Black Bears

IN BRITISH COLUMBIA

Ecology, Conservation and Management

BRITISH COLUMBIA

Ministry of Environment, Lands and Parks

Ten thousand-year-old skeletons in caves on Vancouver Island indicate that black bears arrived soon after glaciation.

INTRODUCTION

The black bear (*Ursus americanus*) is the smallest and most widely distributed member of the bear family found in North America. In British Columbia, black bears inhabit all areas of the province except most urban cores. They are relatively numerous and tolerant of human activities and as a result are the most commonly encountered large carnivore in the province.

Jared Hobbs

Black bears are not always black, and this variation is most apparent in British Columbia. Other colour phases that occur in British Columbia include cinnamon, brown, and blonde. A white-coloured morph, called Kermode or Spirit Bear, is reported most frequently on the north-central coast. The blue phase, or "glacier" bear, is sometimes seen in the extreme northwest corner of the province.

EVOLUTION AND APPEARANCE

The bear family, Ursidae, contains eight species on four continents and includes the giant panda. Three species of bears – grizzly (brown), polar, and black – occur in North America, the latter nowhere else. Other species include the spectacled bear in South America, and the Asiatic black bear, sun bear, and sloth bear in Asia.

Only 18,000 years ago, British Columbia was completely covered with ice and black bears were relegated to at least two refugia: one in what is now the United States and one near the Queen Charlotte Islands. Following glacial melting, bears gradually spread back north and also re-colonised coastal British Columbia from near the Queen Charlotte Islands. Ten thousand-year-old skeletons in caves on Vancouver Island indicate that black bears arrived soon after glaciation and were larger than modern-day black bears. Scientists believe that bears on Vancouver Island and the Queen Charlottes have retained more of their ice-age characteristics than mainland bears because of a long period of isolation from continental populations.

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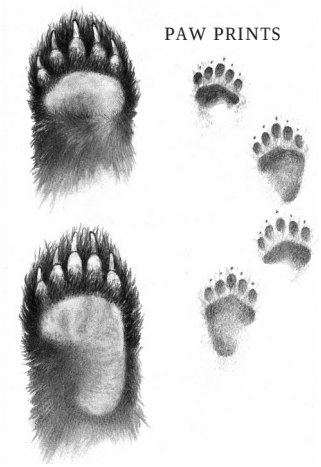
SUBSPECIES (RACE)	RANGE AND PHYSICAL CHARACTERISTICS
Ursus americanus cinnamomum	Most of British Columbia east of the Coast Range. Is generally larger, with narrower teeth than *U. a. altifrontalis*. The brown colour phase is common.
Ursus americanus altifrontalis	Coastal race ranging from Oregon to Bella Coola, western Tweedsmuir Provincial Park, east into Manning Provincial Park and Lillooet. Primarily black-phase bears.
Ursus americanus vancouveri	Insular race restricted to Vancouver Island and larger adjacent islands; large like *U. a. carlottae* but has smaller teeth. Primarily black- phase bears.
Ursus americanus carlottae	Insular race restricted to the Queen Charlottes; massive skull, large molars; only black phase.
Ursus americanus kermodei	Restricted to the coastal mainland of British Columbia from Burke Channel to the Nass River and most adjacent islands. Includes white and black colour phases. The white colour phase is most common on Princess Royal and Gribbel Islands (about 10% of bears) but is seen occasionally throughout the range of Kermodei.
Ursus americanus emmonsii	Limited to the extreme north-west of the province; primarily found in Tatshenshini Provincial Park and adjacent Alaska; includes the rare glacier or "blue" bear.

the isolation of some bear populations on our islands. Although the differences are not great, they illustrate biodiversity in the making.

Black bears have a chunky body, small black eyes, a broad head, rounded ears, a short tail, and a fine, long pelage. Typically, they have uniformly black fur, except for a tan muzzle and a white V on the chest. The feet are flat-soled (plantigrade), with naked pads and five toes with relatively short curved claws. Adult size, and particularly weight, varies greatly according to sex, season, food supply, and geographic area. Adult males measure about 60 to 90 cm in shoulder height and 130 to 190 cm in length and weigh 80 to 300 kg. Females are smaller, weighing 40 to 140 kg.

