Minnesota Trapper Education Manual

Brought to you by:
The Minnesota Trappers Association
and
Minnesota Department of Natural Resources
Division of Wildlife

~ Safety ~ Animal Welfare ~ Responsibility ~
~ Ethics ~ Furbearer Conservation ~

Revised 7/2012

PREFACE

This manual is intended to improve your knowledge of Minnesota's furbearers and to provide the basic information needed to trap them in a responsible manner. In the manual is a discussion of basic techniques and how to avoid many of the most common trapping mistakes. Trapping is not for everyone and persons who trap, or who are considering trapping, must accept the responsibilities that come with it. The manual will not make an "expert" out of anyone – and is not intended to. Expertise in trapping comes only with years of experience and long hours of thoughtful observation and study. This manual will provide an introduction to the biology and management of Minnesota furbearers, and to the basics of using that resource responsibly and safely. It is not intended to encourage or discourage anyone who might want to trap.

Unfortunately, much of the opposition to trapping today is the result of an unknowing public and irresponsible acts by a few trappers. Although there are some who will oppose trapping no matter how it is conducted, there is no excuse for the avoidable abuses resulting from lack of knowledge by inexperienced and irresponsible trappers, which serve to inflame public opinion against all trappers.

As fur prices increased in the 1970s and early 1980s, so did the number of inexperienced trappers. In 1978, concerned members of the Minnesota Trappers Association (MTA) in cooperation with the Department of Natural Resources (DNR) began a statewide program of voluntary trapper education. That program recognized that many inexperienced trappers were sincerely interested in trapping responsibly, but they lacked any available source of direct information.

This manual is intended for use in conjunction with the MTA/DNR education program. In addition to classroom sessions, the program includes equipment demonstrations and practical field experience under the supervision of qualified instructors. Although this manual can be used alone as a reference or a self-instruction book, it will be of most value when used in combination with the education course.

OBJECTIVES

Individuals who study this manual and successfully complete the education course will:

1) Have a greater knowledge and appreciation of natural environments and their associated wildlife;
2) Be aware of the history and heritage of trapping and the fur trade;
3) Have a basic understanding of the biology and management of Minnesota furbearers;
4) Be familiar with trapping and wildlife regulations and their purpose;
5) Know how to behave ethically in the outdoors;
6) Understand how to properly prepare, maintain and use trapping equipment;
7) Know the basics of trapping Minnesota furbearers responsibly and effectively;
8) Understand how to properly prepare, care for, and use or market, fur pelts to realize the greatest benefit with the least resource waste; and
9) Understand the basics of outdoors safety and survival.

These are ambitious goals. We cannot stress enough that this manual and the education course are only a beginning. You are encouraged to check with your instructor for sources of additional information and to seek guidance from instructors or other experienced trappers at every opportunity. Above all, you will learn by doing. Take the time to analyze the reasons for your successes and failures and always attempt to improve on your methods. No two trappers do everything the same; they each develop a system that works for them. The purpose of this manual is to get you started on the right track in this learning experience.

HISTORY OF TRAPPING AND THE FUR TRADE IN MINNESOTA

In addition to providing a colorful glimpse of the heritage associated with trapping in Minnesota, this brief history of the fur trade also provides a valuable lesson in the importance of conservation principles when dealing with renewable natural resources.

Trapping and the fur trade were the most important influences in the early exploration and settlement of Minnesota. Although the first explorers came seeking a "northwest passage" to the Orient and it's gold and spices, they found wealth of another kind – fur. Although lumber, minerals, agriculture and industry would later assume the major economic importance in what is now Minnesota, it was fur that lured the first explorers and traders into the wilderness.

