Dogs, humans team up to help eradicate Dyer's woad in Montana

November 14 2012, by Evelyn Boswell

Wibaux barks to let her handler know that she has detected another Dyer's woad plant. Credit: MSU, Sepp Jannotta

A Labrador that's trained to find cadavers, and a Border collie plucked from a Bozeman animal shelter are now helping rid Montana of noxious weeds.

Demonstrating her abilities on a frosty fall morning, Wibaux the Labrador scrambled up a Montana mountain and soon detected the scent of Dyer's woad over the smell of hikers, pets, deer, shrubs and other plants. Shaking with excitement but true to her training, Wibaux circled the weed, barked continually and finally sat down until her handler verified that she had, indeed, found Dyer's woad.

"Good dog. Good girl," Deb Tirmenstein said as she handed Wibaux a biscuit.

Tirmenstein marked the location on her GPS unit and said she would return alone later to spray the weed. It's a trip she has made many times since she, Wibaux and a Border collie named Seamus joined the Dyer's woad project in 2011.

The project grew out of research conducted at Montana State University and has multiple goals, according to weed experts at MSU, the University of Montana and Beaverhead County.

One goal is to completely eradicate Dyer's woad from Montana by using dogs and humans together. Amber Burch, assistant weed coordinator for Beaverhead County and coordinator of a statewide effort to fight Dyer's woad, said the weed is native to southeast Russia and used to be cultivated in England as a source of blue dye and medicine. It was first identified in Montana in 1934. It is now classified as a Priority 1B Noxious Weed in Montana.

One Dyer's woad plant can grow four inches in a week and produce as many as many as 10,000 seeds, Burch said. UM Natural Areas Specialist Marilyn Marler said the roots sometimes go down for more than five feet. When blooming, the plant can grow waist high. Noxious weeds compete with native plants and can overrun pastures and wildlife habitat.

Dyer's woad experts said the weed is extremely widespread in Utah and eastern Idaho, but it is a good candidate for eradication in Montana because it is far less widespread in this state. Once found in 17 Montana counties, Dyer's woad is now active in only seven because of the Montana Dyer's Woad Cooperative Project started in 1984. The Montana counties with active Dyer's woad are Beaverhead, Silver Bow, Carbon, Flathead, Gallatin, Missoula and Park County.

Dyer's woad in Montana has decreased 87.1 percent since 2005, Burch said. At last count for 2012, the total number of plants in the state was 997. A site is considered eradicated if no Dyer's woad plants are found in eight years. If a single plant is found during that time, the site is deemed eradicated as long as the plant doesn't produce seeds.

Another goal of the weed-dog project is to spread the word that that dogs and humans can find more weeds together than alone.

Kim Goodwin, a research associate in the Department of Land Resources and Environmental Sciences in MSU's College of Agriculture, started investigating the possibility of using dogs to detect noxious weeds when she was a master's degree student at MSU. She started her master's degree in 2005 and finished in 2010. Before that, in the 1980s, former MSU Extension Noxious Weed Specialist Pete Fay researched herbicides that might be used on Dyer's woad. He had MSU students, personnel and county weed crews pulling Dyer's woad. He started the Montana Dyer's Woad Cooperative Project.

Goodwin's research showed that dogs and people complement each other when looking for noxious weeds. People are good at finding large flowering plants and large patches of noxious weeds, but they can overlook individual weeds. Dogs work best in areas of low-density, high priority weeds. They can smell Dyer's woad even when the weed is a tiny rosette hidden by other types of plants. They can smell Dyer's woad when it's underground and a mere fragment of a root.

"Through our research, we found they are able to detect twice as many small plants as the surveyors do," Goodwin said.

The third goal of the weed experts is to find more locations for their applied weed-dog research.

"We are interested in determining how to turn this discovery into something useful for land managers," Goodwin said.

The effort that involves Wibaux and Seamus is based on Mount Sentinel at the east edge of Missoula. Marler, the natural areas specialist for UM, said it has been hard to control noxious weeds there because the mountain is steep and the study area covers 200 acres. Major progress has occurred in the past 12 years, however, because of city, county and UM cooperation.

Wibaux and Seamus joined the Mount Sentinel effort in 2011 and continued in 2012. MSU provided funding the first year. Goodwin is still a collaborator on the project, which is headed by Marler.

This year on Mount Sentinel, the dogs detected about 40 locations that humans missed, Goodwin said. The researchers discovered that by having humans look for Dyer's woad first. A day or more later, the dogs covered the same area. By comparing those numbers, they measured the dogs' usefulness.

"It showed the dogs do have utility," Goodwin said.

Goodwin said she got the idea for using dogs to detect noxious weeds after reading about the federal "Beagle Brigade." In it, the USDA's Animal and Plant Health Inspection Service (APHIS) uses beagles to inspect luggage and boxes at U.S. airports and ports of entry. Since dogs also detect land mines and have been used for thousands of years to hunt, she wanted to see if dogs could detect noxious weeds, too.

Goodwin used German shepherds in her master's degree research because of their intelligence and scent-work experience, Goodwin said. The Mount Sentinel project shows that a Labrador and Border collie can also detect noxious weeds. In this case, the weeds are Dyer's woad.

Goodwin's earlier research focused on spotted knapweed.

Wibaux was already trained to find human remains when she was recruited to detect Dyer's woad, said her owner, Tirmenstein. She has searched for cadavers and has assisted law enforcement in Montana, Washington, Idaho, Arkansas and elsewhere.

Aimee Hurt, director of operations for Working Dogs for Conservation, said the Montana-based organization that uses Wibaux for noxious weeds sends dogs all over the world to detect such smells as gorilla dung, cheetahs, and emerald ash borer beetles. The training to detect cadavers, noxious weeds, narcotics and scat is all very similar, she added.

Trainers introduced Wibaux to Dyer's woad by hiding the weed inside a box with holes in the lid and placing the box next to boxes containing other weeds. When Wibaux realized she would receive a treat or get to retrieve a ball every time she detected Dyer's woad, she started honing in on it. Her training became longer and more complex until she was able to detect Dyer's woad outdoors in a larger environment without getting distracted or confused.

Seamus came to Working Dogs for Conservation from Heart of the Valley Animal Shelter in Gallatin County, Hurt said. Noting that only one or two dogs in a thousand make good detection dogs, she said Seamus stood out from the others because he was playful even when surrounded by chaos. A closer look showed that he had other qualities that could be developed to make him into a successful detection dog.

"These dogs tend to be highly energetic and easy to motivate with food or toys," Hurt explained.

They also don't mind seeking the same thing over and over. They love working with a handler. They love rewards no matter if they receive

them 60 times a day or once. They aren't confused by competing scents. They aren't distracted.

"We are asking a lot of them, but they really love it," Hurt said. "We work with dogs that need a job to be happy."

Provided by Montana State University

Citation: Dogs, humans team up to help eradicate Dyer's woad in Montana (2012, November 14) retrieved 25 April 2024 from https://phys.org/news/2012-11-dogs-humans-team-eradicate-dyer.html