and her experience with garbage feeding and people. It is likely that this bear fed on garbage at the Chalet for a number of years. She apparently had learned that, under certain circumstances, people could be approached. When she entered the camp she apparently ignored the candy bars and chewing gum, although their odors may have helped to attract her, as may some of the other odors I mentioned. Once in camp, the bear's evolutionary design as an opportunistic feeder, combined with her learned association of the smell of people, garbage, and nothing bad happening to her, led her to the point at which she treated Julie Hegelson and Roy Ducat as possible prey. The attack, however, was probably not focused on killing because, if it had been, death would have come quickly. The nature of the attack suggests that Ducat and Hegelson were first explored as possible prey. The bear may have abandoned Hegelson's body as a result of a conflict between having prey and the fear of being in a campsite occupied by people.

The absence of a tent to separate the campers from the grizzly probably contributed to Julie's death and at least four of the other six deaths in Glacier Park. Although a flimsy physical barrier, a tent may be enough of a psychological barrier to prevent the early stages of an incident, when a grizzly explores a person as something to eat. However, grizzlies have ripped tents and dragged people out and killed them. A tent only offers some protection.

Playing dead was the wrong strategy for Ducat and Hegelson.

Grizzly bears entering camp at night and methodically starting to chew on people, in contrast to grizzlies who charge and attack, are most likely acting as predators. The best resort in this case is to flee or fight back, depending on the circumstances.

The most likely predisposing factor related to the attack on Julie Hegelson and Roy Ducat was garbage feeding and habituation. An even stronger confirmation of the role of garbage, human-food feeding, and habituation, however, is found in the death of Michele Koons.

On the same night of the attack at Granite Park Chalet, a group of five other young employees of Glacier Park Incorporated were having a harrowing night.

Trout Lake in Glacier Park is only 4.6 miles from a paved road, but it is a stiff uphill hike over a steep ridge to get there. During the sunny and warm weather of 1967, many visitors came for the good fishing for cutthroat trout. Some of Michele Koons' party fished, catching at least one, but she did not, nor is she known to have handled any fish. Fish odors were no doubt prevalent in camp since a fish was cooked that night, and people had regularly cooked fish at this camp throughout the summer. Several fishermen had surrendered strings of fish to an aggressive grizzly during the summer, very probably the same one involved in the August 13 attack on Michele Koons.

The day before the attack, an aggressive grizzly treed a father and his son while on the trail above Trout Lake. The son, when confronted by an aggressive grizzly on the trail, dropped his pack and climbed a nearby tree. The bear tore the pack open and remained in the area for two hours while the father and son remained up separate trees.

This bear was by then well known to the Park Service. It was even better known at nearby Kelly's Camp, which is a private piece of land just inside the park. Here, the bear had been seen about fifteen times from mid-June to August 1.¹² It was involved in several break-ins and aggressive confrontations. It had fed on garbage and human food repeatedly, and it was sufficiently unafraid of people that it was aggressive in getting these items and in confronting people. Residents at Kelly's Camp wanted to shoot it, as did the Park Service, although the Service was slow to act.

When Michele Koons and her friends set up camp at Trout Lake, they knew nothing about the troublesome grizzly. They arrived around 5:00 P.M. and fished until 8:00 P.M. They then cooked a fish and some hot dogs. Soon Michele saw a bear approaching the camp. The campers fled down to the beach where they soon built a fire, hoping to keep the bear away. The grizzly rummaged through their camp and

ate their dinner food. It took a pack and tore it apart.

When the bear left, they returned to the site, got their camping gear, and moved to the beach where they had their fire. They took only cookies and Cheezits to their new camp.

