

## **“Bears Explained” by Colleen Campbell (2018)**

### **Part I**

While I refer to brown bears (grizzly bears in central North America), it is important to remember that each of the eight species of bear has a complex relationship with its habitat.

“Web of life” refers a complicated and well-knotted very, very messy mat of alliances. While many can cite that the grizzly bear is a “\*keystone” or an “umbrella” species in an ecosystem, the complexity of those designations is rarely explained. Grizzly bears are *intricately* linked to their landscapes.

In the Rockies, grizzly bears spend winter denning high in the mountains. When they abandon their dens in spring they move towards the valley and their entire journey through the seasons until next fall is one of interacting with their environment, gaining and bestowing benefit through their foraging habits.

During the early downhill journey, a bear may scent glacier lilies, green leaves and budding flowers ready to bask in the sun as soon as the snow melts away. It will dig through the snow and earth to liberate some of the bulbs, which then break apart, many pieces to be eaten by a bear as early season protein and others to drop back into the disturbed soil to grow as new lilies next year. In some places we cannot walk off the trail amongst the glacier lilies without crushing lily plants with every step, so successful is the bears’ passive and important cultivation of the beautiful yellow flowers.

Grizzly bears lead productive lives and it has taken a long time for us to *formally* realize that they have a complex beneficial role in the wild community. The designation as \*keystone species is warranted as grizzly bears do many things to benefit their ecosystems.

Nature staggers the ripening of the many berry species through the season. Bears eat ripened berries and the skins and seeds pass to the ground with their scat, become food for several other species or wash to the edge of the trail where many germinate and grow, fertilized, in part, by the nutrient-rich scat that carried them to the ground.

As bears dig for roots or, late in the season, for hibernating ground squirrels or marmots, they aerate the soil and mix the nutrients that are present, making it easier for plant communities to grow. In the high alpine, grizzly bears dig hedysarum (a legume) — sometimes hundreds of square metres of it — freeing the nitrogen fixed to its roots to fertilize whole plant communities. A host of other species — ungulates, several species of ground squirrels, mice and voles, birds, insects and aquatic habitats all benefit from the healthy plant communities promoted by the actions of a grizzly bear. During photosynthesis, all those healthy plant communities produce oxygen, a benefit for all breathing creatures.

Male ground squirrels and marmots hibernate weeks before the females and pups, leaving resources for the youngsters and females to ensure that the species survives. Digging up early burrowing ground squirrels or marmots rewards bears with a bit of animal protein and may be a way of reducing the male populations of those species. It may also be possible that those males have poor denning strategies (when, where, how) .... do bears, then, help some of those populations to become a little smarter as the years pass?

Bears in coastal habitats interact with five different species of salmon (coho, chum, Chinook, sockeye and pink) in north Pacific waters and they all spawn with different schedules. Coastal grizzly bears eat their fill, over and over and over as the season passes; the most successful at catching fish eventually become picky, high-grading the best parts and abandoning the remains for others — other bears, foxes and ravens, martens and eagles all benefit as do many smaller animals and birds, even some we think of as vegetarians. Salmon remnants are carried into the forest where nitrogen from decay of the carcasses then benefits the trees and other plants. Scientists can take fine bores from cedar trees deep in a forest and estimate historic salmon populations from the salmon isotopes they find in the different tree rings.

YES.....BEARS ARE VERY WELL CONNECTED TO THEIR HABITAT

Loss of grizzly bears would affect their ecosystems significantly. We might not notice for decades, but the loss would eventually impair the health, the well-being of many plants and animals. Indeed the whole ecosystem would be undermined.

*\*Keystone means that the presence of such an appointed species directly benefits the well-being of many others and, thus, presence of a keystone species can be used to assess the general health of an ecosystem over a period of time.*

## **“Bears Explained” Part 2**

As well as being intricately linked to their physical environment grizzly bears are tied to us through a 35 000 year (or longer) history that is full of story-telling and lessons.

How does our connection – our complicated infatuation with and anxiety about bears work?

We name dozens of common products after bears: kitchen scrubbies, beer and coffee, quads, boots, bottled water, honey is marketed in a bear-shaped container, bears show up in car ads and toilet paper ads and toys. Bears — kind or vicious, smart or not-so, being “bears of the woods” or more like humans in costume — are in movies and children’s stories, music, fictional literature and poetry. A bear is stars in the 1976 Governor General’s award winning novel, *Bear*, by Marion Engel.

