

RESULTS AND DISCUSSION

I interviewed or corresponded with 62 individuals in Alaska and Canada regarding wolf-human encounters (Appendix) and from their responses I compiled 80 cases. Forty-one cases were from provinces and territories of Canada, 36 cases occurred in Alaska, and 3 cases occurred in northern Minnesota (Fig 1). Thirty-nine cases contained elements of aggression by healthy wolves, 29 were nonaggressive, and 12 involved known or suspected rabid wolves. In 16 cases healthy wolves bit people or bit into their clothing, but most bites were minor. Among the 6 severe bites inflicted by wolves (Cases 1, 4, 14, 15, 16, and 17), none was life-threatening, but 4 of those cases involved children, and the injuries could have been more serious if rescuers had not intervened. Six cases involved aggression by wolves toward people that were accompanied by dogs; in 2 of those cases the wolves bit people.

In the following case summaries I present a description of the encounter and, where available, the interpretations of witnesses or investigators. However, interpretations of wolf-human encounters can be highly subjective, especially if the encounter involves an animal the witness perceives to be either inherently dangerous or, conversely, inherently benign. Therefore, where appropriate, I attempt to discuss alternative interpretations that could explain the behavioral actions of the wolves involved.

AGGRESSIVE ENCOUNTERS

Agonistic Behaviors

Where wolves become habituated to people, often as the result of food conditioning, wolf-human encounters may occur at close range and be prolonged because habituated wolves do not exhibit an avoidance response. Sometimes those encounters result in aggressive wolf behaviors that reflect an agonistic response to a human action the wolf perceives as threatening, annoying, or unexpected. Cases 1–14 illustrate agonistic behaviors toward people. Most involve habituated or food-conditioned wolves, but one case (Case 7) illustrates a low-level threat behavior by a nonhabituated wolf. In Cases 2, 3, 13, and 14, people were accompanied by dogs. In those cases the wolves' response was agonistic, but the aggressive behavior was likely influenced by the presence of the dogs.

CASE 1 — Vargas Island, British Columbia, 2000.

In mid-June wildlife photographer Jacqueline Windh arrived on Vargas Island by kayak. She was working with another photographer who had arrived shortly before and had witnessed 2 people feed a female wolf nearby. After Windh arrived, the female wolf approached and as the photographer crouched to take photographs, the wolf walked directly toward her sniffing at the camera lens. Windh held out her closed hand; the wolf sniffed and gently bit with its teeth, apparently testing to see if the woman was holding food. When the wolf found no food, it licked Windh's hand. Later a male wolf joined the female; he was more assertive and rapidly approached, nipping at a tear in the knee of Windh's pants and at her bare toes that were sticking out of her sandals, but his biting motions were inhibited.

The photographers camped near the beach for 2 days and the wolves remained in the area; the female wolf slept near the photographers' tents. The wolves attempted to steal articles of clothing and camping gear but did not obtain food. Windh reported the female wolf pulled water jugs from beneath a log, playfully pushed them around, and would also crouch in front of her and



then run in a circle and crouch again, as if soliciting a play or chase response. Late on the second day, the pair of wolves became more persistent in their approach. Finally, the male approached directly toward the photographers with his head lowered as the female wolf circled behind. The photographers interpreted that behavior as more threatening than earlier approaches and they backed up the beach side by side. After a few minutes, they were able to drive the wolves away by throwing rocks. The next morning the 2 photographers left the island. Windh later reported that other people in the area told her that the wolves had been hand-fed the year before as pups, and that they had been thoroughly habituated to people during several encounters that involved both feeding and play.

A few days after Jacqueline Windh left Vargas Island, another group of 18 people camped at a nearby campsite. Most slept in tents, but 2 men laid their sleeping bags in the open near a campfire ring. One of the campers near the fire awakened at 1:30 AM to find a wolf sitting on the end of his sleeping bag. The startled camper yelled, but the wolf did not move. Another camper in a nearby tent heard the shouts and discharged a noisemaker that scared the wolf away. The man who had encountered the wolf moved into a tent, but the second camper remained outside and was awakened by a wolf pulling on his sleeping bag about 2:00 AM. The wolf dragged the man a few meters but released its grip and took a step backward when the man awakened and shouted. The wolf then moved forward, attacking the man's upper body that was still encased in the sleeping bag. Again the man shouted, attempted to fend the wolf off with his arms, and began rolling back toward the fire pit, but the wolf attacked the back of the man's head inflicting serious lacerations and lifting part of the victim's scalp. Eventually, fellow campers emerged from their tents and drove the wolf away. The victim estimated the attack lasted for about 5 minutes. He was transported to a hospital in Victoria B.C. where he was treated for injuries to his scalp, back and hands. It required more than 50 stitches to close the wounds in his scalp.

