

INVESTIGATION TEAM REPORT

Attacks by a grizzly bear in Soda Butte Campground on the Gallatin National Forest on July 28, 2010

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Summary:

In the early morning hours of 28 July 2010, an adult female grizzly bear accompanied by 3 yearlings attacked 3 separate people in 3 different tents in the Soda Butte Campground. The initial attack was inflicted on Mr. Ronald Singer at approximately 0200 hours, who was bitten through his tent on his lower left leg. Mr. Singer punched the bear several times and the bear left. The second attack was inflicted on Mrs. Deborah Freele at approximately 0215 hours; she was initially bitten on her upper left arm and then bitten on her lower left arm. She then received a slight bite to her left leg and then the bear left. The third attack was inflicted on Mr. Kevin Kammer at an unknown time, presumably after the first 2 attacks. Mr. Kammer was camping by himself, and was killed and partially consumed at his campsite. All of these attacks occurred in a 27-site campground, of which 24 sites were occupied by people on the night of the attacks. An unmarked adult female grizzly bear and her 3 yearling offspring (2 females and 1 male) were captured at the site of the fatality within 16-48 hours of the incident. This adult female was DNA matched to grizzly bear hair found on the victims and was subsequently destroyed. The yearlings were placed in a zoo facility for permanent removal from the wild.

¹ Listed alphabetically by agency affiliation.

Format of this report:

This report is an interagency investigation team report of a grizzly-human incident resulting in a human fatality as per p. 59 of the Interagency Grizzly Bear Guidelines (Appendix 1). The report summarizes the incident, the investigation of the incident, resolution or response to the incident, and presents information gathered as part of the investigation team effort. The investigation team is made up of state and federal agency staff involved in responding to the incident and 1 outside expert member who had no prior involvement in this incident. The team collected written statements from and interviews with people directly involved. Written statements and interviews and other informational materials are appendices to this report. The team attempted to reconstruct the incident as much as possible, given the information available. The team made every effort to reconstruct and report the finding about the incident while avoiding speculation.

Situation:

The Soda Butte Campground is a medium-sized campground located along Hwy. 212 approximately 1 mile east of Cooke City, Montana and 5 miles east of the northeast entrance to Yellowstone National Park (see map, Appendix 2). The campground allows hard-sided and soft-sided camping and is equipped with numerous warning signs advising that grizzly bears frequent the area. Each campsite has a bear-resistant food storage box and campers are required to keep a clean camp, to store food in the provided food storage boxes or their vehicles, and to not leave food-stuffs or attractants in or around their campsites. The campground stretches approximately 1000+ yards from the east to the west end and campsites are separated from each other in most cases by visual cover with thick stands of spruce and other conifers providing visual screening. The campground is along Soda Butte Creek and the in area adjacent to the campground and in some places within the campground, there are abundant bear foods, including forbs. On the night of the incident, 24 of the 27 available sites were occupied. In 2010, there was not a campground host at the site. The campground contains 4 bear-resistant garbage containers, 4 established outhouse facilities, and a bear resistant food storage box at each campsite. There are numerous signs both when entering the campground and within the campground stating that the area is frequented by grizzly bears.

There was some evidence of bears of unknown species frequenting the campground prior to the incident on 28 July 2010, including bear tracks on the garbage containers and many of the food storage boxes at each campsite, as well as photos of a subadult grizzly in the campground on July 25, 2010 (this subadult that was photographed was not one of the yearlings captured at the attack site). There were no reports of conflicts with grizzly bears or black bears in 2010 at this campground prior to these attacks. At least 2 groups of campers at the site reported hearing or seeing bears in the evening or at night prior to 28 July 2010 but there were no reports of aggression by these bears or any conflicts associated with these bear sightings.

Detailed Information:

The attack events:

The first attack was at campsite #16 (Photo 1) where Mr. Singer was sleeping in a tent with his girlfriend and their dog (a young puppy). Mr. Singer's girlfriend's father and sister were in another tent a short distance away at the same campsite. At approximately 0200 hours, Mr. Singer was awakened by his tent moving, "several feet" (Appendix 3). He then felt something bite his left leg through the tent but he could not see what it was. He reacted by punching at the animal several times through his tent at which time the animal let go of his leg. He looked through a tear in his tent that had occurred during the attack but did not see anything. At that time, his girlfriend, Maria Flemming, screamed and turned on a light in the tent. Ms. Flemming exited the tent and went to the nearby tent where her father and sister were sleeping and awoke them. They all returned to Mr. Singer's tent and were applying first aid to his leg when they heard a woman screaming at what they thought was campsite #13. The group loaded Mr. Singer in the vehicle and drove to Cooke City where they called 911 and emergency responders. Mr. Singer had puncture wounds and lacerations to his lower left leg but no fractured bones.



Photo 1. Campsite #16 where attack on Mr. Singer took place.

Sometime between 0200 and 0215 hours, the second attack occurred at campsite #11 (Photo 2) where Mrs. Deborah Freele was sleeping alone in a tent. Mrs. Freele's husband was sleeping in separate tent approximately 13 yards away at the same campsite. She awoke and felt a bite to her upper left arm (Appendix 4). The bear shook her briefly, let go of her upper arm then bit her

again in the lower left arm. At the same time she was being bitten in the lower arm she believed she was bitten in her left leg and then the bear let go of her leg.



Photo 2. Campsite #11 where the attack on Mrs. Freele took place.

She screamed and then played dead hoping the bear would leave. A family from another campsite came in their vehicle to assist her and then this family left her to seek additional assistance by driving around the campground and honking their vehicle horn to attract attention. Mrs. Freele was left alone on the ground, where she had been attacked, for approximately 5-15 minutes until other campers returned to assist her. She wrapped her arm in her shirt to try and stop the bleeding. She believed that her arm was broken because she heard what she believed to be a bone break during the second bite on her lower left arm. Mrs. Freele never saw any bear during the attack. Her injuries on her left arm were 1 laceration 15 cm in length to the upper arm with deep muscle damage; 3 other small lacerations in the upper arm; 8 lacerations in the lower arm, one fracture of the ulna with no bone exposure and no nerve or vascular damage. The bite to her left leg caused no lacerations or punctures. A part of a broken canine tooth from a bear was found in Mrs. Freele's tent. Mrs. Freele had bear spray in her tent but never got to use it.

Mr. Don Wilhelm and his family, including 2 children and his wife, were camped at campsite #12, adjacent to the campsite occupied by Mrs. Freele and her husband. Mr. Wilhelm went to the restroom at approximately 0130 hours and checked his watch upon returning to his tent and it was 0132 hours (Appendix 5). Mr. Wilhelm's recollection is that at approximately 0130-0145 hours, he heard a woman scream from upstream (to the east), in the direction of the site occupied by Mr. Singer. He heard other fleeting sounds then silence. He was not aware

what caused the scream and speculated that it was perhaps a domestic disturbance. At approximately 0145-0200 hours, he heard in the downstream (west) direction toward site #11 a lady's voice screaming, "stop" "no," and other cries of distress and agony. Mr. Wilhelm and his wife immediately started dressing speaking to each other and gathering their family together. During this time, they heard a bear huffing or "woofing" close by for a few seconds. His wife said, "I think there's a bear." They discussed options and decided to make a run for their vehicle. They then heard Mrs. Freele cry, "Help, I've been attacked by a bear." They then drove their vehicle to the adjacent campsite #11 and checked on Mrs. Freele but did not get out of their vehicle. They then left in their vehicle to seek assistance from other people in the campground (see statement for details, Appendix 5). Mr. Wilhelm believes that by the time they returned to Mrs. Freele, they had been gone for about 15 minutes. When they returned to campsite #11 where Mrs. Freele lay injured, they encountered 2 campers from campsite #13 sitting in their truck in the road. They then all exited their vehicles and approached Mrs. Freele and administered assistance. No bears were seen. When the Wilhelms returned after finding assistance, Mrs. Freele was alone on the ground on top of her flattened tent. Mrs. Freele, with the assistance of the Mr. Wilhelm and the campers from campsite #13, was then loaded into a vehicle and transported to Cooke City for medical assistance. The Wilhelm family then drove through the east loop of the campground honking and yelling that there had been a bear attack trying to warn other campers. They never drove through the lower (western) loop of the campground and later stated that they regretted not doing so.

The exact time of events involving the attacks on Mr. Singer and Mrs. Freele are unclear but the sequence of events is clear. It appears that the initial attack on Mr. Singer was at approximately 0200 hours and the attack on Mrs. Freele was between 5 and 15 minutes later.

The third attack was on Mr. Kevin Kammer and occurred at campsite #26 (Photo 3), approximately 600 yards downstream (west) from campsite #11 where Mrs. Freele was attacked. This attack was fatal (Appendix 6). Mr. Kammer's body was not discovered until 0421 hours when law enforcement personnel drove through the lower campground loop to clear it of all campers. By the time Mr. Kammer's body was discovered, the bear(s) had consumed a significant portion of his torso. This occurred at his campsite and where his body was found approximately 10 yards toward the creek from his campsite. Evidence indicated that the victim was killed within 4 feet of his tent. His tent was a small tent primarily of insect screen with a full weather fly stretched over it. Evidence indicated that the victim had been attacked in this tent and had been pulled by his head and shoulders through a hole ripped in the insect screen of his tent. Campers at the campsite adjacent to Mr. Kammer's site (approximately 60 yards away) never heard any activity and were only awakened when the Sheriff's Department drove through the lower loop of the campground to clear the area of campers.

In all 3 attacks, the bear bit or ripped through the tent fabric or the insect screen of the tent. In some cases, the bear apparently reached under the rain fly and bit through the tent or the insect screen of the tent to reach the campers inside.



Photo 3. Campsite #26 where the fatal attack on Mr. Kammer took place.

Response to the incidents:

The immediate response to the incidents involved Montana Fish Wildlife and Park Game Wardens, U.S. Forest Service personnel, Yellowstone National Park personnel, and personnel from the Park County Sherriff's Office. These responses are detailed in Appendices 7, 8, 9, and 10.

Evidence of Bears in the Campground and the Area Prior to the Attacks:

Several witnesses reported evidence of bears in the campground prior to the attacks. Mr. Wilhelm's son reported to his family that he heard a bear around their tent the night before the attack. He said he heard "banging around" like something was trying to get into a bear box. He wondered if this might have occurred at a nearby bearbox, not theirs, because it wasn't that loud, and he was laying about 15 feet from their bear box. He said he heard footsteps as well, which could have been made by a bear or a human walking near their tent. He says that he doesn't remember hearing any "bear sounds." Mrs. Freele reported that on the night of 25 July 2010, she may have heard a bear because she heard a growl and then breathing. On 24 July, 2010 at 0730 hours a campground visitor took a photo of a subadult grizzly in the Soda Butte Campground near the outhouse in the center of the campground (Photo 4). This subadult was not one

of the yearlings captured after the attack as it has a prominent white neck-ring that is lacking on the captured yearlings. There were muddy bear tracks on 3 of the 4 garbage containers in the campground and on several of the food storage boxes within the campground. How long these bear tracks on the garbage containers and food storage boxes had been present is unknown.

A verified report of a female grizzly bear with 3 yearlings in the Cooke City area occurred on 21 July 2010 when Elaine Sabo was jogging along Highway 212 between the northeast entrance of Yellowstone National Park and the community of Silver Gate at approximately 0900 hours (Appendix 11). A grizzly bear with 3



Photo 4. A subadult grizzly photographed in the Soda Butte Campground at 0730 hours on 24 July 2010.

yearlings came out of the woods and onto the highway. The mother stood up, then charged Elaine Sabo. She screamed at the bear, “Hey, hey, hey” and the bear stopped. The bear and her yearlings then ran into the woods and Ms. Sabo returned to the northeast entrance station. This sighting is approximately 4-5 air miles west of the Soda Butte Campground. There was another report on 6 July 2010 of a female grizzly bear with 3 large offspring described as yearlings 5 miles northeast of the Lamar Ranger Station in lower Baronette Meadow in Yellowstone National Park (Appendix 12). This sighting is approximately 8.5 - 10.5 air miles west of the Soda Butte Campground. The bears were observed feeding and traveling along Soda Butte Creek and were reported to be behaving naturally. Investigators also found an individual who had taken photos on 23 July, 2010 of an adult female grizzly bear with 3 yearlings near the Warm Springs

picnic site in Yellowstone National Park. This photo location is approximately 6 air miles west of the Soda Butte Campground.

Prior to the attacks, there were no reports of bear incidents in the Cooke City area in 2010 and no nuisance bear captures or bears relocated into this area in 2010.

Capture of the Bears:

At the tent of the fatality victim, there were several identifiable bear prints on the tent and on the fly of the tent. These prints were of 2 different sizes: 1 set of larger prints and numerous sets of smaller prints. No tracks were visible on the ground due to hard-packed dirt and vegetation. Several bear scats containing vegetation were found in the area of the victim's body. These scats were of different sizes, appearing to be from an adult bear and at least 1 smaller bear. Bear hairs were collected for DNA analysis in the area of the fatality and from the victim's body. The investigation crew searched the adjacent willows and riparian zone but halted their search at the edge of the upslope timber on the other side of the creek for fear of driving the bears out of the area. On the morning of July 28, 2010 a special aerial radio telemetry flight was conducted in the general vicinity of Cooke City and the Soda Butte Campground to search for radio-collared bears. No radio-collared bears were found in the area.

Details of the trapping operations can be found in Appendix 13. Culvert traps were immediately set in the area of the fatal attack. The largest culvert trap was set within 6 feet of where the victim was killed. The trap was baited with bighorn sheep meat and the fly from the victim's tent was draped over the culvert. At approximately 1530 hours on 28 July 2010, traps were baited and human activity at the campground ceased with the collection of all camping equipment by campers or agency personnel. At approximately 1800 hours, a door was heard closing on a culvert trap. It was visually confirmed using binoculars that an adult grizzly bear was in the culvert trap that was closest to the fatality site and which had been covered with the fly from the victim's tent.

At 1929 hours, the adult bear was immobilized and was found to be an adult female grizzly bear. Blood, hair, and tissue samples were collected for DNA analysis. The upper right canine tooth was recently broken and this break matched the part of a canine tooth recovered from Mrs. Freele's tent.

Personnel watching the area verified that 3 smaller grizzly bears were moving in the willows at the edge of the stream. The adult female was placed back into the culvert trap to recover from immobilization and 2 culvert other traps were all moved within 40 yards of the yearling activity area to maximize capture of the yearlings. On 29 July 2010, at 0615 hours the traps were checked and two yearlings had been captured with the third still on the loose. On 30 July 2010, at 0600 hours, the third yearling was captured. Upon consultation between Federal and State agencies, the bears were all moved to Bozeman, Montana. On 30 July

2010 at 1600 hours, the adult female was immobilized, data was collected and measurements were taken and at 1610, the adult female bear was euthanized. A necropsy was completed on the adult female at the Montana State Veterinary Diagnostic Lab by veterinary pathologists Dr. B. Layton and Dr. J. Marshall. On 31 July 2010, a rabies test was completed and the test was negative. The adult female grizzly bear captured in the Soda Butte Campground on 28 July 2010 did not have rabies.

The 3 yearlings were immobilized and examined on 31 July 2010 at 1834 hours. After interagency consultation, it was decided to place these bears at Zoo Montana in Billings, Montana, an accredited AZA non-profit facility. On 1 August 2010, the 3 yearlings were transported to Zoo Montana for permanent captivity.

DNA Results

By 1436 hours on 30 July 2010, DNA results from the Wyoming Game and Fish Department's Wildlife Forensics Lab confirmed a match between hair obtained at the attack and fatality sites and hair and blood samples collected from the adult female grizzly bear (Appendix 14). No DNA from any of the 3 yearlings was found at any of the attack sites or the fatality site or on any wounds or clothing or tents of the victims.

A single grizzly hair was found on Mrs. Freele's shoe that was located outside her tent. The DNA on this single hair did not match the adult female or any of the yearlings, indicating a fifth bear in the area of the campground. The DNA found on this sample from an apparent fifth bear does share an allele at all loci with the adult female grizzly bear involved in the attack (Appendix 14). This allele sharing indicates a high probability of relatedness between the unknown sample and the adult female. There was no evidence of this fifth bear at any of the other attack sites, on any wounds or clothing or tents of the victims, and at the fatality site. There was no sign of this fifth bear during the capture efforts. This hair from an apparent fifth bear may have been picked up on the shoe of Mrs. Freele in the campground as she had stayed in the Soda Butte Campground for 13 days prior to the attack, but there is no way to know this for certain. The only evidence of a bear in the campground other than the adult female and her 3 yearlings is the single subadult photographed on 24 July 2010 (Photo 4).

Condition of the Bears.

The necropsy report (Appendix 15) on the adult female showed this bear weighed 216 pounds. The weight of this adult female is within the low end of the normal range for adult females accompanied by yearlings in July in the Yellowstone ecosystem (Figure 1). The weight of the yearlings is at the low end of the normal range for yearlings in July in the Yellowstone ecosystem (Figure 1). Body of the adult female was described as thin. The right canine tooth was broken. A small amount of milk was produced from the teats. Fat stores were present but marginal. The stomach was full of grass and black strands of fabric. There were a few bony fragments present in the stomach as well. There were

moderate to numerous tape worms and roundworms in the small intestine. The brain and pituitary gland were normal. The lungs indicated the onset of pneumoconiosis, a lung condition caused by inhaling particles of mineral dust. Pneumoconiosis in humans is usually associated with inhalation of either silica dust, asbestos fibers, or coal dust. The origin of this condition in this bear is unknown and is perhaps related to den excavation and occupancy or perhaps digging for foods in dusty soils. The summary morphological diagnosis was a bear with a thin body condition, moderate to numerous numbers of tapeworms and roundworms, and enteritis (inflammation) of the small intestine probably associated with the parasite load.