They arranged their sleeping bags in a ring around the fire. At about 2:00 A.M. the grizzly returned, going to their old camp and then the new one where it grabbed the cookies from under a log. It left and returned several times, each time prowling through the campsites. At 4:30 A.M. it was back, sniffing the campers as they lay in their sleeping bags on the ground. It bit Paul Dunn's sleeping bag and tore the back off his sweatshirt. Prior to this, Dunn had remained perfectly still but he now jumped and ran for a tree. The bear backed off and then followed. Several of the party started shouting and running for trees to climb. Michele Koons either made no effort to get out of her sleeping bag or her zipper was stuck. The bear bit her bag and started dragging her away. The Park Service report provided details on what happened next.¹³

While in a tree Paul stated that he yelled to Michele to unzip her bag. She answered back that the bear had the zipper in his mouth. Paul remembered hearing Michele saying, "He's got my arm off," and "Oh, God, I'm dead," which is the last time he heard any sound from her. The bear dragged her up the hill and out of sight.

Her companions remained in the trees until dawn, when they climbed down and hiked to the road and McDonald Ranger Station.

A day later, August 15, an old grizzly bear female, matching the description of the attacking animal, was shot by park rangers two-and-a-half miles up the valley from the attack site. The autopsy confirmed that this bear had human hair in its stomach.

There were several factors that may have contributed to the attack. The hot, dry weather and lightning strikes may have agitated the bear. The party slept in the open without even the modest protection of a tent. Michele Koons was a fairly heavy user of cosmetics, and odors associated with this may have had some role in attracting the bear to her. Fish and hot dog or cookie odors may have also brought the bear into camp in the first place. Michele was menstruating and using external pads, which held the odor of menstrual blood. At least as important as any of these factors was Michele's inability to flee when the others did. She thus became the easiest prey.

In a broader perspective, the bear's personality combined with its

garbage and human-food foraging experience predisposed it to attack. It was an aggressive individual encouraged to be so by the outcomes of its many interactions with people and their garbage and food. As with the bear that killed Julie Hegelson, this bear's long experience in getting food and garbage from people led it to decide to treat a person as prey. Michele Koons's body was partly devoured after having been dragged 107 feet from camp.

After the bear first entered their camp, the entire party should have left for the road despite the darkness. Habituated, aggressive grizzly bears such as this one are too dangerous to gamble with. A large party such as this *might*, had they acted together, have been able to chase the attacking bear from Michele by using noise and throwing objects at the bear. Given the circumstances and their lack of knowledge about bears, however, they certainly were justified in climbing trees. There is little doubt that the Park Service should have previously killed this bear and forced the cleanup of the backcountry campsites and Kelly's camp. Today these circumstances would not be allowed to develop.

That Julie Hegelson and Michele Koons were killed on the same night, in the same park, by different bears suggested the possibility of a common environmental trigger for the deaths. These were the first grizzly bear-inflicted deaths in the history of the park. Recent dry lightning storms, fire, sonic boom, cosmetics, and the odors of menstruation and premenstruation were all mentioned as possible triggers. We simply do not know. In my opinion any one of these may have contributed to the attacks, either by leaving the bears agitated or by influencing each bear's choice of a victim.

Despite the improbability of both attacks occurring on the same night without a common environmental trigger, I still believe that the most important factor influencing both attacks was the prior experience of both bears with human foods and garbage and that this made both bears willing to enter campgrounds. Both bears had lost most of their natural fear of people. The bear that killed Michele Koons was rewarded with food as a result of aggressive action on many previous occasions. The bear that killed Julie Hegelson was apparently one of six bears that regularly visited Granite Park Lodge to feed on garbage. The odors and activities of people were well known to each bear. When the opportunity presented itself in the form of unsheltered campers, each bear acted like a predator. Avoidable deaths and tragedy were the outcome.