“Bear” in a title will readily sell darned near everything.

What is in our deep history that contributes to our contemporary fascination with bears and to our capacity to understand the deeper implications of what bears symbolize in all our cultural references to them. What deep cultural memory of the creature is evoked in all the many ways applications of “bear”?

The Yavapai of Arizona have identified it in a succinct quote: “Bears are like people except that they cannot make fire.”

In the northern hemisphere, humans have the strongest spiritual link to bears, above all other animals — raven, coyote, tiger, whaler, eagle — that enjoy sacred roles. It is the ways that bears are like people that probably drew us to them, especially the brown bear, tens of thousands of years ago?

Those attributes we think so very human-like are numerous:

- Bears are curious, intelligent, cautious and sometimes impatient.
- They form alliances with others. Some female bears have been known to spend significant time together when raising cubs.
- Cubs are born helpless — little hair, closed eyes, no teeth, unable to do much but nurse. Females sometimes cradle their cubs while nursing, guard them fiercely, discipline and play with them and may spend up to four or five years

- teaching their cubs how to forage, hunt and travel safely and how to negotiate others of their own kind.
- Bears walk plantigrade — whole foot on the ground — as do humans.
  - They sometimes lie on the ground with head on paws, snoozing or watching out at the land. Occasionally a bear will be seen sitting on its rump, possibly perched on a log or a rock.
  - Bears court each other during mating season and either may rebuff the advances of a suitor.
  - Bears may stand erect and can reach out with their forelegs as we do with our arms. They can also use a single claw with dexterity to manipulate something.
  - The overall body of a bear is very like that of a human.
  - Their summer metabolism is similar to that of a healthy human: body temperature, heart rate, blood chemistry, respiration rate.
  - Grizzly bears are deeply complex, quiet, distant, private.

Anthropologists have identified a very long history of humans with bears — 40 000 to 70 000 years. Though it likely started in northern Europe, the “cult of the bear” is circumpolar and grizzly bears are thought to be critical to the awakening of a spiritual dimension of the human psyche. Structurally similar versions of the same few stories are global — told in widely separated places: Finland, Japan, Siberia, Hudson Bay, Iceland, Scandinavia, Four Corners of the American southwest and the northwest coast of North America.

The main story started about 35 000 or more years ago. With time it has acquired different details but the structure and the essential content remain consistent. The story includes a union of a woman with a spiritual being (bear), birth of a son (or two), sacrifice of the father (bear), thanksgiving and resurrection to insure that the son becomes a messenger between the spirit world and the world of humans.

Common attributes of all the stories have helped anthropologists to track how it has travelled and developed around the northern hemisphere. As well, anthropologists have traced the fundamental threads of the ancient stories as they were woven into the spiritual stories of the Hindu and Jain cultures, Zoroastrianism, Judaism, ancient Egyptian and Greek mythologies and Christianity.

All around the northern hemisphere bears show up in rock and cave paintings, as small carvings and as effigies, over tens of thousands of years and one significant effigy was probably situated and created just over 130 ago. The stories all persist.

Indeed, our deep history with bears appears loaded with respect and awe and likely a little fear.

And our contemporary relationship with bears is a bit crazy.

How can we use a bear to advertise toilet paper? How can we call a quad “grizzly”? It certainly lacks the grace and quiet with which a bear usually travels.

In spite of the low numbers of people who might be attacked by a bear, we have extraordinary fear of them. There have been about 145 recorded deaths total by three species of bear in North America from 1900 – 2017.

BEARS are IMPORTANT.

In summary, they are intricately threaded into our lives, no matter where we live.

- Bears have huge influence in wild places where they live.
- Bears — especially brown bears — are implicated in historic and contemporary spiritual practices of the northern hemisphere.
- We are tied to bears in the modern world — through stories in every possible mode.
- Though not included in this article, bears are also important in medical research that may benefit human health.

In this story, bears are surrogates for all the wild creatures. While we may benefit directly from one species or another, all wildlife is intrinsically important — important to our physical, emotional and spiritual well-being — and deserving of respect.

REMEMBER:

The hero of Douglas Adams mystery detective novels, Dirk Gently, said,  
“There is a fundamental connectedness of all things.”

... and John Muir wrote:

“When we try to pick out anything by itself, we find it hitched to everything in the universe.”