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COUGAR ATTACKS ON HUMANS: AN UPDATE AND SOME FURTHER REFLECTIONS

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ABSTRACT: I examined historical records of unprovoked attacks by cougars on humans in the U.S. and Canada during 101 years (1890-1990). There were 9 attacks resulting in 10 human deaths and at least 44 nonfatal attacks. In a recent paper, I listed these attacks and discussed them in considerable detail (Beier 1991). Although extremely rare, attacks on humans have increased markedly in the last 2 decades, during which cougar numbers and human use of cougar habitats have increased. There is no substantial evidence that habituation underlies this increase in attacks. The data provide weak support for the notion that an attacking cougar may be disposed to attack humans again. Warnings apparently do not deter people from visiting parks in cougar habitat.

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COUGAR ATTACKS ON HUMANS IN THE U.S. AND CANADA

I have recently provided a table listing time, date, and location for 53 cougar attacks on humans in the United States and Canada from January 1, 1890 through December 31, 1990 (101 years), along with data on the sex, age, and behavior of each victim, and the age, sex, and condition of each offending animal (Beier 1991). Interested readers should consult the earlier paper for this information. Herein I simply update that record with 3 additional cases that occurred since December 31, 1990, restate a point particularly relevant to persons working in Animal Damage Control, and add a few observations not mentioned in the earlier paper.

At about 1200 on January 14, 1991, 18-year-old Scott Lancaster was attacked and killed by a cougar as he jogged alone on a trail about 1/3 mile from his high school near Idaho Springs, Colorado. The attacking cougar was a male, about 2-3 years old, was estimated to weigh 100-110 lbs, and had no apparent disease or impediments.

At about 1100 on July 3, 1991, a woman was taking 5 toddlers and a dog along the Fraser River north of Vancouver, British Columbia. The group was sitting in a small sandy opening in the brush when a cougar walked over and clawed a 2-year-old boy and an 18-month-old girl while the woman struggled barehanded to pull the cat away. The boy's face required 50 stitches and the girl received about 15 stitches, but neither child was bitten. As of July 8, 1991, the cougar had not been caught.

At about 1430 on March 12, 1992, a 9-year old boy was attacked by a cougar in Gaviota State Park, California as he hiked with his twin brother and a 12-year old brother about 1.5 miles from the park trailhead. The boy fought back vigorously while his siblings ran 100 m back down the trail and brought their father to the scene. The father hit the cougar on the head with a rock, causing the cougar to retreat. As of this writing (March 21, 1992), the boy is recovering and the offending cougar has not been taken.

WE NEED BETTER DATA ON OFFENDING ANIMALS

I obtained very few data on the attacking cougars. Some cougars were promptly shot by the victim's family or by game wardens, but no information on the offending animal was recorded. In most cases, no skilled necropsy was done and I have no way of knowing how reliable the data are, but I'm sure that many errors were made. In some cases, veteri-

nary reports showed that wardens and animal control personnel often made gross mistakes in their initial estimates of the animal's sex, age, and weight.

A skeptical ADC professional may read the above and think "Others made mistakes but I certainly know how to assess an animal's sex, age, and condition without a veterinarian's help." But on 2 occasions professionals like yourself were embarrassed to discover that the "female" carcass they delivered to me was a male! And after 4 years studying cougars full-time, I still can't reliably "eyeball" cougar weights (my errors have exceeded 20 pounds). ADC personnel are rightly proud of their professional skills, but a part of being a professional is recognizing when you need to call in a professional with skills in an important related area. In the future, *all cougars shot for attacking humans should be given a post-mortem examination by a wildlife veterinarian, and the results should be filed so as to make them accessible.*

THE HABITUATION HYPOTHESIS

The popular press often speculates that cougars have become habituated to humans because they are no longer bountied predators anywhere in North America, and because in many areas (e.g., wilderness parks, all of California since 1971) cougars are no longer subject to sport hunting. The hypothesis is that as cougars learn to accept humans as a non-threatening part of their environment, they may be more likely to treat humans as prey.

However, about 200 cougars per year are removed by hunters or on depredation permits on Vancouver Island, where the Wildlife Branch estimates that 6-10% of the population is harvested annually (Hebert 1989). This rate is probably higher than harvest rates in most western states (see references in Smith 1989). Compared to other North American populations, Vancouver's cougar population may be the least habituated to humans and the most subject to aversive conditioning. Nonetheless Vancouver Island has by far the highest concentration of cougar attacks on humans (Beier 1991). This fact seems difficult to reconcile with the habituation hypothesis.

There is no substantial evidence that habituation has played a role in any particular attack nor in the general recent increase in attacks.

Attacks have increased markedly in the 20-30 years since the end of the bounty period, and some have used this fact to support the habituation theory. But there is a far simpler explanation: perhaps the risk of attack was lower 80 years

ago because persecution kept cougar numbers very low, not because it taught cougars to avoid people. In my experience studying telemetered cougars for 3.5 years in an area of intense urbanization and no cougar hunting, I have seen no evidence that cougars are habituated to humans. Cougars do not raid garbage cans, enter suburban areas with astonishing rarity, and are generally unseen by the thousands of potential human observers in their midst.