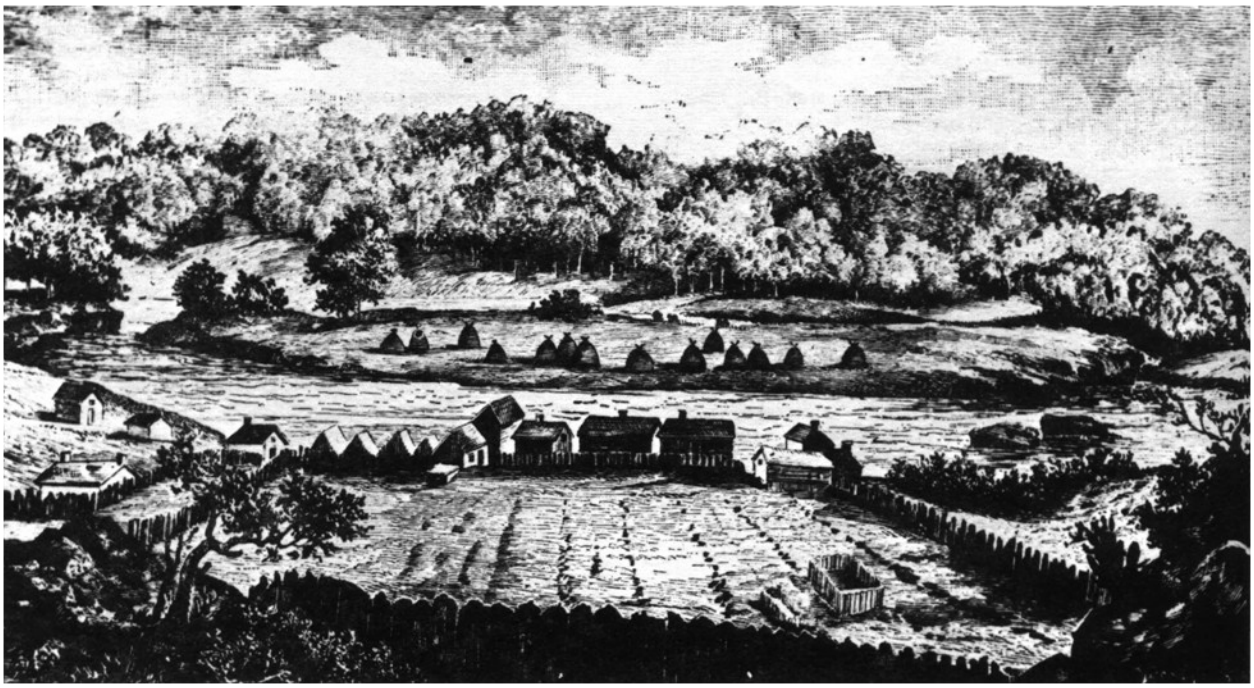
In the 1600s as fur resources in eastern North America were becoming depleted, the explorer-traders advanced westward through the Great Lakes, and northward up the Mississippi River. This first white men known to travel into what is now Minnesota were the French fur traders Pierre Radisson and Sieur de Groselliers who came from Quebec in 1655 to explore and trade. When they returned to Montreal, they told of the riches in fur to be found in the Minnesota country.

Early French trappers and traders followed the explorers and at first were independents, not working for any company. They were known as *courier de bois*, or "bush rangers," and would spend their winters in Minnesota and Wisconsin trapping and trading with the Indians. In the spring, they returned to the Indian village of Mackinac, on the narrow strait between Lakes Huron and Michigan, where they traded their furs for needed supplies and trade goods.

By 1700, with the establishment of French trading posts in Minnesota, the importance of the independent *couriers de bois* faded as fur company employees traded directly with the Indians. The *voyageurs*, or "travelers," were French Canadians employed by the fur companies to transport furs out of the wilderness and to transport supplies and trade goods back to the trading posts. These men were known for their stamina and endurance as they paddled and portaged their heavy canoes through the wilderness.

In 1731, Sieur de la Verendrye arrived at the Grand Portage (at the northeastern tip of Minnesota) and traveled the canoe route up the Pigeon River, across the border lakes (now the boundary between Minnesota and Ontario), and through Lake of the Woods to build Fort St. Charles on the Northwest Angle. Verendrye has been called the founder of the fur trade in northern Minnesota, Manitoba and Saskatchewan. The posts he established extended the fur trade north and west to the Saskatchewan and Missouri Rivers.

