

Earlier this year, the Great Bear Rainforest received new protections under a landmark conservation agreement. That's good news for the region's spirit bears, a rare, all-white species of black bear. But it might not be enough.

WHERE THE
Spirits
ROAM

By Kerry Banks Photos by *Canadian Wildlife* Contributors



JAN MCDLISTER



Legend has it that the spirit bear possesses super-natural powers that enable it to swim deep underwater and lead people to magical places

Each year, hundreds of international travellers journey to Klemtu, a tiny, remote village located on British Columbia's northern coast in the midst of a vast chunk of primordial terrain known as the Great Bear Rainforest. Covering an area the size of Ireland, this mist-shrouded land contains some of the richest and most varied wildlife on the planet: wolves, cougars, bears, Sitka deer, mountain goats, five salmon species, sea lions, sea otters, orcas, and fin and humpback whales.

All of the visitors come to Klemtu to observe and photograph the amazing wildlife, but there is one creature in particular that tops everyone's bucket list — the mysterious, cream-coloured Kermode, or "spirit bear." This bear is not an albino, but rather a subspecies of black bear, with a ghostly pallor caused by a double-recessive gene.

First Nations communities that have lived in the region for thousands of years call the spirit bear "moskqm'ol," or "white bear," and view the animal as sacred. In their legends, the Creator turned every tenth black bear white as a reminder of a time when the earth was covered by ice. Legend also has it that the spirit bear possesses super-natural powers that enable it to swim deep underwater and lead people to magical places, an attribute that has a special resonance today with the spirit bear serving as the driver behind a thriving eco-tourism business.

But First Nations people also had taboos about discussing the white bear openly. And so, until the 1990s, the animal was really only known to a handful of naturalists and hunters. This situation changed rapidly in the middle of the decade when environmental activists adopted the spirit bear as a symbol of the rainforest's mystical qualities and the necessity for its protection.

It was a media-savvy campaign that featured protests, blockades and a call for an international boycott of B.C. forest products. It also included stunning photos of spirit bears juxtaposed against ugly images of clear-cut mountains that would eventually shut down the saws and bring opposing sides to the bargaining table. In February 2016, conservation groups, timber companies, 26 First Nations and the B.C. government finalized a landmark agreement to protect 85 per cent of the Great Bear Rainforest from industrial logging. The remaining 15 per cent will be subject to the most stringent commercial logging standards in North America.

Although most of the Great Bear Rainforest is now off limits to logging, the spirit bear's future is not assured. Declines in salmon stocks are likely reducing the number

of new cubs, and logging is continuing in parts of the bears' range that fall outside the terms of the Great Bear Forest agreement. Logging roads, which provide entry to previously inaccessible areas, could lead to an increase in poaching. These roads also disrupt the spirit bear's feeding grounds. Finally, there is the threat of an oil spill affecting the bears' salmon supply if a pipeline is built in the area.

In the last few years, however, a new and unforeseen threat has also materialized — grizzly bears have been swimming over from the mainland and invading the spirit bear's realm. Some fear that the dominant grizzlies may be chasing the Kermodes off the prime fishing spots or, in some instances, even killing them.

It is uncertain why the grizzlies are pushing their range westward, but a scarcity of salmon may be the motivator. As Philip Charles, a 27-year-old biologist and the lead guide at the Spirit Bear Lodge in Klemtu notes: "Food rules a bear's world. Grizzlies especially seem to be on a never-ending quest for food and are very adept at finding it, aided by a phenomenal sense of smell that is 10 times better than that of a bloodhound. If there is no food in their present location then they will travel until they find it, even if it means swimming to the next piece of land. We have more than 50 salmon-bearing rivers in our territory alone, so it wouldn't take a hungry grizzly long to come across one."

Charles says that the presence of grizzlies is having an unwanted effect on eco-tourism by making an already elusive subject even more camera shy. "Many of these spirit bears had never seen a grizzly before. They were the top predator in their world, but the arrival of the grizzlies has changed that. In the past, when a spirit bear heard me rustling in the bushes behind them, they would likely ignore it. Today they are much more apt to take off."

And how many spirit bears are we talking about? There is still no unanimously accepted number. Government scientists have pegged the population at 400. Charles insists that estimate is too high. "Based on many hours of observation, I would say less than 100, perhaps as few as 60."

The same gene that produces the blonde coats of golden retrievers causes black bears to have white coats



The Spirit Bear Lodge, where Charles works, is owned and operated by the Kitasoo/Xai'xais Nation and is a great source of pride in the local community. The 12-room, 24-bed waterfront property opened in 2008 and has steadily increased its business to the point where it is now running at nearly full capacity. Its success depends not only on the spirit bear, but also on coastal black bears and grizzlies.

All attract tourists and help keep the ecosystem healthy.