It was nine years before the next grizzly bear-inflicted fatality occurred in Glacier Park. On September 23, 1976, Mary Pat Mahoney,

a woman in her early twenties, and four female companions of about the same age were camped in two two-person tents at the Many Glacier Campground on the eastern side of Glacier Park. This is a drive-in campground, and at the time eight other campsites were occupied. All of the women were experienced campers and hikers. They were concerned about bears. They had a clean camp, no food was in their tents, they had no deodorants, perfumes, or odorous materials on them, and none of them was menstruating. They had even left their unlocked car ten feet from their tent as a refuge in case a bear did bother them. The board of inquiry that investigated the case concluded that they had "followed or exceeded the precautions one would take in avoiding conflict with bears."¹⁴

Despite their precautions, at around seven on the morning of September 23, Mary Pat Mahoney was dragged from her tent, killed, and partly devoured by a grizzly bear. One-and-a-half hours later two young grizzly bear siblings, both male, were killed. One of them had human blood between its front claws. Strong circumstantial evidence, including the similarity of the distance between puncture marks on Mahoney's body and the distance between both bears' canine teeth, suggested that one of these bears killed her.

Both bears had a known, but brief, history of feeding on human food or garbage and harassing people. On September 14 and 15, the two had come to an illegal camp at nearby Iceberg Lake. Six people were camped there with two horses. The campers had taken no precautions concerning food. Two bears ate some of the campers' food. This was the first report of the bears being in the area. Their experience with people and food seems to have quickly increased. On September 17, two grizzlies, thought to have been this sibling pair, encountered two hikers on the trail near Ptarmigan Lake. The hikers dropped their packs and left the trail. The bears fed on the food in their packs for about an hour and a half. On September 19, two grizzly bears moved through the Many Glacier campground, getting some garbage from one can. Later in the day, at nearby Fisherman Lake, two bears approached two fishermen. One bear had earlier approached a sunbather. Both of the fishermen ran and one, or both, bears trotted after them. One man climbed a tree and the other went into the water. One bear went into the water and shook the man's toe. The man yelled; the bear let go and left to climb up after the man in the tree. This man descended and also entered the water. Both men swam to the middle of the lake, and the bears did not follow. Three days later, on September 23, two campers made camp near Redrock Falls in an area closed to camping because of grizzlies.

The two men were discovered and charged with violating park regulations. During the afternoon the men returned to their campsite to collect their gear when two grizzlies, again thought to be the siblings, came into the camp and tore it up. The campers were kept at bay until the bears left.

This pair of grizzly bears seems to have had a history of only one week of feeding on human food and garbage, coupled with aggressive behavior toward people. This history began with their finding food carelessly left at an illegal camp on September 14 or 15. They next encountered hikers who fled and left their packs for the bears. Soon they got garbage at the Many Glacier campground. By September 19 they began to be aggressive around people, presumably because they had learned to associate humans with food. By September 23, one of the two bears, both of which were now well habituated to people, apparently treated Mary Pat Mahoney as prey. The excellent precautions taken by the five women did little to deter the bear. Its prior experience had taught it that approaching people could lead to a meal.

It is easy to say that once the bears showed aggressive behavior they should have been destroyed, but at the time nine years had elapsed since the death of Michele Koons. Today it is also known that young grizzly bears, after they have been weaned but before adulthood, can be a particular challenge in parks. These bears, especially males, have not yet established their home range and have no predictable sources of food or retreat. They still have youthful curiosity, and they explore and test a lot. Unfortunately they are also strong and therefore dangerous to people. Such a young male grizzly carried off three-year-old Brendan Harrop from a picnic area in Banff National Park on July 21, 1982.¹⁵ Prompt aggressive action toward the bear by the child's mother and family prevented serious injury to the boy.

Current bear-management policy in Glacier Park, Montana, dictates that such bears be killed or captured and removed from the park after one aggressive incident. Such action is probably necessary to give an acceptable level of safety. But this new toughness toward grizzly bears must come in conjunction with a similar toughness toward ignorant and careless park visitors, whose food or garbage starts a grizzly off on such a path.

In late July 1980, I was at our farm in British Columbia, beginning this book, when I heard that a young woman and man, Jane Ammerman and Kim Eberlee, had been killed by a grizzly bear in Glacier Park, Montana, near St. Mary. The next day, Phillip Iversen, then

the park superintendent, called me and asked if I would serve on the board of inquiry that was being convened to determine and interpret the facts about the deaths.

