

# Canid Identification: Wolves, Coyotes and Dogs

Adapted from Wisconsin DNR



wolf and coyote photos ©David C. Olson

It can be difficult - especially at a distance - to tell the difference between a wolf and a coyote. In general, wolves are larger and bulkier while coyotes are shorter, sleek and lighter on their feet. Whether hunting, wildlife watching, or tracking, here are some helpful tips to distinguish between a wolf and a coyote.

Certain characteristics may vary with animal's age and health status, such as canine wear and fur conditions. If an animal has at least 8 out of 10 of these characteristics, there is a high likelihood that it is at least part or mostly wolf, but in some cases DNA testing may be needed to confirm its status.

- Head is relatively large, with broad cheeks ~ 5.75 inches (~15 cm) across, below the eyes.
- Face markings are well blended, lacking distinguishable borders.
- Well furred erect ears rounded at tip ~ 4.75 inches (~12.1 cm.) long.
- Light colored slanted eyes, ranging from amber to yellow.
- Normal coloration is rusty brown (cinnamon) with black tipped guard hair, winter coat has thick under fur and guard hair.
- Elongated snout (non-dished) with black nose and large ~ 1.0 inch (~23 mm) inward curved canine teeth.
- Narrow keeled chest and hips, front feet slightly toed out, shoulder height ~ 28 inches (~73 cm).
- Long legs with large ~ 3.5 inches (9.0 cm) long by ~ 2.6 inches (6.7 cm) wide front feet and smaller back feet
- Ruff of fur around neck and shoulder area resembling four layer cape appearance. Chest girth ~ 24 inches (~ 60.5 cm)
- Straight bushy tail with black tip, black spot (precaudal gland) on top of tails base. Tail bone length ~ 17.5 inches (43.5 cm)



**SIZE**

Wolves are generally bigger than coyotes. Be sure to look for other identifying characteristics.

Length (nose to tail): Wolf 5-6 feet, coyote, 3.5-4.5 feet.

Weight: Wolf, 50-100 pounds; coyote, 25-45 pounds.



**SIZE**

Wolves are generally bigger than coyotes. Be sure to look for other identifying characteristics.

Height (at shoulder): Wolf 27-33 inches; coyote, 20-22 inches.

Weight: Wolf, 50-100 pounds; coyote, 25-45 pounds.



**HEAD**

The snouts are distinguishing features. While the wolf's snout is blocky, the coyote's snout is pointed.



Wolf



Coyote

**EARS**

Looking at the ears is a key way to distinguish between a wolf and a coyote. Coyote ears are larger in proportion to head size. A 30 lb. coyote can have ears as big or bigger than an 80 lb. wolf. Also, wolves have rounded ears. Coyote's ears are pointed.



Wolf Scat



Dog Scat

**SCAT**

In wolves scat is distinct, cylindrical with tapered fringes of hair. Most are full of deer, beaver, or sometimes snowshoe hare hair. Usually over 1" in diameter. May be as wide as 1.5" and 4-7" long. Coyote is usually less than 1" diameter, and often full of small mammal hair. Domestic dog has a lack of hair, lack of tapered fringe and full of cereal matter.

**TRACKS**

Canine tracks can vary in size and shape depending on the ground softness, substrate, and size of the animal. Wolf tracks often appear a bit longer (narrow) in their overall shape, while dog tracks often appear a bit more round in shape.

**CANID TRACK IDENTIFICATION  
FRONT FEET ACTUAL SIZE**



- Wolves are usually 3 1/2 inches or more in length not including claws.
- Coyotes are usually 2 3/4 inches in length or less.

- Wolves and coyotes generally use direct registration when they walk (hind foot steps in line with front foot). Most dogs do not.

- Wolves and coyotes mostly travel by walking and trotting, and usually in fairly straight lines. Dog travel is more variable using a lot of gallops and bounds and often weaving about.



COYOTE



LARGE DOG (Highly variable)



WOLF



Wolf track in fresh snow

# Gray Wolf Biology

## Habits

Wolves are social animals, living in a family group or pack. A pack usually has six to 10 animals - a dominant ("alpha") male and female (the breeding pair), pups from the previous year (yearlings) and the current year's pups. Additional subordinate adults may join the pack upon occasion. The dominant pair is in charge of the pack, raising the young, selecting denning and rendezvous sites, capturing food and maintaining the territory.

A wolf pack's territory may cover 20-120 square miles. Thus, wolves require a lot of space in which to live, a fact that often invites conflict with humans.

While neighboring wolf packs might share a common border, their territories seldom overlap by more than a mile. A wolf that trespasses in another pack's territory risks being killed by that pack. It knows where its territory ends and another begins by smelling scent messages - urine and feces - left by other wolves. In addition, wolves announce their territory by howling. Howling also helps identify and reunite individuals that are scattered over their large territory.

How does a non-breeding wolf attain dominant, or breeding status? It can stay with its natal pack, bide its time and work its way up the dominance hierarchy. Or it can disperse, leaving the pack to find a mate and a vacant area in which to start its own pack. Both strategies involve risk. A bider may be out-competed by another wolf and never achieve dominance. Dispersers usually leave the pack in autumn or winter, during hunting and trapping season.