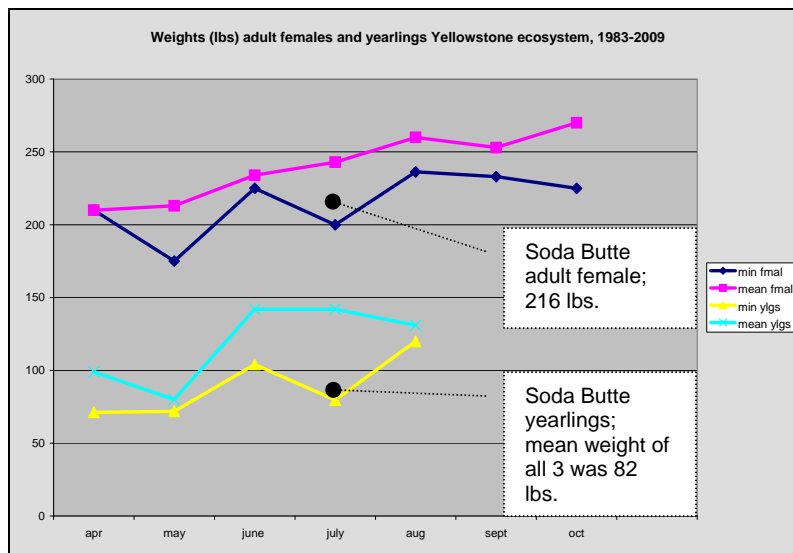


Figure 1. Mean and minimum recorded weights of individual adult females with yearlings and weights of individual yearlings (both sexes combined) in the Yellowstone ecosystem, 1983-2009 compared to the adult female and her yearlings involved in the Soda Butte attack. N = 26 for adult females and 19 for yearlings. IGBST data.

The veterinary pathologists concluded that the parasite load combined with the increased energy demands of 3 offspring, were contributing factors to the poor body condition of the bear.

Isotope Analysis Results:

Hair, serum, and blood samples from the adult female captured at Soda Butte Campground were sent to Dr. Charles T. Robbins at Washington State University for analysis of carbon, nitrogen, and sulfur isotopes. The levels of various isotopes in hair, blood, and serum samples can be used to estimate dietary composition by bears during recent weeks to years in the past depending on the tissue sample analyzed. When hair samples are analyzed at different lengths of the hair, one can understand if food habits changed over the time period the hair was grown. Results of the isotope analysis (Appendix 16) show that the adult female captured in the Soda Butte Campground consumed almost exclusively a plant-based diet over the previous 2 years. Ninety-two percent of the grizzly bears in the Yellowstone ecosystem consume a higher proportion of meat in their

diet than did this grizzly bear. There was a slight increase in the female's nitrogen isotope signature during the last few weeks of her life. Nitrogen isotopes are an indication of the consumption of meat. Even though there was a slight nitrogen increase in the past few weeks, this female only consumed a very minimal amount of meat during the last few weeks of her life.

Evidence of sulfur isotopes in the hair, serum, and red blood cells of bears indicates the consumption of whitebark pine seeds. Analysis of the sulfur isotopes in the hair of the female captured in the Soda Butte Campground indicates that she consumed few whitebark pine seeds in 2009 even though it was a relatively good year for pine seed production in the Cooke City area. Analysis for sulfur isotopes in the 2010 portion of the hair growing on this bear indicated minimal use of whitebark pine seeds in 2010, very similar to the level of consumption in 2009. Both the serum and red blood cell values for sulfur also indicate minimal consumption of whitebark pine seeds during the last few weeks of this bear's life. In summary, this bear was not a consumer of whitebark pine seeds, even when whitebark pine seed crops were good within the area where she lived.

Isotopes of carbon can be used to understand consumption of natural plant foods which are associated with a C₃ metabolism. Corn, sorghum, sugar cane, and other plants that have a more tropical climate origin indicate a C₄ metabolism that is not found in natural plant foods in the Yellowstone ecosystem. These differences lead to very different carbon isotope signatures between consumers of native Yellowstone area plants and consumers of tropical climate plants. Corn is a widely used product for livestock feed for cattle, pork, and poultry. Farm animals fed corn products show a C₄ signature in their meat. Corn syrup is also used as a sweetener in many consumer food products like granola bars, baked goods, and many other packaged foods. Corn is also widely used in pet foods such as dry dog food. If a bear eats any of these human-related foods or pet food containing corn or corn sweetener or any beef, pork or poultry from animals feed corn products, the bear will contain carbon isotopes characteristic of C₄ plants in the serum and blood of the bear and in the hair of the bear that was grown during the time of this corn product consumption. Thus, evidence of C₄ from corn in the hair, blood, or serum of a bear is a clear indication that a bear has obtained human-related foods such as garbage or meat, pork or poultry products, and/or pet food. Analysis of the hair, blood, and serum of the female grizzly bear captured at the Soda Butte Campground shows a very low C₄ signature. This is very similar to the carbon signature of 350 wild research bears handled in the Yellowstone ecosystem from 1984 to 2005. If amounts of human-related food had been consumed over several weeks by this bear, it would have shown up on the analysis of carbon isotopes. These results indicate this female consumed little or no human-related foods such as human garbage or pet food over at least the last 2 years.

The end result of the isotope analysis shows this female was a consumer of little or no garbage or human foods in 2009 or 2010. This female utilized few or no whitebark pine seeds, even in 2009, a year when whitebark pine seeds were abundant in the Cooke City area and much of the Yellowstone ecosystem. This female was living on a plant-based food diet that provided a minimal level of nourishment, particularly when she was nursing and accompanied by 3 offspring. While this female was utilizing a primarily vegetative diet, she was not unique in this strategy in the Yellowstone ecosystem (see Figure 2). Other grizzly bears in the Yellowstone ecosystem survive successfully on a plant-based diet similar to the diet of the adult female involved in the Soda Butte attacks (Figure 2). Grizzly bears are opportunistic omnivores that consume a wide variety of foods and subsist on a wide diversity of diets even among animals with overlapping home ranges within the same geographic area.

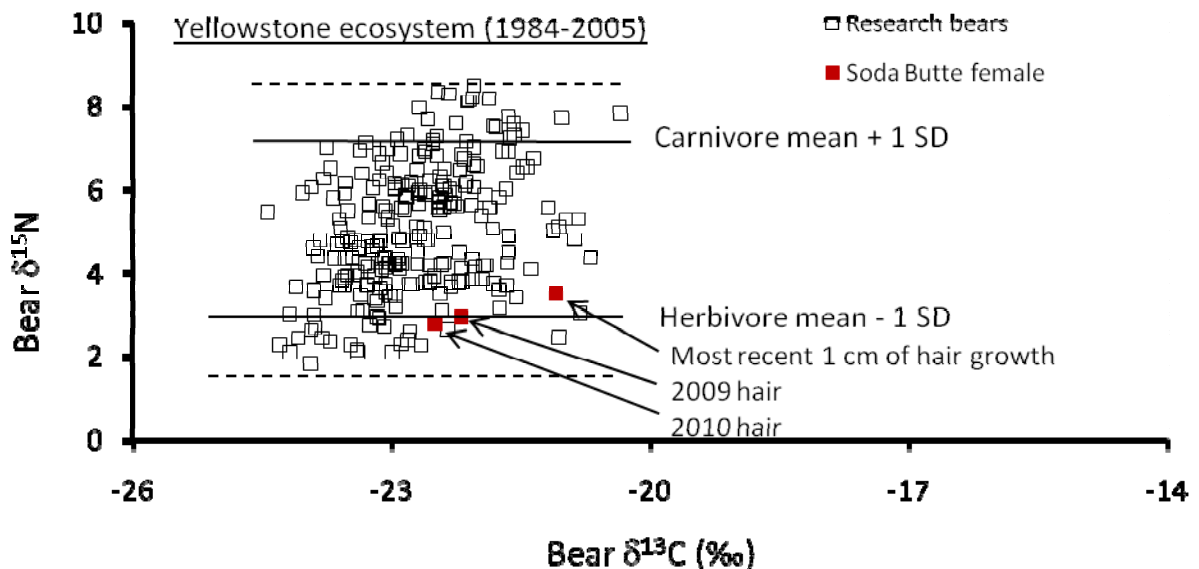


Figure 2. Carbon and nitrogen isotope values of the hair collected from the Soda Butte female compared to similar samples for 350 research bears handled between 1984 and 2005 (From Appendix 16).

Finding of the Investigation Team:

An adult female grizzly bear accompanied by 3 yearlings attacked 3 separate campers in their tents in the Soda Butte Campground between approximately 0200 and 0400 hours on 28 July 2010. The first 2 attacks resulted in injuries that were not life threatening. The last attack resulted in a human fatality. The first attack occurred on an individual in a tent with another individual and a small dog. The second and third attacks occurred on lone individuals in tents. The bear bit the campers through the side of the tent or through the insect screen of the tent, or ripped the tent fabric somehow and bit the campers through the resulting hole

in the tent. The first victim fought off the bear by punching the animal and the bear let go. The second victim made noise and then played dead. The bear left the area after biting the second victim 3 times. There was noise at this time made by 4 campers in the adjoining campsite as they scrambled to get dressed and go to their vehicle. The third victim was killed at his tent site approximately 600 yards from the site of the first 2 attacks. A significant portion of his body was consumed at that site and 10 yards away where his body was dragged by the bear(s). The exact time of the third attack is unknown. It is not clear if the yearling offspring accompanying this female participated in the attacks but it evidence indicates that they participated in the consumption of the third victim.

The location where the attacks took place is an established Forest Service campground along Hwy. 212 approximately 1 mile east of Cooke City, Montana. The campground is between Highway 212 and Soda Butte Creek and is approximately 1000+ yards from one end to the other. There are 27 established campsites within this campground, 24 of which were occupied the night of the attacks. Six of the sites were occupied by hard-sided trailers and 18 by people camping in tents. There was no campground host in this campground. The campground contained 4 established outhouse facilities and 4 bear-resistant garbage containers. Three of the 4 garbage containers had muddy bear tracks on them at the time of the attacks. Each camp site has a bear-resistant food storage container and several of these had muddy bear tracks on them at the time of the attacks. The campground is located in undulating topography and is timbered with spruce and other conifers offering a high level of visual cover. Many of the camp sites are screened by vegetation so that they cannot be seen by people in adjacent sites. There is significant spacing between the campsites in this campground. Soda Butte Creek runs along the south side of the campground creating a high level of ambient sound in the campground that makes hearing noises in adjacent campsites difficult. The creek bottom adjacent to the campground is riparian habitat with willows and many bear foods. Wildlife trails are common and evident in the creek bottom.

Food storage regulations were in effect in the campground and metal food storage boxes were available at each campsite. There was no evidence of food attractants being available at any of the sites where attacks took place. There was no evidence of improper food storage problems anywhere in the campground at the time of the attacks or prior to the attacks, nor was there evidence that bears obtained garbage or human foods in the campground in 2010. There were no prior reports of bear/human conflicts in 2010 except for the bluff charge during a surprise encounter with a jogger (Elaine Sabo) along Highway 212 near Silver Gate. There were no reports of problems with bears obtaining human foods in the campground or in the Cooke City area in 2010.

After the attacks, efforts were initiated to capture the offending bear(s). Initially it was not conclusive what bear species was involved in the attacks due to insufficient tracks for species identification left at the sites. Trapping operations

were concentrated at the site where the third attack took place and where the victim was killed. A culvert trap was placed at the campsite of the victim's tent and the rain fly of his tent was used to cover the culvert trap. There were 2 other culvert traps set in the immediate area. At approximately 1800 hours on 28 July 2010, within 16 hours of the initial attacks, an adult female grizzly bear was captured in the trap closest to the victim's tent site. This was the trap covered with the rain fly from the victim's tent. On 29 July 2010 at 0615 hours, 2 yearling grizzly bears were captured in traps adjacent to the culvert trap where the female was being held. On 30 July 2010 at 0600 hours, the third yearling was captured in a culvert trap adjacent to the campsite where the victim was killed.

The adult female grizzly bear was approximately 10-15 years old (exact age as yet unknown but will be determined by tooth cementum analysis). The bear was unmarked and had never been captured before. All 4 bears were moved to Bozeman, Montana where the adult female was euthanized and sent to the Montana Veterinary Diagnostic Lab for necropsy. The adult female weighed 216 pounds. The brain of the adult female bear was tested for rabies and the results were negative. The morphological diagnosis was a bear with a thin body condition, moderate to numerous numbers of tapeworms and roundworms in the small intestine, enteritis (inflammation) of the small intestine probably associated with the parasite load, and the onset of pneumoconiosis, a lung condition caused by inhaling particles of mineral dust. The veterinary pathologists concluded that the parasite load played a role in the poor body condition of the bear. This parasite load, combined with the increased energy demands of 3 offspring were contributing factors to the poor body condition of the bear. The 3 yearlings were also in poor physical condition but were within the lower end of weights recorded for yearling grizzly bears Yellowstone ecosystem. The size of this adult female is within the normal range for adult females accompanied by yearlings in the Yellowstone ecosystem.

There was a single grizzly hair found on a shoe that was outside the tent of Mrs. Freele on the night of the attack. The DNA from this single hair was not from the adult female or any of her 3 yearlings indicating a fifth bear in the area. The DNA from this hair indicated that it was from a bear that was related to the adult female. There was no DNA evidence of this fifth bear at any of the other attack sites, on any wounds or clothing or tents of the victims, or at the fatality site. There was no sign of this fifth bear during the capture efforts. This hair from this fifth bear may have been picked up on the shoe of Mrs. Freele around the campground as she had stayed in the Soda Butte Campground for 13 days prior to the attack, but there is no way to know this for certain. Subadult grizzly bears will sometimes remain within the home range of their mother. It may be that there was a subadult frequenting this campground that is a previous offspring of the adult female involved in the attacks. This may be the bear photographed in the campground on 24 July 2010 (Photo 4). There is no direct evidence that this unknown fifth bear was involved in any of the attacks.

Stable isotope analysis indicated the adult female subsisted primarily on native vegetation and had very little meat in her diet. Isotope results also show that the adult female was not a consumer of whitebark pine seeds, even in 2009 when whitebark pine seeds were abundant in the Cooke City area. Isotope analysis also showed that this adult female had not consumed human-related foods such as garbage or pet food. This adult female subsisted primarily on natural vegetation that provided a marginal level of quality nutrition. This diet was a contributing factor to her poor body condition. The nutritional demands of raising 3 yearlings would further strain her nutritional situation. Her diet of primarily vegetation is within the normal range of diets in the Yellowstone ecosystem (Figure 1).

There is no clear explanation for the aggressive, predatory behavior of this adult female grizzly bear in the early morning hours of 28 July 2010. The bear and her offspring were low in body condition but their body condition was not outside the range of other wild grizzly bears in the Yellowstone ecosystem. Her poor body condition was likely directly related to her nearly exclusive reliance on native vegetation (other than whitebark pine seeds, which she ate very little of), combined with the nutritional demands of raising 3 yearlings and continuing to nurse those 3 yearlings. Her poor body condition was exacerbated by a parasite load in her small intestine. This parasite load would have compromised her nutrition and physical condition and, combined with a vegetative diet and raising 3 offspring, likely contributed to nutritional stress. It is important to recognize that nutrition can be a contributing factor to stress in wildlife but in and of itself, nutritional stress is not a sufficient explanation for predatory behavior by a bear on humans.

Herrero et al. (*in press*) analyzed 59 different fatal attacks by black bears on humans from 1900-2009. Of the 34 attacks in which the body condition of the attacking bear was known 32% (11 of 34) had an apparent health problem such as being underweight, injured, or in poor body condition. In 68% (23 of 34) of black bear predatory attacks on humans, the bears were described as “healthy” and not underweight or in poor body condition. Therefore, poor body condition may be a contributing factor to a predatory attack on a human by a bear but by itself it is not a conclusive or sufficient explanatory factor to explain such predatory behavior. The adult female grizzly bear that attacked 3 people in the Soda Butte Campground was able to raise 3 cubs to yearling status. She was within the normal range of weights for adult females accompanied by yearlings in the Yellowstone ecosystem and was therefore not abnormally thin or malnourished. Raising cubs puts a nutritional strain on every female grizzly bear. Nutritional stress is not a reason for a bear to become predatory on humans, although it may be a contributing factor. In the study on black bear predatory attacks on humans, Hererro et al. (*in press*) found that only 3 of 36 fatal attacks involved an adult female bear with young, indicating that fatal attacks on people by black bear females with young are highly unusual. Confounding interpretation of the reason for this attack is the fact that the isotope results show that this bear

had consumed little or no human-related foods. Evidence indicates there were bears frequenting this campground and this could have included the family group involved in the attack, but there is no evidence indicating that human-related food was obtained by these bears in the campground or anywhere else prior to the attacks. There were no reports of aggressive bears (other than the bluff charge during the surprise encounter with a jogger along Highway 212) or habituated bears in the campground or the Cooke City area in 2010.

In summary, the attack involving an adult female grizzly bear and her 3 yearlings on 3 separate people in the Soda Butte Campground on 28 July 2010 cannot be clearly explained or understood. The adult female and her offspring were nutritionally stressed due to their primarily plant-food diet and the adult female had a moderate intestinal parasite load which contributed to her poor nutritional status. However, their body size and condition were not outside the range of normal values for grizzly bears in the Yellowstone Ecosystem. It is clear this bear had obtained few if any human-related foods prior to the attack and therefore was not food conditioned to seek human use areas as sources of food. The bear exhibited minimal levels of habituation to humans as it was rarely seen or reported in the Cooke City area or in the campground. There is evidence of bears frequenting the campground area surreptitiously as evidenced by bear tracks on food storage boxes and garbage dumpsters in the campground and there is a photo of a fifth bear in the campground. However, none of these issues can be identified as a causative factor for this bear to suddenly become predatory on humans at 0200 on July 28, 2010 after apparently living in the area of this campground for its entire life (as adult female core home ranges remain fairly static throughout their lifetimes).

