

Commentary

[Editor's note: the following articles are responses to Valerius Geist's article "Wildlife habituation: advances in understanding and management application", appearing in Human–Wildlife Interactions 5:9–12. Geist's rebuttal follows.]

Misconceptions about black bears: a response to Geist (2011)

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WE READ WITH INTEREST the commentary by Valerius Geist on habituation (Geist 2011). Dr. Geist is a world authority on ungulate behavior, but his statements about bears reflect misconceptions that he supported with anecdotes rather than with systematic observations that characterized his ungulate research. When someone of his stature uncritically extrapolates from ungulates to bears in this way, he sets back bear management, promotes the sensationalized image of bears, and makes people unwilling to coexist with animals that they fear.

Habituation is a waning of response to a repeated, neutral stimulus (Thorpe 1956, Whitaker and Knight 1998, Gilbert 1989, Smith et al. 2005, Herrero et al. 2005, Stringham 2009). Bears that are fully habituated to humans ignore them (Whitaker and Knight 1998). Geist's use of the word habituation was confusing because he often used it to mean bears that are conditioned or attracted to humans, which is the opposite of its true meaning.

Geist's main point was that "habituation" can lead to bear attacks. There is danger in anything, of course, but if habituated bears were as Geist says, we and our co-workers could not do the close-up black bear (*Ursus americanus*) studies that we have been doing for decades. Habituated individuals do not view us humans with "unconsummated interest" and attack. They behave as if we are of little consequence. We are neither friends nor enemies. We are neither significant food-givers nor competitors. Bears forage, nurse, and sleep with hardly a look in our direction, thus, providing insights into bear life that we would not have thought possible. This is not new, of course. Jane Goodall and

Dian Fossey did the same with great apes (Hominidae) years before.

To support his contention that habituation leads to attacks, Geist erroneously used the case of Timothy Treadwell who was killed by a brown bear (*Ursus arctos*) in Katmai National Park, Alaska, during 2002. In reality, Treadwell attacked the bear as much as the bear attacked him, and he did it first (more below). I [Rogers] have watched Treadwell with bears many times as I led groups of bear-viewers. As long as Treadwell behaved as usual, the bears tended to ignore him. For 13 summers, Treadwell waded next to the bears as they fished, approached them as they mated, and sat with them as they grazed or as mothers 3 m away played with their cubs. The occasional young bear approached him. Sometimes they touched, but it was not the beginning of an attack, as Geist implied. Guides and tourists had similar experiences. Guides recognized the situations for what they were—true habituation—and correctly judged the safety of it. They were not attacked, even when I watched as 2 tourists approached within 2 m of a large, sleeping bear that opened an eye and went back to sleep.

Why did Treadwell get killed? It had nothing to do with habituation. A bear investigated his camp when Treadwell had his gear and food packed up ready to be flown out. Treadwell probably burst out of his tent and went after the bear in his "samurai" mode, as he mentioned in the movie "Grizzly Man" (Herzog 2005). Did Treadwell know the bear? Was it habituated? No one knows. A sparse salmon run had brought new bears out of the interior, according to Clint Hlebechuk (personal communication), who owned Hallo Bay Bear Camp. Officials killed a

big bear that had fed on Treadwell's body, but big bears take over kills from smaller bears. Geist mentioned none of the above. His only citation was an *Anchorage Daily News* article by Craig Medred (2003), titled "Wildlife author killed, eaten by bears he loved." The article fit Geist's point, and he cited it.

In his section on the theoretical basis for habituation, Geist used the word habituation correctly and gave an excellent overview of how animals function, citing his good work from the 1970s. But, in the section on danger signals, discussing signals that show anxiety (Herrero et al. 2005), Geist followed the common practice of calling them threats. While it looks threatening when a nervous black bear lunges, slams its feet down, blows explosively, and clacks its teeth, it is a stretch to label these behaviors as signs of danger. In my 44 years of working with wild black bears, I have seen these ritualized displays hundreds of times and have never had one turn into an attack. These displays are not predictors of black bear attacks. They merely express nervous apprehension, as is shown in the bear language videos on the North American Bear Center's website (<<http://www.bear.org>>). As bears became habituated, they made fewer of these expressions of anxiety, not more.