The lodge has also played a role in a wildlife research project that began in 2011 when village residents asked Tim McGrady, the lodge's general manager, to investigate the movement and impact of the migrating grizzlies. From this, a partnership was formed between the University of Victoria, the Raincoast Conservation Foundation and a new organization known as the Spirit Bear Research Foundation.

The research is aimed at improving knowledge about all the species of bears in the area by charting their numbers,

movements and behaviour. The current project involves five different First Nations and covers 20,000 square kilometres. Instead of tranquilizing and attaching radio collars to the bears all of the data is being collected by non-invasive methods. Scented traps lure the bears into enclosures that consist of a square of barbed wire, extending a couple of metres long on each side and half a metre off the ground. Suspended high off the ground inside this wire corral is a cloth soaked with vanilla, loganberry or orange-anise extract, or beaver anal mucus, scents that any bear in the vicinity will hone in on from kilometres away.

When a bear steps over the barbed wire, hair from its body is snagged in the tines, without harming the animal. And when a bear approaches the site, night or day, infrared video cameras mounted on nearby trees begin recording. At present, there are 320 of these study sites operating along with 120 remote cameras.

As Chris Darimont, an evolutionary ecologist at the University of Victoria and the science director for the Raincoast Conservation Foundation, explains, "We're now experiencing a molecular revolution in wildlife science. The DNA collected from fur, poo, saliva, all the bits and pieces that animals leave behind, are telling us far more than we could ever learn with traditional methods." Isotope analysis of the hair allows scientists to identify individual bears: their species, their sex, their stress level, whether or not they had cubs that year and even how much salmon their diet contained the previous year.

As well, says Darimont, who is incorporating indigenous knowledge and customs into the study, this non-invasive approach "is consistent with the cultural norms of our partners, many of whom consider the bears to be their brothers and sisters."

Meanwhile, two other recent scientific inquiries have focused directly on the spirit bear. Kermit Ritland, a geneticist at the University of British Columbia, identified the mutation that causes black bears to have white coats. "It's the same gene that produces the blonde coats of golden retrievers," he says.

Most of the black-coated bears on the coastal islands carry this recessive gene, but two are needed — one from each parent — to produce a spirit bear. Ritland suspects the gene came to prominence during the last Ice Age. Back then, glaciers covered the Pacific Northwest, isolating a bear population on an ice-free strip of coastline where inbreeding would have helped increase the frequency of the Kermode gene.

In another study, University of Victoria biologist Tom Reimchen and graduate student Dan Klinka shed light on an evolutionary advantage of having a white coat. They demonstrated that during daylight spirit bears were twice as efficient at catching salmon as black bears, presumably because the fish have trouble seeing the light-coloured bears outlined against a white or grey sky. This correlates with the critical importance of salmon in the spirit bear's diet, which runs as high as 85 per cent of their total intake.

Most of B.C.'s spirit bears inhabit one of two coastal islands: Gribbell and Princess Royal. The ratio of white bears to black bears is about one in 10 on Princess Royal Island, where a 103,000-hectare section of the southern part of the island is now protected under the Kitasoo Spirit Bear Conservancy. Located directly north of Princess Royal, the much smaller Gribbell Island has a higher ratio of white bears to black bears, at nearly 40 per cent, which has caused veteran bear biologist Wayne McCrory of the Valhalla Wilderness Society to christen Gribbell "the mother island of the white bears."

Because of its genetic importance, it's surprising to learn that the 20,000-square-kilometre island was left out of the Great Bear Rainforest deal. Instead, Gribbell is identified as a "stewardship" area, a label that does not prohibit mining, clear-cut logging or hydroelectric development. This designation was made even though large parts of Gribbell have already been clear-cut and roaded. The reason for this is that the Gitga'at First Nation, whose territory includes Gribbell Island, want to keep the logging option open.

But while several conservation groups continue to press for greater protection for the spirit bear, there is still the

unresolved issue of the incoming grizzly bears. If the grizzlies remain, and salmon stocks continue to decline, the spirit bears will face a new challenge.

Christina Service, a graduate student from the University of Victoria who has done research for both the Raincoast Conservation Foundation and the Spirit Bear Foundation, notes, "When grizzlies move into a system, they become king on these salmon rivers." There are other parts of the world and in the province where black bears and grizzlies coexist, Service continues, "but we know that when they do coexist, those blacks are eating less meat; in some cases, as much as 40 per cent less salmon. For a species like a white bear, where there's already so few of them, that change in diet could have a major impact on their population. But again these are all things that we're just starting to tease apart and find out."

Nothing is certain at this point, but it could be that one of Earth's rarest creatures is about to become even rarer. The spirit bear, like the white buffalo of the American plains, is traditionally seen as a transformative figure, a giver of good fortune and power to those to whom it appears. It seems only fitting that if the bear's population continues to fall, our luck may disappear with it. 🐻



JOHN E. MARRIOTT

IAN W. CALLISTER