This 1827 engraving of the American Fur Company's post at Fond du Lac is reproduced by permission of the Minnesota Historical Society



By the mid-1700s competition between the French and British fur companies was intense. The British gained control over the fur trade when France lost the French and Indian War to Great Britain in 1763. Although Montreal (Northwest Fur Company) and Hudson Bay (Hudson's Bay Company) were the centers of the fur trade at that time, Grand Portage was an important trade center. In the spring, smaller canoes loaded with furs from the northwest outposts in northern Minnesota, Manitoba and Saskatchewan (and later Alberta), traveled southeast through the border lakes.

At the same time larger freighter canoes loaded with trade goods and supplies from Montreal headed up the St. Lawrence and Ottawa Rivers to North Bay and then across the tops of Lakes Huron and Superior. They met at Grand Portage. The traders and *voyagers* celebrated for a few days, exchanged their cargoes, and then made the return trips. Time was very important because these return trips had to be completed prior to freeze-up in the fall.

Although most of what is now Minnesota became part of the United States after the Revolutionary War, the British continued trading here until after the War of 1812. The American Fur Company was founded by John Jacob Astor in 1811 and it began trading in Minnesota. In 1816, Congress passed an Act prohibiting foreigners from engaging in fur trade in the United States, giving the American Fur Company a monopoly on the Minnesota fur trade.

Fort Snelling was built at the confluence of the Mississippi and the Minnesota Rivers in 1819, partially to protect the fur trade. At that time, the town of Mendota, just across the river from the Fort, was the major fur-trading center in Minnesota.

By 1820, there were already signs that the beaver population in Minnesota was being seriously depleted. Although disease, forest fires and even wolverines were blamed for the decline, there is little doubt that the unregulated harvest spurred by intense competition between companies, was primarily responsible. The heyday of the fur trade in Minnesota was near an end, and trappers and traders began concentrating their efforts in the West, where some areas of the Rocky Mountains still contained abundant beaver populations.

By 1842, the era of the "mountain man" ended when the fur trade collapsed with the demise of the American Fur Company. Silk hats had become the fashion, replacing those made from beaver felt. By this time beaver populations had been greatly depleted throughout most of their range in the United States.

Although we most often think of trapping and steel traps in connection with the fur trade era, a variety of methods were used. Steel traps had been invented in 15th or 16th century Europe, and they were used in the 17th and 18th century North America fur trade. But these traps were expensive and in limited supply. The early trappers and the Indians used any means at their disposal to capture beaver and other furbearers. These included shooting, netting, spearing, snaring, deadfalls, using dogs and even draining of ponds and the destruction of dens and lodges. It was not until 1823, near the end of the fur trade era, that Sewell Newhouse perfected the making of steel traps with interchangeable parts – thus making mass manufacture possible.

It would be easy to blame the demise of beaver and other species of fur bearers on simple greed, but the intense competition, the lack of a conservation ethic and the lack of regulations all contributed. Some efforts were made to curb the decline, but they were too little and too late. In the Mid 1820s, Hudson's Bay Company officials convinced the Indians in the Rainy Lake area to protect the beaver, but Indians from another region came in and took the beaver from the "resting lodges." The effect of this competitive and unregulated taking was made even worse because the beaver fur was used primarily for the making of felt, and there was little concern about taking prime pelts. Beaver were thus trapped year around.

In the latter half of the 19th century habitat changes caused by logging, uncontrolled fires, agricultural development and drainage along with continued trapping and hunting by the new settlers, further contributed to the decline of some furbearer species.

The first organized attempts at furbearer management in Minnesota date back to 1867, when the state legislature closed the mink, muskrat and otter seasons from May through mid-November. In later years, seasons were closed entirely for a number of species. In 1931, the Minnesota department of Conservation was formed (now the Department of Natural Resources) to manage the state's natural resources.

Furbearer harvests are now managed through regulations and habitat is protected and managed for furbearers and many other wildlife species. Populations of most Minnesota furbearers have recovered dramatically since the turn of the century, and no species is being threatened by over-harvest.