Literature Cited

Herrero, S., A. Higgins, J. E. Cardoza, L. I. Hujduk, and T. S. Smith. (in press) Fatal Attacks by American Black Bears on People in Canada and the United States: 1900-2009. *Journal of Wildlife Management*.

List of Appendices

- Appendix 1 – Requirements for an Investigation Team Report in case of a human fatality, from the Interagency Grizzly Bear Nuisance Guidelines
- Appendix 2 – Map of Soda Butte Campground
- Appendix 3 – Interview with Ronald Singer
- Appendix 4 – Interview with Deborah Freele
- Appendix 5 – Timeline of events from Wilhelm family camped in Site #12
- Appendix 6 – Coroner's report on the death of Kevin Kammer
- Appendix 7 – Dispatch log Yellowstone National Park Communications Center
- Appendix 8 – Incident report of James Miller, Montana Fish Wildlife and Parks Game Warden
- Appendix 9 – Enforcement synopsis, Sam Shepard, Montana Fish Wildlife and Parks Game Warden Captain
- Appendix 10 – Summary of Forest Service staff involvement by Dan Tyers
- Appendix 11 – Bear sighting report, Elaine Sabo, 21 July 2010
- Appendix 12 – Bear sighting report, Scott Sabo, 6 July 2010
- Appendix 13 – Incident report, Kevin Frey, Montana Fish Wildlife and Parks
- Appendix 14 – Laboratory DNA results, Wyoming Game and Fish Department
- Appendix 15 – Case summary, Montana Veterinary Diagnostic Laboratory
- Appendix 16 – Summary of stable isotope analysis for the Soda Butte female grizzly bear

7. Any IGBC agency may terminate participation in this Plan upon 120 days written notice to each of the other agencies.
8. The attached Plan provides operational guidelines for determining grizzly bear nuisance status and for controlling nuisance grizzly bears in the conterminous United States. Handling and control of nuisance grizzly bears will be governed by the grizzly bear special rule (50 CFR 17.40) and per discussions and/or resulting agreements between IGBC member agencies and APHIS (Animal and Plant Health Inspection Service) animal damage control.
9. The "Guidelines and a "Plan" have been submitted to the Fish and Wildlife Service as a formal aggregate consultation since the projects, activities, and programs are logically grouped, their effects should be similar and such an aggregate consultation should greatly economize consultation activities related to and required for grizzly management.

The purpose of this document is to:

1. Document management direction agreed upon by participating agencies with respect to determination of grizzly bear nuisance status, and the capture, translocation, release and/or disposal of nuisance grizzly bears.
2. Guide managers in making rapid, effective, and responsible decisions and initiating action regarding grizzly bear control actions.

II. Guidelines for Determining Grizzly Bear Nuisance Status

These guidelines apply to the Management Situation Areas defined in Interagency Grizzly Bear Guidelines. In Management Situations Areas 1 and 2, grizzlies must be determined to be a nuisance by specific criteria before they can be controlled. In Situation Areas 3 and 5, any grizzly involved in a grizzly-human conflict situation is considered a nuisance and will be controlled. Control must be compatible with Grizzly Bear Recovery Plan objectives for limiting man-caused grizzly mortality and with Federal and State laws and regulations.

A grizzly bear may be determined to be a nuisance if any or all of the following conditions apply:

- Condition A. The bear causes significant depredation to lawfully present livestock or uses unnatural food materials (human and livestock foods, garbage, home gardens, livestock carrion, and game meat in possession of man) which have been reasonably secured from the bear resulting in conditioning of the bear or significant loss of property.
- Condition B. The bear has displayed aggressive (not defensive) behavior toward humans which constitutes a demonstrable immediate or potential threat to human safety and/or a minor human injury resulted from a human/bear encounter.

Condition C. The bear has had an encounter with people resulting in a substantial human injury or loss of human life.

The following are considerations in determining grizzly nuisance status under Condition A:

Unnatural foods were reasonably secure from grizzlies. Reasonably secure means all steps were taken to comply with guideline objectives (a) Maintain and Improve Habitat and (b) Minimize Grizzly-Human Conflict Potential. The following are examples of reasonably secure conditions:

- (1) sight and/or smell of edibles and/or garbage was not dominant (i.e., food was canned or in other sealed containers) and edibles and/or garbage was made unavailable (hung out of reach or secured in a solid-sided-bear-proof structure). Livestock use did not occur in habitat components critically important to grizzlies in time or space;
- (2) livestock and wildlife carcasses were removed, destroyed or treated so that the material would not reasonably be expected to attract grizzlies.
- (3) game meat was stored at least 100 yards from any sleeping area;
- (4) no baits were placed for purposes of sport hunting black bears, nor did any artificial feeding of bears occur.

The following are considerations in determining grizzly nuisance status under Condition B:

The bear has displayed aggression toward man. Sound evidence must be available to establish that the bear acted aggressively without provocation (not defensively), and that such behavior constituted a threat to human safety and/or a minor human injury occurred as a result of a nondefensive grizzly attack.

The following are considerations in determining grizzly nuisance status under Condition C:

An encounter with people which resulted in a serious human injury or loss of human life. A bear that is involved in an accidental encounter with people, defense of young, or in a provoked attack (the bear acted defensively not aggressively) which results in a minor human injury should not be considered a nuisance under this condition.

If information is insufficient to clearly establish the above requisites under Conditions A, B, and C, then the involved bear(s) probably should not be determined a nuisance under that condition. The criteria in Table 1 should be used to guide control actions.

Preventive Action

Certain specific grizzlies have known behavioral patterns, which, when combined with location, time and other factors, indicate that an incident is highly probable. In such situations, direct preventive action designed to safely remove the bear(s) from the situation (prior to an occurrence which would result in nuisance status and possible loss of the bear(s) to the ecosystem) can be implemented regardless of the Management Situation involved. Human activities must be in compliance with applicable guidelines to minimize potential for grizzly-human conflicts for that Management Situation. Control actions should be designed to capture and remove the specific target bear(s).

In other situations, a bear may move into a visitor use or residential area without causing an incident, but there is indication that due to its persistent use of the area, it may become overly-familiar with humans and may become habituated. The animal may be relocated if a suitable release site (free of circumstances similar to the capture site) is available. This is an action to prevent a possible incident or habituation of the bear. It does not count as an offense when determining the disposition of the bear (using Table 1), should the bear be recaptured in a future control action.

III. Grizzly Bear Control Action

1. If a grizzly bear is not determined to be a nuisance after consideration of criteria in Section II, no control action will be initiated.
2. Capture of nuisance grizzly bears outside National Parks is the primary responsibility of the State Fish and Game Agency in conjunction with the U.S. Fish and Wildlife Service. The National Park Service is responsible for bear capture within National Parks. Figure 1 is a schematic diagram showing the sequence of notification and the decision process which will be used in all grizzly control actions. Data forms for recording information about the captured bear(s) and the control action are provided in the Appendix. Nuisance bear forms should be completed by the on-site official and forwarded to the Grizzly Bear Recovery Coordinator for subsequent distribution.
3. Nuisance grizzlies that are sick or injured beyond a point where natural recovery is likely will be removed from the population. Other nuisance grizzlies will be controlled according to the guidelines in Table 1.
4. After a bear has been captured during a control action, the decision on where to relocate the bear or whether to kill it must be made within 24 hours of its capture. The relocation must be made as expeditiously as possible after the disposition of the bear is determined. Bears will not be held in a snare but will be immobilized, marked, and placed in an appropriate holding facility (can be a culvert trap).

With due consideration of mortality risk associated with immobilization, grizzly bears released should be marked with numbered ear tags, lip tattoo, and functioning radio transmitters. Monitoring will be a cooperative effort between State and Federal agencies. On-site release may be

accomplished if the bear taken is: (a) determined not to be a nuisance bear or; (b) on a first offense when the bear cannot be relocated because of terrain, weather, or inaccessibility to a relocation site. Females with cubs, where relocation is identified in the above table, will be released on-site if relocation is not feasible for previously stated reasons or if the cubs cannot also be caught and relocated with the female. An on-site release will not be conducted in developed areas. On-site releases will be accomplished after approval of the land management agency if the release is monitored in such a way to determine its success or failure with respect to bear survival and conflict resolution.

5. If a bear is to be killed, the action will be completed only by authorized State or Federal or Tribal employees. A grizzly bear mortality report form should be completed and the carcass forwarded to the Montana Department of Fish, Wildlife and Parks lab in Bozeman, Montana, for examination and subsequent disposition.
6. The initiating agency may "take back" a relocated bear, according to case-by-case agreements.
7. The State Fish and Game Regional Office will be the principal coordination point for all control actions, unless specified otherwise in the initial discussions on a particular incident.

The public and news media are extremely interested in all operations involving grizzly bears. To insure that they receive the proper information, it is critical that information be shared between all involved agencies in an accurate and timely manner. Planned news releases will be the responsibility of the State Fish and Game agency in close consultation with the administering land management agency (or Tribe) and the Grizzly Bear Recovery Coordinator.

Table 1. GUIDELINES FOR GRIZZLY BEAR CONTROL ACTION
(See Footnotes)

TYPE OF GRIZZLY	NO OFFENSE OFFENSE	TYPE OF PROBLEM					
		CONDITION A			CONDITION B		CONDITION C
		1st	2nd	3rd	1st	2nd	1st
Females							
Orphaned Cub	*** RLS/REL *						
Cub		REL	REL	REM **	REL	REM	REM
Yearling		REL	REL	REM	REL	REM	REM
Subadult		REL	REL	REM	REL	REM	REM
Prime Adult with Young		REL	REL	REM (Adult)	REL	REM (Adult)	REM (Adult)
Old Adult ***		REL	REM	--	REM	--	REM
Old Adult with Young		REL	REL	REM (Adult)	REL	REM (Adult)	REM (Adult)
Males							
Orphaned Cub	*** RLS/REL *						
Cub		REL	REL	REM	REL	REM	REM
Yearling		REL	REM	--	REM	--	REM
Subadult		REL	REM	--	REM	--	REM
Prime Adult		REL	REM	--	REM	--	REM
Old Adult		REM		--	REM	--	REM

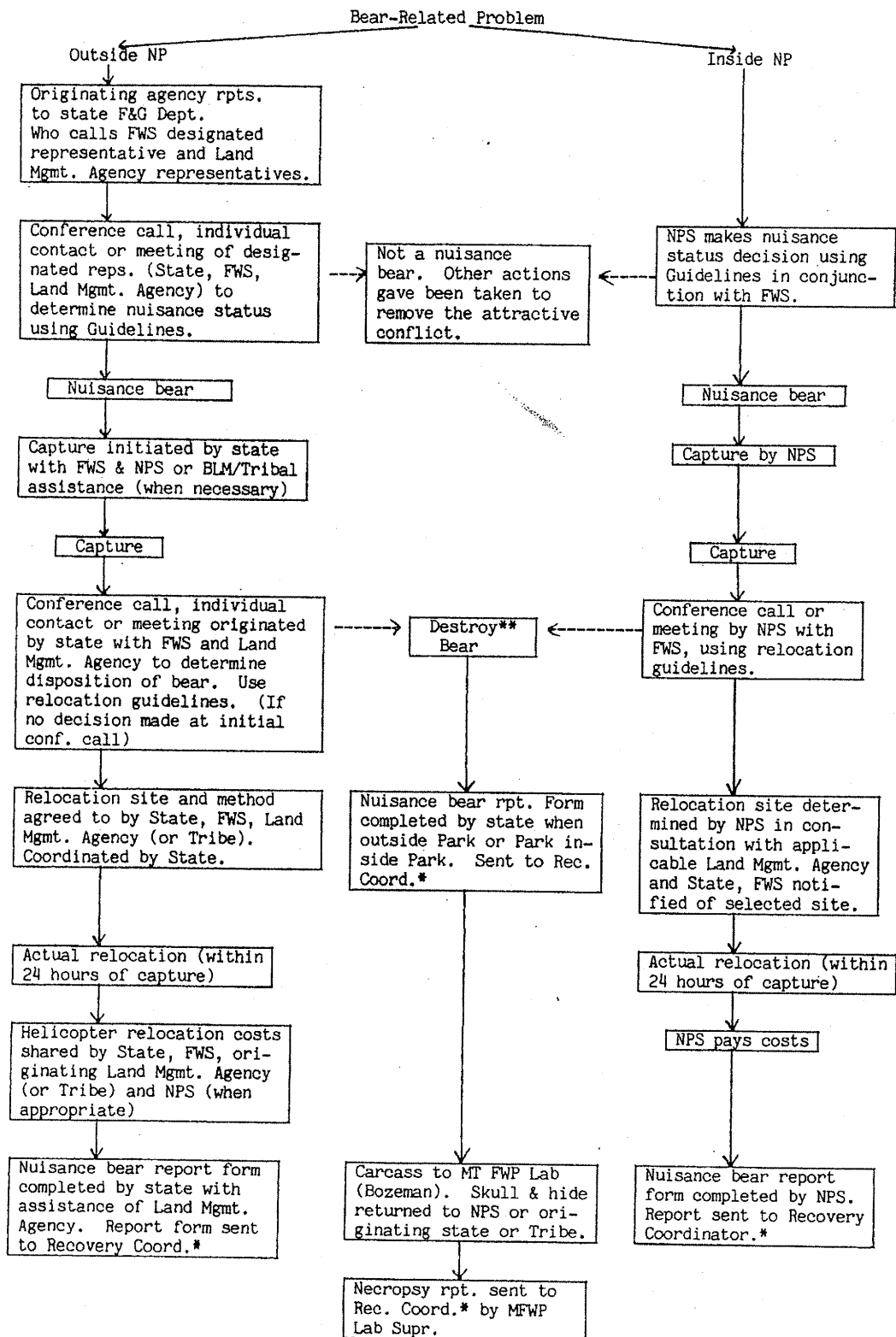
* REL - RELOCATE ** REM - REMOVE FROM POPULATION *** RLS - RELEASE ON SITE
(Nuisance grizzlies that are sick or injured beyond a point where natural recovery is likely will be removed.)

Cub - Young of the Year
Yearling - 12 to 24 months old
Subadult - 24 to 48 months old
Young - Cub, yearling, or subadult accompanying mother
Old - Indicates advanced age and deteriorated physical state, indicators are tooth wear and physical appearance

* Grizzly Bear Recovery Coordinator, USFWS, HS 105D, University of Montana, Missoula, MT 59812

FIGURE 1

ACTION PROCEDURES FOR DETERMINING BEAR NUISANCE STATUS AND MANAGEMENT ACTION



*Recovery Coordinator distributes report to agency representatives in Ecosystem.

**Alternative may include transport to a zoo or research. Decision made at second phone call.

*Grizzly Bear Recovery Coordinator, USFWS, US 105D, University of MT, Missoula, MT 59812

FIGURE 2

ACTION PROCEDURES IN CASES OF GRIZZLY-HUMAN CONFLICT

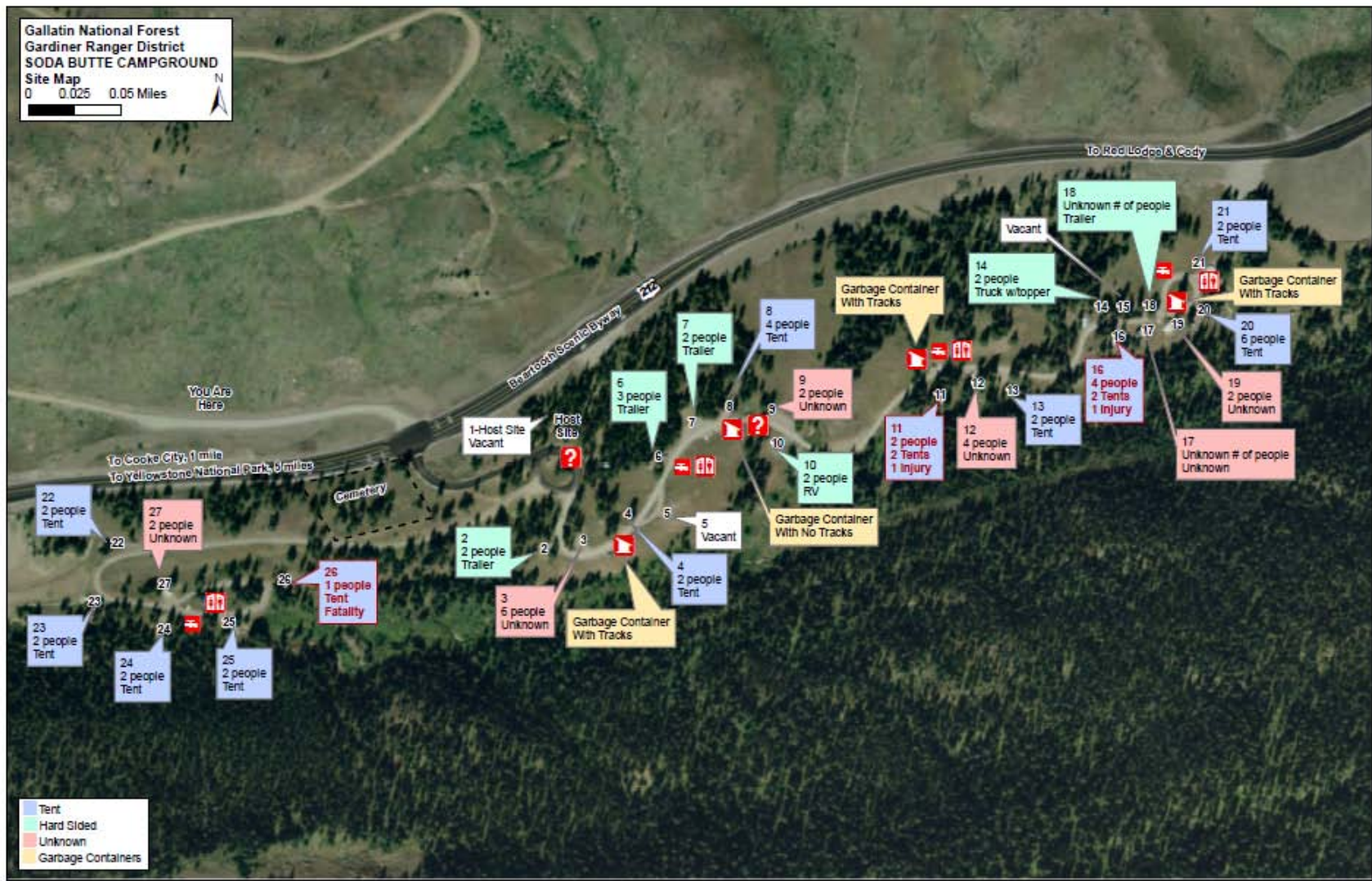
All grizzly bear habitat

1. All incidents of grizzly-human conflict will be investigated immediately and a factual and detailed report (answering who, what, when, why, where and how) submitted to the line officer. In case of human death, notify the County Sheriff and County Coroner. In case of grizzly death, notify the U.S. Fish and Wildlife Service and the appropriate State wildlife management agency.
2. State wildlife management agencies and/or the U.S. Fish and Wildlife Service, National Park Service, Tribe will handle nuisance grizzlies.
3. County sheriffs will have primary responsibility for backcountry rescue outside National Parks and Indian Reservations.
4. The site of an incident will be closed immediately to human use until the investigation is complete and the problem solved or corrected. This closure is the responsibility of the managing agency.
5. All incidents resulting in serious human injury or death will be investigated by an interagency team with members from the county law enforcement agency, State wildlife management agency, land management agency, U.S. Fish and Wildlife Service, NPS and appropriate outside experts as necessary.
6. News releases involving grizzly-human conflict incidents will be coordinated through all concerned agencies.