THERE IS NO SUCH THING AS ZERO RISK

Although attacks were much rarer in the "bad old days" when deer were market hunted and cougars were shot on sight, the risk was still greater than zero. There has been at least 1 attack in every decade since 1890. It is impossible to reduce this small risk to zero without eliminating either cougars or humans from cougar habitat. Neither "solution" is acceptable.

THE "REPEAT OFFENDER" HYPOTHESIS

Removal of the offending animal provides several important benefits that amply justify such removal: (1) It allows us to learn what factors may have predisposed it to attack; (2) It helps satisfy the understandable grief of the family and the human instinct for retribution; (3) It may reduce the legal liability to the land manager in case there is a subsequent attack.

In addition, removal is often justified for a 4th reason, namely that "Once a cougar has attacked a human, it must be removed because it will probably attack again." Are there any data to support this hypothesis? A definitive test of this notion would require observing whether released attackers engage in subsequent attacks at a greater rate than a "control" group of cougars.

Clearly this is an infeasible experiment, but my data (Beier 1991) do support the "repeat offender" hypothesis, albeit weakly. There were 10 cases in which no cat was removed after an attack. In 3 of these cases there was a subsequent attack within 50 miles and 2 years of the initial attack; in the other 7 cases the offending animal apparently did not attack again. Thus when an attacking cougar was not removed, there was a 30% chance of a second attack within 50 miles and 2 years. I suspect that for a random set of dates and locations in the current range of cougars, there is a far less than a 30% chance of a cougar attack within the same time and distance. Thus it appears that leaving the offending animal in the wild may increase the risk of a future attack.

This analysis suffers several inherent defects: (1) the 30% "repeat offender" rate is based on only 10 animals; (2) the 3 "second attacks" may not have been made by the first attacker; (3) I did not actually compute the risk of attack within 2 years at randomly selected locations. Furthermore, even if my analysis is correct, a skeptic can correctly point out that there apparently is a 70% chance that an attacking cougar will never attack again. My analysis is not conclusive, but is simply my best attempt to interpret the scant data available.

PUBLIC WARNINGS

Cougar attacks are rare. The total of 11 deaths in over a century is far less than the *annual* total of people killed by lightning strikes, rattlesnake bites, or bee-stings (Beier 1991). Attacks are especially rare when one considers that cougars

forego thousands of opportunities to attack humans. In my own work, I have documented cougars bedded for the day a few feet off of a well-used park trail. The cougar doubtless was aware of the hikers, the hikers were completely unaware of the cougar and therefore were at risk of being ambushed.

It will ultimately be up to lawyers, not biologists, to determine if wildland visitors are *required* to be warned about the danger of cougar attacks. I will not speak directly to that legal issue, but will make 2 observations:

(1) If cougars are dangerous enough to require a warning, then warnings for many other hazards — from rattlesnakes to cliffs to poison oak — will also be needed throughout thousands of square miles of wildlands, including national parks, national forests, and BLM lands. This raises the specter of wilderness areas blighted with guardrails and warning signs, or, worse yet, "wildlands" that are sanitized for the visitor's protection.

(2) Although such warnings may reduce a public agency's legal liability, it is not clear that a warning, by itself, actually reduces the risk to wildland visitors. If a visitor gets a simple warning that "There are mountain lions in this wildland; they could bite or kill you," the only risk-reducing action he can take, based solely on this warning, is not to enter the Park. Big Bend National Park (Texas) after several attacks over about a 10-year period, now attempts to warn every person entering their Visitor Center about the potential for cougar attacks. In the first year of this program, the park is unaware of a single visitor who has turned back because of this warning (P. Koepp, Big Bend NP, pers. comm., August 14, 1991). Similarly, Caspers Regional Park (Orange County, California) after 2 attacks in the late 1980s, has for several years required every visitor to sign a statement that he or she had been warned of the potential risk of cougar attacks. My conversations with Park employees indicate that fewer than 10 people in 5 years chose not to enter the Park due to this warning. In 1 case, a cougar walked through the main campground in Big Bend National Park in daylight, confronting a camper briefly before retreating. Although that camper did leave, park rangers warned everyone else in the campground about the incident, and none of them left.

PUBLIC EDUCATION

Although warnings are not legally required, it is becoming increasingly common for public entities to educate the public about cougars in a balanced way that mentions the aesthetic and ecological role of cougars, the potential risk of attack, and suggestions for how to respond if one encounters a cougar. Within the past 4 years, Colorado Division of Wildlife, Montana Department of Fish Wildlife and Parks, and Big Bend National Park have all produced helpful and accurate brochures on cougars. The first 2 agencies provide information targeted not only at wildland visitors but also at people who live in cougar habitat.

I believe such efforts are commendable; one of the reasons we preserve wild parklands is to provide the public with an education in natural history. The urban citizenry of states like California is increasingly ignorant of both the sense of place that wildlands can provide, and the dangers inherent therein. Thus such education is increasingly appropriate. A primary purpose of my recent paper (Beier 1991) was to give managers some factual basis on which to base their advice on how to react in an encounter with a cougar.

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