

BROWN BEAR (*URSUS ARCTOS PISCATOR*) REACTION TO HUMANS ON KAMCHATKA

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Abstract: I documented 270 personal encounters with brown bears (*Ursus arctos piscator*) when the latter detected my presence. Bear reactions were avoidance (70%), determine human and move away (14%), indifference (12%), threat demonstration (3%), and attack (1%). I also analyzed the causes and circumstances of 15 bear attacks on humans.

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The brown bear is abundant in the Kamchatka region of Russia; the population is estimated at 8,000-10,000. Agricultural and countryside housing development, human population growth, road construction, logging, mining, and recreation have increased the number of bear-human contacts in recent years.

STUDY AREA

The study area included the South Kamchatka Refuge and adjacent areas between 156°30' and 158° east longitude and between 51°10' and 52° north latitude. The area is mountainous and contains 4 active volcanoes. Terrain features include mountain ridges 915-1,370 m high, wide river valleys, tundra, and marsh flatlands.

Habitat composition was:

- alder and pine brush between 0-730 m elevation (50%).
- seaside 18 m and mountain tundra zone 730-1,100 m (15%).
- stone-birch (*Betula middendorffi*) forest in the lower mountain zone, 275-365 m (10%).
- stone and volcano land above 1,100 m (10%).
- seaside meadow and marsh zone (10%).
- willow forest on the river valleys (5%).

The climate is maritime. The winter is relatively warm, and very windy, with snow cover 6 to 9 months depending on elevation. The average January temperature is about 8°C. The summer is cold, damp, and rainy. The average temperature in mid-August is about 10°C.

METHODS

I recorded about 1,250 observations of Kamchatka brown bears from the ground or boat from 1985 to 1991. In 270 cases, I was detected by the bear. For each observation I recorded date, time, place, size, color, behavior, diet, distance to observer, and reaction of the bear. For some bears here, humans may have

been a rare sight. The bear-human conflicts and their causes have been described on the basis of different people's experiences, including the author's.

RESULTS AND DISCUSSION

The Kamchatka brown bear is one of the largest bears in Russia and usually has a peaceful disposition. This is because of a large food supply and low human-population density. When one kind of food is not abundant, bears will change their diet. Years of low food production are very rare. Bear-human encounters occur very seldom.

The brown bear's reaction to humans in South Kamchatka Refuge by author's observations in 270 cases were:

- avoidance (frightened huff-huff and run away, run a short distance and then walk away slowly, just walk away slowly, or disappear silently, 190 (70%).
- studying of humans, approach, identify and then walk away, 38 (14%).
- indifference, 34 (12%).
- threat demonstration, 8 (3%).
- attack of humans, 2 (1%).

Most of the time the Kamchatka brown bears avoid humans. However if bear-human encounters occur in dense brush, or if the human is upwind the contact distance may only be 15-20 m. In this case, bears will make many huffing noises, stamp their feet, and break brush while running away. Sometimes bears surprise humans by silently disappearing.

If bear-human encounters occur within 30-50 m, bears will often demonstrate fright, run short distances, stand on hind legs, and then walk away slowly.

At 50-80 m or more, disturbed bears will walk away slowly. If the human is upwind bear sometimes will try to smell the person by circling. Large older bears will ignore human's vocalization, odor, and movement.

In sudden encounters with humans during salmon spawning, bears rarely demonstrate threatening behavior

(lay ears back, raise hackles, make a sibilant noise, make short jumps towards humans, click teeth).

In 2 cases I was attacked by bears. Both instances were on a river bank during spawning period in September 1985 and September 1988. In the first case, the attack reason is unknown. An aggressive bear jumped out of the brush at my companion and myself within a very short distance (2 m). Yelling loudly caused the bear to turn and run away. It is possible the bear didn't detect us within a short distance due to the noise made by the rain and river.

In the second case, a female was defending young. My companion and I disturbed her cub. The cub ran away, but the mother jumped out of the brush, knocking me down, destroying my pack on my back, and then walking away slowly. I played dead; maybe it saved my life. Neither I, my companion, nor the bears were killed or injured in either incident.

I know circumstances of 13 bear attacks on humans. Five humans were killed, three were injured. In these cases bears were shot or scared away. The incident causes classification are:

- a sudden encounter in short distance (20 m and less), 4 cases.
- a harassed bear injured by hunters, 3 cases.
- an older or sick bear pursuing humans, 2 cases.
- a female defending young, 2 cases.
- a bear pursuing hunting dog and attacking hunter, 1 case.
- in spring, a bear entered a village and killed a man, 1 case.

The recreation, agricultural development, geologic research, mining, and road construction are increasing in this area. Because of this, it is important that humans understand bears and keep garbage away from them to create a safe living condition for both humans and bears.

Since 1991, the sale of bear parts has quickly grown. The trade with Japan, China, and Southeast Asia is increasing where bear parts are in demand. The difference in currency rates between Russia and these Asian countries makes trading bear parts very profitable. This is a reason for illegal bear hunting that will increase very soon, especially in the time of hard living conditions for people in Russia.

Today Russia's local and federal governments do not have enough money and managers to control this situation. There are only 3 researchers studying brown bears at this time. The researchers do not have enough money, equipment, and means of transportation. They have only a great desire to study and to conserve an excellent animal—the Kamchatka brown bear. At the same time the hunting companies are developing brown bear hunts for foreigners. One bear license and service cost is \$6,000-7,000 US. Money is offered to hunting companies to improve the economy, but nothing is contributed for research or the conservation program. The bear population has been hunted without number, sex, and age limits being determined by bear specialists. I have a great deal of concern for the future of the Kamchatka brown bear. It could very well become a threatened species.

CONCLUSION

Kamchatka brown bears are still numerous. It is usually a peaceful animal. Seventy percent of the time it avoids humans, and only 1% of bear-human contacts end in attack. The probability of a bear attack is more likely in a sudden encounter, during a hunt, or when a female is defending young.

A new problem for Kamchatka is to conserve brown bears in the time of political, economic, and social changes.