Jane and Kim worked at Lake McDonald Lodge in Glacier Park. In late July they decided to go hiking and camping. They ended up at the small resort area at St. Mary. Here was a developed campground catering mostly to people with truck campers, trailers, or other mobile homes. The teenagers chose not to stay in the campground and made an illegal camp between the campground and the development at St. Mary.

The details surrounding their deaths had to be inferred from circumstantial evidence because there were no witnesses. They camped alongside a stream that cuts through a very bushy area. The shallow stream, with its frequent meanders, appeared to our investigating team to offer a natural travel route for a bear moving through the bush. But why should a bear want to traverse this area, when most of its natural foods are found at higher elevations at this time of year?

About half a mile from their camp was a small garbage dump. The dump was on land that was a private inholding surrounded by the Blackfoot Indians. Years ago Glacier National Park had closed all refuse sites within the park because of bear problems. The Glacier Park officials had tried to get this dump closed, but the area was outside their jurisdiction. Because of the nature of the land holding—being surrounded by Indian land but not belonging to the Blackfoot—it was not clear if the county sanitary officer, normally responsible for supervising such operations, had jurisdiction over the site.

When our investigating team visited the dump we saw a horse carcass beginning to decay. Items such as this can attract bears from several miles away. Whether attracted by the dead horse or other garbage, the grizzly bear was probably heading to or from the dump in the early hours of July 24. Near his route of travel were the two teenagers, apparently sleeping on top of their tent because the night was warm and muggy. The bear had learned to accept the smell of humans from foraging at the dump. The bear might have approached the teenagers because of odors from sexual intercourse, but whether this was the case and what happened next are conjecture.¹⁶

One of the bodies was found by fishermen around noon of July 24. An investigating team of park rangers found the other body nearby. Both had been partly consumed. Early the following morning, Blackfoot Tribe members shot a grizzly bear near the site. Careful autopsy of the bear revealed identifiable remains of the victims still in the bear's digestive tract. Bite marks on the dead teenagers' bodies matched

the dental pattern of the bear that was shot. The board of inquiry was unanimous in stating that the probability was very high that the "killer" grizzly had been located and killed.¹⁷

Because of the complexity of the jurisdictional issue, we were not sure how to prevent the problem from recurring. All of us were certain, however, that this and all similar refuse sites for edible garbage had to be removed from grizzly country. A bear scat collected at the death site contained, among other things, cellophane, Styrofoam, and cantaloupe rind, indicating that the bear had fed on garbage only a short time prior to killing Ammerman and Eberlee.

While Glacier National Park, Montana, has had the greatest number of grizzly bear-inflicted fatalities of any park in North America, deaths and serious injuries have happened in other national parks. In the late summer of 1980, shortly after I had returned from sitting on the board of inquiry that investigated the Ammerman-Eberlee deaths, I received a call from Andy Anderson, chief warden in Banff National Park. On August 24, there had been a serious bear mauling, referred to in the Introduction, in which the victim, Ernest Cohoe, had lost much of his face. Could I help in the investigation and the search for the bear? I offered my suggestions but couldn't help right away because I was scheduled to testify in a court case in Alaska regarding a grizzly bear mauling. When I returned, the situation seemed under control and a bear thought to be responsible had been shot. Then on September 1 a second incident occurred in the same area. This time two people were injured, raising the total to three within one week. It looked like a very dangerous bear was still loose. My phone rang and shortly afterward I left for Banff.

All three maulings took place in the Whiskey Creek area, less than half a mile from the town of Banff. Tense and armed, we visited the sites where the attacks took place and searched for clues to the bear's identity and the cause of the maulings. The maulings had all occurred in dense vegetation, and it appeared that the people had come very close to the bear before it rushed at them, attacked briefly but violently, and then left. The area where the attacks had occurred was surrounded by armed wardens, and we suspected that the bear was inside the ring.

