

Going to the Dogs

By Kathryn Socie

Conservation research's new best friend

Parked at the top of a long, winding, logging road, Aimee Hurt assesses her field gear before heading out for a day of data collection. Map. Check. GPS. Check. Data sheets. Check. Dog. Check.

Wicket, a specially trained scat detection dog, and a cadre of dogs with this unique skill set, are fast becoming an important tool available to scientists and wildlife managers in Montana and around the globe.

Employed to sniff out fisher scat on this particular field outing, Wicket and Hurt, co-founder of Working Dogs for Conservation (WDC), are helping biologist Michael Schwartz of the Rocky Mountain Research Station better understand why fishers, a relative of the weasel, are so rare in the Rocky Mountains. Fishers have been found only in north-central Idaho and west-central Montana, and Wicket's specially developed ability is among several survey methods being used to help shed light on this mystery.

Whether it's a lost hiker, drugs, bombs or even certain types of cancer, humans have made use of the hundreds of millions of scent-sensitive cells unique to the dog nose to sniff out a wealth of information. Recently, dogs have been tested and confirmed highly capable not only in distinguishing odors of different species of animals, but also different individuals within a species through their scat, allowing scientists to infer habitat use, range size and relative abundance. When combined with technologies available for the analysis of DNA extracted from scat, scientists can verify species, sex, and potentially determine population size, home range, paternity and kinship. Analysis of hormones extracted from scat also can determine the reproductive status of individuals.

From bears to butterflies, dogs are making huge contributions to conservation efforts, assisting researchers and helping a diverse array of species.

When Jon Beckmann, a scientist with The Wildlife Conservation Society, wanted to determine the habitat selection and movement patterns of black bear, grizzly bear, cougar and wolf in the Centennial Mountain range, he turned to dogs for assistance.

The Centennials, along the Idaho-Montana border, are one of the few east-west oriented mountain ranges in the area, providing an important migratory corridor for these four critical carnivore species between the Greater Yellowstone area and central Idaho's Frank Church River of No Return Wilderness. Safe corridors linking core habitats are essential to the survival and maintenance of healthy, genetically diverse populations of many species, but this is true especially for large carnivores.

Using WDC dogs to locate the scat of these target species, Beckmann was able to extract DNA from the samples found by the dogs, and determine relative densities, use of areas and movement patterns of carnivores. Moreover, he was able to identify potential bottlenecks for carnivores within the Centennials using these data as well.

The dogs have proven their worth. On one of her first field outings, Wicket located several areas where bears had been particularly busy, sniffing out 47 bear scats in a single day, and Camas, a German shepherd, located 40 scats. As a result of their efforts, 40 miles of BLM roads have closed and a 1,200-unit housing development and golf course was halted. The dogs uncovered enough evidence of grizzly bear use in the area to convince agencies and developers that this was a hot spot for an endangered species.

OPPOSITE PAGE, TOP: Wicket poses with the results of a day's labor during a survey for large carnivores in the Centennial Mountains.

OPPOSITE PAGE, BOTTOM: Tsavo at work in the Centennial Mountains, with Jon Beckman (WCS) and handler Alice Whitelaw (WDC).

Photo by Aimee Hurt

Photo by Julie Larsen Maher, courtesy of WCS



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Photo by Julie Larsen Maher, courtesy of WCS

After learning about the Beagle Brigade, a group of border patrol dogs used to identify organic materials carrying diseases and pests that could infect U.S. agriculture, Kim Goodwin, a conservation biologist working with the Invasive Weed Prevention Program at Montana State University in Bozeman, began to wonder: “Can dogs do the same thing on the landscape? Can a dog find a living plant among other living plants in a community?”

A specific plant species is an entirely different and complicated scent to detect than the scat of a specific animal. In order to detect a weed in the field, a dog has to work in a landscape dominated by plants, with many different species occurring in a small area. The dog must be able to recognize the volatile chemicals produced by a single species in a sea of plant scents. A tough task considering all plants produce these chemicals, known as vapor constituents, but in different ratios.

Goodwin worked with WDC to train dogs to locate spotted knapweed, testing their success at locating these plants against experienced human surveyors. The dogs used in her research performed better than people, and when using dogs as a team she found them to have 100 percent accuracy, whereas people only came as close as 75 percent. “We [humans] are inherently limited in what we can find,” says Goodwin.

In fact, one of the advantages dogs have, she discovered, is the ability to locate juvenile and small plants people can't see, particularly plant parts that are still underground.