Further, in National Parks,

7. All grizzly-human conflicts will be investigated and a factual and detailed bear incident report submitted to the Superintendent's Office. In incidents where injury and/or property damage have occurred, the investigating officer's report will be supplemented when possible by the statements of witnesses to the incident. All incidents of grizzly inflicted human death will be investigated by an interagency investigation team (as in No. 5).
8. All management actions involving bears will be reported by telephone to the Bear Management Office/Resource Management Office.
9. All grizzly bear sightings will be recorded in the station log and telephoned daily to the Bear Management Office/Resource Management Specialist. Information shall include observer, date, location, time, number, activity, and if possible, sex, age class, and individual description.

Appendix 2 - Map of Soda Butte Campground



Appendix 3 - Interview with Ronald Singer

Investigation Report

Grizzly Bear Inflicted Injury to Ronald Singer

Prepared by:
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On July 28, 2010 at about 0730 hrs I interviewed Ronald Singer at the West Park Hospital in Cody, Wyoming. Singer was at the hospital being treated for injuries inflicted by a bear while he was camped at the Soda Butte Campground near Cooke City, MT. The following is a summary of my interview with Singer and with the treating physicians.

Mr. Singer advised that at about 0200 hrs on July 28, 2010 he was sleeping in the same tent with his girlfriend, Maria Fleming, and their dog when he was awoken by his tent moving "several feet". He felt something bite his left leg but did not see what had a hold of him. Singer reacted to the bite by punching at the animal several times through his tent at which time the animal let go of his leg. He looked through a tear in the tent that had occurred during the incident and did not see anything. He felt his leg at which time Ms. Fleming screamed and turned on the light in the tent and observed that Mr. Singer had a injury to his lower left leg.

Ms. Fleming exited the tent and went to a nearby tent that her father, Rolland Fleming and her sister, Micaela Fleming were asleep in and woke them. While they were applying 1st aid to Mr. Singer's leg the group heard a woman screaming at what they thought was campsite 13. The Flemings and Mr. Singer loaded up in their vehicle and drove to the Super 8 Motel in Cooke City and called 911. A 1st responder came to the motel and applied additional 1st aid. While they were at the motel a woman, Deborah Freele, showed up with arm injuries. Mrs. Freele had been injured by a bear in the same campground as Mr. Singer. Mr. Singer stated that an ambulance arrived and transported Mrs. Freele to the hospital and he had Mr. Fleming drive him to the hospital in Cody, WY. Mr. Singer said he never observed the bear during the incident.

Dr. Stan Peters of Cody WY initially treated Mr. Singer and advised me that he had puncture wounds and lacerations to his lower left leg, but did not have any fractured bones. Mr Singer was treated in surgery by Dr. Jay Winzenreid. Dr. Winzenreid summarized Mr. Singer's wounds to his left lower

leg as 1 laceration 5 cm in length, 1 laceration 7cm in length, deep muscle damage associated with the bite, tooth divots to the bone, no nerve or vascular damage.

Appendix 4 - Interview with Deborah Freele

Investigation Report

Grizzly Bear Inflicted Injury to Deborah Freele

Prepared by:
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Wyoming Game and Fish Department
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307-899-8157
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On July 28, 2010 at about 1030 hrs I interviewed Deborah Freele at the West Park Hospital in Cody, Wyoming. Freele was at the hospital being treated for injuries inflicted by a bear while she was camped at the Soda Butte Campground near Cooke City, MT. The following is a summary of my interview with Freele and with the attending physician.

Mrs. Freele advised that while camped in site #11 at about 0200 hrs on July 28, 2010 she was sleeping in a tent pitched near her husband's tent, Bill Freele, when she awoke and about 1 second later she felt a bite to the her upper left arm. The bear shook her briefly the let go of the arm, then bit her again in the lower left arm. She screamed during the first bite, but then played dead hoping the bear would leave. She felt a slight bite to her left leg and then the bear let go of the leg. She heard people yelling in the campground as she wrapped her arm up in her shirt to try and stop the bleeding. Several people came to her tent and removed her from her tent. One person put an improvised splint on her arm as she advised them she thought it was broken because she heard what she believed was a bone break during the second bite to the arm. Mrs. Freele advised that the people loaded her in a vehicle and took her to the Prospector Inn in Cooke City, MT. They then took her to the Super 8 Motel where the 1st responder was administering 1st aid to Ronald Singer who had also been attacked in the campground at a separate campsite.

An ambulance arrived and transported Mrs. Freele to the hospital in Cody, WY. Mrs. Freele said she never observed the bear during the incident. Mrs. Freele advised that on the night of July 25, 2010 while camped at the same site she may have heard a bear because she heard a growl and breathing outside of her tent.

Dr. Winzenreid of Cody, WY summarized Mrs. Freele's wounds to her left arm as 1 laceration 15 cm in length to the upper arm with deep muscle damage, 3 other small lacerations to the upper left arm, 8 lacerations on the lower left arm, 1 fracture to the ulna bone with no bone exposure, no nerve or vascular damage. The bite to the left leg caused no lacerations or punctures.

Timeline of Events for Wilhelm Family
Soda Butte Campground, Montana
July 2010
Wilhelm Family Camped in site #12

Monday July 26th.

Early evening. We arrive at campsite #12 and set-up camp. Observe small children walking up and down the main road. We feel secure enough despite the many bear warnings. Paige goes over "Be Bear Aware" rules, stressing the importance of keeping a clean campsite. We also decide that if a bear comes near our camp, we are going to immediately load up in our car. I jokingly say that she is scaring the kids...

Tuesday July 27th

It rained softly off and on during the night. First thing the next morning, my eldest son, Sam, reports that he heard a bear during the night. We kindly smile and dismiss his comments. We have a normal day at Yellowstone NP.

Wednesday July 28th.

1:32 am: check watch after returning from restroom

1:40 - 45 am: hear lady's scream from upstream; sit up; Paige wonders aloud if one of our children has had a nightmare. There were a few other fleeting sounds then silence. Lay back down and wonder.

1:45 – 2:00 am: Hear beginning of attack at campsite immediately downstream, #11. Lady's voice screams "Stop!!" Then "No!" There are other cries of distress and agony. Paige and I begin dressing and grabbing gear. Soon we hear a bear "huffing" for a few seconds. My wife says "I think there's a bear!" I agree. Then silence. We quietly discuss our options and decide to make a run for our vehicle. Lady cries out "Help! I've been attacked by a bear!" We think to ourselves that maybe the bear has left. We grab our kids and bolt for our vehicle.

We jump in vehicle and drive to lady's campsite, honking horn. Do not see a bear. We see lady in what appears to be her sleeping bag in obvious distress. We discuss our options and decide that because the bear could be anywhere we need to go get help - potential suicide if I try to help lady by myself. We yell to the lady that we are going to get help.

2:00 am – 2:30 am. Drive to camp host location to see if anyone is there. Empty. Cell phone won't work. We encounter large SUV headed out of campground. We roll down windows and ask if they can come help us with a lady injured by a bear. The man driving says that his son/friend has been bitten in the leg by a bear and is taking him in for help. He indicates that he is OK. We continue to drive around trying to find someone to help us, someone hopefully with a gun/pepper spray. Stop at 3 or 4 sites and can't rouse anyone despite honking and yelling out window. My children very afraid for

me to leave truck, however, to knock on doors or approach tents. Finally, come upon site with large work truck and two tents. Decide we have to get a response – keep honking until two men emerge. They agree to go back with us to try and help the injured lady.

2:15 – 2:40 ?? Return to site #11, **probably gone for about 15 minutes** – just not exactly sure of time we left or returned. Upon return, campers (Mitch and girlfriend, a student nurse) from site #13 are sitting in their truck in main road near site #11. They've heard everything. The five of us then approach the injured lady, **who is alone (husband still in his own tent)**, and, as I watch the area with my spotlight, the others try to stabilize her broken arm and then load her up in Mitch's truck. This takes about 10 -15 minutes. Lady's husband loads up in the truck right before they leave to go find medical help.

We then decide we need to warn the other campers, driving around honking and yelling that there has been a bear attack. No one responds, although we do see one man dressing in site 14 or so. I decide that if the others head to the hospital in Cody then no one may have been able to call 911 or otherwise warn authorities; so, we decide to drive to Park Entrance (approx. 5 miles away). We don't notice any vehicles in Cooke City and drive to Park entrance where sign say to walk up hill to contact a ranger. I drive around to a house and knock on door but no one answers. I see a young lady in window in second floor of adjacent building and drive towards her. I flash my spot light at her and say that there's been a bear attack at Soda Butte. She stares at me. I ask if she can hear me. She nods yes. I ask if she needs anything else from me and she either nods or says no. I drive away irritated but thinking that she must already know about the bear attacks.

As we head into Cooke City we notice a "VACANCY" sign at the Super 8 Hotel. Drive in and realize that both victims are there awaiting an ambulance and park rangers/game warden. We stay the night there.



STATE OF MONTANA
FORENSIC SCIENCE DIVISION

DEPARTMENT OF JUSTICE
2679 PALMER ST.
MISSOULA, MT 59808
(406) 728-4970

CORONER'S
REPORT FORM

Case # 7-28-10-1

Autopsy # —

MDFS # —

SUBMITTING AGENCY: Coroner's Office

County: PARK Coroner/Deputy: A C Jenkins

DECEDENT: (Full Given Name) Kammer, Kevin Ronald

Address: [REDACTED]

D.O.B.: [REDACTED] Sex: M F Race: White Hispanic Native American
 Black Asian Unknown

Occupation: Medical Technologist

DATE & TIME LAST SEEN ALIVE ; OR IF KNOWN DATE & TIME OF DEATH 3 PM 7/27

DATE & TIME FOUND IF TIME OF DEATH UNKNOWN: 0421 7/28

PLACE OF DEATH: Soda Butte Campground, Cooke City, MT

IF DEATH IN HOSPITAL, DATE & TIME ADMITTED: — Dr.'s Name: —

AUTOPSY: Y N IF YES, by Dr. —

TOXICOLOGY SPECIMENS TAKEN? Y N IF YES, check which: Blood Vitreous Urine

FINGERPRINTS TAKEN? Y N PHOTOGRAPHS TAKEN? Y N Scene ^{External} Autopsy

DEATH CERTIFICATE (D.C.) CERTIFIED BY Coroner/Deputy A C Jenkins Dr. —

CAUSE OF DEATH (As appears on D.C.) Exsanguination Pending

MANNER OF DEATH: Pending Accident Homicide Suicide Undetermined Natural

DETAILS SURROUNDING DEATH: (Describe below or check if report attached. If applicable please include past medical history; i.e. heart disease, hypertension, diabetes, alcohol abuse, seizures, etc., and current medications.)

The decedent was attacked by a Grizzly bear while sleeping in his tent in space #25 of the USFS Soda Butte Campground. The scene evidence suggests that the attack was not provoked by the decedent but as a deliberate attack by the bear. The campsite was clean and orderly.

Signature: A C Jenkins Coroner/Deputy

FORM DFS2 (3/01) DISTRIBUTION: White— Coroner, Canary— State Medical Examiner, Pink— County Attorney

Call Report By Date

Report Range From 07/28/10 12:00:00 To 07/28/10 11:59:59

Report Date 08/05/10 08:58:22

Dispatch #: CC1000011799		Event Times			
Agy Event Cnt: 29690	Reported: 02:21:42	Dispatched: 02:24:25	Arrived: ::	Clear: ::	
Agency:	Agency Type: Park Service	Zone:			
Date Reported: 07/28/10	Event Type: UNCODED INCIDENT	How Reported: Officer Initiated			
Unit:	Priority High	Dispatcher: JOSH			
Location: SODA BUTTE CG	Floor:	Apartment	Cross Street:		
Phone:	Business/Residence:	Related To:			
Cancelled Call: Yes	Cancel Time: 11:08:45	Cancel Code: CCA	Action Taken:		
Narrative: bear romping through the campground and deflating tents//rp is roland fleming who is staying in the campground//called from the super 8 where he was going to be to stay near a phone//report is there was on man bitten//no word on how bad it was//he was not requesting an ambulance//messages left with fish and game but no answers//called the super 8 back to get more details from roland but there was no answer at the front desk 07/28/10 - 11:08:45 - F1286 _____ x					

Total Records: 1

Event Detail (w/ Veh/Person Info)

Report Date 08/05/10 08:04:48

Report Range From 07/27/10 12:00:00 To 08/05/10 11:59:59

CC1000011800 07/28/10 02:37:29 JOSH User Officer Initiated How Reported
 Event No. Date Time User Officer Initiated How Reported
 SODA BUTTE Location
 ND N 02:37:29 02:38:37 Park Service UNCODED INCIDENT
 Agy / Zone Received Dispatch Primary Service Incident Type
 Business/Residence Phone Number Reporting Party Name
 Floor Apt Cross Street
 Case Numbers Assigned
 Unit Case No. Offense Type
 Vehicle / Person Information
 Callback Phone

Assigned Unit Times				Cleared		Location	
Unit	Enroute	Arrived	To Dest	At Dest			
4970	08:54:37	10:31:40	::	::	19:58:12	SODA BUTTE	
4914	02:39:41	03:48:46	::	::	13:27:02	SODA BUTTE	
5D10	03:26:46	03:26:53	::	::	17:42:53	SODA BUTTE	
5D35	02:59:59	03:11:53	::	::	01:00:30	SODA BUTTE	
5H14	02:38:37	03:48:49	::	::	06:36:43	SODA BUTTE	
FG313	06:11:13	06:11:18	::	::	07:00:21	SODA BUTTE	
FS74	06:44:10	08:18:30	::	::	23:37:48	SODA BUTTE	
FS74	06:59:36	20:33:40	::	::	21:56:43	SODA BUTTE	
NE1	03:14:26	03:14:31	::	::	22:01:54	SODA BUTTE	

bear attack/bite one man possible and one 53 yr female/they are near the super &/bear is romping through soda butte cg/ff

07/28/2010 02:39:32-5H14-JOSH

man requesting ambulance/cook city a/cis paged at 0226/k writle and jan gardner responding/

07/28/2010 02:39:53-5H14-JOSH

fish and game contacted

07/28/2010 03:00:37-5H14-JOSH

cody a/cis enroute as well/5d35 responding to the ambulance

07/28/2010 03:05:36-5D35-JOSH

pat 1-lacerations to the arm and broken arm
pat 2-lacerations to the calf
all bleeding contained

07/28/2010 03:11:09-5D35-JOSH

eirmac notified/checking availability

07/28/2010 03:12:54-5D35-JOSH

fg10 enroute to cook

07/28/2010 03:47:47-NE1-JOSH

pat1 in NE1 to meet with cody amb/5H14 is attending
pat2 goin in private vehicle to cody

07/28/2010 04:15:03-4914-JOSH

all soft sided campers advised and warned about the attacks and advised to sleep in their cars or at their own risk/possible attack sites were 11, 16 or 17, and 25

07/28/2010 04:16:58-4914-JOSH

5d10 in the campground wit h4914

07/28/2010 04:22:46-5D10-JOSH

fatality reported at campsite 25

07/28/2010 04:41:46-5D10-JOSH

evacuating the campground

07/28/2010 04:50:46-5H14-JOSH

5h14 back in his vehicle

07/28/2010 04:53:03-5H14-JOSH

message of fatality left for PIO and chief ranger

07/28/2010 04:53:27-5H14-JOSH

galein dispatch answering service

07/28/2010 05:03:23-5D10-F1303

F&G 313 entering the park now

07/28/2010 05:17:33-5H14-JOSH

message left with nick harrig

07/28/2010 05:25:36-5H14-JOSH

FG31 advises to check other campgrounds for possible evac/5H14 is enroute to the next campground to spread the word

07/28/2010 05:30:14-NE1-JOSH

NE1 parked at the antler lodge

07/28/2010 05:40:35-5D10-JOSH

a grizzly has been frequenting the area during the day/through the campgrounds in the area

07/28/2010 06:04:18-5D10-F1286

5D10 5D35 out at Chief Joseph CG

07/28/2010 06:23:20-5D10-F1286

FS74 and Pat Hoppa advised, left message for Mary Maj, 5D10 reports that Dan Tyers is in the area and will be checking in with Mark Miller

07/28/2010 06:37:09-5D35-F1286

5H14 en route back to Mammoth

07/28/2010 06:44:28-FS74-F1286

FS74 en route to Cooke

07/28/2010 15:30:18-NE1-F1148

1528 4d90 cooke firehall closed

07/28/2010 17:04:51-4910-F1148

1704 4910 says keep veh as evidence for time being

07/28/2010 17:06:20-4910-F1148

1630 game sergent from boze en rt cooke

07/28/2010 17:42:47-5D10-F1148

1742 5d10 clear cooke city

07/28/2010 22:12:06-FS74-F1148

2211 fs74 departing cooke en rt gardiner

07/29/2010 07:00:09-FS74-F1287

FS74 en route to Cooke

07/29/2010 07:36:25-FS74-F1287

Report of a man at the Log Cabin Cafe that was chased from his tent by a bear

07/29/2010 07:41:01-FS74-F1287

Called Log Cabin Cafe 406-838-2367

07/29/2010 07:53:40-FS74-F1287

Kevin House was camped across from the orientation site about 50 yards into woods. Heard some noise. Peeking around tree was a bear. Bear did not act aggressive. Kevin walked towards road, bear made one grunt, did not make any other noises. Smaller bear, did not act aggressive. Morgan is going to escort and back to the tent site. He will be in the area until FS 74 is in Silvergate in about an hour

07/29/2010 08:17:53-FS74-F1287

Roland Flemming 719-580-4099 looking for belongings from site 16

07/29/2010 20:34:04-FS74-F4414

2013 FS74 CLR OF COOKE.

07/29/2010 21:56:36-FS74-F4414

2153 FS74 10-10 IN GARDINER.

INCIDENT REPORT

Date: August 2, 2010

Time: 12:43 PM

Warden: James Miller

The following report is a summary of my (James Miller, Montana Game Warden, Gardiner District) actions during the Soda Butte Campground Grizzly Bear Incident on 28 July, 2010.