Minnesota trappers and hunters today take an annual harvest of furbearers, which is probably as high or higher than the average take during the fur trade era. The difference is that modern harvests are managed on a sustained-yield basis, which can be continued indefinitely, provided the habitat base

MOTIVATIONS

There are a number of reasons why people trap. For some it is mainly for money or out of a need to reduce wildlife damage, but for most trappers it is primarily for other less tangible reasons. Several recent studies, done in various parts of the country, have consistently shown that most trappers rate values such as nature enjoyment, challenge and recreation above economic gain as reasons why they trap. Some of the motivations behind why people trapped are discussed in more detail below.

Economics. Although monetary return is important to most trappers, those individuals who begin trapping because they think it will be an easy way to make a "fast buck" soon find out otherwise. If the average trapper took his annual earnings, subtracted the costs of traps, equipment and transportation, and then divided the remainder by the number of hours spent obtaining permission, scouting, preparing equipment, setting and checking traps and handling and selling the fur; he would realize just how low his hourly earnings really are. But for most, that doesn't matter. The attraction of trapping goes far beyond the dollars earned.

Challenge and Recreation. Trappers, of necessity, must learn the requirements and habits of the animals they seek in great detail. *A recent national survey found that trappers were among the most knowledgeable groups about wildlife, and were also among the most concerned for the preservation of wildlife habitats.*

Not only does trapping require detailed knowledge of animals, but it also involves long hours, physical labor and the need to be out every day, no matter what the weather. A typical day on the trapline, even for "part-timers," begins before daylight with trap checking and resetting, and does not end until well after dark when all furs have been properly taken care of and equipment is prepared for another day. Successful trapping is far more difficult than many people realize. Fox trappers, for example, typically average only about one fox per 100 trap nights (a trap night is one trap set for one night). It sounds like hard work and it is; yet to those who understand and appreciate trapping, nothing is more satisfying. If you lack the motivation and perseverance to do the work involved, day after day, regardless of the weather, then you should consider taking another activity that requires less discipline.

Aesthetics and Heritage. Some of the motivations for trapping are difficult to express, but are an immeasurable part of the experience. For some trappers, it is the knowledge that they are practicing a skill, which dates back to the time of their forefathers. For others, it is seeing the changing moods of nature – experiencing frosty sunrises and glorious sunsets far removed from the rush of everyday life. There is also a feeling of satisfaction and accomplishment that comes from being able to identify animal sign at a glance, and to interpret what is seen with a fair degree of accuracy.

Damage Control. Some people trap not so much because they want to as because they have to. Landowners and livestock producers often fall into this category. Although there are some methods of preventing or reducing wildlife damage that do not involve removal of animals, the fact remains that the only practical solution to many problems is removing the animals that are causing it. Trapping remains the single most versatile and effective tool for removing many types of problem animals.

Responsibility. No matter what your motivation for wanting to trap, we want to stress that you should never set a single trap unless you are willing to learn how and where to set it correctly and unless you are willing to check it promptly and regularly as required by law. There is no room in the ranks of trappers for those who are unwilling to accept that responsibility, or who are unwilling to respect and study the animals they seek.

ETHICS AND RESPONSIBILITY

Key ingredients for trappers who care about their sport

Many people view trapping and the use of fur as controversial issues. Much of this controversy stems from misinformation and misunderstanding on both sides. As trappers, we know that our sport is a legitimate use of a natural renewable resource, but we often have trouble putting this in terms that nontrappers can understand or appreciate.

Few of us are accomplished public speakers or trained in public relations. Nevertheless, we communicate a message about our sport and about ourselves every time we mention that we're trappers.

Demonstrating ethics and responsibility while trapping sends many positive messages that nontrappers understand and appreciate more than any explanation. These values are understood universally and don't require extra time or special training. Yet they tell people that we're proud to be trappers, we care about our sport and we care about the resource we're using.

"You are your brother's keeper. Your actions reflect either credit or discredit on the thousands of others who run traplines in Minnesota and across the nation."

Maintain Good Landowner Relations

Obtaining permission to trap is more than the law. It's an opportunity to earn respect by respecting landowners and their property. Be polite and presentable while asking for permission. If it's granted, take time to make sure you know where the property lines are so that neighbors' rights are upheld as well.

Ask the landowner or tenant if they've noticed damage or other problems caused by furbearers. Chances are that if you're taking time to ask permission from a particular landowner, the property has good habitat and high furbearer populations. Asking about damage will help to reinforce the point that trapping provides a service by reducing furbearer populations and the problems they can cause. By the same token, don't promise more than you can deliver.

