

A Brief History of Wolf Research

PART I

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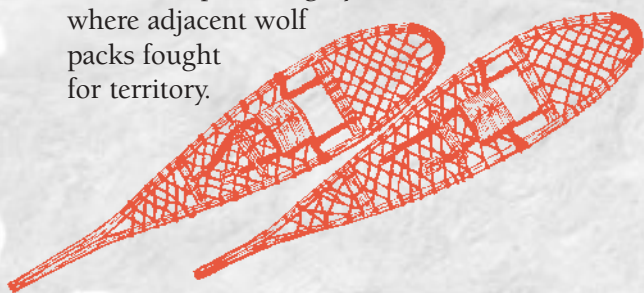
Wolf research is a young field of science. For many centuries, wolves were seen as a problem to be eliminated rather than as animals that should be studied. Although wolves have only been studied for about seven decades, remarkable new technologies have given researchers amazing ways of understanding wolves. Each new research tool or technique has allowed scientists to find answers to new questions about wolves. Here is a brief history of research tools and techniques.

Snow Tracking

HISTORY: Snowshoes were developed in prehistory. Sigurd Olson, the Minnesota author and wilderness advocate, may have been the first trained observer to track wolves in winter and publish studies of what he learned about their behavior.

ADVANTAGES/DISADVANTAGES: While snowshoes are inexpensive, tracking wolves is costly in terms of the time and energy a researcher must invest.

RESEARCH ISSUES: Tracking wolves allows researchers to see precisely where wolves travel and to indirectly observe some behaviors, such as raised-leg urinations. Tracking gives insights into the ways wolves hunt and how they utilize their kills. Now and then a patch of gory snow marks the scene where adjacent wolf packs fought for territory.



Field Observation



HISTORY: Binoculars and spotting scopes are technology arising from Galileo's work in the 16th century. The first scientist to observe wild wolves objectively was Adolph Murie, whose *The Wolves of Mount McKinley* was published in 1944. Murie did his work in what is now Alaska's Denali National Park, where wolves could be seen from a long distance by human observers.

ADVANTAGES/DISADVANTAGES: Wolves live in low densities and move quickly through dense cover during much of their lives. Because wolves are so elusive and difficult to observe, field observation has historically required great expenditures of time to gain a few glimpses of wolves. Two major advantages of this technique are that wolves observed this way behave naturally, and the equipment itself is inexpensive.

RESEARCH ISSUES: Field observations of wolves in natural settings have concentrated on wolf dens, for they are the most productive setting for observing wolves. Only when raising pups at a den or rendezvous site does a wolf pack center activities on a single location. Thus the technique of field observation has mainly produced findings about social interactions and pack behavior around dens.

(Note: The second part of this article will discuss fresh applications of this traditional research technique, applications that are producing stunning and unanticipated results.)

Foot-hold Trap

HISTORY: Foot-hold traps were developed around 1600 and have been modified frequently since then. Recent innovations reduce the stress experienced by a live-trapped wolf and decrease the likelihood of damaging the wolf's foot.

ADVANTAGES/DISADVANTAGES: Live-trapping wolves is difficult work. Beyond that, trapping is both a science and an art. Successful trapping requires a canny sense of wolf behavior. Live-trapping remains about the only way to capture a live wolf for research purposes in areas too forested for darting or netting by helicopter.

RESEARCH ISSUES: A live-trapped wolf can be drugged and then quickly weighed, measured and analyzed for physical condition. Drugged wolves can be blood-sampled for studies of disease, parasites and condition. The wolf is then released, usually none the worse for the experience. Because trapping is an antecedent to other techniques, primarily fitting wolves with radio collars, the ancient foot-hold trap remains crucial to wolf research in many areas.

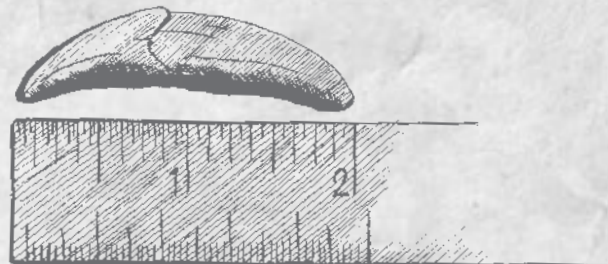


Necropsy

HISTORY: From the 1930s through the 1970s, a major thrust of the scientific study of wolves involved examining wolf carcasses. Carcasses were available because of hunting, trapping and poisoning programs until wolves became protected, although wolves illegally or accidentally killed were still studied. Carcasses were examined for stomach contents, weight, size, condition, parasites, litter size (from examination of reproductive tracts of wolves that had given birth) and so on.