- Message left by Yellowstone National Park (YNP) Dispatcher Josh at 0215 hours of a "Bear at Soda Butte Campground taking down tents and romping through the campground."
- I returned the call and was informed the bear had injured people
- I called Warden Sergeant Joe Knarr, Warden Captain Sam Sheppard, Bear Specialist Kevin Frey, and Bear Specialist Jeremiah Smith and left messages about the incident.
- I left my residence traveling to Cooke City about 0230 hours.
- Captain Sheppard called me and told me he was coming to Cooke City, along with BS Frey and BS Smith.
- I asked YNP Dispatch to contact United States Forest Service (USFS) Law Enforcement Officer (LEO) Morgan Dale and advise him of the incident.
- While traveling through YNP, the Comm. Center advised me that I could pick up some statements at the Super 8 Motel, where families of the victims had staged.
- As I was approaching Cooke City, MT, Park County Sherriff's Office (PCSO) Deputy Justin Chaffins advised me that I should come to the campground ASAP.
- I advised Deputy Chaffins to secure the scene at the campground and make sure everybody was safe.
- I stopped at the Cooke City Super 8 picked up Statements from Bill Freele (Victims husband), Paige and Don Wilhelm (camped near the Freeles), Mitch Heimer and Kelly McMannel sp. (camped at site 13), Robert Rayner (camped at site 14).
- I asked Jan Gaertner (Cooke City Search and Rescue (CCSAR) volunteer and medic) to ride with me to the campground as there may be more victims.

- At about 0415 hours I arrived at Soda Butte Campground and met Deputy Chaffins and YNP Ranger Brian Chan.
- Chaffins advised me there was a fatality at site 26.
- I asked YNP Dispatch to advise Captain Sheppard of the fatality.
- Deputy Chaffins and myself swept the area around site 26 to ensure there was only one victim at the site.
- Ranger Chan, Deputy Chaffins evacuated the campground and I took Gaertner back to Cooke City.
- I returned to Soda Butte Campground.
- At 0523 hours I asked YNP Ranger Joe Beiter to advise campers of the incident in the two other campgrounds in the area.
- I advised the USFS Trail Crew staying at the cabin just above Soda Butte Campground and asked them to notify their crew, whom were sleeping in tents in the meadow.
- At 0545 hours Deputy Coroner Drew Morrill of Cooke City arrived.
- I secured the Campground and waited for the arrival of Captain Sheppard.
- Captain Sheppard, and Montana Game Warden Jim Smolczynski arrived
- USFS Dan Tyers advised campers in local areas outside of the organized campgrounds of the Incident.
- Sheppard and Smolczynski processed the scene.
- I noticed a plane flying low in the area, it appeared to be looking for the bear.
- USFS LEO Morgan Dale arrived along with USFS trainee Phillip Legg.
- PCSO Deputy Greg Todd arrived.
- Park County Coroner Al Jenkins arrived.
- Jenkins took possession of the victims body and returned to Livingston, MT.
- Montana Fish, Wildlife and Parks (MFWP) Bear specialists Kevin Frey and Jeremiah Smith arrived.

- Frey and Smith set up Culvert traps while Sheppard and Smolczynski processed the scenes at campsites 11 and 16.
- Wyoming Game and Fish Bear Specialists [REDACTED] arrived.
- MFWP Warden Sergeant Joe Knarr arrived.
- Wyoming set culvert traps at sites 11 and 16.
- Around 1800 hours USFS LEO Dale told me the door had shut on a culvert trap at site 26.
- I notified Captain Sheppard, Sergeant Knarr, and BS Frey of the trap being sprung.
- An adult grizzly bear was in the culvert trap
- The grizzly was tranquilized and samples taken for processing.
- I left Cooke City to go home at about 2030 hours.
- I arrived home and went off shift at about 2230 hours.

CCGB.R1

INCIDENT REPORT

Date: August 2, 2010

Time: 15:34 PM

Warden: James Miller

The following report is a summary of my (James Miller, Montana Game Warden, Gardiner District) actions during the Soda Butte Campground Grizzly Bear Incident on 29 July, 2010.

- I left my house for Cooke City at 0600 hours
- I arrived at Cooke City at about 0800 hours
- I was informed that two of the three grizzly cubs were captured in culvert traps during the night.
- I assisted with Security while a snare was set for the third cub.
- I attended a town meeting where MFWP Andrea Jones, Captain Sheppard along with the USFS answered citizens questions.
- I continued to patrol the area until 2300 hours.

CCGB.R2

INCIDENT REPORT

Date: August 2, 2010

Time: 16:20 PM

Warden: James Miller

The following report is a summary of my (James Miller, Montana Game Warden, Gardiner District) actions during the Soda Butte Campground Grizzly Bear Incident on 30 July, 2010.

- At 0400 hours I noticed the culvert trap that was set for the last cub was sprung and I heard what appeared to be bear cub calls coming from that vicinity.
- MFWP BS Frey and Smith showed up at the site, we moved the traps to the campground host area.
- I notified Captain Sheppard that all four bears were now in culvert traps.
- Frey, Smith, and I transported the 3 culvert traps to MFWP R3 Headquarters in Bozeman, MT.
- After assisting Frey and Smith with providing water, straw and sawdust in the culvert traps I left Bozeman.
- I arrived home around 1700 hours.

CCGB.R3

Soda Butte Grizzly Incident

Enforcement Synopsis

Sheppard, Smolczynski,

Synopsis: In the early morning hours of Wednesday July 28, 2010 FWP wardens were notified and responded to Soda Butte Campground, north of Cooke City Montana regarding a reported bear attack. Ultimately the attack developed into three separate attacks of three separate victims. Two victims were transported to and treated at the Cody Wyoming hospital. The third victim was fatally injured in the attack. The following is a timeline of FWP Enforcement staff Sheppard and Smolczynski response and activities throughout this investigation.

- Sheppard received call from Warden Miller at 0223 hours reporting the incident.
- Sheppard left for the Regional Office and Cooke City at 0238 hours.
- Sheppard picked up a culvert bear trap and traveled to Cooke City.
- Sheppard receives word from YNP Communications Center that the attack had resulted in a fatality. 0430
- Sheppard contacted Bear Specialist Jeremiah Smith and informed him of the situation and requested he contact Bear Specialist Kevin Frey and mobilize resources and head to Cooke City.
- Sheppard contacted FWP Enforcement Bureau Chief Jim Kropp and apprised him of the situation.
- Sheppard contacted warden Smolczynski in West Yellowstone and requested he respond to Soda Butte Campground as part of the Wildlife Human Attack Response Team (WHART).
- Sheppard entered YNP at Gardiner at 0517 hours en route to Cooke City.
- Smolczynski left West Yellowstone for Soda Butte Campground at 0545 hrs.
- Sheppard arrives at Soda Butte Campground at 0630 hours.
- Sheppard takes authority of the incident command at this time
- Sheppard meets FWP Warden Miller, Deputy Park County Coroner Drew Morrill, YNP Sub District Ranger Brian Chan, and Park County Sheriff's Deputy Justin Chaffins at the lower entrance to Soda Butte Campground
- Sheppard is advised of the situation and campground evacuation status at that time.
- Sheppard advises US Forest Service (Dan Tiers) of recommendation of closing and evacuating both Colter and Chief Joseph Campgrounds as a precautionary measure until the offending bear is captured.
- Sheppard and assembled agency staff await the arrival of FWP Warden Smolczynski at the campground.
- Smolczynski arrives at Soda Butte at 0700 hours
- Sheppard sends Warden Miller to do a security sweep of the upper loop of the campground.

- Sheppard sends LEO Morgan Dale to do a security sweep of the lower loop campground
- Security sweep reveals no sign of any current bear activity
- Sheppard, Smolczynski along with FWP Warden Miller, Brian Chan (YNP), Drew Morrill (PCC), Justin Chaffins (Park County Sheriff's Office) proceed to Soda Butte Campground campsite # 26 to initiate fatality scene investigation.
- Upon arrival at campsite # 26 Sheppard directed Warden Miller (FWP), Brian Chan (YNP) and Justin Chaffins (PCSO) to establish a security perimeter around the campsite for security and safety purposes.
- Sheppard and Smolczynski tape off the entrance to campsite #26 at 0730 hours.
- Sheppard and Smolczynski begin campsite # 26 fatality scene investigation.
- Sheppard's primary duties were to investigate the scene and document photographic evidence from the scene
- Smolczynski's primary duties were to investigate the scene and collect and process physical evidence.
- Sheppard and Smolczynski began near and around the campsite tent location.
- Evidence collected included hair samples from the exterior of the tent, photographs of the tent and surrounding area and photographs of bear prints (blood) on tent fly.
- Sheppard photographed the following at the tent site:
 - Overview of the tent and adjacent area
 - Large blood soaked earthen spot adjacent to the tent.
 - Blood soaked earth was 3 feet from bear entrance to the tent
 - Blood soaked earthen site appeared to be the initial attack site on the victim
 - Small diameter scat pile located adjacent to the north east corner of the tent
 - Small diameter scat pile located approximately 1 foot from the south end of the large earthen blood stain.
 - Bite marks on tent
 - Small bear print from the tent's rain fly
 - Large bear print from the tent's rain fly
- Smolczynski collected the following physical evidence from the tent site:
 - Hair samples from the exterior of the tent.
 - Track measurements from the bear prints on the rain fly
- Sheppard photographed the view from the tent site to the victim final resting place
- Sheppard photographed a camp pillow located roughly 10 feet south of the tent .
- Sheppard photographed a large diameter scat pile located roughly 14 feet south of the tent.
- Sheppard photographed the victims sleeping bag located with the victim's body south of the tent.
- Smolczynski collected hair samples from the victim's sleeping bag
- Sheppard photographed the victim's final resting place 25 feet south of the tent.
- See attached diagram of campsite # 26 evidence location and layout.
- Smolczynski and Sheppard then collected and logged hair, blood, saliva samples from the victims body. Also documented were bit marks and measurements via photograph.

- Park County Coroner Al Jenkins arrived at the fatality scene at approximately 0830 hours.
- Smolczynski collected and logged clothing evidence from the victim.
- Sheppard and Smolczynski released the victim's body to the Park County Coroner at approximately 1000 hours
- Sheppard and Smolczynski assisted Coroner Jenkins load the victim's body into the Coroner's vehicle.
- Smolczynski collected and logged the camp pillow as evidence
- Sheppard and Smolczynski collected hair samples from the interior of the victim's tent
- Sheppard and Smolczynski assisted Coroner Jenkins with the inventory of the victim's personal items from inside of the tent. (No food items or attractants were found inside of the tent)
- Coroner Jenkins took possession of the personal items from within the tent
- Sheppard took checked on the contents of the bear proof food storage boxes at campsite #26.
 - The contents consisted of some cereal, granola bars, full cans of tuna fish and other assorted food items. (there were no food items present that presented any immediate aromatic attractants or odors)
- Sheppard and Smolczynski walk Bear Specialist Kevin Frey and Jeremiah Smith through the campsite # 26 and discuss an overview assessment of the scene.
- Sheppard and Smolczynski along with Frey, Smith and the security team expand the search south of the campsite for additional evidence
- Smolczynski collects additional hair samples along a path taken by bears (path also contained a slight blood trail down towards the creek
- Sheppard and Frey inspect vague bear tracks of a smaller size in the area of Soda Butte Creek.
- Sheppard calls a halt to the expanded search roughly 50 yards south of Soda Butte Creek
- Sheppard and Smolczynski meet the response team back at the campground loop gate.
- Sheppard and Frey discuss the use of the victim's tent and rain fly as an attractant for the purposes of trapping the offending animal
- Sheppard requests Chan(YNP) and Dale (FSLEO) to escort displaced campers back to the lower loop campsites for gear retrieval
- Sheppard requests Chaffins to escort displaced campers back to the upper loop campsites for gear retrieval
- Sheppard, Smolczynski and Miller proceed to campsite #11 at 1100 hours
- Sheppard posts Miller as a security and safety officer at the site
- Sheppard photographs the following at campsite #11:
 - Overview of the campsite with two separate tents
 - Apparent entry hole on the south facing side of the victim's tent
 - Hair samples found inside of the victims tent
 - A fragment of what appeared to be a broken tooth from the offending bear (appeared to be from a larger canine tooth, fragment had a black cavity tract through the fragment
- Smolczynski collects hair samples from the interior of the victims tent
- Smolczynski collects and logs the tooth fragment from the interior of the victims tent
- Sheppard and Smolczynski found no definitive track evidence at campsite #11

- Sheppard, Smolczynski and Miller leave campsite # 11 at 1145 hours
- Sheppard, Smolczynski and Miller arrive at campsite # 16 at 1155 hours
- Sheppard posts Miller as a security and safety officer at the site
- Sheppard photographs the following at campsite #16
 - Overview of the campsite with two separate tents
 - Apparent entry hole on the south side of the victim's tent (victim's tent is located west of other tent)
- Smolczynski collects hair samples from the interior of the victim's tent
- Smolczynski collects the victim's sleeping bag as evidence
- Sheppard and Smolczynski found no definitive track evidence at campsite #16
- Sheppard, Smolczynski leave campsite # 16 at roughly 1230 hours
- Sheppard and Smolczynski depart for the Cooke City Chamber of Commerce building
- Smolczynski begins to process evidence collected for transfer and transport to Wyoming's wildlife forensics laboratory
- Sheppard conducts a situational briefing with Andrea Jones (FWP Communications Officer)
- Sheppard calls FWP Helena headquarters and provides an update of the situation
- Sheppard begins to assist Jones with media talking points based on facts
- Smolczynski transfers samples and evidence to WY Game and Fish at 1500 hours
- Sheppard returns to Soda Butte Campground to check on displaced camper gear removal and bear trap setting progress
- Sheppard is updated on trap locations and process by Frey (traps are placed at this time won't be baited or set until all displaced campers gear has been removed and campground is confirmed vacant and closed)
- Sheppard returns to Cooke City
- Sheppard is contacted by Miller (FWP) and informed that one of the traps at the fatality site has been set and a bear is in the trap
- Sheppard, Frey and Smith return to the Soda Butte Campground
- Sheppard, Frey and Knarr park on the Beartooth Highway approximately 100 yards west of the campground and observe the following
 - The center trap has been tripped and contained what appeared to be an adult grizzly bear (bear identified by Frey as an adult grizzly with binoculars)
 - Additional cubs could be heard vocalizing across Soda Butte Creek up in the timber
- Sheppard, Joe Knarr (FWP Warden Sergeant), Smith and Jones meet at the Soda Butte campground lower gate.
- Chan, Dale, Miller, WY Game and Fish are also present
- Sheppard and Frey discuss next steps concerning trapping operations
- Sheppard and Jones drive down to the fatality site to assist with processing the adult bear in the trap
- Sheppard sets up a security perimeter for staff safety while darting and processing the bear
- Sheppard and Jones take numerous photographs of darting and processing information

- Sheppard inspects the teeth of the female grizzly and notes the following:1940 hours
 - The right canine on the upper jaw of the bear had been recently broken and was missing a portion of the tooth
 - The right canine on the upper jaw had what appeared to be a black hole or cavity near the center of the tooth. (Similar characteristics of the tooth fragment found in victim #2 tent at campsite #11)
- Sheppard observes three yearling cub grizzly bears in the timber south of Soda Butte Creek
- Sheppard and Jones leave the fatality trap site and return to the upper loop
- Sheppard and Jones return to Cooke City

Thursday July 29, 2010

- Sheppard and Knarr meet Jones, Frey and Smith in Cooke City
- Sheppard, Knarr, Frey and Smith return to Soda Butte Campground
- Sheppard stops prior to Soda Butte Campground and observes the following:
 - The two adjacent culvert traps positioned next to the adult female have triggered
 - Sheppard observes one yearling cub grizzly on the ground at the trap site
- Sheppard meets Knarr, Frey, Smith, Miller, at the lower loop gate at Soda Butte Campground
- Sheppard proceeds to the Campsite #26 fatality trap site
- Sheppard directs a security detail to cover darting and processing operations of the two trapped yearling grizzly cubs
- Sheppard takes up a security position south of the three culvert traps and observes the following:
 - One yearling cub grizzly prowling and vocalizing in the area just south of the trap site
 - Yearling cub grizzly advances to within roughly 30 yards of the trap site
- Sheppard returns with the rest of the staff present to the lower loop gate at Soda Butte campground
- Sheppard returns to Cooke City, updates Jones, Helena FWP Enforcement and Helena Communication and Education of the situation status
- Sheppard assists Jones in developing talking points for release to the media on situational developments of the investigation
- Sheppard works with Jones to plan a community meeting to be held at the Cooke City Chamber of Commerce building for 1730 hours that evening
- Sheppard updates the USFS Gardiner Ranger District personnel of trapping developments
- Sheppard and Jones meet with USFS Gardiner and Shoshone Ranger District personnel along with Gallatin National Forest Supervisor Mary Erickson and Marna Daley to coordinate speaking responsibilities at the Community meeting
- Sheppard and Jones address the public and media at the Cooke City Chamber of Commerce building.

