

# OPERATION GRIZZLY

A monitoring project of military proportions produces an elusive population number and other critical information on northwestern Montana bears.

BY TOM DICKSON

It took five years, hundreds of workers, and 34,000 hair samples, but scientists finally know how many grizzly bears live in the Northern Continental Divide Ecosystem (NCDE). The number—765—was released recently by the U.S. Geological Survey (USGS), which undertook the massive bear monitoring project in cooperation with federal, state, and tribal agencies, private landowners, and universities.

Grizzly bears in the NCDE were listed as threatened in 1975 under the Endangered Species Act. Thirty years later, officials with the U.S. Fish & Wildlife Service (USFWS) needed to know the population size and its upward or downward trend over time to determine if the bear was ready to be considered for delisting.

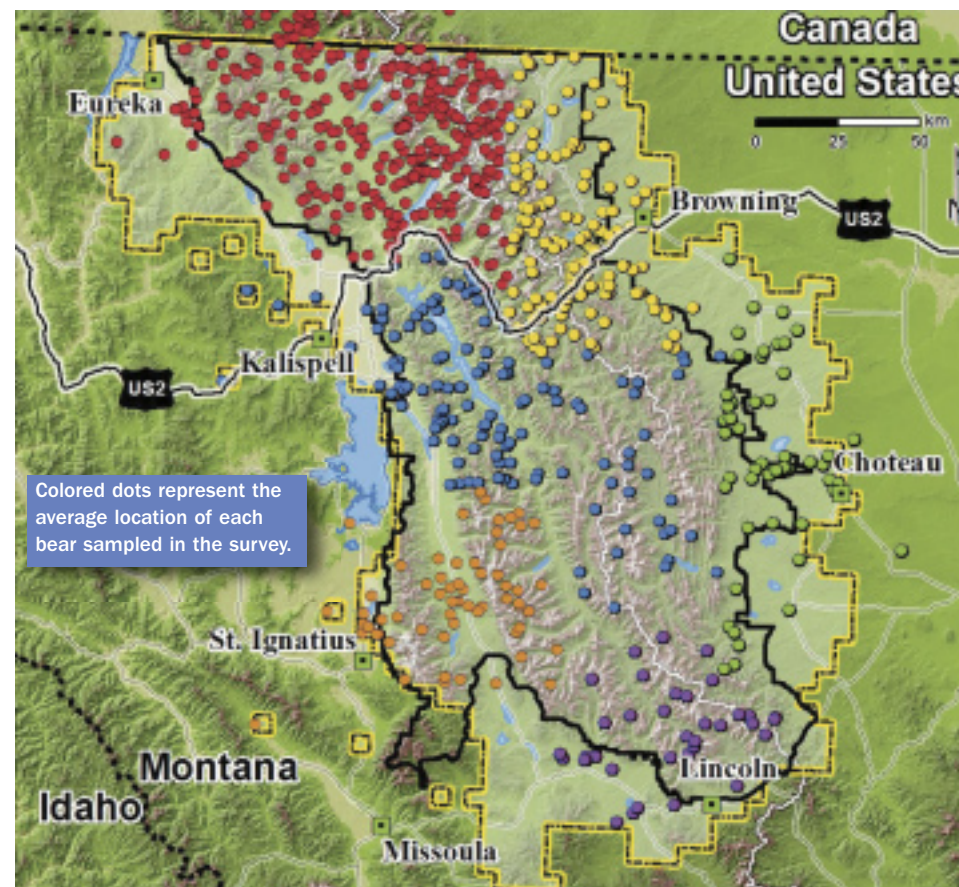
Grizzlies are notoriously difficult to count, especially in the NCDE. Comprising a roughly 8-million-acre area surrounding Glacier National Park and extending south to the Blackfoot Valley, it is one of the most inaccessible ecosystems in the Lower 48 states. Biologists could not accurately estimate the population using traditional wildlife monitoring methods such as air surveys. Then, in the early 1990s, scientists discovered how to read DNA from bear hair follicles to determine the identity of individual animals. The scientific breakthrough opened the door to a new way of estimating bear populations.