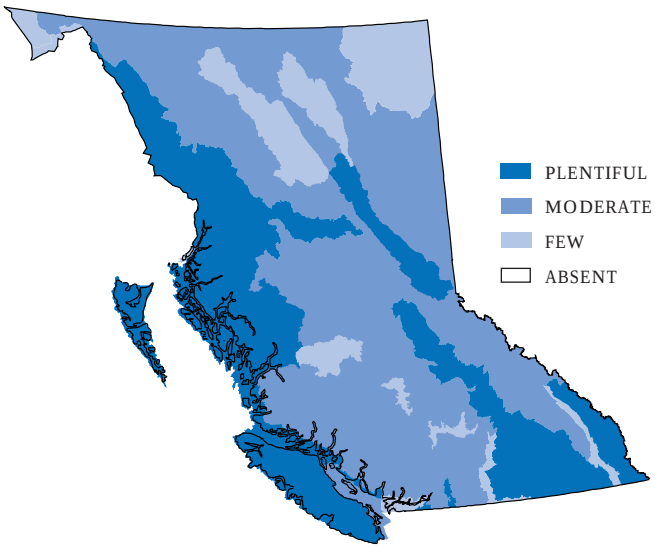


Black and grizzly bears sometimes look similar, but grizzlies are usually larger and are seldom completely black. Grizzlies have a prominent shoulder hump, which is lacking in black bears, and a dish-shaped face instead of the straight facial profile of the black. Grizzlies have much longer claws that are adapted for digging, whereas the shorter, curved claws of black bears are well suited for tree climbing.

DISTRIBUTION AND ABUNDANCE

Black bears, estimated to number well over half a million, range over a vast area, from the Arctic tree-line south to Florida and northern Mexico, but are sparse or absent in large parts of the United States. In Canada they occur from coastal British Columbia to Newfoundland.

One of the most widely distributed mammals in British Columbia, the black bear is found in forestland across the province. Its natural range includes Vancouver Island and most coastal islands to the north, including the Queen Charlottes (Haida Gwaii). Although generally absent from alpine, grassland, and heavily settled landscapes, black bears often occur close to the fringes of communities and sometimes wander into them.



The current estimate of the black bear population in British Columbia is 120,000–160,000. This is about one quarter of all black bears in Canada. Bear numbers are higher in wet climatic zones, where vegetation is more plentiful, than in dry regions, and coastal bear densities are higher because of access to spawning salmon. Although bear numbers vary from year to year and habitats available to them are slowly shrinking due to land development, the species is not currently rare, threatened, or endangered in British Columbia.

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LIFE HISTORY

Black bears have low reproductive rates compared to many other mammals. Females usually don't reach sexual maturity until four years of age and breed only every two to three years after that. In areas of abundant food, they may reach maturity sooner. Where food is scarce females might not bear their first litter until they are six or seven years old. Although some males can breed when they are one and a half years old, in most populations males don't mature sexually until age five or six. Black bears can live for 25 to 30 years in captivity, but their life-span in the wild is usually much shorter.

Black bears in British Columbia usually mate from early June to mid-July. However, in a phenomenon called delayed implantation, the embryo does not implant in the uterus and begin developing until October or November. Cubs are born in January or February, during hibernation. Black bears usually have two cubs, but litter sizes vary from one to five. At birth, cubs are hairless, blind, and weigh about 400 g. They nurse while the mother continues hibernating and weigh 3 to 5 kg when they leave the den in spring.

Cubs stay with their mother their entire first year and sometimes longer. During that time, she protects them and teaches them how to survive. They are weaned between July and September and hibernate with their mother the first winter. By the middle or

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end of their second spring, they are on their own. The mother drives the cubs away when she is ready to breed again. At first they stay within her home range, and the mother may allow female cubs to set up home ranges that overlap hers. Male cubs usually stay within their mother's home range for only a short time and then disperse to find a home range in a new area.

Hibernation is an important survival strategy for bears in regions such as British Columbia where their main foods – green vegetation, berries, salmon, and insects – are not available in winter. Black bears typically hibernate for three to five months on the south coast and for longer periods (probably five to seven months) in the interior and the north. Females, particularly the pregnant ones, hibernate longer than males.

In coastal British Columbia, almost all black bear dens are in or under large-diameter trees, snags, logs, or stumps and may be up to 25 m above the ground. Bears in the interior also use tree cavities, but if big trees are not available, the bears often den in rock cavities, under brush piles, or in holes dug into the ground.