Dispersers must be alert to entering other wolf packs' territories, and they must keep a constant vigil to avoid encounters with people, their major enemy. Dispersers have been known to travel great distances in a short time. One radio-collared Wisconsin wolf traveled 23 miles in one day. In ten months, one Minnesota wolf traveled 550 miles to Saskatchewan, Canada. A female wolf pup trapped in the eastern part of the Upper Peninsula of Michigan, died from a vehicle collision near Johnson Creek in Jefferson County, Wisconsin in March 2001, about 300 miles from her home territory.

Nobody knows why some wolves disperse and others don't. Even siblings behave differently, as in the case of Carol and Big Al, radio-collared yearling sisters in one Wisconsin pack. Carol left the pack one December, returned in February, then dispersed 40 miles away. Big Al remained with the pack and probably became the pack's dominant female when her mother was illegally shot.

In another case, two siblings dispersed from their pack, but did so at different times and in different directions. One left in September and moved 45 miles east and the other went 85 miles west in November.

## Food

Timber wolves are carnivores feeding on other animals. A study in the early 1980s showed that the diet of Great Lakes wolves was comprised of 55 percent white-tailed deer, 16 percent beavers, 10 percent snowshoe hares and 19 percent mice, squirrels, muskrats and other small mammals. Deer comprise over 80 percent of the diet much of the year, but beaver become important in spring and fall. Beavers spend a lot of time on shore in the fall and spring, cutting trees for their food supply. Since beavers are easy to catch on land, wolves eat more of them in the fall and spring than during the rest of the year. In the winter, when beavers are in their lodges or moving safely beneath the ice, wolves rely on deer and hares. Wolves' summer diet is more diverse, including a greater variety of small mammals.

## **Breeding biology**

Wolves are sexually mature when two years old, but seldom breed until they are older. In each pack, the dominant male and female are usually the only ones to breed. They prevent subordinate adults from mating by physically harassing them. Thus, a pack generally produces only one litter each year, averaging five to six pups.

Great Lakes wolves breed in late winter (late January and February). The female delivers the pups two months later in the back chamber of a den that she digs. The den's entrance tunnel is 6-12 feet long and 15-25 inches in diameter. Sometimes the female selects a hollow log, cave or abandoned beaver lodge instead of making a den.

At birth, wolf pups are deaf and blind, have dark fuzzy fur and weigh about 1 pound. They grow rapidly during the first three months, gaining about 3 pounds each week. Pups begin to see when two weeks old and can hear after three weeks. At this time, they become very active and playful.

When about six weeks old, the pups are weaned and the adults begin to bring them meat. Adults eat the meat at a kill site often miles away from the pups, then return and regurgitate the food for the pups to eat. The hungry pups jump and nip at the adults' muzzles to stimulate regurgitation.

The pack abandons the den when the pups are six to eight weeks old. The female carries the pups in her mouth to the first of a series of rendezvous sites or nursery areas. These sites are the focus of the pack's social activities for the summer months and are usually near water.

By August, the pups wander up to two to three miles from the rendezvous sites and use them less often. The pack abandons the sites in September or October and the pups, now almost full-grown, follow the adults.

## **Distribution**

Before Europeans settled North America, gray wolves inhabited areas from the southern swamps to the northern tundra, from coast to coast. They existed wherever there was an adequate food supply. However, people overharvested wolf prey species (e.g., elk, bison and deer), transformed wolf habitat into farms and towns and persistently killed wolves. As the continent was settled, wolves declined in numbers and became more restricted in range. Today, the majority of wolves in North America live in remote regions of Canada and Alaska. In the lower 48 states, wolves exist in forests and mountainous regions in Minnesota, Michigan, Wisconsin, Montana, Idaho, Wyoming, Washington, Arizona, New Mexico, North Dakota, and possibly in Oregon, Utah and South Dakota.

## **Misconceptions and controversies**

Wolves are the "bad guys" of fable, myth and folklore. The "big bad wolf" fears portrayed in "Little Red Riding Hood," "Peter and the Wolf" and other tales have their roots in the experiences and stories of medieval Europe. Wolves were portrayed as vile, demented, immoral beasts. These powerful negative attitudes and misconceptions about wolves have persisted through time, perpetuated by stories, films and word-of-mouth, even when few Americans will ever have the opportunity to encounter a wolf.

Wolves are controversial because they are large predators. Farmers are concerned about wolves preying on their livestock. In northern Wisconsin, about 50-60 cases of wolf depredation occur per year, about half are on livestock and half on dogs. As the population continues to increase, slight increases in depredation are likely to occur. In Minnesota, with about 3,000 wolves, there are usually 60 to 100 cases per year.

### **Current Status of Gray Wolves in Iowa**

Wolves are listed as a furbearer under Iowa code and are protected by state law. We currently have a closed season but a gray wolf could be killed if it was causing damage. When gray wolves were listed as threatened and endangered by the US Fish and Wildlife Service they also had federal status. Now that the northern great lakes population has recovered and been delisted there is no federal oversight or penalty. The picture is complicated by the fact that the southern red wolf population is federally listed as endangered and since the historic range may have included southern Iowa wolves in southern Iowa (south of I-80) would be protected by the US FWS. Mountain lions and bears are not protected by state law and are not covered by any federal regulations since they are not a threatened or endangered. Several attempts have been made to have bears and mountain lions listed as furbearers, but so far those efforts have failed. This would require legislation not a department rule.