We returned to the warden office and sat down to think. The area was completely closed to people and the perimeter was being patrolled twenty-four hours a day. We thought that this would prevent further injury to the public. Our planning session was interrupted by a radio message. We listened in disbelief and shock as the radio dispatcher described a man who had just staggered onto the Trans-

Canada Highway bleeding from numerous wounds. The bear had attacked again. Despite our precautions, a young man, possibly fleeing the police, had slipped into the closed area. The bear had a fourth victim.

Never before had I heard of a bear involved in so many incidents causing human injury. What was happening? Our first responsibility was to capture the bear. Dennis Weiser, a predator control officer with Alberta's Department of Fish and Wildlife, had come to help trap. He had extensive experience in capturing bears. He set several baited snares in the area, and we waited all night to see if we could either capture the bear or lure it to bait so that it could be shot.

The next morning, September 4, a large male grizzly bear was in one of the snares. Its almost jet black color suggested a black bear but its behavior and all other characteristics confirmed that it was a grizzly. It had felled trees and other vegetation in the area where it was snared. It charged violently when the wardens approached but was stopped by the steel cable of the snare. The wardens shot and killed it.

A few hours later, working with John Gunson, a Fish and Wildlife biologist, I began the preliminary autopsy on the bear. There were no significant wounds or injuries other than from the bullets that had just killed it. There was no apparent sign of disease; nor did subsequent lab work reveal any. The grizzly was huge, even for an adult male, weighing 761 pounds. This fact, combined with previous observations of the bear unknown to me at the time, provided clues that helped to explain the incidents.

A very important previous observation of the bear was reported about a week later. On the morning of the day of the first mauling, a reliable observer saw a large, black grizzly bear feeding on garbage in the refuse storage sites of a restaurant, less than half a mile from where the mauling subsequently occurred. The grizzly acted very agitated while feeding. It vocalized and swatted at the garbage bins. At one point the open gate of the compound swung shut and hit him in the rump. The bear wheeled and swatted the gate violently. The cause of the agitation seemed to be related to several black bears nearby in the bush. Until this bear arrived, they had been feeding regularly at the garbage bins for weeks. The grizzly periodically charged from the compound and into the bush. Several times the observer heard "bawling" much like a calf. He assumed that it came from one or several black bears that the grizzly had treed.

Our subsequent investigation of the site where the maulings occurred revealed that some natural foods for bears were present. However, the extensive bear trails leading into the woods from the restaurant



The author holds the hind foot of a 761-pound male grizzly which killed one man and injured three others, Banff National Park, 1980.

Paul Kutzer

garbage storage site made it clear that bears were in the area primarily to feed on garbage. We concluded that our bear had been attracted to the area to feed on garbage. Other evidence suggested that this bear had been feeding on garbage for many years. Tooth sectioning revealed that the bear was ten and a half years old when he was killed. Known growth rates of grizzly bears in nearby Jasper National Park showed that no male was ever known to attain this weight at this age without having fed on garbage.¹⁸

My explanation for the maulings (submitted to Parks Canada and accepted by a subsequent Superintendent's Review Team of which I was a member), was that the bear was attracted to the area by the ready availability of garbage. It was obviously a very aggressive in-

dividual, which, on the day of the first mauling, was additionally agitated by having interacted aggressively with black bears at the restaurant's garbage storage site. After feeding on garbage the bear apparently retreated into nearby dense shrub fields before returning again for garbage.

Unfortunately all of this occurred on the edge of Banff townsite, in an area frequented by hikers, fishermen, and tourists. While hiking in the bushes each of the injured people appeared to have come close to the bear, which charged and made a brief but violent attack. The attacks lasted only a few minutes each, and then the bear left. It did not appear that the grizzly intended to kill, or certainly each man would have been left dead because of the power and speed of this large bear. Instead, the bear acted as if it were responding to something that came too close.

The grizzly was willing to feed on garbage so close to Banff probably because it had a long history of having fed on it before, perhaps beginning in more remote sites. The attacks occurred because the victims repeatedly came too close to a bear that was habituated to people but was still very aggressive.