Early the next morning conservation officers killed 2 wolves near the campsite, a young male weighing 37 kg and a young female weighing 29 kg. Both wolves were in good condition and tested negative for rabies. The gastrointestinal tracts of both wolves contained remains of ungulate prey but no evidence of human food or garbage. Reproductive organs in both wolves appeared to be immature, suggesting the animals were approximately 14 months of age at the time of the attack.

The wolves that were killed near the attack site were later identified as the same wolves that had interacted with people in various locations on Vargas Island. Both wolves were obviously food conditioned and thoroughly habituated, but they were also highly socialized with people, as evidenced by their attempts to solicit a play response from Jacqueline Windh. However, despite that high level of socialization and habituation, the wolf acted aggressively when the man in the sleeping bag shouted, waved his arms and began rolling on the ground. The wolf's aggression apparently increased during the incident, possibly as a social response to what it perceived as agonistic behavior by the man (i.e., fearful aggression), or as an exaggerated approach response when it was denied the food handout that had been frequently offered by other campers in a similar context. After the 2 wolves were killed, other wolves continued to visit campsites on nearby Flores Island where they stole shoes, camping gear, and clothing from tents. Those incidents indicated that other members of the wolf pack were similarly conditioned.

Source: M Stern. 2000. Vargas Island wolf attack, unpublished investigative report, British Columbia Ministry of Water, Land and Air Protection, Nanaimo, BC; Jur Bekker, British Columbia Provincial Parks, personal communication; and Dr Jacqueline Windh, wildlife photographer, Tofino, British Columbia, personal communication.



These wolves became highly habituated and food conditioned on Vargas Island, British Columbia after they were repeatedly fed by people. The male (left) subsequently attacked and severely bit a man who was in a sleeping bag at a popular campsite (Case 1). Photo by Jacqueline Windh.

CASE 2 — Haines Junction, Yukon Territory, 2000.

In December a woman was walking her leashed dog near her house about 10 km from Haines Junction, Yukon Territory. The house was at the base of an open hillside near the Alaska Highway. As the woman walked along her driveway she saw a black wolf sitting on the hill watching her from a distance of about 80 m. The woman became concerned when the wolf trotted off the hill directly toward her. She turned and began walking back toward the house, but the wolf came onto the driveway 10 m in front of her, blocking her path. The woman stopped, waved her arms, and began shouting; the wolf continued to look toward her but did not react. The woman then turned and walked approximately 120 m toward the highway with the wolf following a short distance behind. About 30 m from the highway the woman came to a large, car-sized boulder. She moved behind the boulder, but the wolf approached with its head lowered and stretched forward, finally stopping only a few meters away. The wolf steadily focused its eyes on the woman and her dog, but it did not vocalize or snarl. For the next few minutes the woman shouted at the wolf and called out for her husband who was at the house. Finally, she saw a car approaching on the highway; she rushed toward the road and stopped the approaching vehicle. The wolf remained by the boulder until the woman and dog were inside the car, and then it moved away.

The woman later reported she was frightened by the wolf's approach and perceived the wolf's actions as aggressive rather than curious. However, she believed the wolf was probably focused on the dog. The dog had been spayed a few days earlier and that may or may not have contributed to the wolf's actions. Upon inspection of the area after the incident, the local conservation officer discovered a series of wolf trails in the snow behind the woman's house, indicating the wolf had spent considerable time in the area, possibly attracted by the presence of the dog. Throughout that winter other local residents periodically reported seeing a wolf of similar description, but the wolf did not act as if it was food conditioned, nor did it approach other people.

Source: Bob Hayes (retired), Yukon Fish and Wildlife Branch, Haines Junction, Yukon Territory, personal communication.

CASE 3 — Pacific Rim National Park, British Columbia, 1999.

The following 2 incidents illustrate wolf behavior that may become aggressive when people are closely accompanied by dogs. Similar behaviors are described in Cases 2 and 13.