As always, practice common sense and courtesy by leaving gates the way you found them, walking or using a four-wheeler when fields and field roads are too wet to drive, and avoiding sets that might result in non-target catches.

Many trappers send a short thank-you note to landowners and tenants. A holiday greeting card can mean a lot as well. Offering to help with a chore or dropping off a pheasant or some venison will do more than words can express.

Respect Other Outdoor Enthusiasts

Autumn and winter are a popular time for many outdoor activities like hunting, hiking, bird watching and cross country skiing. Taking the time to find out which activities are likely to take place on an area you're trapping is the first step in avoiding any misunderstandings between you, the landowner and others sharing his property.

Most activities are compatible with trapping and don't require further thought. If an area receives allot of hunting pressure, you can time your use of a property to avoid peak times that hunters tend to choose like opening weekends and holidays. If this isn't practical, use the most selective traps and trapping techniques to reduce the chances of a non-target catch. Doing so will improve your skills, image and satisfaction.

Keep Familiar with Improvements in Trapping Equipment and Techniques

Nearly all trappers have looked for better ways to do the same job. While this usually involves years of refinement and a realization that simple methods often work best, new developments in equipment and methods often have a place in specific applications or even broader use.

Body-gripping traps like Conibears are a good example. Many trappers considered them "gadgets" when they were first made available. Today they form the backbone of the muskrat and beaver trapping industry.

Improving efficiency, selectivity and humaneness isn't a new idea for the trapping industry. Many time-honored techniques addressed thess concerns about trapping. However, research and development are occurring at a faster pace today and require more effort to keep abreast of state-of-the-art developments in equipment and methods.

Keeping up-to-date with new developments is easier today than it was in the past. Some sources are: trapper magazines and newsletters,

presentations at trapping conventions, instructional books and videos, and contact with other trappers at fur sales and conventions.

Some methods for improving efficiency, selectivity and humaneness

Use pan tension devices to avoid non-target catches

Use extra swivels and center-mounted chains to hold more animals and reduce the chance of injuries

Use modern positioning techniques at dirt hole sets to increase selectivity

Use short trap chains for most land sets, especially those targeted for fox and coyote

Use guarded or "stop-loss" traps for muskrats in shallow water or dry land sets

Use dispatching methods that are quick and humane

Use trap sizes that are appropriate for the target species – pad catches are desirable for fox, coyote, raccoon and many other animals because they cause fewer injuries

Use baits and lures that attract target species but not other animals

Use cage, box or species-specific traps near barns, outbuildings and other locations where domestic animals may be present

Use common sense in choosing set locations that maximize opportunities to catch target species and minimize opportunities to catch other animals

Use secure methods of attaching traps – tailor methods to hold the largest species you may catch

Use traps with padded or laminated jaws where the risk of non-target catches is high

Use discretion when setting body-gripping traps

Use time to your advantage – don't set more traps than you can handle

Use early morning trap checks to reduce the time an animal is held, reduce its chances of escape and avoid theft of traps and animals.

Appreciate Perceptions of Nontrappers

Trappers who act responsibly and ethically don't have anything to hide. However, they need to appreciate the fact that most people know little or nothing about trapping.

Differences in backgrounds, cultures and experience can cause misinterpretation of your words, deeds and actions. Keep this in mind when communicating with nontrappers. Put yourself in their place if you want an honest evaluation of how you're portraying your sport. Make an effort to communicate on their level. Above all, remember that high standards of ethics and responsibility form a message that can't be mistaken.

"Always play the game fairly. Your sense of accomplishment and pride in your success will be all the greater"

Respect the Resource

Ethical trappers respect the resource they use. Part of this involves making the most of your catch. Follow proper pelt handling procedures and take pride in your work at all times. Look for secondary markets for carcasses, castor and other by-products for baits and lures when possible. If not, dispose of them properly.

Wildlife laws are designed to conserve our fur resources while allowing for responsible use. Become familiar with and obey all regulations. Report violations to a Conservation Officer. Violators are stealing from trappers and nontrappers alike, as well as giving the sport a bad name.

