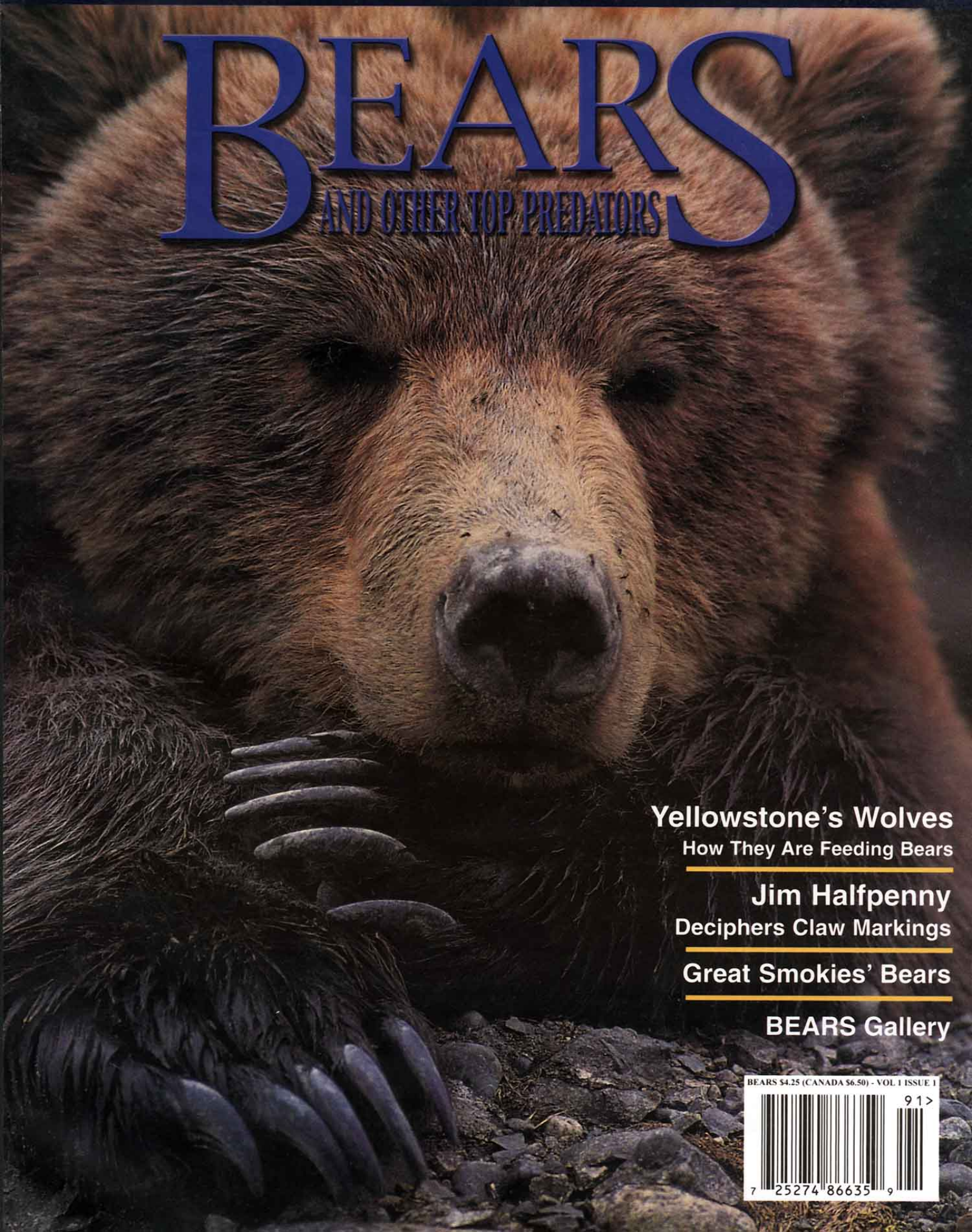
Bear Attacks of 1998: Complete Review

BEARS

AND OTHER TOP PREDATORS



Yellowstone's Wolves
How They Are Feeding Bears

Jim Halfpenny
Deciphers Claw Markings

Great Smokies' Bears

BEARS Gallery

BEARS $4.25 (CANADA $6.50) - VOL 1 ISSUE 1

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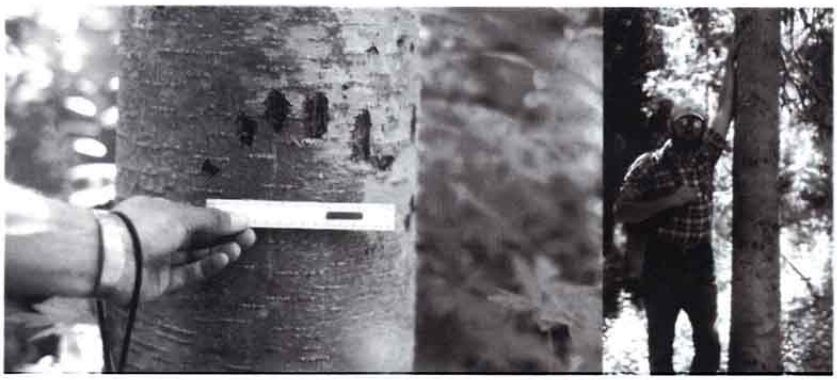
Tracking the Great Bear