In January 1999, a man was jogging with his 2 dogs near Ucluelet, B.C. when 2 wolves attacked the smaller of the dogs. The man grabbed the dog away from one of the wolves and the wolf lunged toward the man but did not make contact. The wolves then followed the man as he returned to his vehicle.

A similar incident occurred in March when a woman walking her dog encountered a wolf on a trail. The woman immediately picked up her dog and retreated to a nearby parking lot as 3 wolves followed her within 10 m.

Source: Bob Hansen, Pacific Rim National Park Reserve, British Columbia, unpublished Warden Service Occurrence Reports and personal communication.

CASE 4 — Algonquin Provincial Park, Ontario, 1996.

On 18 August a family of 5 including children ages 3, 7, and 12 were sleeping outside without a tent on Tom Thomson Lake. About 2:00 AM a wolf bit into the face of the sleeping 12-year-old and dragged him about 2 m before being driven away by the boy's father. The boy had a broken nose and 6 serious lacerations in his lower face, one of which required reconstructive surgery.

Later that day the same wolf approached a woman who was standing in shallow water on the edge of the lake. The wolf jumped toward the woman 4 times. The woman reported she thought the wolf was more playful than aggressive, and it retreated each time she told it to "get." When 2 other people arrived, the wolf moved away a few meters but did not leave the area.

Three days after the boy was bitten, the wolf approached 2 women at their campsite late in the evening. The women quickly left in their canoe and when they returned several hours later, they discovered the wolf had shredded a canvas pack and had also chewed and shredded contents of their tent. The apparently healthy male wolf was eventually shot on 23 August at the same campsite where the boy had been dragged in his sleeping bag. The wolf's stomach contained approximately 1 kg of meat, beans, carrots, string, and labels indicating that it had scavenged human garbage.

What seemed to be the same wolf had been seen repeatedly in the general area of the lake during the previous 12 days. Other campers reported the wolf seized articles of clothing or camping gear but did not seem aggressive toward people. In one encounter, the wolf pulled a pack containing clothes that was used as a pillow from under the head of a man sleeping outside his tent. The man awoke, yelled, and the wolf dropped the pack but returned and tried to dart in and take it when the man bent to pick it up. The campers had left a length of salami lying on their canoe, but the wolf seemed uninterested in food. Later, the campers found 2 tennis shoes in the brush that the wolf had stolen and chewed.

Although serious injury resulted, park officials speculated that the attack on the sleeping boy was probably not an act of predation. Instead, they speculated that the wolf's obsession with chewing and tearing human clothing and camping gear led to the wolf's pulling on an occupied sleeping bag. The pattern of rips in the bag suggested the wolf initially attempted to pull the bag by the fabric, and that it ripped with the weight of the boy. The boy's injuries were possibly inflicted when the wolf seized the boy's head in an attempt to pull the weight of the boy and the bag together. However, the existence of multiple severe lacerations indicates the boy was repeatedly bitten and suggests more was involved than a simple pull and bite. Possibly, as the



boy was dragged and awakened by the pain of the initial bite, his movements elicited an agonistic response in the wolf, or the wolf repeatedly regripped with its jaws to pull the boy's weight. Regardless, the wolf's actions were clearly aggressive, although its initial attraction to the campground may not have involved aggressive intent. In many aspects this case is strikingly similar to Case 1.

The obsession with human clothing and gear is a common theme among highly habituated wolves. Even though this wolf obviously obtained human food, it apparently never sought food in the presence of people and ignored food when easily available in the open. However, the wolf was clearly habituated to people and readily approached occupied campsites.

Source: Algonquin Provincial Park 1997.

CASE 5 — Ellsmere Island, Nunavut, 1995.

In mid-June 1995 Wildlife Officer Tabitha Mullin was standing near the front of her living quarters at the Park Warden's Tanquary base on Ellsmere Island, Nunavut. She watched and photographed a pack of 11 wolves as they approached the camp. Upon seeing her, the wolves approached to within 10 m then stopped. A single animal continued forward and circled around her once at close range. Concerned about the animal's behavior, Officer Mullin moved toward the building, only 5 paces away. As she turned to reach for the door handle, the circling wolf stepped toward her and grabbed her sleeve near her free hand. Officer Mullin tried to pull away, but the wolf held on and for a few seconds Mullin found herself in a "tug of war." Alarmed, she let out a short scream and the wolf released its grip. Officer Mullin entered the building and the wolves left the area.