So valuable were the dogs in locating exotic plant species, they were recently recruited in Oregon to detect the threatened Kincaid's lupine, a host plant for the critically endangered Fender's blue butterfly. The native lupine and butterfly currently exist on only one-tenth of one percent of the habitat that was once available. Current research and conservation efforts are focused on understanding the specific habitat needs of the plant, and locating new populations of both the lupine and the butterfly. The detection abilities of the dogs will soon be tested against experienced botanists in locating plants. The aim is to develop efficient search protocols, and continue to measure dogs' accuracy and efficiency.

As new uses for the amazing dog nose are discovered, the importance of our centuries-long relationship with canines deepens and appreciation for our “best friend” grows. At the rate dogs are successfully being used by scientists and managers to protect wildlife and better understand their ecology, it may soon be said that conservation truly has gone to the dogs. 🐾

Kathryn Socie freelance writes and edits in the sciences while helping non-profits like the Montana Natural History Center and Working Dogs for Conservation to grow. She can be reached at kathryn@socie.com

ABOVE, LEFT: Wicket gets a reward for job well done.

BELOW: WDC co-founder Megan Parker and Peppin ford the Swift River during a survey for fishers in the Selway-Bitterroot Wilderness.

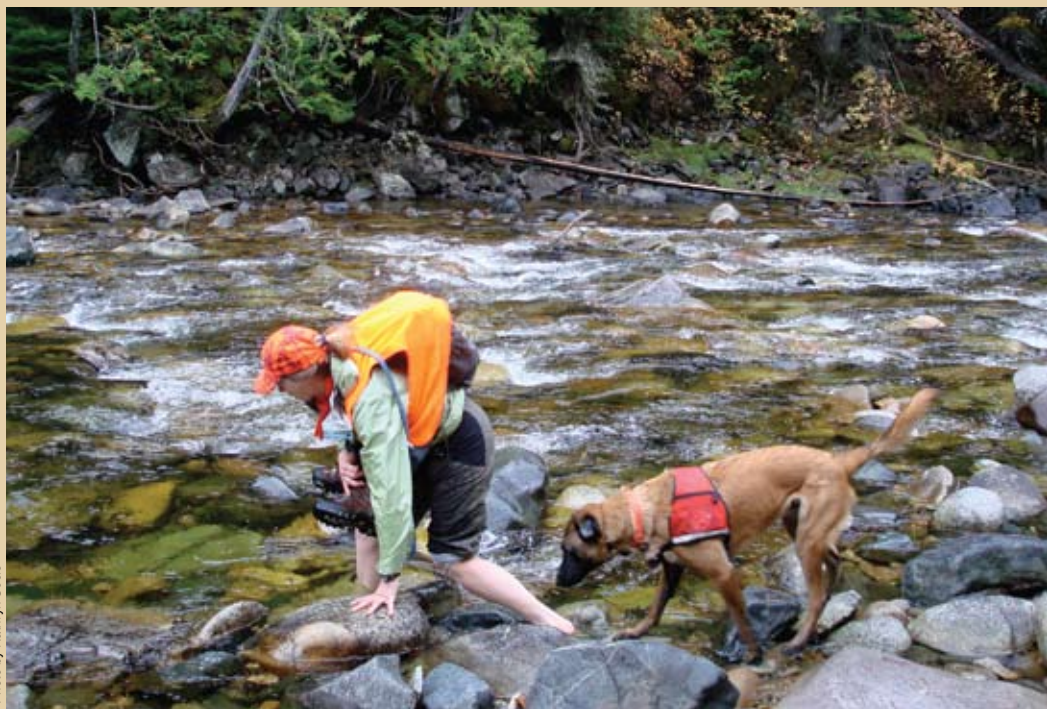


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About Working Dogs for Conservation:

Working with detection dogs to benefit science and conservation, Working Dogs for Conservation promotes on-going research into the abilities and applications of conservation detection dogs, and provides the unique method of surveying with detection dogs to wildlife researchers, conservationists and associated institutions. WDC has partnered on numerous projects around the globe, targeting many different threatened or endangered species.

Conservation dogs are selected for their extremely high play drive, ability to concentrate and their agility, often making them very difficult pets. Many of the dogs on staff are rescued shelter dogs or those relinquished by overwhelmed owners. WDC is committed to providing a positive, fulfilling life for working, retired and candidate conservation detection dogs.

To learn more about WDC online, go to www.workingdogsforconservation.org.

Photo courtesy of Working Dogs for Conservation