- Sheppard and Jones provide a synopsis of information regarding the attack, investigation, trapping efforts and field general questions from the public and media regarding the event and future plans
- Sheppard and Jones return to depart for Bozeman at approximately 2100 hours

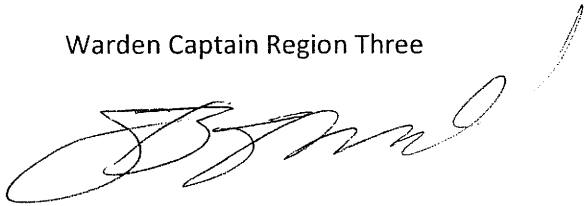
Friday July 31, 2010

- Sheppard and Jones depart for Cooke City at 0600 hours
- Sheppard receives a phone message from Miller stating the third yearling cub has been caught
- Sheppard phones FWP Regional Supervisor Flowers, Helena Communication and Education Chief Ron Aashiem, Helena Enforcement Chief Jim Kropp and updates them on the capture of the third yearling cub
- Sheppard returns to FWP Regional Headquarters arrives at approximately 1200 noon hours

Sam B. Sheppard

Montana Fish, Wildlife & Parks

Warden Captain Region Three

A handwritten signature in black ink, appearing to read 'S. Sheppard', with a long, sweeping flourish extending upwards and to the right.

August 9th 2010

SUMMARY OF FOREST SERVICE STAFF INVOLVMENT
SODA BUTTE CAMPGROUND BEAR INCIDENT
JULY 28, 2010
(Dan Tyers)

DAN TYERS, GARDINER DISTRICT SUPERVISORY RESOURCE SPECIALIST

July 27

I returned from a backcountry horse trip in the Absoarka Beartooth Wilderness with other district personnel. I stayed over night at my private residence in Silver Gate while the rest of the party returned to Gardiner.

July 28

About 0600 hours I received a phone call from Forest Service seasonal employee Bradon Hayes. Bradon was staying at the Forest Service work station east of Cooke City. He had been awakened by FWP warden Jim Miller and, in response, called me. Jim's message was that there had been a serious bear related incident in the Soda Butte campground.

I asked Bradon to immediately ensure the safety of other Forest Service employees at the work station, several of whom were staying in tents outside the cabin. This involved getting everyone in-doors. I then conversed with Craig Olwert, one of several other Forest Service seasonal employees staying at my residence. I relayed the salient information to Craig and asked him to get ready to assist in managing the incident.

I drove to the Soda Butte campground trailhead where I met a group including YNP, MT FWP, and Park County MT employees. I received more information about the incident.

I drove on to the Chief Joseph campground about 2 miles away. My intent was to alert a school group, Ecology Project International, of the need to secure the safety of their staff and students. I woke an instructor, Carly, and asked her to get all their program participants out of their tents and into vehicles. I knew EPI was at the campground and staying in tents because they had been helping the Forest Service with project work during the week.

I returned to my Silver Gate residence to solicit help from Forest Service seasonal employees Craig Olwert and Hollee Schwingel. I requested that they seek out all campers they could locate at dispersed campsites along county and Forest Service roads and at nearby trailheads. Primarily, this involved the Miller Creek and Fisher Creek roads. Then, with the help of other agency personnel, we began systematically warning all campers in Colter and Chief Joseph Campgrounds.

Around 0800 I returned to the Soda Butte campground entrance to help control access at the gate.

Around 0930, in conference with Incident Commander Sam Sheppard, MT FWP, we agreed to close and evacuate the 2 adjacent campgrounds, Colter and Chief Joseph. I delegated this to Forest Service employee Robert Grosvenor who arrived about 0800 from Gardiner and Craig Olwert who returned from his patrol with Hollee.

At about 0930, I assigned Forest Service seasonal employees Hollee Schwingel and Molly Runyon to accompany the EPI group for field work on the Beartooth Plateau to get them as reasonable removed from the Cooke City area as possible. I also sent Forest Service seasonal employees Bradon Hayes, Taylor Bottles, Rebecca Johnson and Stephanie Shively to the Beauty Lake area, Beartooth Plateau, on an overnight trip clearing trails; also to get them out of the Cooke City Basin.

Campground closure and posting involving Robert and Craig Olwert continued from about 0930-1030.

For the remainder of the day I assisted with campground ingress and egress, interacting with the media, and the flow of information among agency personnel at the incident site and off-site.

In the evening, I asked Robert Grosvenor and another seasonal employee, Jay Pape, who had also arrived from Gardiner, to double check the Forest Service campgrounds to make sure they were closed and unoccupied. I spent until about 2200 hours patrolling secondary roads and Forest Service trailheads to check for food storage compliance and warn visitors to watch for bears. This involved contacting about 20 separate parties. I also posted trailheads with bear warning signs.

July 29

I spent the day involved in relaying information to agency personnel, media referrals, campground management, agency briefings, and patrols to check for food storage compliance and to warn visitors. I also shuttled Forest Service seasonal employees from trailheads and arranged to have them all transfer back to Gardiner. After an agency briefing at about 1600 and a community meeting at 1730-1830, I also left for Gardiner.

CRAIG OLWERT, FOREST SERVICE SEASONAL EMPLOYEE

July 28

At about 0630, Dan Tyers informed Forest Service employee Hollee Schwingel and me that a bear incident had occurred, including injured people and a fatality. Hollee and I were staying at his private residence in Silver Gate.

By 0800 Hollee and I left to warn all dispersed campers along the Fisher and Miller Creek roads of the bear attacks and notify them that the bears were still at large. We concluded this task at about 0900.

Hollee and I then visited the school group Ecology Project International in the Chief Joseph campground to organize our project activities with them for the day. They had previously been warned about the bear events by Dan Tyers. Hollee and I returned to the Cooke City cabin and then the Silver Gate residence. By 0930, Hollee and Forest Service employee Molly Runyon left the Cooke City area to work with EPI for the rest of the day on the Beartooth Plateau.

At 0930 I went with Forest Service employee Robert Grosvenor to help him evacuate and close the Colter and Chief Joseph campgrounds. We asked the people to leave by noon; many were already leaving. Two sites in the Colter campground were occupied but the occupants had left for the day. All the others were personally contacted. We closed the gates and posted bear warning signs.

By 1030 hours we were finished with closing the campground. We returned to the Soda Butte Campground entrance where we assisted in restricting access. By noon I departed the site and resumed my normal work schedule.

JAY PAPE, FOREST SERVICE SEASONAL EMPLOYEE

July 28-30

I was in Bozeman on my regularly scheduled days off. At approximately 0700 I received a call from Forest Service employee Robert Grosvenor informing me that there had been a bear mauling involving 3 persons, one of which was a fatality. I left my home and was in Cooke City by about 1045. At that time my duties were to secure the entrance to the Soda Butte campground and assist in the investigation as needed. I remained in Cooke City until the night of June 30th patrolling and monitoring bear and camper activities.

ROBERT GROSVENOR, FOREST SERVICE EMPLOYEE

July 28

At 0630 I received a phone call from Forest Service employee Pat Hoppe that a mauling had occurred at the Soda Butte campground. I then contacted District Ranger Mary Maj at her home to inform her of the incident. Following, I contacted Forest Service seasonal employee Jay Pape in Bozeman and had him meet me at the Soda Butte campground.

I arrived at Soda Butte campground at 0815 to find Dan Tyers controlling access through the entrance gate. Dan provided me background information on the incident. LEO Morgan Dale and Phillip Legg were already at the scene of the fatality conducting the investigation with Park County, YNP, and MT and WY State personnel.

Through the morning I controlled access at the campground entrance gate area with Phillip Legg and Jay Pape who arrived at about 1030. This consisted mostly of keeping reporters and by-standers away from the campground where the investigation and bear

trapping were ongoing. During this time I also evacuated the Colter and Chief Joseph campgrounds with Forest Service employee Craig Olwert. This took place from about 0930 to 1030

July 29

I returned to the Soda Butte campground entrance at 0700. I controlled access for authorized personnel with Jay Pape through the day.

July 30

I returned to the entrance of the Soda Butte campground to control access with Jay Pape. All four bears had been captured and were being prepared for transport. The bears were removed by trucks at about 0900. All personnel in the campground left at this time and Jay and I went to site 26 to sanitize the areas.

At 1030 I returned to Cooke city to help return camping items to the husband of the victim from site 12 (11?). I stopped by the Chamber of Commerce to inform Donna Ward of our decision to keep all campgrounds closed until further notice.

At 1430 I returned to Gardiner.

SHOSHONE NATIONAL FOREST INVOLVMENT- INTERVIEW WITH DISTRICT RANGER TERRY ROOT AND ZONE WILDLIFE BIOLOGIST ANDY PILS (Cody WY, August 5; Dan Tyers)

July 28

The Shoshone National Forest restricted camping to hard-sided vehicles in the area from Crazy Creek campground to the Wyoming line in response to the events on the Gallatin Forest, Cooke City. This was fully implemented by their staff by the end of the day. Shoshone personnel conducted patrols and posted warnings in their jurisdiction throughout the day.

Shoshone Forest employee Clint Dawson joined evening briefings at the Cooke City community building.

July 29

District Ranger Terry Root participated in an evening agency and community briefing. Shoshone personnel continued patrols in their jurisdiction throughout the day.

July 30

Shoshone personnel continued patrols in their jurisdiction throughout the day.

July 31

This special order was rescinded in response to the notification that all 4 bears trapped at Soda Butte Campground had been removed and the DNA connection between the bears involved in the event and the ones captured was substantiated.

To: 83073442211

; 3073442655

07-21-10;08:51 ;From:

YELL 711
Revised 1/10

Bear Mgt Office Only
Report #: <u>1820</u>
Entered by: <u>ES</u> initials

BEAR SIGHTING REPORT

TYPE OF REPORT = Sighting Track _____ Scat _____ Feed Site _____ Other _____

1) Sighted By Elaine a Sabo Address SNE Ranger Station
 Sighting Date 7/21/2010 Time 9:00am

Location of Bear hwy 212

Check Appropriate Location Type:

Within Development _____ Backcountry Campsite _____ BC Trail _____ UTM 579072 E NAD 27 _____
 Associated with Road From Road _____ In the Wild _____ 4983812 N NAD 83

2) Description of Bear(s): Total Number of Bears: 4

A. Species: Grizzly Black _____ Unknown _____
 Adult _____ Mating Pair _____ Family Female with cubs-of-the-year _____ Female with yearlings
 Subadult _____ Unk/Not sure _____ group: Female with two-year-olds _____ Other _____

B. Identifying Markers:
 Unknown _____ No Markers Ear Tags _____ Color of Tags _____ Radio Collar _____ # _____

C. Check Below for Size and Color of EACH Bear Observed:

Predominant Coat Color	10-50 pounds	51-100 pounds	101-200 pounds	201-400 pounds	Over 400 pounds
1 - Blonde (White/Yellow)					
2 - Gray/Silver					
3 - Reddish Brown (Cinnamon)					
4 - Light Brown		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
5 - Medium Brown					
6 - Dark Brown (Chocolate)					
7 - Black					
8 - Other					

D. Activities of Bear(s): Preying On _____ Scavenging On _____
 Walking _____ Digging _____ Grazing _____ Running Fishing _____ Bedded _____ Mating _____
 Other _____

E. Distance between Observer and Bear(s)? _____ How Long Did You Observe the Bear(s)? 7 minutes
 Did the Bear(s) Notice You or Other People? If yes, what was the bear(s) Reaction? (Circle Below)
 Unk No Reaction Moved Away Ran Away Moved Towards Charge Other _____ (On Back)

3) Incident Type: Check all that apply. Give description on back of form if possible:

<u>Confrontations:</u>	<u>Bear/Human Conflicts:</u>	<u>Management Action:</u>
Confrontation/Charge <input checked="" type="checkbox"/>	Human Injury _____	Mgmt Hazing _____ (Describe/Case #)
Bear in Development _____	Unnatural foods _____	Area Closure _____
Bear Approached/Followed _____	Property Damage _____	Trail/Camp Closure _____
Bear in Occupied BC Camp _____	Orchards _____	Bear Warnings _____
Encounter _____		Bear Trap _____

4) Report Filled Out By: _____ Dead/Injured Bear _____ Bear Jam _____ (See below) (Detailed Descript of Trap Event) _____
 Location: _____ IF Name/Division _____ Hours at jam _____
 Case Incident #: _____ BEAR Name/Division _____ Hours at jam _____
 Date to BMO: _____ JAM: Name/Division _____ Hours at jam _____
 Via: Phone FAX Mail Unstaffed Bear Jam _____

Official Use Only	Conflicts: <u>Charge (out of park)</u>	Sub-District: <u>Out of Park (GNF)</u>
	Confrontations: _____	
	Mgmt Actions: _____	
	Area Mgmt: _____ (if Bear Jam Road Code #)	
	Dead/Injured Bear: _____	

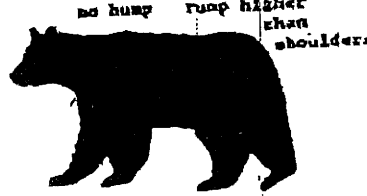
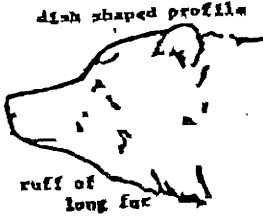
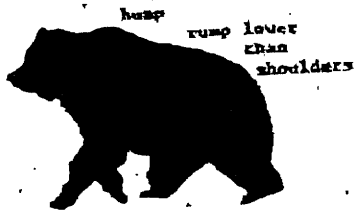
07-21-10;08:51 ;From:

YELL 711
Revised 1/10

CHARACTERISTICS OF GRIZZLY BEARS AND BLACK BEARS

GRIZZLY BEAR

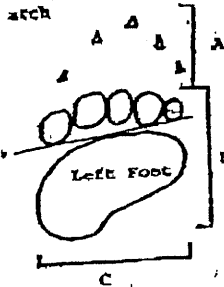
BLACK BEAR



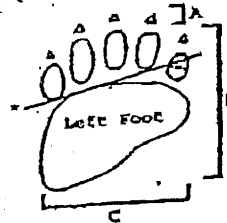
long claws
toes close together
and pad has little
itch



short claws
toes separated
and pad arched



A-claw length _____
B-pad length _____
C-pad width _____



A-claw length _____
B-pad length _____
C-pad width _____

- A line drawn from under the big toe and across the top of the pad runs through the top 1/2 of the little toe on black bear tracks and through or below the bottom 1/2 of the little toe on grizzly bear tracks.

Case Incident Number (For management activities or incidents): _____

Detailed description of incident, and area of incident:

Logging 1/4 mi from NE station toward Silver Gate
bears came out of woods on road. Mom stood up
& cubs ran on side of road toward me. Mom
charged & I screamed Hey Hey Hey & she stopped.
She ran to the woods on the right and I ran
back to NE station.

To report bear incidents call (307) 344-2162 (phone) or (307) 344-2211 (FAX) seven days a week from 7:00 am to 4:30 pm.
E: Mail Kerry_Gunther@nps.gov or Travis_Wyman@nps.gov or YELL_Bear_Management@nps.gov
For emergency situations after hours, contact the Communications Center at (307) 344-2640:

23:40:16 07-07-2010

1/1

3073448970

YELL 711
Revised 1/10

Bear Mgt Office Only
Report #: 101525
Entered by: LE initials

BEAR SIGHTING REPORT

TYPE OF REPORT = Sighting Track Scat Feed Site Other

1) Sighted By Scott Sabo Address 5 W.E Range Station
Sighting Date 7-6-10 Time 6:30am - 7:30pm

Location of Bear Lower Bonnette Meadow

Check Appropriate Location Type:

Within Development Backcountry Campsite BC Trail UTM 573008 E NAD 27
Associated with Road From Road In the Wild 4978150 N NAD 83

2) Description of Bear(s):
A. Species: Grizzly Black Unknown Total Number of Bears: 4
Adult Mating Pair Family Female with cubs-of-the-year Female with yearlings
Subadult Unk/Not sure group: Female with two-year-olds Other

B. Identifying Markers:
Unknown No Markers Ear Tags Color of Tags Radio Collar #

C. Check Below for Size and Color of EACH Bear Observed:

Predominant Coat Color	10-50 pounds	51-100 pounds	101-200 pounds	201-400 pounds	Over 400 pounds
1 - Blonde (White/Yellow)			X X X	X	
2 - Gray/Silver					
3 - Reddish Brown (Cinnamon)					
4 - Light Brown					
5 - Medium Brown					
6 - Dark Brown (Chocolate)					
7 - Black					
8 - Other					

D. Activities of Bear(s): Preying On Scavenging On
Walking Digging Grazing Running Fishing Bedded Mating
Other

E. Distance between Observer and Bear(s)? 130 yds How Long Did You Observe the Bear(s)? 60 minutes
Did the Bear(s) Notice You or Other People? If yes, what was the bear(s) Reaction? (Circle Below)
Unk No Reaction Moved Away Ran Away Moved Towards Ran Towards Charge Other (On Back)

3) Incident Type: Check all that apply. Give description on back of form if possible:

Confrontations:	Bear/Human Conflicts:	Management Action:
Confrontation/Charge <input type="checkbox"/>	Human Injury <input type="checkbox"/>	Mgmt Hazing <input type="checkbox"/> (Describe/Case #)
Bear in Development <input type="checkbox"/>	Unnatural foods <input type="checkbox"/>	Area Closure <input type="checkbox"/>
Bear Approached/Followed <input type="checkbox"/>	Property Damage <input type="checkbox"/>	Trail/Camp Closure <input type="checkbox"/>
Bear in Occupied BC Camp <input type="checkbox"/>	Orchards <input type="checkbox"/>	Bear Warnings <input type="checkbox"/>
Encounter <input type="checkbox"/>		Bear Trap <input type="checkbox"/>
Dead/Injured Bear <input type="checkbox"/>	Bear Jam <input checked="" type="checkbox"/> (See below)	(Detailed Descript of Trap Event)

4) Report Filled Out By: S. Sabo Name/Division Scott Sabo / LE Hours at jam 60
Location: _____ IF Name/Division _____ Hours at jam _____
Case Incident #: _____ BEAR Name/Division _____ Hours at jam _____
Date to BMO: _____ JAM: Name/Division _____ Hours at jam _____
Via: Phone FAX Mail Unstaffed Bear Jam _____

Conflicts: _____
Confrontations: _____
Mgmt Actions: BEAR JAM (if Bear Jam Road Code # 3)
Area Mgmt: _____
Dead/Injured Bear: _____

Sub-District:

NE/LAMAR

I saw grizzly 3 large cubs. All blonde. Bears behaved natural and mated. Bears grazed and traveled at Soda Butte river.