Officer Mullin had not fed the wolves, nor did she have food with her. Garbage from the Tanquary camp was stored inside and was burned each day. Officer Mullin had no reason to believe wolves obtained food from the Warden's camp, but she believed that photographers occasionally fed wolves to enhance photographic opportunities, despite official warnings against such activity. In addition, she reported that wolves ranging outside of the park near the military and weather installations of Alert and Eureka commonly obtained food from open garbage dumps and also were occasionally fed directly by people near Eureka. The behavior of the wolves that approached Officer Mullin strongly suggests they were food conditioned to approach people. The wolf grasping Mullin's sleeve was likely an exaggerated approach response similar to those described in other cases where wolves failed to receive expected food handouts (Cases 1, 9, 10, 11 and 12).

Source: Tabitha Mullin, Nunavut Department of Sustainable Development, Resolute Bay, Nunavut, personal communication.

CASE 6 — Algonquin Provincial Park, Ontario, 1994.

During summer 1994 numerous campers reported encounters with a fearless wolf in the Opeongo-Lavieille area of Algonquin Park. The wolf was reported to be uninterested in food but growled at people in an aggressive manner, tore up camping gear, and eventually bit 2 people. The wolf acted aggressively toward individuals but not when confronted by 2 or more people.

The first biting incident occurred on 3 August when a 9-year-old boy, returning from the latrine to his campsite, confronted the wolf alone about 7:30 PM. The boy ran and the wolf chased, grabbing the boy in the side and inflicting a single puncture wound. The boy's father responded to the child's shout and harassed the wolf away, but the wolf stopped within 2 m and



stood watching the boy. Then on 1 September a woman emerging from her tent turned back when her companion called to her from inside. As she turned, the wolf approached and bit into the back of her leg, inflicting a single puncture wound. The woman crawled inside the tent and the wolf began tearing into camping gear stored at the back of the tent. The wolf was eventually killed; it tested negative for rabies.

Growling at people suggests a defensive agonistic behavior, but the 2 biting incidents appear much more assertive and were initiated by the wolf without aggressive provocation by the people. However, in both cases, the wolf bit after the people had turned and were moving away from the wolf at close range. The behavior of chewing items of human clothing or ripping camping gear is documented frequently from various locations where wolves became habituated to people (Cases 1, 4, 52, 53, 54, and 58).

Source: Algonquin Provincial Park 1997.

CASE 7 — Great Falls, Manitoba, ca 1990.

In the early 1990s Stuart Jansson of Great Falls, Manitoba was setting muskrat traps along a lakeshore in southeastern Manitoba during late November. Just before dark he was returning to his vehicle and found where a wolf had recently killed a deer on the ice. Tracks and drag marks indicated the wolf had moved the deer into a nearby stand of balsam fir. Jansson followed the tracks, but shortly after entering the trees he was stopped by a loud growl that emanated from behind tree boughs only 5 m away. There was insufficient light to see, and Jansson immediately retraced his steps into the open. The following day he returned to the same site and found the area completely packed with the tracks of 4–5 wolves. Scattered hair and a piece of the lower jaw were all that remained of the deer. Apparently, the trapper had walked directly up to the fresh kill the previous night, and a wolf guarding the kill, rather than retreating, emitted the growl as a threat.

Biologists commonly visit wolf kill sites during field studies, but wolves rarely attempt to defend the kill. The aggressive threat displayed in this case may be related to both the freshness of the kill and the time of day.

Source: Stuart Jansson, Great Falls, Manitoba, personal communication.

CASE 8 — Algonquin Provincial Park, Ontario, 1987.

In summer 1987 a wolf briefly bit and inflicted a minor abrasion on the arm of a 16-year-old girl after the girl aimed a flashlight into the wolf's eyes at close range. The incident occurred at a campground and park personnel interpreted the behavior as a “disciplinary” or “annoyance” reaction similar to behavior a wolf would exhibit with another wolf. The wolf was killed and tested negative for rabies.

This incident was the first of 5 in Algonquin Park between 1987 and 1998 in which fearless wolves bit people. In all of the cases, the offending wolves had established regular patterns of fearless behavior for weeks before the biting incidents occurred.

Source: Algonquin Provincial Park 1997.

CASE 9 — Key Lake Mine, Saskatchewan, 1984.