ADVANTAGES/DISADVANTAGES: Studying dead wolves is more convenient than studying living wolves, for obvious reasons. The limitation of this technique is that the study of wolf carcasses cannot address most of the important and interesting issues about wolf behavior.

RESEARCH ISSUES: The study of wolf carcasses has taken two main forms. Early in the history of wolf research, taxonomists — notably E. A. Goldman — categorized wolves into a number of subspecies (“Arctic wolves,” “buffalo wolves” and so forth). Their work relied heavily on measurements of wolf skulls and bones. Many of their findings have been revised by subsequent research. Scientists continue to learn from the study of wolf carcasses. It is important today to examine carcasses to assess the health of specific populations of wolves.



Studying Captured Wolves

HISTORY: Wolves have been kept in zoos for centuries, yet the notion that their behavior could be studied is a recent one, perhaps dating to five or six decades ago.

ADVANTAGES/DISADVANTAGES: Studying confined wolves is inexpensive and convenient. Confinement, however, limits the range of behavior that wolves can exhibit. For example, confined wolves do not hunt, kill prey or disperse. The fact that the living situation is artificial creates doubts about which observed behaviors are natural and which might be a result of the unnatural setting.

RESEARCH ISSUES: Much can be learned about social interactions and pack dynamics by studying wolves in confinement. Wolves are wolves, even if they live behind fences. Researchers studying captive wolves must always be careful to try to determine what behaviors are being affected by the captive situation.

Scat Analysis

HISTORY: Researchers have been examining scats, or droppings, since the 1940s.

ADVANTAGES/DISADVANTAGES: Scat analysis is relatively simple and inexpensive, although it is a limited technique.

RESEARCH ISSUES: Scat analysis tells researchers what wolves have been eating. Although it is a technique that answers just one question, the question is a critically important one. Seasonal changes in the contents of wolf scats have taught

researchers important lessons about the ways wolves depend on different prey animals at different times of year.



Aerial Observation

HISTORY: Small aircraft became relatively abundant after World War II. Hunters were using small aircraft to hunt wolves in the late 1940s. In the early 1950s, researchers began hiring small planes for their purposes, often employing the same pilots who flew for hunters. A pioneer in the use of small planes for wolf research was Minnesota's Milt Stenlund, a former board member of the International Wolf Center.

ADVANTAGES/DISADVANTAGES: Using airplanes in winter enables researchers to cover great distances and find wolf packs in rough country where travel by snowshoe would be painfully slow and inefficient. Wolves that have never been hunted from the air will ignore planes, even if they buzz around and follow the pack. Thus, airborne researchers can study wolves behaving normally. Obvious disadvantages to aerial observations include the hazards, discomfort and expense of flying small aircraft.

RESEARCH ISSUES: Much aerial research has been done on Isle Royale, a national park in western Lake Superior, where wolves have never been hunted. Wolf pack size can be easily assessed from the air in winter. Airborne researchers have observed some dramatic predator-prey engagements.



Editor's note: Part II of this article will appear in the next issue. It will discuss how electronics has revolutionized wolf research, and the dramatic progress in field observations.



Howling

HISTORY: Howling to wolves probably dates to the 1940s. By one account, Wisconsin biologists Bill Feeney and Clarence Searles were assessing wolf populations one winter night in Iron County. On an impulse, Feeney howled. When that howl was answered by two nearby wild wolves, the men were so alarmed that one of them shinnied up a tree. Howling was later refined as a research technique by Canada's Douglas Pimlott and others.

ADVANTAGES/DISADVANTAGES: Howling is fun and inexpensive, requiring no equipment and no great technique. It is a legitimate research tool, although one with a limited range of applications.

RESEARCH ISSUES: Howling is mainly used to assess wolf populations, particularly to locate den sites that then can be studied by other means. Howling has helped researchers monitor the progress of wolf restoration by showing which formerly empty habitat has been colonized by wolves. Howling also teaches lessons about wolf howling behavior. ■

Steve Grooms has been writing about wolf management since 1976. He is the author of the book The Return of the Wolf, and serves on International Wolf magazine's advisory committee.