



Beetle-killed whitebark pines mar the Teton Wilderness in this 2007 photo. Grizzlies and other species rely on whitebark pine nuts for food.

Bear cupboards bare

Decline of whitebark pine bodes ill for Greater Yellowstone grizzlies.

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In his description of Avalanche Peak, Thomas Turiano wrote, “After a beautiful forest of whitebark pine, the trail gains a small basin” Unfortunately the “beautiful forest of whitebark pine” that Tom wrote about in his landmark *Select Peaks of Greater Yellowstone* no longer exists. Along with many other climax whitebark forests of the Greater Yellowstone ecosystem, the Avalanche Peak whitebark have fallen victim to the mountain pine beetle. The term “victim” is used guardedly – after all, the mountain pine beetle is a native insect that has coexisted for millennia with many western forests. Although spectacular outbreaks of mountain pine beetle are nothing unusual in the vast lodgepole forests of the Greater Yellowstone, current mortality in the high elevation whitebark pine forests is truly unprecedented. In historic times, mountain pine beetle activity in the high mountains was limited by a climate that was typically too harsh for the beetle. With global warming, this once inhospitable climate has become much more benign for the beetle, with massive tree mortality occurring year after year.

Whitebark pine plays a major role in the ecological integrity of the Greater Yellowstone, since it functions as both a foundation and a keystone species. It forms the foundation of high mountain and alpine ecosystems (those above approximately 8,500 feet) by providing the major biomass and producing most of the organic matter, enhancing soil formation, and serving as “nurse trees” for other conifers. In the larger spatial context of the entire ecosystem, it is a keystone species because of the important role played by high elevation forests in snow dynamics, in both the distribution of snow during winter and the subsequent rate of snowmelt in the spring. Whitebark pine also provides critical resources to many wildlife species. Its large, fleshy, highly nutritious seeds provide an important food resource for a wide array of wildlife ranging from Clark’s nutcrackers to squirrels to grizzly bears. During the fall, grizzlies gorge on the vast quantity of seeds in whitebark pinecones cached on the

ground in squirrel middens. The importance of whitebark pine seeds to iconic wildlife such as the grizzly is of particular importance in the Greater Yellowstone ecosystem due to the paucity of other high quality food during the critical time prior to bears entering hibernation.

One clear prediction from the loss of cone-bearing whitebark pine trees is that negative interactions between grizzly bears and humans will increase. With the loss of whitebark pinecones, grizzlies feasting in preparation for winter are forced to exploit other food resources that are far more dangerous than red squirrels and squirrel caches. A primary alternative fall food is gut piles left by elk and deer hunters. Unfortunately for female grizzlies, gut piles are also a favorite of male grizzlies, always a potential threat to a female with cubs. Foraging on the remains of hunting also brings bears in close contact with the human hunters themselves. Instead of being in the high-elevation forests out of harm’s way, female bears are exposed to their two greatest mortality threats.

In the two years since the Greater Yellowstone grizzly was delisted, the Interagency Grizzly Bear Study Team’s action threshold (a mortality level set at 15 percent of that year’s grizzly population that mandates review of the delisting decision) was vastly exceeded in 2008 with 48 known mortalities (37 resulting from human/grizzly interactions), and

it was only one fatality short of this threshold in 2007. The number of mortalities in 2008 is the highest on record. While no one knows the exact number of bears that died last year, it was assuredly more than the number reported. Using the study team’s formula to factor in bears that died but weren’t reported or counted, as many as 130 grizzlies could have died. One thing that is known for sure is that this mortality level is unsustainable, and one that cries for reconsidering the decision to remove the great bear from endangered species protection. ■ *The Wildlife Matters Campaign is supported by Earth Friends Wildlife Foundation, Skinny Skis and Patagonia, Inc.*



In 2007, the U.S. Fish and Wildlife Service removed Greater Yellowstone grizzlies from Endangered Species Act protection. The Alliance, along with six other groups, filed a lawsuit in federal district court asking for the decision to be reversed; a court date is pending.