In the mid-1980s wolves fed from open garbage pits near a uranium mine in northern Saskatchewan. Trapping and hunting of wolves was prohibited near the mine and wolves became

food-conditioned and habituated to humans. A wolf–human encounter from 1984 clearly illustrates behavior of a food-conditioned wolf.

A workman was walking along a mine site road carrying his lunch bag in one hand. A wolf approached the man from behind, and in an attempt to get the lunch bag, the wolf grabbed the man's sleeve. The man shoved the lunch bag into the wolf's face causing the wolf to release its grip but not to retreat. With the wolf nearby, the man climbed onto a culvert and remained there until a passing truck stopped. The wolf then moved off and the man hurried to the safety of the vehicle.

Source: Tim Trottier, Saskatchewan Environment and Resource Management, La Ronge, Saskatchewan, personal communication.

CASE 10 — 5-Mile Camp, Alaska, 1975.

This case and the 2 that follow, describe 3 of the approximately 10 incidents (Follmann et al. 1980) in which wolves inflicted minor bites on workers during the construction of the trans-Alaska pipeline. During the mid-1970s wolves commonly received food handouts from construction workers and truck drivers along the pipeline. Those practices contributed to habituation and food-conditioned approaches.

A construction worker had been feeding pieces of sausage to a wolf. As the man placed a piece of meat into his own mouth the wolf leaped toward the man's face, apparently in an attempt to obtain the food. The wolf's teeth closed around the man's nose and mouth, causing superficial abrasions. This wolf was thought to be involved in another biting incident involving a different worker. The wolf tested negative for rabies.

Source: Alaska State Virology Laboratory, Fairbanks, Alaska, unpublished files 1971–2000; and Don Ritter, Alaska State Virology Laboratory, personal communication.

CASE 11 — Prudhoe Bay, Alaska, 1975.

A man was walking at the pump station site on the trans-Alaska pipeline when a wolf rapidly approached and bit him. Both of the man's hands were inside his coat pocket, but the wolf grabbed the man's left hand through the coat, inflicting a minor abrasion. The wolf tested negative for rabies.

Source: Alaska State Virology Laboratory, Fairbanks, Alaska, unpublished files 1971–2000; and Don Ritter, Alaska State Virology Laboratory, personal communication.

CASE 12 — Prospect Creek, Alaska, 1974.

In what was described as an unprovoked attack at a pipeline construction camp, a wolf bit a worker on the right forearm causing dermal bruises but no apparent breaks in the skin. The wolf was killed and tested negative for rabies.

Source: Alaska State Virology Laboratory, Fairbanks, Alaska, unpublished files 1971–2000; and Don Ritter, Alaska State Virology Laboratory, personal communication.

CASE 13 — Superior National Forest, Minnesota, 1970.

Two loggers, accompanied by their dog, were cutting logs in northern Minnesota during December when they saw 2 wolves chasing a deer. When the deer stopped nearby, the men waved their arms and frightened the wolves away, but one of the wolves soon returned and



attacked the dog that was standing near the men. The wolf eventually backed off and one of the men picked up the dog. Then the second wolf charged back and leaped at the dog, hooking a canine tooth in the man's wool jacket, and tearing a 15 cm rip. The wolf then retreated.

The men reported the wolves' aggression was focused on the dog, rather than at themselves, but in similar cases wolves have acted aggressively toward people that were accompanied by dogs (Cases 2, 3, 14, 23, and 25).

Source: Mech 1990.

CASE 14 — Coppermine River, Northwest Territories, 1915.

Early on the morning of 10 February, a female wolf entered the camp of the Canadian Arctic Expedition and began fighting with sled dogs that were staked beside the expedition's tents. Five men came out of the tents and attempted to drive the wolf away. The owner of the dog team ran toward the wolf trying to scare it, but the wolf charged him. The man flapped a shirt at the wolf and it retreated behind a dog sled. A second man, Diamond Jenness, threw a rock at the wolf, whereupon the wolf dodged and ran at the man attempting to bite his leg. Jenness grabbed the wolf by the back of the neck, but the wolf turned its head and bit into the man's forearm. Jenness attempted to choke the wolf with his other hand, and the wolf released its grip then moved a short distance away where it was immediately shot by another member of the party.