Bear Art

By Dr. Jim Halfpenny



We call it Bear Valley, our secret location in Yellowstone. Walking its narrow bottom, you can feel their presence: grizzlies and black bears. Interestingly enough, we have seldom observed a bear there. However, ursid scratches left on the trees are petroglyphic communications telling us it is their home, not ours. Like Anasazi petroglyphs, we strive to place meaning into the behavioral art left by our ursid friends.

The valley is an art gallery, a bear art gallery. Each marked tree, etched by claws, is a picture of ursine comings and goings. Contained in the art work is a vertical bear trail that provides an interpretation challenge for the natural history detective. What is the story told by this bear art?

Bears mark trees in three manners: by clawing, biting, or scratching their bodies against them. Claws, teeth, and hair leave distinctive patterns. Trees with soft bark, such as aspen and birch, take impressions well. Careful examination may reveal pictures on conifer trees as well, but since conifer bark is harder, markings are less conspicuous. Could it be that as many conifers are climbed by the ursids as birch and aspen, but our eyes simply fail to reveal pictures as well?

To understand tree art, the first order of business is to determine the species of the artist. Some generalities about claw marks help differentiate species. While bears may leave five claw marks per print, often the little toe does not cause a mark. Check carefully to find sets of five claw marks. Cats typically leave four claw marks, while mustelids (weasel family) usually leave five claw marks per print. However, cats and weasels both have very sharp claws. Bear claws are blunt, 0.2 to 0.3 inches wide near the tips. The claw marks of cats and weasels leave signature wide-narrow-wide patterns: narrow (0.02 inches) at the beginning before the claws completely dig in, wider in the middle, then narrow again just before exiting. In contrast, bear claw marks are normally wide from beginning to end.

Bears leave two distinct claw patterns depending on whether they are ascending or descending a tree. On ascent, the bear kicks its hind claws straight into the bark, leaving five neatly-placed puncture marks in an arc shape. When climbing, front claws make longer slices in the bark at an angle of about 40 degrees from vertical. Longer, near vertical cuts indicate where a bear has slid down a tree, a typical manner of descent. These slide marks are usually left by the front claws, but occasionally by the back.

A basic pattern often expressed on the bark is that of a simple climb where the hind feet are placed side-by-side and the front feet reach out to the side allowing the bear to hang from its front claws.

Knowing this pattern, you should be able to tell which side of the tree the bear was facing and which are the right and left feet. Longer, repeated scratch patterns show descent routes. Complex pictures may show various combinations of repeated climbs and descents.

Bear art trees betray the maker's size and often its age. First, measure the width of its hind claws as an indicator of size. In marks where all five claws are clearly indicated, widths greater than five inches indicate a very large adult bear! Second, measure the stride of the bear, the vertical distance from where a claw mark occurs to where the same claw mark occurs again. The stride approximates the hip-to-shoulder length of the bear and should be sufficient to identify it as a cub-of-the-year, yearling, or adult.

A word to the wise my friends: be careful. Trees grow in diameter each year and the "tale" of your bear, as measured by the width of the hind claws, grows larger with each passing year. Examine the amount of scarring in individual claw marks. If there is considerable scarring, track size is probably greatly exaggerated by years of growth. It is then better to use stride as an indicator of bear size.

Why do bears climb trees? There appear to be many reasons. Mothers babysit their young with an audible "woof" which tells youngsters to climb. The urgency of the

"woof" tells them how fast and how high to climb. A danger signal sends them to the highest points of trees. Young bears will remain for hours in the tops of trees waiting for mom's return. Older bears may climb for reasons of safety, for example, to avoid the charge of a bigger bear or an approaching human. Eastern black bears build nests high in the forks of trees for use as day beds. In Colorado, black bears have been observed high in aspen in the spring, eating buds. Aspen buds may provide concentrated sources of energy or simply be a flavorful "candy" for the bears.

Other behavioral actions may also result in marked trees. Bears rub trees to alleviate their itches. Good rubbing trees are used over and over again for decades, maybe even centuries. These trees, usually conifers, will show smooth, warn bark. Twin depressions in the ground often reveal where bears stand while rubbing their backs and tummies up and down on the trunk.