Soda Butte Campground, GNF, Cooke City MT.
Grizzly Bear Attacks - July 28, 2010
Kevin Frey MFWP

Initial Report and Response:

07/28/10:

0550 hours – check phone messages.....3 messages.

0235 hours - message from FWP warden Jim Miller at - 3 people have been injured by a bear in the Soda Butte Campground at Cooke City.

0247 hours – same message from MFWP warden Captain Sam Sheppard.

0436 hours – message from Sam Sheppard, near Gardiner has 1 trap in tow, headed to Cooke City.

My actions after receiving messages/information:

0604 hours – left message with Sam Sheppard we (Frey & Smith) were responding to incident.

0615 hours – Jeremiah Smith calls and arrives at my house. We leave shortly thereafter for FWP R-3 HQ in Bozeman to get bait and 2 more culvert traps.

0646 hours – called Chris Servheen USFWS to inform of the incident, current situation and planned actions.

0649 hours – called Mark Haroldson USGS-IGBST to inform of the incident.

0656 hours – called Mark Bruscano WYGF at Cody to inform of the incident. We discussed getting a radio-telemetry flight initiated to check for any potential known/collared grizzly bears in area of Soda Butte Campground. Mark B. offers to go to the hospital to check on injured victims.

0715 hours called Bruscano asked if he could make arrangements to get Skye Aviation up on telemetry flight to check for radio-collared grizzly bears and alert WYGF Forensics Lab for DNA analysis.

0721 hours – called YNP Communication Center. Information was that 2 people injured, 1 to Cody and 1 to Livingston for medical assistance. One person had been killed by a bear.

0727 hours – called Kerry Gunther YNP-BMO to inform of the incident.

0734 hours – tried to call the USFS Gardiner Ranger District – no one at work yet.

0737 hours - left message with Jim Miller that we were in route to Cooke City/Soda Butte Campground.

0739 hours – update Mark Haroldson with information and Mark has no recent flight data of any radio-collared grizzly bears in the Soda Butte area.

0813 hours – update Chris Servheen with more information.

0816 hours – Bruscano confirms both victims are at the Cody hospital. WYGF is willing to send additional culvert traps to Soda Butte.

0819 hours – Bruscano and I discuss capture efforts, DNA analysis, and telemetry flight...all cleared.

0820 hours - personal contact with PCSO deputy regarding victim's condition information while fueling vehicles at Emigrant, MT.

0837 hours – call FWP R-3, transferred to Helena...left message/update with current information.

0928 hours – try to call FWP IO Andrea Jones from lower Lamar, YNP.

0935 hours – Bruscano sending two culvert traps to Soda Butte.

0958 hours – try to call Andrea Jones from Trout Creek.

1012 hours – try to call Andrea Jones from NE Gate-YNP....line busy.

1020 hours – arrive at Soda Butte Campground. Drive through upper loop and proceed to lower loop where investigative team is working at fatality site (#26).

Site Investigation:

07/28/10:

1024 hours -

At investigative site we (Smith & I) found Sam Sheppard, Jim Miller, FWP warden Jim Smolczynski, USFS-LEO Morgan Dale, YNP ranger Brian Chin, PCSO deputy Justin Chaffins, Park County Coroner Al Jenkins, and deputy coroner Drew Morill. The fatality victim's body had been loaded into the coroner's car. Sheppard asked me to begin investigating bear and attack/fatality evidence at the site. The fatality victim was obviously killed within 4 feet of his tent. The tent was a cloth insect netting tent with a full-weather fly over it. The victim had been attacked and pulled by head/shoulders through the north end of his tent. At some point after the fatality, the bear(s) had dragged the **victim's body** south around the tent (collapsed) and down-slope approximately 30 feet to where he **was found** by PCSO deputy Justin Chaffins and YNP ranger Brian Chin **at 0421 hours**. It was evident that the victim was dead when he was dragged to the discovery location. Investigation of the tent revealed 3 identifiable as smaller bear front foot tracks/prints on the tent and 1 larger track/print. The smaller tracks/prints were not clearly distinguishable as grizzly bear tracks. One larger front-foot track/print was also undistinguishable due to the tent fabric having been folded when the bear stepped on the tent. No tracks/prints were visible on the ground due to vegetation, gravel and hard pack dirt. Bear hairs were collected from the tent for DNA analysis. Numerous (6) natural vegetative scats were in immediate area of the tent and victim, as well as along the trail into the willows and creek where the bears traveled back and forth to the victim. Due to size, two of the scats were definitely that of an adult bear and the remaining scats were from cubs or young bear(s). At that time I was confident in assuming we were dealing with an adult female bear and at least one cub. Species was not certain. No one from the initial investigative group had walked past the where the victim's body was discovered. After examining the fatality site, it was necessary to walk into the willows/creek to check for evidence from the victim and to further determine what species and number of bears were involved with the attack/fatality. The heavy willows began approximately 30 feet down-slope and the creek was only about 45 yards beyond that. Willows were approximately 1+ meter tall (waist height). Jim Smolczynski and I examined tracks, discovered blood drops and look for bear hair on branches. Sheppard, Miller, Smith, Chaffins, Dale, and Chin walked as armed guards. There were numerous new bear trails in the vegetation/willows. Bear hairs were collected for DNA analysis. Several of the bear guard hairs were light tipped along with the under-fur, appeared consistent with that of known grizzly bear hair. Sheppard and I examined small bear tracks in the sand/gravel along the creek. Toe pattern was not definitive, but claw marks were more consistent with grizzly tracks. The main bear-trail was followed across the creek and into the timbered forest for approximately another 30 yards. No better or additional evidence was found and if the bears were nearby, I did not want our activities to bump the bears out of the area. We returned to the fatality site, search for other bear hair. All evidence was cataloged. At this time (1200+ hours) I decided on number of traps, trap placement and baiting. During the time of setting the traps, the initial investigative team moved upstream to sites #16 and #11 where the two other victims were attacked.

Bear Captures:

07/28/2010:

All traps used at the fatality site capture location were aluminum culvert traps.

1200 hours:

The largest trap was set within 6 feet of where the victim was killed. Due to the need to capture at least one cub, potentially more, a secondary trap was set within 5 feet of the 1st trap. A third trap was also

set between, but 10 feet behind the other two traps. Smith and I remained near the set traps for public safety while campers were escorted back to retrieve their gear by YNP-ranger Chin or USFS-LEO Dale. The larger trap was baited with a bighorn sheep hindquarter and the fly of the fatality victim's tent was draped over the trap. The other two traps were baited with whitetail deer quarters and all traps had a chunk of watermelon on the floor under the trigger. The victim's tent was set back up in the exact location it had been during the attack. While setting these traps, WYGF personnel arrived at the staging area with two steel culvert traps that would be set at Sites #16 & #11.

At approximately 1400 hours, Smith and I met Luke Ellsbury-WYGF at the staging area (campground entry loop) and preceded to Sites #16 & #11. Sheppard and Smolczynski had left to report information at Community Center (phone land-lines) in Cooke City. Miller was still on site. We looked for any other evidence to explain cause of attacks. All food had been stored in bear-resistant food boxes, fire-pits were clean and no food was found in the tents. The woman's tent had a can of bear pepper-spray in it. All equipment and tents left behind at the victim's camps (#16 & #11) were gathered and loaded into agency trucks. WYGF was asked to set one culvert trap at Sites #16 & #11. Traps were placed and baited (deer). Trap doors were left closed until campers had gathered their gear. We remained on scene at Sites #16 & #11 until the public had been cleared out of campground.

Approximately 1530 hours all traps were baited and set. Human activity became quiet. Three additional camps were also removed by agency personnel. One camp was retrieved by owners at the campground entry loop and the rest of the camps were taken to the Cooke City Fire-hall. All wildlife agency personnel had gone into Cooke City by 1900 hours. USFS personnel were guarding the campground.

Approximately 1800 hours USFS-LEO Dale radioed Miller that a door had closed on 1 trap. Sheppard, Knarr-MFWP warden sgt. and I went to Soda Butte to check situation.

1815 hours, using binoculars, I was able to determine that an adult grizzly bear was captured in the largest aluminum culvert trap that had been set closest to the fatality site. We returned to town for supper, allowing time for any assumed cub(s) to be captured.

At approximately 1910 hours, we went to the capture/fatality site. No cubs had been captured.

1929 hours I immobilized the adult female grizzly bear.

1940 hours blood, hair and tissue samples were collected for DNA analysis. Photos were taken.

Teeth were examined for any new fractures. Upper right canine had been recently broken. Tooth fragment found in tent at Site #11.

Personnel on watch, verify that there are 3 cubs running around willow/timber edge.

2016 hours the female grizzly bear in recovery stages.

2030 hours female bear in trap and the other 2 traps are moved 40 yards to willow edge to maximize capture effort of cubs.

2045 hours all personnel are away from capture/fatality site. Stay in campground entry loop and locked front gate till all public viewers have left for night.

2110 hours WYGF personnel leave with samples collected from female grizzly to transport/relay samples to WYGF Forensics Lab in Laramie, WY.

2245 hours campground vacated by all.

07/29/2010:

0615 hours two cubs captured in traps – one in each trap. Third cub is running around site in willows.

0645 hours cubs (both female) are immobilized and placed in one trap. Third cub runs/bluffs in close to traps several times. Third trap reset and site is vacated.

0730 hours notify C Servheen that female and 2 female cubs captured. Info relayed to IGBST and YNP.

1100 hours the third cub has not returned, snare is set in spruce trees and trap with cubs is placed nearby. Female grizzly in trap is moved back to fatality site for shade.

1200 hours WTGF trap from Site #16 is moved and set at Site #25 next to Site #26.
1500 hours female cubs are moved to shade and all captured bears watered.
1700 hours meet with USFS (GNF & SNF) at campground entry loop to discuss campground (Soda Butte, Colter, Chief Joseph, Fox Creek, & Crazy Creek) and management options.
2300 hours campground vacated by Frey, Smith and Miller....last personnel left on scene/Cooke City.

07/30/10:

0600 hours third trap door is down.

0610 hours confirm third cub is captured.

0645 hours all 3 traps/4 bears moved to entry loop of campground.

0700 hours call WYGF, C Servheen-USFWS, USFS to report all bears captured. Miller called Sheppard.

0738 hours Frey, Smith, Miller leave Cooke City with bears for Bozeman.

1115 hours arrive in Bozeman – MFWP HQ.

Bears are placed in garage bay. Watered and placed bedding in traps. Have discussion with Pat Flowers and Sam Sheppard on the fate/disposition of the bears.

1436 hours I received a call from Dee Dee Hawk at the Wyoming Wildlife Forensics Lab, confirming the DNA test results are a conclusive match of samples collected at the attack/fatality sites and the samples collected from the adult female grizzly bear captured.

*See WYGF Laboratory Examination Report (DNA).

1520 hours discuss bears with Servheen. Decision made to place cubs at Zoo MT in Billings. Adult female is to be euthanized.

1545 hours call MT State Veterinary Diagnostic Lab for necropsy and testing of adult female grizzly bear.

Adult female bear disposition:

07/30/10:

1600 hours adult female grizzly is immobilized with 1140 mg of Telazol. Bioimpedence, weight and physical measurements are taken.

1610 hours adult female grizzly is euthanized by lethal injection at MFWP HQ. Bear carcass is transported to MT State Veterinary Diagnostic Lab. Dr. B Layton and Dr. J Marshall perform necropsy and collect tissue samples for testing. Necropsy was witnessed by Frey and Smith.

1705 hours necropsy completed. Rabies test imperative.

07/31/10:

Rabies test negative. Call Bruscano and he relays information to hospital in Cody, WY.

08/06/10:

1553 hours received necropsy/pathology report of adult female grizzly bear.

*See Diagnostic Case Summary.

Three Yearling Cubs handling and disposition:

07/31/10:

1834 hours begin immobilizing and handling all three cubs. Blood, hair, weights, photos and physical measurements were collected. Upon gross field physical examination, all cubs were in poor physical condition. All cubs were given a combiotic (penicillin/procaine) injection. All cubs were placed into one aluminum culvert trap with bedding, water and food.

2300 hours all cubs in recovery process of immobilization (head up, moving, standing). Cubs are monitored until 0000hours 08/01/10.

08/01/10:

0710 hours begin transport drive to Zoo MT in Billings MT.

1020 hours arrive at Zoo MT. Cubs are transferred into captive zoo. Discuss cubs physical condition with staff veterinarian (S Whitling), advised combiotic treatment, de-worming and nutritional supplements. Cubs observed eating fruit and meat at soon as in holding area.

1330 hours return to Bozeman.

Attack and Fatality Scenario:

During the early morning hours of 28 July, 2010 3 people were attacked and 1 person was killed in separate locations by an adult female grizzly bear and 3 yearling cubs. The attacks and human fatality occurred in the Soda Butte Campground on the Gallatin National Forest east of Cooke City, Montana.

At approximately 0200 hours Ronald Singer along with his girlfriend (Maria Fleming) and dog were sleeping in their tent at Site #16 (UTM 585911 x 4986270 NAD 83) in the Soda Butte Campground. Singer was awakened by his tent moving and something bit his lower left leg. Singer hit the animal several times and it let go of his leg. Moments later while applying first-aid to Singer, Flemming and family heard a woman scream in what they thought was Site #13. Via personal vehicle the Flemming family transported Singer to Cooke City for medical assistance. At no time did Singer or Flemming see the animal.

*See Singer statement taken by Mark Bruscano – WYGF.

At approximately 0200 hours Deborah Freele sleeping in her tent at Site #11 (UTM 585760 x 4986218 NAD 83) in the Soda Butte Campground was awakened and suddenly was bitten on her upper left arm. Freele screamed as the animal shook her briefly. Freele was suddenly bitten again on the lower left arm. Freele did not make noise or fight at that point. Freele felt an additional lesser bite to her left leg and the “bear” let go. Freele wrapped her arm in a shirt and heard other people yelling in the campground. Other campers from Site #13 assisted Freele in her tent and transported her by personal vehicle to Cooke City for medical assistance. Once at the Super 8, the 1st responder (Jan Gaertner) was already administering medical assistance to Singer. **It was confirmed by DNA analysis that the adult female grizzly that had attacked Freele had also attacked/killed Kammer.

*See Freele statement taken by Mark Bruscano-WYGF.

My conclusions based on the Singer and Freele attacks and the evidence found at Site #26 (UTM 584163 x 4986052 NAD 83) where Kevin Kammer was found attacked and killed by bears are as follows:

With the evidence that Singer was attacked first and Freele second, it seems logical that the adult female grizzly bear and 3 yearlings moved downstream to attack, kill and partially consume Kammer. Singer was attacked/bitten in the leg. He fought back, Flemming screamed, thus confusing the bear(s) and causing them to move downstream approximately 150 meters to Freele. Campers in Site #13 reported (written and oral) hearing the bears running on the gravel road and heavy breathing as they went past their campsite. Freele had screamed and went quiet. However, with the yelling and activity at Singer site along with the Flemming vehicle moving past the Freele site, the bear(s) again became unsure and moved downstream. In a little as 10 minutes time, the bear(s) could have been to Site#26/Kammer.

Site #26, where Kammer was camping is approximately 600 meters downstream from Site #11 (Freele). Kammer was not discovered dead until 0421 hours, which is in excess of 2 hours after the attacks on Singer and Freele. Site #26 is the most upstream site in the lower loop/portion of the campground. *See maps/photos. At Site #26 there is significant vegetative (conifer trees/willows) cover and noise due to proximity to Soda Butte Creek. From the evidence, Kammer had most likely not heard or was not aware of the bear(s) presence. Talking with the couple that was camping in Site#25, the man stated, "I did not hear a woof, growl, moan, whimper.....nothing", which is understandable due to the loud creek noise, night-time and sleeping. The bear(s) would have not been disturbed at Site#26 by the human injury/rescue activities that occurred in the upper portion of the campground. The road/exit is well upstream from the lower campground loop. It had remained quiet in the lower loop. From on ground fatality site investigation, the bear(s) had fed on Kammer and were most likely pushed off by PCSO & YNP vehicles/lights when securing the campground. Also, with the basically quick capture of the adult female grizzly, the bear(s) had not moved far from the fatality site during the daylight hours of 07/28/10. The bear(s) were waiting for evening/dark to return to the site for feeding. Additionally, the adult female bear was captured in the trap set closest to the fatality site, which had Kammer's tent fly draped over the trap. The bear(s) would not have attacked/killed /fed upon Kammer, then move upstream attacking Singer, then Freele and then moved back downstream to daybed close to Site#26.