When cold weather arrives, bears become increasingly lethargic and enter their dens. During hibernation their heart rate drops from about 50 beats per minute to around 10. Oxygen intake decreases by half, and body temperature drops by about 3°C. In a most remarkable biochemical feat, hibernating black bears do not eat, drink, urinate, or defecate. They have a unique process for recycling metabolic wastes into nutrients. Black bears may lose up to a quarter of their body weight during hibernation.

With only about six months to build up fat reserves for hibernation, black bears must eat a lot of food. They are particularly attracted to foods that are abundant and high in protein and energy and that they can get with little energy expenditure. Although this strategy helps them survive, it can also bring them into contact with human beings.

ECOLOGICAL RELATIONSHIPS

The area that a specific bear uses throughout the year for food, water, breeding, and shelter is called its home range. Home ranges of adult males, typically 25 to 150 km^2, are larger than those of females, which vary from 5 to 25 km^2. Home ranges are usually made up of several feeding areas connected by travel routes. These are often located in wooded areas that provide cover. Black bears, especially females with cubs, avoid open areas when moving from one feeding site to another. Secure travel routes are therefore important for linking foraging areas. Home ranges may shift in response to weather and the availability of seasonal food and often overlap those of other black bears. While related females are known to share home ranges, black bears are mostly solitary. The only common social groups are the sow with her cubs and the mating pair, but the latter bond is quite temporary. Groups of bears at food sources like landfills or salmon spawning streams usually lack social cohesion.

A bear's nutritional state is important because it influences reproductive success, survival, and hence the abundance of bears. Black bears are classified as carnivores (meat eaters), but they are omnivorous ("everything-eaters") and consume a variety of plant and animal foods. Black bears use different foods in different seasons and seek out low-fibre, easily digestible foods. Vegetable matter forms the bulk of their diet, particularly in spring and summer. In spring, black bears forage for succulent vegetation in meadows, estuaries, riparian habitats, skunk cabbage swamps, avalanche chutes, grassy south-facing slopes, and burned areas. Also in spring, they prey on newborn deer, elk, moose, and caribou. In summer, black bears feed on insects and larvae, fruits, berries, salmon, and carrion. Come autumn, they often forage on berries and on spawning fish. Bears kill and eat small mammals opportunistically throughout the year. Rarely, they have been reported to kill adult moose and elk. To conserve energy, black bears seek out concentrated food sources such as spawning fish and dense berry patches, an important thing to remember when you are in the backcountry. The habitats they use are as varied as the food they eat – forests, wetlands, subalpine meadows, avalanche chutes, riparian habitats, and beaches.

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Across British Columbia the versatile black bear makes a living in a variety of ecosystems and is an important component of local food chains. In most ecosystems it functions primarily as a herbivore and secondly as a carnivore; however, it is also a scavenger that plays a role in recycling carrion. The transport of seeds via bear droppings aids the dispersal of many species of berry-producing shrubs. Along salmon spawning streams, bear feces and the remains of

fish carried into the woods contribute to the long-term nutrient cycle in old-growth forest. Even cambium feeding by bears, which sometimes kills trees, creates widely scattered snags that benefit other species of wildlife.

VALUES AND USES

The First Nations' cultures of British Columbia recognised the black bear in various ways. Native Indians distinguished black bears from grizzly bears and through symbolic representation, included them in traditional ceremonies and mythology. They used bear meat fresh, or dried it for the winter; used bear fat as a cosmetic and for mixing with pigments to make paint; and used bear skins for robes, blankets, and hats. Some First Nations continue to use black bears for sustenance purposes.

For many tourists, the wilderness attributes of British Columbia are its major attraction, and the presence of large carnivores symbolises that wilderness. Because wolves, grizzly bears, and cougars are less numerous and more reclusive, black bears provide the best opportunity for visitors to view and possibly photograph this powerful symbol. For many, this experience is the highlight of a trip to British Columbia. In places where visitors can view black bears safely, such as at estuaries in the spring or spawning streams in autumn, there is considerable opportunity for responsible eco-tourism.

In addition to seeing black bears, a hike through the forest can provide opportunities to see bear signs, such as claw and bite marks on a tree where a bear marked the trunk with scent during mating season or chewed at the bark to get at the cambium. Bears frequently use "rubbing" trees, either as a scratching post or to mark their home range. Another interesting habit of bears is the way they make and use trails. Often they will step in the same footprints of other bears, thus creating well-worn paths that they use year after year. Footprints, scats, rubbing trees, and ripped-up logs are all signs of black bears. When you see these, be bear aware! Check with local B.C. Environment, B.C. Parks, or Forest Service offices to find out about black bears in your area.