Jenness (1985) speculated that the wolf first entered camp because it was, "in heat ...and was seeking a mate among the sled dogs." Further, he speculated that the attempts of the men to drive it away provoked the attack.

Although the wolf may have been in a state of proestrus, it was probably not in breeding condition. Wolves in northern Canada and Alaska normally whelp between late April and mid-May. Therefore breeding takes place in late February to mid-March and the Jenness attack occurred approximately 2–4 weeks before the breeding season. This incident occurred in an area where rabies is enzootic in arctic foxes (*Alopex lagopus*); therefore, the wolf may have been rabid. However, the wolf was not tested for rabies, and despite a serious wound to his arm that bled profusely and exposed underlying muscle tissue, Jenness recovered from the bite without ill effect. In addition, Jenness (1985) rejected rabies as a cause of the attack because one of the members of the expedition was a prominent mammalogist, Dr Rudolph Anderson, who presumably would have recognized and noted any behaviors indicating the wolf was rabid. Nevertheless, in the early stages of rabies, symptoms of the disease may not be readily apparent and being bitten by a rabid wolf does not always result in the victim contracting the disease (Cases 47 and 48). In addition, the wolf's persistent and repeated attempts to attack, after being driven away, is a characteristic often seen in rabid wolves (Cases 40–51)

Source: Jenness 1985.

Predation

Many cases reviewed in this case history contain some behavioral actions that could be interpreted as predaceous, but only the following 3 appear to be clear cases of predation. All 3 involved small children and 2 involved wolves that were habituated to people. In each case multiple elements of predation are apparent, including orientation toward the prey, stalking, chasing, biting, and carrying.

CASE 15 — Icy Bay, Alaska, 2000.

In a remote logging camp, 2 boys ages 6 and 9 were playing behind the camp school on the edge of the surrounding forest on 26 April. A wolf emerged from the trees within 3 m of the boys in a crouched position, showing its teeth. One of the boys reported the wolf growled. The boys initially did not move, but when the wolf stepped closer the boys ran across an open gravel pad toward their homes. The younger boy was wearing oversized boots and was only able to stumble forward in a half run, eventually falling to the ground after traveling about 40 m. Once the boy fell, the wolf attacked, biting the boy in the buttocks and lower back, inflicting 19 lacerations and puncture wounds. When rescuers arrived seconds later throwing rocks and shouting, the wolf picked the boy up and attempted to carry and then drag him into the trees. Eventually, the wolf was separated from the boy when the wolf dropped the boy to regrip and a dog (male Labrador retriever) intervened between the wolf and the boy.

About 10 minutes later the father of the older boy entered the forest and blew on a predator call. The wolf emerged from the trees onto a trail about 80 m away and the man fired a single shot from his rifle killing the wolf. The wolf tested negative for rabies and distemper. A necropsy of the carcass indicated the wolf was in good condition with a normal amount of interior body fat and no apparent physical injuries; however, the wolf was small relative to other wolves in the area. The entire carcass was not weighed but its weight was estimated to be 35 kg. The boy was transported to Yakutat and later to Anchorage for treatment. He recovered from his injuries.

The wolf, a 5-year-old male, had been radiocollared 4 years earlier approximately 160 km west of the attack site and was commonly seen near the Icy Bay logging camp beginning in 1999. In April 1999 the wolf was sighted at a road turnout where a log truck driver had been seen throwing food to an uncollared wolf the previous day. Therefore, it seems likely the collared wolf had received food from people at the same site, but based on the investigation following the attack, there was no evidence the wolf had been fed or had obtained food from people after April 1999.

When seen by camp residents during summer 1999, the wolf was often standing or moving along the edge of the camp perimeter and would retreat into the forest when approached. The wolf appeared to use a natural travel route on the edge of the camp to transition between inland foraging areas and the nearby beach. During April 2000, in the last days prior to the attack, the wolf had shown increasingly fearless behavior, occasionally traveling through the camp and ignoring camp residents. However, the wolf had never approached or acted aggressively toward people before its attack on the boy.

Source: Alaska Department of Public Safety 2000; Marc Cloward, Alaska Department of Public Safety, personal communication; Phil Mooney, Alaska Department of Fish and Game, personal communication.

CASE 16 — Algonquin Provincial Park, 1998.