Conclusion

You may be the only trapper that many people will ever know. Leave them with a gold impression by upholding high standards of ethics and responsibility in your words, deeds and actions. Be proud to be a trapper and a good representative for others who enjoy the sport.

"Trapping's rewards are great, not only in the harvest of fur, but in the very special satisfaction gained from time spent afield. Accept your share with gratitude and don't waste a precious gift"

- **Maintain Good Landowner Relations**
- **Respect Other Outdoor Enthusiasts**
- **Keep Familiar with Improvements in Trapping Equipment and Techniques**
- **Respect the Resource**
- **Identify and record all trap locations accurately**
- **Pick up all traps as soon as you are finished trapping**
- **Cooperate with wildlife management agencies**

FURBEARER MANAGEMENT PRINCIPLES

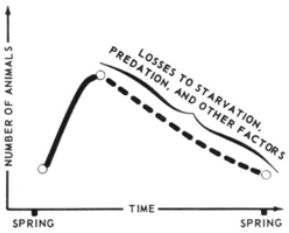
Furbearing mammals, like all other species of animals, are dependent on having adequate food, water, shelter and living space if they are to survive. These basic life needs are commonly referred to as ***habitat***. Any given amount of habitat will only support a certain number of animals. The number of animals that the habitat is capable of supporting on a year-around basis is called ***carrying capacity***.

The carrying capacity depends on the quantity, quality and arrangement of habitat factors, as well as on the amount of crowding that the animal will tolerate. The ability of the habitat to support animals varies with the seasons, and reaches a low in late winter in Minnesota. At that time, lack of adequate food, shelter or other resources can become a ***limiting factor***, which sets the upper limit on the number of animals that can survive. For example, a marsh may have enough of everything to support 1,000 muskrats in the summer and fall, but in the winter there may be only enough food or deep enough water for 200. That means that the year-around capacity is 200 and that the remaining 800 will die or possibly ***disperse*** (move out). However, even most of the dispersers will ultimately die.

Carrying capacity can be compared to the volume of a bucket. When the bucket (habitat) has been filled, adding more to it simply wastes what is added. That is why most stocking programs fail. As the seasons progress and food and shelter become more limiting, the population is forced into a smaller and smaller habitat "bucket." Since this smaller bucket cannot support as many animals, the excess must die, one way or another, or attempt to move and find unfilled "buckets." The only way to bring about a long-term increase in the population is to increase the size of the bucket (improve the quantity or quality of habitat).

Because the chances of survival in the wild are uncertain, nature has provided most species of animals

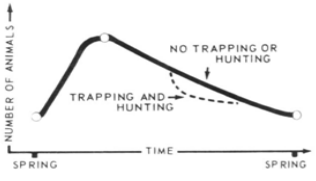
with the ability to produce far more young than are needed to maintain the population. This is nature's way of assuring that enough animals survive to replenish the breeding population and to disperse into available habitats. A portion of this excess, called the ***harvestable surplus***, is the amount that can be taken by people, without reducing the breeding population. This is possible because the trapping or hunting mortality (deaths) replaces or compensates for some of the natural mortality that would otherwise occur.



This harvestable surplus can be compared to the interest from a savings account. The "interest" (harvestable surplus) can be used each year without reducing the "principal" (breeding population). By adjusting the number of animals removed (for example, by seasons or limits) the population can be allowed to increase, decrease or remain stable. Use of the surplus provides recreation, income, products, food and employment, without depleting the population. The population remains to provide ecological, aesthetic and recreational values, and to produce the next year's surplus.

Sometimes the best management plan requires that a population be held below its carrying capacity, for example to prevent excessive wildlife damage. Also, management attempts to maintain levels above the carrying capacity of the habitat are invitations to environmental problems, disease and resource waste. Wildlife cannot be stockpiled.