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Across North America there is increasing interest in the black bear as a game animal. In recent years hunters in Canada and the United States have taken about 40,000 black bears per year, generating over $10 million in annual license revenue and much more in related spending. In British Columbia, black bear hunting generates revenue that contributes to wildlife management and habitat conservation programs.

Jared Hobbs

CONSERVATION

Black bears are doing well in British Columbia; however, conflicts between people and bears, as well as on-going impacts on bear habitat, are of concern. Conflicts mostly arise when bears seek out foods that people provide through garbage, beehives, fruit trees, farm waste, or "goodies" in campground coolers. Bears that become conditioned to those foods or that simply wander into areas where humans live often have to be destroyed. Some bears die as a result of poaching and railway and highway traffic kills. People also affect bears by altering their habitat through logging or by removing it completely for hydro reservoirs, farms, highways, and settlements. The collapse of some salmon stocks has reduced bears' ability to feed on spawning salmon. All these factors affect the number of bears in British Columbia.

The following management activities will help to maintain black bear populations in British Columbia.

Measures to reduce and eliminate human-bear conflicts

Conservation officers have to kill up to 1000 black bears every year because of serious conflicts with people. Improperly handled garbage is the greatest cause of human-bear conflict in British Columbia, and responsible waste management is the best approach to preventing conflict. This means denying bears access to garbage from the point of generation to final disposal. The British Columbia government encourages people and communities to take responsibility for managing conditions that attract bears.

Research and planning for the protection of black bear habitat

Human populations and settled or developed landscapes have expanded greatly in British Columbia in recent decades, and this has resulted in the loss, degradation, or fragmentation of black bear and other wildlife habitats. Despite this trend, black bears are numerous and widely distributed in the province. They are adaptable enough to persist in lightly settled landscapes and close to the fringe of urban areas. Nevertheless, habitat loss is an on-going trend that requires attention.

Government programs are designed to control the encroachment of land development into wildlands, including bear habitats, and to ensure appropriate siting and management of recreational or other facilities in backcountry areas. These programs include regional Land and Resource Management Plans (LRMPs), the establishment of protected areas, Environmental Assessment Office reviews of major projects, and municipal growth management plans.

Logging affects black bear habitat in British Columbia. Although clear-cuts may provide short-term benefits from increased berry production, dense second-growth stands produce little bear food. In coastal British Columbia, studies indicate that virtually all winter dens are in large-diameter old-growth trees, snags, stumps, or logs. Fifty- to 100-year logging rotations, together with the gradual decay of old stumps and logs, will eventually eliminate suitable denning sites in large areas of plantation forest. Several government initiatives are addressing these potential impacts. Initiatives include Forest Practices Code regulations that require deactivating logging roads and retaining old-growth in the form of riparian strips, forest ecosystem networks, and wildlife tree patches. Over the long term, managed forestlands offer considerable hope for maintaining viable black bear populations.

Enforcing regulations and investigating illegal activities

Because of international concern for the conservation of all species of bears, the black bear is listed on Appendix II of the Convention on the International Trade of Endangered Species (CITES). In February 1993, British Columbia introduced legislation banning the possession and commercial trading of bear gall bladders and genitalia and the trading, exporting, and importing of bear paws, primarily to discourage the incidence of poaching to provide animal parts for traditional Asian medicines. Observe, Record, and Report is a program with toll-free access (1-800-663-WILD [9453]) for anyone to report poaching or other violations of wildlife and environmental laws. Through the B.C. Wildlife Federation's

Wilderness Watch program, volunteers provide extra "eyes and ears" for the Conservation Officer Service.

Managing hunting

Annual hunting regulations ensure that black bear populations are not over-harvested. This is accomplished by controlling hunting seasons and bag limits and, in areas where the bear population is low, by restricting or closing hunting seasons. Hunting is prohibited in all national parks, ecological reserves, and some provincial parks. In addition, it is illegal to hunt Kermode (white) or glacier (blue) bears and to shoot any two-year-old or younger bear, or any bear in its company, usually its mother.

Additional brochures available:
Safety Guide to Bears in the Wild
Don't Attract Bears to Garbage

For more information, contact BC Government offices.

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