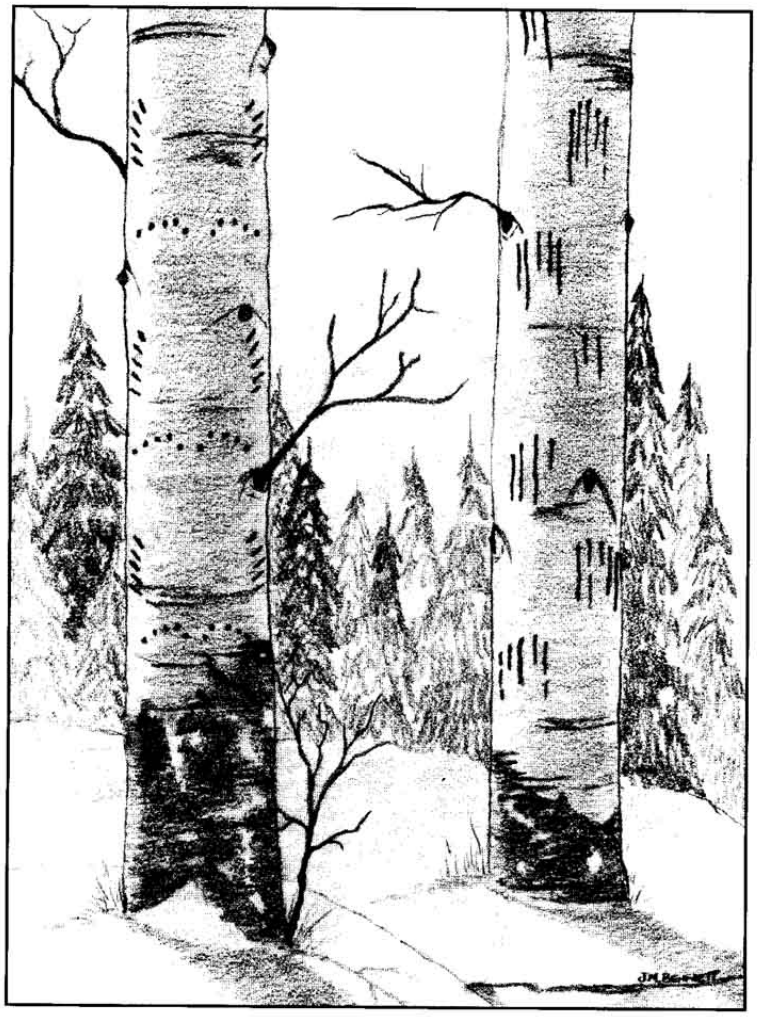
Many trees and logs are marked by bears in the process of dining. Bears tear open old downed logs and trunks to look for insects, especially tasty formic acid bearing ants. Look for claw marks around the edges of torn open logs. Bears will also create round holes, which are sometimes up to a foot in diameter, in rotten, standing tree trunks by using their claws to burrow into the tree to extract a meal.

The question whether bears mark trees to communicate with other bears is controversial. Some say bears do not communicate this way. I admit bears do not mark and defend a territory, but I believe they may communicate by marking trees. Perhaps the first bear on the scene reaches as high as possible on a tree and claws the trunk. Other bears that stand against the same tree might decline to leave their mark if they are smaller in size. In comparison, some trees seem to be clawed by every bear that passes by. Are these trees bulletin boards telling who has passed?

A special marking is the one I call the side swipe. When grizzlies on a trail walk past a tree, they often claw it with the front foot nearest the tree. This is done while standing on three legs and the mark is horizontal. Does the horizontal mark indicate possessiveness or might they be testing the tree to see if it is worth digging into for insects?

Bears bite trees to create additional bear art. Their canine teeth leave distinctive holes and scratches. The height of tooth marks and the width of the tooth centers indicate bear size and where the bear was standing when it bit the trunk. Since grizzlies bite prominent trees in their range, the bite marks may also communicate possessiveness or size to other bears. I've even found polar bears biting human-placed posts in the arctic.

It was from Dr. Charles Jonkel, bear biologist, that I first heard the phrase "bear art," a term possibly more appropriate than Chuck realized. Art, while a form of



The tree on the left depicts claw marks made during a bear's ascent. The tree on the right depicts claw marks made during descent. Drawing courtesy of Jennifer Bennett.

expression and communication, is also fragile and transient. So too, is bear art. The recording media, the tree, is temporary and short-lived. Fires may further shorten the record. In Yellowstone, most of the aspens are mature and aren't being replaced. Therefore, most bear art in the park now will disappear during my life time. Taking my cue from scientists studying Anasazi petroglyphs, I have started a photographic atlas of bear art trees. This atlas will record the location and portrait of each art panel—each clawed, bitten, and scratched tree my students, friends, and I can find. Why not add your own contribution to the study of bears and start your own atlas?

Jim Halfpenny and Diann Thompson snowshoeing by Yellowstone National Park's Old Faithful. Jim owns and operates A Naturalist's World in Gardiner, Montana.