In June visitors reported frequent sightings of a fearless wolf near Two Lakes in Algonquin Park. Four wildlife students interacted with the wolf for over 40 minutes and they described the wolf as, "...cautious and curious, never frightened. It seemed to genuinely be enjoying its contact with us, as a dog might." The students described the wolf as imitating their behavior, slowly approaching within a few meters then jumping away before starting all over again.

Possibly, the wolf scavenged food from camping and picnic areas, but park officials found no evidence that the wolf had been fed, or that people had seen the wolf eating human foods. Throughout the summer the wolf was sighted almost daily, probably by thousands of people.

Campers, who were thrilled to see a wild wolf so close, reported the wolf was unconcerned by the presence of people. However, the wolf was aggressive toward dogs on at least 4 occasions.

In late September the wolf's behavior suddenly changed when it stalked a man and woman walking with their 4-year-old daughter; the wolf appeared to be intent on approaching the child. The parents blocked the wolf's attempts to reach the child and sprayed it with pepper spray but could not discourage the wolf's approach. When the child and her mother finally found refuge in a nearby trailer, the wolf lost interest and left.

Two days later the wolf emerged from the brush and walked into the Two Rivers campground where another couple with 2 children were packing to leave. One of the children, a 19-month-old boy, was sitting on the ground 6 m from his father. The wolf grabbed the small boy by the rib cage and tossed him about 1 m; the mother immediately picked the child off the ground and climbed atop a picnic table. The father and other campers confronted the wolf and drove it away. The boy was treated for several puncture wounds on his chest and back. Park officials concluded the attack appeared to be a case of attempted predation.

The male wolf was found and killed the same day. Rabies tests were negative, and in all other respects the wolf appeared normal. The wolf had a DNA profile typical of local wolves and therefore, was probably not a captive or hybrid wolf.

Wolves bit people in 4 other instances in Algonquin Park between 1987 and 1996. However, this fifth case represents the only case where elements of predation were clearly present. In all 5 cases the wolves exhibited habituated behavior toward people prior to inflicting bites. At that time, park officials estimated that roughly 12 wolves had exhibited noteworthy, habituated behavior since the early 1970s; 4 of those wolves eventually were involved in biting incidents.

Source: Algonquin Provincial Park 1999.

CASE 17 — Koyukuk River, Alaska, ca 1900.

In his book *Shadows on the Koyukuk*, Sydney Huntington tells the story of David Tobuk, a river captain who ran the steamboat *Teddy H* along the Koyukuk River in the early 1920s. As a toddler Tobuk was playing along the edge of the Koyukuk River when a wolf ran from the brush and grabbed him by the head and carried him off. A man who witnessed the attack took a rifle and gave chase, shooting the wolf and saving the child. Tobuk carried a large scar on his face for the rest of his life suggesting the wolf severely bit into the young boy's head.

This case which occurred about 1900, could be considered to be out of context relative to current wolf management concerns. However, the remote and somewhat primitive conditions under which this event occurred are similar to conditions in remote areas of Alaska and Canada today where rural residents are surrounded by habitat and wildlife conditions that remain largely unaffected by man.

Source: Huntington 1993.

Prey Testing-Agonistic Charges

In cases in which wolves have made rapid, apparently aggressive, charges or leaps toward people in remote areas, it is difficult to identify the motivation for such behavior. It may be the result of wolves misidentifying people as prey, the actions of naïve wolves testing unfamiliar prey, or it may be an agonistic response in which, for whatever reason, wolves feel compelled to aggressively drive people away. In the following 8 cases, wolves displayed aggressive approach

behavior and the people involved defended themselves at close range. None of the wolves in these cases was known to be food conditioned, habituated, or rabid.

CASE 18 — Joshua Green River, Alaska, 1997.

In October 1997 big game guide and commercial pilot Andy Greenblatt was guiding 2 bear hunters near the western tip of the Alaska Peninsula, a remote area where wolves rarely encounter people. The 3 men were sitting on a small knoll a few hundred yards from their campsite when Greenblatt decided to return to camp to retrieve his canteen. The guide was in open country and walking along a well-worn game trail when he sighted a trotting wolf 75 m away, angling toward the trail. When the wolf intersected the trail it looked directly at Greenblatt, and then with its ears up, broke into a run. The man yelled and waved his arms, the wolf's ears laid back for a few steps, but the animal continued to run and to stare directly at Greenblatt's face. As the wolf approached at a full run Greenblatt fell to one knee, raised his rifle, and fired when the wolf was less than 1 m from the end of the barrel. Although the bullet passed over the wolf's head, the muzzle blast from the large caliber rifle (.338 win) knocked the wolf off line. Greenblatt jumped to his feet and swung his rifle, striking the wolf in the head with the rifle butt. The wolf staggered off a few feet, briefly glanced back, and then trotted away across the tundra and out of sight. Greenblatt described the wolf as "relatively small," possibly a yearling.

