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Information Paper BMO-7
Bear Management Office
Yellowstone National Park

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February 2012

BEARS AND MENSTRUATING WOMEN

On the evening of 13 August 1967, two women were attacked and killed by grizzly bears (*Ursus arcto*) in separate incidents within Glacier National Park (GNP). Following these incidents, there was speculation that due to odors associated with menstruation, women may be more prone to attack by bears than are men (Rogers et al. 1991).

The objective of this paper is to present the data available on this subject so that women can make an informed choice when deciding whether or not to hike and/or camp in bear country during their menstrual period.

Polar Bears

In a study designed to test the hypothesis that bears are attracted to the odors of menstruation, Cushing (1983) reported that when presented with a series of different odors (including seal scents, other food scents, non-menstrual human blood, and used tampons), four captive polar bears (*Ursus maritimus*) elicited a strong behavioral response only to seal scents and menstrual odors (used tampons). Cushing (1983) also reported that free-ranging polar bears detected and consumed food scent samples and used tampons, but ignored non-menstrual human blood and unused tampons. This suggests that polar bears are attracted to odors associated with menstrual blood.

Grizzly Bears

Herrero (1985) analyzed the circumstances of hundreds of grizzly bear attacks on humans, including the attacks on the two women in GNP, and concluded that there was no evidence linking menstruation to any of the attacks. The responses of grizzly bears to menstrual odors has not been studied experimentally.

Black Bears

Rogers et al. (1991) recorded the responses of 26 free-ranging black bears (*Ursus americanus*) to used tampons from 26 women and the responses of 20 free ranging black bears to four menstruating women at different days of their flow. Menstrual odors were essentially ignored by black bears of all sex and age classes. In an extensive review of black bear attacks across North America, no instances of black bears attacking or being attracted to menstruating women was found (Cramond 1981, Herrero 1985, Rogers et al. 1991).

Yellowstone National Park Bear-Inflicted Human Injury Statistics

Prior to 1980, most bear-inflicted human injuries in Yellowstone National Park (YNP) involved human food conditioned bears that were aggressively seeking human foods and injured people in the process. By 1980, human foods and garbage were no longer readily available to park bears and few human food conditioned bears remained in the population. During the 32 year period from 1980 through 2011, over 90 million people visited YNP. These visitors spent almost 21 million user nights camping in developed area roadside campgrounds, and over 1.3 million user nights camping in remote backcountry areas of the park. Although actual statistics are not available, thousands of menstruating women undoubtedly visited, hiked and/or camped within YNP over the last 32 years. From 1980 through 2011, 43 people were injured by bears (35 by grizzly bear, 5 by black bear, and 3 by bears where the species was not identified) within YNP, an average of only 1.3 bear-inflicted human injuries per year (Gunther 2012). Of these 43 injuries, 34 (79%) were men, and only 9 (21%) were women. Of the 9 incidents where women were injured, most (67%, n=6) involved surprise encounters with bears while the women were hiking, and were therefore probably unrelated to menstruation. One incident involved a female park ranger moving an injured bear that had been hit by a car, off of the roadway. In one incident a grizzly bear pulled a woman out of her tent at night and killed and partially consumed her. However, the woman was not menstruating at the time of the attack. In one incident a curious bear approached and bit a woman, but the woman was not menstruating at the time. There was no evidence linking menstruation to any of the 9 bear attacks on women. It is difficult to accurately compare the ratio of males to females that are injured by bears because the park does not keep records of visitor use in the park by gender. However, the bear-inflicted human injury data for YNP does not indicate any correlation between bear attacks and menstruation (Gunther and Hoekstra 1996).

Precautions

Although there is no evidence that grizzly and black bears are overly attracted to menstrual odors more than any other odor, certain precautions should be taken to reduce the risks of attack.

The following precautions are recommended:

1. Use pre-moistened, unscented cleaning towelettes.

2. Use internal tampons instead of external pads.

3. Do not bury tampons or pads (pack it in - pack it out). A bear may smell buried tampons or pads and dig them up. By providing bears a small food "reward", this action may attract bears to other menstruating women.

4. Place all used tampons, pads, and towelettes in double zip-loc baggies and store them unavailable to bears, just as you would store food. This means hung at least 10 feet above the ground and 4 feet from the tree trunk.

5. Tampons can be burned in a campfire, but remember that it takes a very hot fire and considerable time to completely burn them. Any charred remains must be removed from the fire pit and stored with your other garbage. Also, burning of any garbage is odorous and may attract bears to your campsite.

6. Many feminine products are heavily scented. Use only unscented or lightly scented items. Cosmetics, perfumes, and deodorants are unnecessary and may act as an attractant to bears.

7. Follow food storage regulations and recommendations so you can avoid attracting a bear into your camp with other odors. All odorous items that may attract bears, including food, cooking and food storage gear, toiletries, and garbage, must be kept secured from bears. Proper methods for storing bear attractants include: 1.) in a vehicle (the trunk of a car or cab of a truck), 2.) in a solid camping trailer that is constructed of non-pliable material (**never** in a tent or tent trailer), 3.) in a food storage box (provided at some campgrounds), or 4.) suspended at least 10 feet above the ground and 4 feet horizontally from the tree trunk.

The question whether menstruating women attract bears has not been completely answered (Byrd 1988). There is no evidence that grizzly bears are overly attracted to menstrual odors more than any other odor and there is no statistical evidence that known bear attacks have been related to menstruation (Byrd 1988). In Yellowstone National Park, the probability of being injured by a bear for both men and women combined, is only 1 in over 2.1 million (Gunther 2012), so the risks are very low. Although the risks are very low, visitors have been injured and killed by bears in Yellowstone National Park (Gunther and Hoekstra 1996). If you are uncomfortable hiking and camping in bear country for any reason, you should probably choose another area for your recreational activities. Your risk of bear attack is highest while hiking in the backcountry. You can reduce the risks by: 1) hiking in groups of 3 or more people, 2) staying alert, 3) making noise in areas of poor visibility, 4) carrying bear spray, and 5) not running during encounters with bears.

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