If Geist were right about the danger of habituated bears, I would have been attacked decades ago, Treadwell could not have lasted 13 years among habituated brown bears, and bear viewers could not have sat next to habituated brown bears at McNeil River Falls for >3 decades without injury. There is a need to quantify or qualify statements of danger. In my decades of experience, habituated bears have proven to be less of a danger than taking a walk through the woods or doing home repairs.

In discussing dominance displays, Geist stated, "Most humans have a very difficult time recognizing this signal at all, let alone recognizing it as a signal of high danger." Count me as one of those humans. I interpret black bear behavior in terms of their fear, not human fear. Instead of seeing dominance displays, threats, and danger from bears, we see defensive displays that show anxiety and that are not coupled with attack. We use nonthreatening techniques. Over time, the bears become habituated to us within the limits of their individual personalities, enabling us to accompany them for research. We now

use trust rather than tranquilizers to radio-collar black bears, including mothers with cubs and males up to 578 pounds. These kinder and gentler research methods eliminate injury and cause far less stress than traps and tranquilizers (Cattet et al. 2003, 2008).

Geist stated, "When large mammals show an interest in the observer, or perform the first, faint dominance displays, it is high time for the observer to leave." In truth, if I had taken that advice a quarter century ago, I never would have remained with bears long enough to learn much. The same black bear displays that Geist and others call threats, warnings, and dominance displays, I call harmless bluster. Instead of leaving when I see bluster, I feel safe. Bluster means a black bear is apprehensive and wants to talk about it. Communication is a step toward trust.

Geist included the common advice that retreat should not be at a run because "fearfulness and timidity can trigger attacks!" This may be true with some dogs and big cats, but I know of no support for that statement with black bears. The warning not to run is perhaps the most common advice given for black bear encounters. But, I have yet to find 1 person who has given that advice who has an example. In reality, many people who see black bears tell me, "I ran 1 way and the bear ran the other." If a person is under attack, running can shift the attack to a new location, but I am still looking for an example of running clearly triggering a black bear attack. A 7-year-old female black bear in Minnesota provided the example closest to showing that. She attacked a man who stood his ground 1 day, attacked a man who ran the next, and became distracted by food when campers ran the day after that (Rogers and Garshelis 1988). Did the second man trigger an attack by running? Or did he simply shift the attack to a new location? Would 1 example truly show cause and effect rather than coincidence?

To test a bear's response to running, a co-worker ran from a nervous mother black bear that had an unusual tendency to charge right up to a person rather than performing a simple lunge or blustery hop-charge. We video-taped several of her charges, which can be seen on <www.bear.org>. When the mother charged again, my co-worker ran, glanced back at the bear on his heels, and fell flat. The bear

performed fancy athletics to avoid touching him while braking and turning back to her cubs.

Working as closely as we do with black bears, we have a more than passing interest in the role of habituation in attacks. Herrero et al. (2011) reported that 54 fatal attacks by black bears during 1960 to 2009 showed no pattern of habituation as the cause of the attacks. Most of the killings were in remote areas of Canada and Alaska where habituation is unlikely, while only three were in the eastern United States where habituation and food-conditioning are common (Herrero et al. 2011).

Black bears that attack people are far out in a tail of a bell-shaped curve. About 1 black bear in 950,000 kills someone. By comparison, 1 person in only 18,115 kills someone according to departments of justice and census bureaus in the United States and Canada.

The extent to which bears are the subjects of misconceptions and exaggerations is becoming ever more apparent. Misconceptions about black bears are too often the basis for advice, bear management decisions. With more and more people moving into bear habitat, there is a need to reexamine our beliefs about bears. Warnings about bears should go beyond agency desires to limit liability. Warnings should be quantified to provide the public with information useful in assessing risks and benefits of coexisting with bears.

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LYNN L. ROGERS spent many years trapping, tranquilizing, and radio-collaring black bears as a U.S. Forest Service research scientist. In the mid-1980s, he adapted the trust-based research methods of Jane Goodall to black bears in the forests of Minnesota and began accompanying wild bears for 24 hours at a time. Research topics include diet, habitat use, social relations, care of cubs, hibernation, vocalizations, body language, causes of death, and causes of bear–human conflict.



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