Note: Subsequently to this incident on 28 July, 2010, YNP-BMO has provided two reports of an adult female grizzly w/ 3 cubs near the Silver Gate/Cooke City area prior to this incident.



WYOMING GAME AND FISH DEPARTMENT

5400 Bishop Blvd. Cheyenne, WY 82006

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LABORATORY EXAMINATION REPORT ADDENDUM REPORT

LAB NO.
10-36A-W-CAF

DATE:
August 12, 2010

SUBMITTER: Kevin Frey
Wildlife Mgmt Specialist

EXAMINERS: Kim Frazier
Tasha Bauman

AGENCY:
Montana Fish, Wildlife and Parks
1899 Mount Ellis Rd.
Bozeman, MT 59715

TECHNICAL REVIEW: Dee Dee Hawk
CASE NO.: N/A
PURPOSE: Microsatellite matching of
the submitted items.

EVIDENCE RECEIVED:

Dee Dee Hawk, Laboratory Director received items No. 1-4 from Tara Teaschner, Biologist, on July 29, 2010.

Dee Dee Hawk, Laboratory Director received items 5-7 on August 6, 2010.

EXAMINATIONS CONDUCTED:

Extracted DNA from numerous submitted items was used in the polymerase chain reaction (PCR) for microsatellite matching of the submitted items.

In Table No. 1, “hair submitted” indicates the samples were taken from someone outside of the laboratory and “hair collected” indicates the samples were recovered by Wyoming Game and Fish Forensic Laboratory personnel. Site #11 is the second site and the area of the female victim, site #16 is the first site and the area of the male victim, and site #26 was the area of the fatality.

In the interest of time and decreasing turnaround time, not all items were utilized for testing.

RESULTS:

Results are listed in Table No. 1

Table No. 1
Items Submitted and Results

Lab Item No.	MFWP Item Number	Description	Species ID	Gender	Genotype
1A		Known female grizzly bear—blood (not used)	Grizzly bear (GB)	F	A
1B		Known female grizzly bear--tissue	GB	F	A
1C		Known female grizzly bear--hair	GB	F	A
1D		Known female grizzly bear--tooth	GB	F	A
2A	11	Shirt from victim campsite-hair collected	NT	NT	NR
2B	2	Pants from victim-hair collected	NT	NT	NR
2C	4	Hair from exterior of victim's tent-hair submitted	GB	NT	A
2D	3, 5-9	Sample from victim's wound-no sample retrieved at this time			
2E	1	Victim's shirt, section covering puncture wound, right arm-hair collected	NT	NT	NR
2F	19	Glove used to collect evidence from fatal victim-no sample retrieved at this time			
2G	13	Pillow found near victim's body at campsite-hair collected	GB	F	A
2H	12	Shirt removed from victim at campsite-hair submitted	NT	NT	NR
2H	12	What appeared to be partially digested vegetation with saliva	NT	NT	NT
2I	14	Hair from body at campsite-hair submitted	GB	F	A
2J	15	Hair on willow below body site-hair submitted	GB	F	A
2K	16	Hair from inside of tent-hair submitted	GB	F	A
2L	17	Hair from sleeping bag-hair submitted	NT	NT	NR
3A	20	Clothing from hotel room-no sample retrieved			
3B		Tooth-inside of tent site No. 11	NT	NT	Could not exclude A
3B		Hair-inside of tent site No. 11-hair submitted	NT	NT	Could not exclude A
3C		T-shirt and sock from Ronald Singer-no sample retrieved			
3D		Sheet from hospital-R. Singer-no sample retrieved			
3E		Linen from hospital-R. Singer-no sample retrieved			
3F		Hair-right shoe-Singer-hair collected	NT	NT	Could not exclude A

Table No. 1 (Continued)

Lab Item No.	MFWP Item Number	Description	Species ID	Gender	Genotype
3G		Hair-flannel pants-Singer-hair collected	NT	NT	Could not exclude A
3H		Hair-shoe, D. Freele-one hair submitted	Bear	NT	B
3I		Hair-Clothing-D. Freele-No sample retrieved			
3J		Underwear-Singer-No sample retrieved			
3K		Bandage, Soda Butte CG, Mt-R. Singer-Leg-No sample retrieved			
3L		Bag containing Singer clothing-No sample retrieved			
3M		Flannel pants worn by R. Singer, Soda Butte CG-hair collected	NT	NT	Could not exclude A
3N		Bandage that victim arrived at hospital in-removed at hospital-No sample retrieved			
3O		Clothing D. Freele, Soda Butte CG-MT-hair collected	NT	NT	Could not exclude A
3P		Site #16 sleeping bag-hair collected	NT	NT	Could not exclude A
3Q		Freele sleeping bag-hair collected	NT	NT	Could not exclude A
3R		Hair samples from tent-one hair submitted	NT	NT	Could not exclude A
4		Bandages from hospital-No sample collected at this time			
5		Bear No. 1, Runt Female cub	NT	NT	C
6		Bear No. 2, Dominant Female cub	NT	NT	D
7		Bear No. 3, Male cub	NT	NT	E

GB=Grizzly Bear NT=Not tested NR=Non-reactive F=Female

CONCLUSIONS:

- 1) Items #1, 2C, 2G, 2I, 2J, and 2K resulted in identical genotypes (genotype A); this is consistent with the items originating from the same female grizzly bear.
- 2) Items from sites #11 and 16 had hairs that only produced partial genotypes. These partial genotypes could not be excluded from genotype A.
- 3) Item #3H resulted in genotype B and originated from a second bear of undetermined gender and species, however this bear does share an allele at all loci with the known female grizzly bear (Item #1). This indicates a high probability of parentage between genotypes A and B.
- 4) Item #5 resulted in genotype C and originated from a known female grizzly bear.

- 5) Item #6 resulted in genotype D and originated from a known female grizzly bear.
- 6) Item #7 resulted in genotype E and originated from a known male grizzly bear.

DISPOSITION OF SAMPLES:

Items are retained in the custody of the examiners.

DNA EXAMINER: _____
Kim Frazier
Forensic Specialist

DNA EXAMINER: _____
Tasha Bauman
Forensic Analyst

TECHNICAL REVIEW: _____
Dee Dee Hawk
Laboratory Director

cc. G. Amrine
S. Talbott
B. DeBolt
M. Bruscano
file

Aug. 6.

15

Montana Veterinary Diagnostic Laboratory

State of Montana - Department of Livestock

PO Box 997 * Bozeman, Montana 59771 * phone (406) 994-4885

MVDL Accession # 8-72-11
Date Sent: 08/06/2010
Date Received: 07/30/2010

Species: WILD - GRIZZLY BEAR Age:
Breed: NA Sex: F
Name/No. GRIZZLY BEAR

Submitter: NEIL ANDERSON FW & P
1400 S 19TH AVE
BOZEMAN MT 59718

Owner: NEIL ANDERSON FW & P
1400 S 19TH AVE
BOZEMAN MT 59718

Final

WL

CASE SUMMARY

REASON FOR SUBMISSION: Post mortem examination, human attack

LABORATORY DIAGNOSIS:

- Thin body condition
- Endoparasitism, moderate, cestodes and ascarids
- Enteritis, eosinophilic, mild
- Splenic congestion (barbiturate euthanasia)

COMMENT: Abnormalities identified in this animal include thin body condition, in which fat stores are decreased and moderate endoparasitism (cestodes and ascarids). No other significant gross or histologic changes are present in any other tissues evaluated. This animal was in a marginal nutritional plane, and the endoparasitism is likely playing a role in the body condition state. Increased energy demands and availability of nutritional resources must also be considered as additional potential causes of the thin body condition.

A. W. Layton, DVM, DACVP/cto

MVDL Accession #:
8-72-11

Submitter:
NEIL ANDERSON FW & P

Owner:
NEIL ANDERSON FW & P

Date In 08/04/2010

PATHOLOGY/CYTOLOGY

Date Out: 08/06/2010

WL

GROSS: A 220 pound adult female grizzly bear was euthanized at the Montana Fish Wildlife & Parks laboratory with barbiturate lethal injection. Post mortem examination was performed at the Montana Veterinary Diagnostic Laboratory within 30 minutes after euthanasia was performed. Observers include Kevin Frey and Jeremiah Smith of Fish Wildlife & Parks, and the necropsy was assisted by Dr. Jeff Marshall, MVDL pathologist. The animal was captured at the Soda Creek Campground, and its genetic material was identified in connection with a human mortality. Photographs were obtained of the external carcass. The bear is thin, and hair coat is matted and rough. The right apical canine tooth is broken (pictures obtained). Scant amount of milk could be expressed from the teats. Musculoskeletal system is normal. Fat stores are present, but marginal. Spleen is engorged, purple, and has purple cut surfaces in which blood exudes (barbiturate associated splenic congestion). Liver is pale and slightly tan. Gallbladder is engorged with abundant serous green bile. Heart has brown surfaces and expected dimensions. Lungs are partially collapsed, pink, dry and spongy. Esophagus and trachea are normal. Oral cavity and tongue are normal. Pleural and peritoneal cavities have smooth, glistening surfaces. Kidneys are lobulated and have brown cortices, light brown medullae and dark red pelves. Ovaries are inactive, and uterus is small. Stomach is full of grass and green and black strands of a fabric. Few boney fragments are also present, as well as hair. Small intestine has the same contents as the stomach amid a black tan thick mucoid fluid. There is plication of the small intestine (linear foreign body). Moderate to numerous numbers of tapeworms and ascarids are identified. Large intestine is empty. All gastrointestinal contents were saved and frozen back. The brain and pituitary gland are grossly normal. Portions of liver, kidney and lung were saved and frozen at -25° C. Carcass was retained for eventual incineration. The head (minus the brain and skullcap) was returned to Fish Wildlife & Park representatives.

HISTOPATHOLOGY: Multiple sections of brain, sections of pituitary gland, left and right kidney, heart, liver, spleen, lung, skeletal muscle, pancreas, small and large intestine, stomach, urinary bladder, tongue, trachea, uterus and ovary with adjacent structures are examined. Splenic red pulp is engorged with numerous erythrocytes. Small numbers of pigment-laden macrophages occur with peribronchiolar connective tissue of the lung (pneumoconiosis). Lamina propria of the villi contain small to moderate numbers of lymphocytes, plasma cells, eosinophils and fewer macrophages. No other significant lesions are present in the remainder of the tissues.

MORPHOLOGIC DIAGNOSIS:

Thin body condition
Endoparasitism, moderate, cestodes and ascarids
Enteritis, eosinophilic, mild
Splenic congestion (barbiturate euthanasia)

MVDL Accession #:
8-72-11

Submitter:
NEIL ANDERSON FW & P

Owner:
NEIL ANDERSON FW & P

RABIES

Direct Fluorescent Antibody Results: NEGATIVE

Human Exposure: YES

Victim Information:

Not Available

Lower Left Stem: NEGATIVE
Lower Right Stem: NEGATIVE
Upper Left Stem: NEGATIVE
Upper Right Stem: NEGATIVE
Left cereb: NEGATIVE
Right Cereb: NEGATIVE
Left Hippo: NEGATIVE
Right Hippo: NEGATIVE

Appendix 16 - Summary of stable isotope analysis for the Soda Butte female grizzly bear

SUMMARY OF STABLE ISOTOPE ANALYSES OF THE SODA BUTTE FEMALE Charles T. Robbins and Justin Teisberg, Washington State University, Pullman, WA August 10, 2010

Introduction

Three hair samples from the adult female captured at the Soda Butte Campground near Cooke City, Montana were received on August 5, 2010, from Kevin Frey. The samples included 1) a sample of hair grown during 2009 based on its faded, worn appearance and the fact that it had been molted but was still clinging to the currently growing hair coat, 2) a sample of new hair growing in 2010, and 3) a mixture of the 2 hair coats. The new hair was clipped at the skin surface to insure that the 2010 hair sample included the most recently grown hair. The hair samples were washed with distilled water and a chloroform-methanol mixture to remove oils and extraneous debris and dried. A subsample of the hair representing the entire hair coat grown in 2009 and 2010 was ground, loaded into stable isotope capsules, and submitted on August 9th to the Washington State University Stable Isotope Analytical Lab for carbon, nitrogen and sulfur isotope analyses. Another subsample of full length 2010 hair was laid out next to a ruler and the first 1 cm of hair that would have been next to the skin was cut. Previous studies found that grizzly bear hair grows at 1.5 cm/month (Felicetti et al. 2004). The 1 cm sample was processed as above and submitted for carbon, nitrogen, and sulfur isotope analyses. Serum and whole blood samples from the above female also were obtained on August 6th from the Wyoming Game and Fish Wildlife Forensic and Fish Health Laboratory in Laramie, Wyoming. Subsamples of the serum and red blood cells were freeze-dried and submitted for the same stable isotope analyses. Previous studies on a wide range of species have shown that the isotope composition of the serum is indicative of the diet consumed during the past 10 to 14 days, that of the red blood cells during the past 3 months, and that of the hair during the time of its growth.

Summary of Results

1. The female consumed an almost exclusively plant-based diet during the past 2 years (Figure 1). Ninety-two percent of the grizzly bears in the Yellowstone ecosystem consume a higher proportion of meat in their diet than did this female.
2. There is no indication that the female consumed significant amounts of human-provided food (e.g., pet food, garbage, or livestock grain) during 2009, 2010, or during the last few weeks of her life. The carbon signature of the female's serum (-24.8‰) and red blood cells (-24.4‰) are very similar to the mean ($-24.1 \pm 0.4\text{‰}$) for 350 research bears handled in Yellowstone between 1984 and 2005 and indicate the consumption of the C3-plants that grow in the Yellowstone ecosystem. Although there is a slight carbon shift in the most recently grown hair, that value is still well within the variation seen in Yellowstone bears (Figure 1). If human-provided food had been a major source of nourishment, a carbon shift towards $\pm -14\text{‰}$ would have been expected.

There was a slight increase in the female's nitrogen isotope signature during the last few weeks of her life. For example, the nitrogen isotope value of her hair was 2.94 in 2009 and 2.78 in the hair grown thus far in 2010. The most recent 1 cm of hair grown during the last 2 to 3 weeks of

her life had a nitrogen isotope value of 3.50‰. However, even this increase indicates that the female consumed a very minimal amount of meat during the last few weeks of her life.

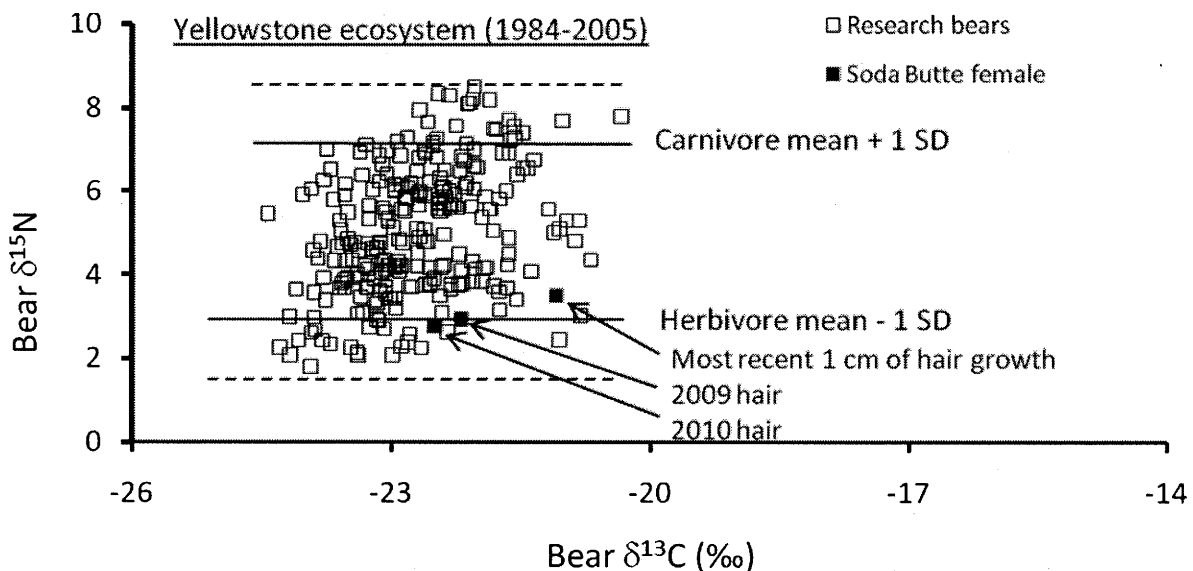


Figure 1. Carbon and nitrogen isotope values of the hair collected from the Soda Butte female compared to similar samples for 350 research bears handled between 1984 and 2005.

3. There is no indication that the female consumed significant amounts of pine nuts in 2009 even though it was a relatively good year for nut production. If she had consumed significant amounts of pine nuts, we would have expected a S-isotope value approaching 8‰ in her 2009 or 2010 hair based on the results of Felicetti et al. (2003). The actual S-isotope values for her hair were 3.66‰ in 2009 and 3.64 in 2010, which are towards the lower end of the range for Yellowstone bears. Both the serum and red blood cells values are also distant from what would have been expected if pine nuts had been a significant source of nourishment during the recent past.

Conclusion regarding the nutrition of the Soda Butte female

The female occupied a plant-based nutritional niche that provided a minimal amount of nourishment relative to what would have been required to meet her own needs and that of three nursing yearlings.

Literature Cited

Felicetti, L.A., C.C. Schwartz, R.O. Rye, M.A. Haroldson, K.A. Gunther, D.L. Phillips, and C.T. Robbins. 2003. Use of sulfur and nitrogen stable isotopes to determine the importance of whitebark pine nuts to Yellowstone grizzly bears. *Canadian Journal of Zoology* 81:763-770.