Habituation of grizzly bears can also occur without food conditioning, but this is a relatively recent phenomenon that has occurred mainly in Glacier National Park, Montana. In some portions of this park, grizzly bears are exposed to many hikers. Researcher Katherine McArthur found that this was associated with habituation of grizzly bears.¹⁹ Grizzlies that seldom encounter people may act aggressively or flee when people are around. Neutral behavior, in which bears ignore people and go about their business, occurs with increasing frequency along trails where large numbers of hikers travel through grizzly bear habitat.

McArthur found that habituated grizzlies in Glacier Park not only act neutrally more often but they also approach people more often.²⁰ Approaching means slowly walking toward a person, in contrast to running toward him in a charge. McArthur has not found increased injury rates to hikers from grizzlies that approach people hiking on trails, despite the fact that in some areas of grizzly bear habitat that are popular with hikers, such as the Swiftcurrent trails near Many Glacier, one out of six hundred hikers was approached by a grizzly bear. McArthur believes that making people's activities predictable to grizzlies, such as by following regularly used trails and hiking during midday, helps keep bears from being startled and decreases the chance of injury to hikers.]

My interpretation of her findings, however, is that habituated

grizzly bears may be dangerous to campers. Once such a bear no longer avoids people the stage may be set for entering backcountry camps, especially if the bear has also learned to feed on people's foods.

One recent death, the sixth grizzly bear-inflicted death in Glacier Park, occurred on September 26 or 27, 1980, at Elizabeth Lake. The grizzly bear to which it was attributed was very habituated to hikers but was not known to have fed on people's food or garbage.²¹ This attack on Lawrence Gordon took place at a campsite at the lower end of Elizabeth Lake, again in the eastern portion of the park. The victim's remains were discovered at this camp on October 3. The board of inquiry report concluded that there was a remote possibility the man was killed by another grizzly bear or he had died of other causes and that his body was then scavenged by a grizzly bear.

Lawrence Gordon was thirty-three years old and a former airline pilot. He secured a permit to camp and was twice warned by park staff that it was more dangerous to hike and camp alone than with a party. He did not, however, violate any park regulations and, except for storing his food quite close to his tent, his camp appeared to have been set up according to regulations. His camp was in disarray when found, and it was impossible to infer exactly what had happened. A sleeping bag, tent, and foam pad were scattered about along with several other items. Some of these were torn. There was no sign of a struggle.

Two days after Gordon's body was found, park rangers shot and killed a 379-pound male grizzly at nearby Helen Lake. The bear had tag number 201 in its left ear. Teeth marks in at least one book found in Lawrence Gordon's pack matched perfectly the dentition of bear number 201. The bear had been previously captured on August 8, 1978, in the Many Glacier area because it matched the general description of an aggressive bear. There were many subsequent probable sightings of bear 201 in the Glacier area, but he showed no further aggressive behavior. He seems to have tolerated the close presence of hikers and neither fled nor approached when they were nearby. Katherine McArthur, who was doing research in Glacier Park shortly before Gordon's death, wrote to me about her experience with 201:

I encountered him one day last summer as he was traveling on a trail. I called to make him aware of my presence, then moved off the trail and he passed by me only about ten to twelve feet away. After he had passed, I discreetly followed along behind him and watched as he encountered group after group of people (and horses). Yet he seemed to know exactly how to deal with

them, moving slowly enough for them to be able to accommodate his presence. Once, he cut across the end of a switchback and stopped as a horse party and two hikers walked by, unaware of him. Then he moved onto the trail and continued on his way. . . .²²

It is unknown how much experience this bear had with feeding on people's food or garbage, or if it did at all. There is no question, however, that bear 201 was thoroughly habituated to people and did not usually flee from them. Some of the thousands of hikers that each year walk the trails near Many Glacier had taught this bear that his instinctive urge to flee was inappropriate behavior when repeatedly confronted by hikers. Fleeing costs a bear energy and is a response that will wane unless a bear perceives that a threat exists.