Greenblatt's first assumption was that the wolf was rabid because he assumed healthy wolves never approached people and because he was in an area where rabies was enzootic in red foxes (*Vulpes vulpes*). However, the wolf showed no sign of physical disability and immediately abandoned the encounter and fled once it was struck by the rifle. In cases where rabies is diagnosed (Cases 40–51) wolves often approach repeatedly, even after being struck or harassed away.

Source: Andy Greenblatt, Wright Air Service, personal communication.

CASE 19 — Whale Cove, Northwest Territories, 1985.

On 13 December biologists Robert Mulders and Mark Williams were capturing barren-ground caribou about 65 km southwest of Whale Cove, a small community on the west coast of Hudson Bay in what is now the territory of Nunavut. At 1:40 PM they captured an adult female caribou with a skid-mounted net gun from a Bell 206B helicopter and landed to process the animal. As they knelt over the netted caribou, Mulders noticed an approaching wolf at a distance of 200 m. The helicopter engine was still running, but the wolf ran within 10 m of the spinning tail rotor as it approached the men. Both men stood, shouted and stepped toward the wolf waving their arms. As Mulders took several strides toward the wolf, it moved to their right in a low stalking crouch. When the men turned and faced the wolf, it circled around further to the right, as if to outflank them. Mulders, who was closest to the wolf, maintained direct eye contact and took a step back and to the right as the wolf came within a few meters. The wolf quickly moved in and grabbed Mulder's left leg, just below the shin. Mulders leaned over and struck the wolf in the head with his bare fist, but the wolf maintained a firm grip for about 10–15 seconds. Williams then stepped forward and struck the wolf on the head with a caribou radio collar, knocking the wolf unconscious. Mulders subsequently struck the wolf twice on the top of the skull with the collar and punctured the wolf's chest cavity with a knife. The wolf's bite caused a small 4 cm tear in Mulders' wind-pants and a small lesion to his shin.

External examination of the carcass indicated that this female pup (about 7 mo of age) was in reasonably good body condition and weighed an estimated 22 kg. Traces of dried blood on its right shoulder suggested it might have fed within the previous few days. The head was sent to a lab for rabies testing. Rather than risk possible rabies contamination, the remainder of the carcass was burned without any attempt at necropsy. The wolf tested negative for rabies.

The men believed the wolf intended to prey upon the caribou and had probably not previously encountered people. Given its age, the wolf was probably inexperienced in catching and killing large prey. It is possible that the wolf had witnessed the caribou capture sequence and was visually stimulated, but it was unusual that the wolf was not deterred by the noise of the helicopter's turbine engine. Given the wind direction, the wolf would have scented the men and caribou only at close range. Williams speculated that Mulder's movement back and to the right as the wolf was circling may have elicited an aggressive response by the wolf. However, Mulder's interpretation was slightly different. He described the final movement by the wolf as follows: "The wolf had come in close, within several (perhaps 4) meters then moved around in a wider circle to the right, in a low crouched posture. I maintained steady eye contact with the animal over the entire period, and I believe the wolf was already determined to get in close to me. I'm not convinced that my shifting back and turning to the right by one or two paces is what actually provoked the wolf to run in and grab my leg. It was probably already intent on dealing with me prior to my shifting to the right. Obviously, it's difficult to assess what the wolf's motives were."

Source: Robert Mulders, Wildlife and Fisheries Division, NWT Ministry of Resources, Wildlife and Economic Development, Yellowknife, Northwest Territories, personal communication; and Mark Williams, British Columbia Ministry of Water, Land and Air Protection, Smithers British Columbia, personal communication.



Biologists Robert Mulders and Mark Williams process a live-captured caribou near Whale Cove, Nunavut. A few minutes before this photo was taken, the wolf in the foreground approached and bit Mulders in the leg. The wolf was knocked unconscious with the caribou radio collar and then killed with a knife. The wolf tested negative for rabies (Case 19). Photo courtesy of Robert Mulders.