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Griz study takes adva

Bears like to scratch themselves. They'll back up to a tree, get up on their hinds legs, and scratch and scratch and scratch and scratch. Scientists have caught this behavior on remote cameras. Bears also leave behind the signs: Hair stuck in bark and crushed vegetation at the base of the tree from where the critter has tromped around.

To trained eyes, like those of U.S. Geological Survey biologist Jeff Stetz, these rub trees stick out like sore thumbs. And they're not always trees. Some are fences. Some are power poles. Some are even road signs.

These bear rubs are important to bear research because where a bear leaves hair is where a bear leaves a little bit of its DNA. And if you can gather enough bear DNA, you can find out a lot about bear populations. That's how the team of Kate Kendall, Stetz and Amy Macleod determined the bear population estimate across the Northern Continental Divide Ecosystem in 2004.

That study primarily used "scent traps," to attract bears to an area where they crossed a barbed wire fence. But the study also gathered hair from the above-mentioned rubs.

Stetz got to wondering, what if they just used rub trees to keep track of populations? Would it be possible?

Rub trees have distinct advantages — researchers don't have to mess with scents (usually a nasty stew of rendered fish and cow's blood) and most rub trees are along established trails, roads, powerlines or fence lines. In other words, they're relatively easy to get to, even deep in the backcountry.

The team then applied some statistical modeling. Based on the patterns they see in detecting hundreds of individual bears over multiple years, they can then use statistical models to estimate whether the population is going up, down, or stable. The more bears they catch, and the longer the study runs, the more precise the estimate. They can also monitor changes in landscape patterns, like density and genetic structure. The analytical tools have finally become advanced enough to take advantage of the kind of data they can get on the bear population simply by collecting hairs from bear rubs.

Tracking population trends is paramount to preserving and protecting a threatened species like grizzly bears.

There is also another silver lining: The method is entirely non-invasive. Researchers never touch a bear. They just gather hair from wire attached to rub trees. Bears also never become trap shy. In addition, with training, a volunteer can complete the surveys. You don't need a degree in biology to properly gather hair from a bear rub tree.

In 2009 the team put the rub theory to a real world test.

With grant funding from the Forest Service and Glacier National Park Fund, crews and volunteers last summer covered an area from the Canadian border south to Rogers Pass, some 8.5 million acres of real estate, with more than 4,430 miles of trails. They nailed wire to rub tree after rub tree and gathered more than 10,000 samples from more than 4,800 trees and other rub sources.

They garnered cooperation and help from a host of land, government and educational agencies,including the Blackfeet Tribe, the Confederated Salish and Kootenai Tribes, five national forests, Plum Creek, private landowners, Northwest Connections, the University of Montana, the U.S. Fish and Wildlife Service, American Wildlands, Montana Fish, Wildlife and Parks and the Nature Conservancy to name a few.

The goal, Stetz noted, is to detect about 300 individual bears annually and continue the study for three years. Over time, the confidence level of the data increases. Researchers have already found some fascinating aspects of bear life. For example, male bears rub more than female bears. From a previous study, one scratchy male griz rubbed on 47 individual rub trees and left 155 separate samples.

In addition, female bears have a tendency to rub later in the year, particularly in the fall. Stetz will soon have a paper published on the study in the *Journal of Wildlife Management*.

One question still begs, however. Why do bears rub at all?

Stetz says there are many theories, none of which he believes entirely.

The bottomline?

"No one really knows."

A grizzly bear takes care of an itch. Bears also frequently scratch their backs on trees — often along trails. This unique behavior allows scientists to gather their hair, and their DNA. You can watch an entertaining video of a bear scratching on a tree at the USGS Web site at: http://www.nrmsc.usgs.gov/research/KendallRemoteCameraRTvideo.htm

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