The NCDE is an area the size of Maryland and Delaware combined, located in the heart of the Rockies. Capturing hair samples there required an operation of military proportions. In 2004, more than 400 employees and volunteers drove 300,000 miles and hiked 18,000 miles to identify and check “rub” trees and set up and gather samples from hair trap stations. The 2,558 hair trap

stations consisted of small woodpiles soaked in a smelly concoction of fermented blood and fish, surrounded by a single strand of barbed wire. The barbs snagged the hair of bears lured to the sites. Hair was also obtained from 4,795 unscented trees and posts where bears naturally scratch their

bodies, as well as from “management” bears trapped by state and federal agencies for research or removal.

After being gathered and sorted, the hair samples were sent to a private genetics laboratory in British Columbia for analysis. A team of top scientists then conducted mod-



Colored dots represent the average location of each bear sampled in the survey.

**GENETIC SEPARATION** The grizzly study turned up six genetic subpopulations in the NCDE. Though many bears move among subpopulations, breeding occurs mainly within subpopulations, according to project leader Kate Kendall. Grizzlies in the subpopulation along the Rocky Mountain Front (yellow dots) are the most genetically distinct. They feed on abundant winterkilled cattle and wildlife and tend to be larger than those in other subpopulations, Kendall says. Another finding was that the western portion of U.S. Highway 2, where human density is higher, is beginning to form a barrier to genetic mixing. “With new houses comes more garbage and other attractants that draw bears, which often leads to lethal removal before the bears can reproduce,” says Kendall. “Roads aren’t the barrier as much as the associated development.”

Tom Dickson is editor of Montana Outdoors.



**BIG, YES, BUT GROWING?** Scientists now know the Northern Continental Divide Ecosystem grizzly population is more than twice previous estimates. Is it increasing and thus ready for federal delisting? Biologists will need several more years to find out.

eling to come up with the population estimate of 765 grizzlies—more than twice the 300 to 400 number the USFWS had previously estimated, based on sightings of female grizzlies with cubs.

Kate Kendall, a U.S. Geological Survey research biologist stationed at Glacier National Park who orchestrated the operation, says the DNA study provided other important information. It showed that grizzlies occupy a range of 2.6 million acres (yellow line in map at left), considerably beyond the recovery zone boundary set in 1993 by the USFWS (black line). The study also showed that the ecosystem contains six distinct genetic subpopulations. “Overall, the genetic health of the population is good,” Kendall says. “The genetic diversity approaches levels seen in undisturbed populations in Canada and Alaska. There’s no genetic evidence that the population size was ever severely reduced or that its connection to Canadian populations has ever been broken.”

Chris Smith, FWP deputy director, says the new grizzly population esti-

mate means that human-caused mortality—due to trains, cars, and lethal removal of problem bears—has not been reducing the NCDE population. “It also gives us more management flexibility, such as being able to transplant some NCDE bears to the Cabinet-Yaak Ecosystem, where we’ve had trouble establishing a strong population,” he says.

The study—the largest ever of a brown bear population—produced what scientists say is a remarkably precise population estimate. Kendall credits the precision to the large sample size, multiple sampling tech-

niques, and state-of-the-art genetic analysis and population modeling. “We wanted to make sure the data and science were rock solid and would hold up under the most intense scientific and legal scrutiny,” she says. Complete results of the grizzly bear project are featured in the January 2009 issue of *The Journal of Wildlife Management*.

Despite the project’s success, the USFWS is not ready to consider delisting the population. That will take several more years, say state and federal officials. Because the population estimate is for only 2004, biologists still do not know whether grizzly numbers are increasing or decreasing. FWP is tracking radio-collared female grizzlies in the NCDE to monitor their survival and cub production. Scientists will use the information to determine a trend for the entire population. “Given the results of our project, if the monitoring program shows an upward population trend, the U.S. Fish & Wildlife Service would likely begin deliberations on delisting the population,” says Kendall. 🐻

## WATCH THE BEARS RUB TREES

For more information on the grizzly bear DNA project, visit: [nrmsc.usgs.gov/research/NCDEbeardna.htm](http://nrmsc.usgs.gov/research/NCDEbeardna.htm). The site includes footage from remote cameras that researchers set up to learn how bears use “rub” trees and hair traps. The fascinating footage shows grizzly bears as well as wolves, deer, elk, wolverines, pine martens, and other wildlife. “In addition to what we learned, it was amusing to see what wildlife does when you’re not around,” says project leader Kate Kendall.