Bear 201, thoroughly accustomed to people, probably entered Gordon's camp and, combining its past experience with people with a new urge, the bear attacked, killed, and partly devoured Lawrence Gordon.

Since 1980 two more people have been killed by two different grizzly bears in, or adjacent to, Yellowstone Park. Experience with peoples' food, garbage, and habituation to people, or possibly just habituation to people, were once again implicated as contributing circumstances. In each case the bear attacked during the night and treated its human victim as prey.

On the evening of June 24, 1983, Ted Moore and Roger May tent-camped out of their car at Rainbow Point Campground in Gallatin National Forest, adjacent to Yellowstone National Park.²³ A sign at the campground entrance recommended against tent camping, but there had been no bear encounters in 1983. On the evening of the 24th, Moore and May cooked a meal of steak and yams, cleaned up well, went to town for a few beers, returned and went to bed around 11 P.M. A board of inquiry report concluded that they had taken all recommended procedures for careful camping in bear country—their camp was clean, and food and garbage were stored in their vehicle. The clothes they cooked in were in the tent but not especially dirty.

At 2:30 A.M. on the 25th both men were awakened by their tent shaking. Moore later said it was like someone was playing a boy scout-type prank on them. Their tent poles were rattling, but they heard no other noise. Next Moore remembers the tent collapsing, and talking briefly with May. May then began screaming and was pulled through a hole torn in the roof of the tent. Moore exited by the same hole and in the full moonlight he could see a large bear, about ten feet

away, standing over his screaming friend. When Moore stood up the bear grabbed May's ankle and ran, dragging May thirty feet. Moore bravely picked up a tent pole and, while yelling, charged the bear, finally throwing the tent pole at it. The bear backed away briefly. Moore approached no further but asked his friend, "Are you all right?" May replied, "I'm okay—but I'm not doing so good." Moore then quickly returned to the tent (thirty to forty feet from May) and tried to find his glasses, car keys, and a flashlight.

It took Moore several minutes to find these items. While searching he heard his friend scream again, then silence. Other people came and made noise, shone lights, and called for help.

The Sheriff arrived at about 3:20 A.M. The bear, still with his victim, was only 150–200 feet from the original attack site. A search party led by the Sheriff followed the blood trail toward the bear and May. The bear fled, again taking May's body. May was found at about 3:30 A.M. He was dead and approximately seventy pounds of him was consumed or lost as fluid.

Thirteen traps were set and less than twenty-four hours after the attack a grizzly bear was caught within ten feet of where May was killed. The successful trap was baited with garbage. Two other nearby traps which were ignored were baited with antelope. Lab tests confirmed the bear had eaten parts of Roger May.

The bear was a large adult male, identified as number 15. It had been studied for almost twelve years, including nine years of intermittent radio-tracking, by the Yellowstone Interagency Grizzly Bear Research team. Bear 15 was thoroughly habituated to people and had been observed a lot. Despite its extensive contact with people it wasn't known to have been aggressive toward people. All previous known human interactions resulted in the bear fleeing.

What caused bear 15 to attack and kill Roger May is speculative. Number 15 was captured twenty times previously and was drugged twelve times. Sernylan, "Angel dust," was used on six occasions, and another drug, M-99, was also used six times. Some people feel the Sernylan made number 15 irritable and aggressive before it killed May.

A more likely contributing circumstance was the bear's habituation to people and its history of garbage feeding. Its first known association with garbage and people was at Pelican Campground, Yellowstone Park, where it was captured in 1971. In 1974, number 15 was captured three times at West Yellowstone dump. Through the years it became so familiar with trap sets that it could get bait without always being

caught. Up to 1982 it apparently only fed on garbage intermittently but during fall of that year garbage became increasingly important to it.²⁴ Just prior to the fatal attack on May "strong evidence" indicated the bear obtained garbage or dog-food within 200 yards of where May was killed. This food came from private residents who were not securing garbage properly.

Number 15 wasn't an overly aggressive bear. It was a bear who had learned over many years that people and garbage, or trap sites, yielded food. Number 15 had lost some of its fear of people. Under cover of dark, and in the quiet of a sleeping camp, this lack of fear combined with unknown other factors and Roger May was attacked and killed.

One action by Ted Moore was probably wrong. After he scared the bear from May, Moore returned to camp for glasses and a flashlight. At this point Moore probably could have gone to May and taken him to safety. But Moore acted bravely in chasing the bear off, and had he next gone to May he too might have been attacked.

On July 30, 1984, Brigitta Fredenhagen, of Basel, Switzerland, took out a back-country permit to hike the Astringent Creek trail and set up a backcountry camp in Yellowstone National Park.²⁵ She was warned by a park ranger about the hazards of backcountry travel and specifically about bears.

The area she was going to hike into was north of but near Pelican Valley, an area important to, and heavily used by, grizzly bears. Despite its importance to bears backcountry use in this scenic area has risen dramatically in the last six or so years.²⁶ Mary Meagher, a research biologist for the park, told me that at least four grizzlies in the area appeared to be habituated to people and to be reluctant to flee from them. This was probably the result of encountering too many people too often. Dr. Meagher also said that none of these bears was hooked on garbage.

Fredenhagen was concerned about bears and other wildlife. When she camped at White Lake, several miles short of her permitted site, she apparently boiled water for tea and ate precooked or cold food for dinner, and then cached her remaining food ninety feet from camp, suspended between two trees. When her camp was found two days later, on August 1, it was tidy and clean except for a fresh tear next to the front flap of her tent. Outside, six feet away, lay Fredenhagen's sleeping bag. Nearby was a piece of lip and scalp with hair still attached. The bear apparently pulled Fredenhagen out of the tent by her neck. The food cache had been torn out of the trees, apparently by a grizzly that climbed to a height of twelve feet. The food was eaten except for a granola bar. Fredenhagen's body was

found 250 feet from the tent. Quite a bit of her soft tissue had been eaten.

Evidence strongly suggests that a grizzly bear pulled her out of the tent sometime after 10:30 P.M. on July 29. The bear involved was never identified or captured despite major efforts. Dr. Meagher used available evidence to conclude that the bear was probably a sub-adult grizzly (young grizzlies are more likely to climb trees), probably male, and apparently "not a naive bear relative to developed areas and human activities."²⁷

Brigitta Fredenhagen did nothing to encourage the attack, in fact her cleanliness and neatness was said to be exceptional. Being by herself may have made her an easier victim. Another possible contributing circumstance was her camp location, adjacent to a hiking trail and in an area which was a cross-road for game travel. Fredenhagen wouldn't have known this, but the Park Service did. It is well known that in the Yellowstone region grizzly bears often travel hiking trails by night. Stormy weather present around the time of the attack was also proposed as possibly agitating the bear.²⁸

In my opinion, the most obvious contributing circumstance was once again the prior conditions that allowed a grizzly bear to become used to people, and have little enough avoidance of them that it would enter camp. Exactly why this bear attacked, while others having similar backgrounds have not, is impossible to say beyond stating that the specific situation somehow interacted with the bear's experience and personality.

Grizzly bears usually enter camping areas at a walk and at night. Before an attack, a person seldom sees any signs of aggression. Such attacks typically occur when there is too little light for a person to see. No single course of action can be recommended. If you are suddenly bitten while your body is bulging out of the side of a tent, then perhaps the normal startled yell will be enough to let the bear know that you are a person and not a salami. Most campground marauding grizzlies still have enough "fear" of humans that they will flee when discovered.

But if you are camping in a remote area with a small party, the bear may press the attack. Under such circumstances playing dead would be akin to offering yourself to the bear. If you suspect a grizzly is about to eat you, you must do everything possible to deter the bear momentarily so you can escape. Shout at the bear. Throw things at or near it to try to distract it. Use every possible weapon or repellent you might have. Try to get somewhere that an attacking grizzly can't go, such as high up a tree, on a fairly hard cliff to climb, or on a big boulder.