Some species of furbearers can be safely harvested at a higher rate than others. It is nearly impossible to over-trap a prolific furbearer like the muskrat, which breeds at a young age and has multiple, large litters annually. Muskrat populations typically experience a 70 to 90 percent turnover, whether they are harvested or not. Normally, up to 70 percent of the muskrats present in the fall can be harvested without a detrimental population effect. Practically speaking, except on small areas of restricted habitat, this 70 percent level is difficult to achieve and over-trapping very seldom occurs. On the other hand, for an animal like the fisher which does not reproduce until two years of age and which has only one small litter per year, a harvest rate of about 20 percent might be the maximum that could be safely allowed. Wildlife managers must take into account not only the biology and ***population dynamics*** of the species, but also the amount of harvest pressure and how vulnerable the species is to being caught. Fur prices, trapping and hunting license sales, accessibility of the habitat, and effectiveness of the harvest methods must all be considered when managing some furbearer species.



FURBEARER MANAGEMENT IN MINNESOTA

The Department of Natural Resources manages Minnesota's furbearer resources for the benefit of the citizens of the state. The Department recognizes that furbearers have a variety of ecological, recreational, economic and aesthetic values, and that those values can be positive or negative. Also, since values are determined by people, not nature, the same animal can have a wide range of values depending on the time, the place, and who is being affected by it.

The goal of management is to maintain a productive harmony between people and furbearer resources for present and future generations of Minnesotans. This goal is accomplished by maintaining habitats and controlling harvest so that harvestable surpluses can be utilized, consistent with habitat disease, wildlife damage, and the desires and tolerances of people.

In order to responsibly manage furbearers, the Department monitors furbearer populations and harvests, sets regulations, maintains habitats, and enforces laws related to furbearers.

Seasons. Seasons are based first of all on their population impacts. No season, which would be detrimental to the survival of a species in the state, is permitted. Once that biological requirement is met, further decisions are based primarily on the concerns of people who use, value or are affected by the resource. Recreational opportunity, fur primeness, damage problems, landowner concerns, non-harvest values, disease problems and all other factors enter into these decisions, and opportunities for public input are provided.

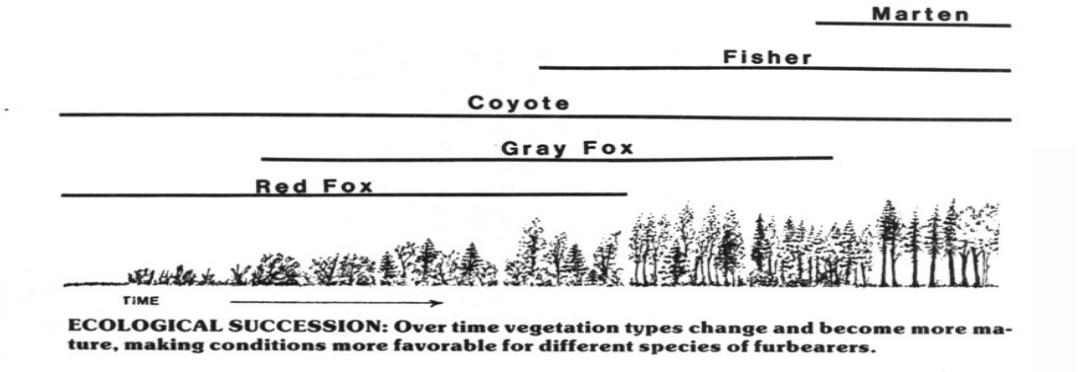
Surveys. Harvest and fur price surveys are conducted for all species of furbearers in Minnesota. In addition, relative changes in population densities are monitored by scent-post surveys for land carnivores and by aerial surveys for beaver. For species, which are highly sensitive, exact figures are determined through pelt registration. For those species, carcasses are also collected from trappers and information on sex ratios, ages and productivity is used to "model" their populations with the aid of a computer. A number of special surveys are also conducted each year to evaluate particular areas of concern.

Habitat. Although furbearers are often not the highest priority in many habitat management programs, the fact remains that furbearing animals are primary beneficiaries of many of these practices. This is particularly true of wetland areas, which are prime habitat for muskrat, mink, beaver, raccoons, foxes and other furbearers. In fact, furbearers often do so well on these areas that conflicts develop with management for other species such as waterfowl. Forest management practices also influence furbearer populations, with some species favoring early successional stages and others favoring later stages.

Enforcement. Minnesota Conservation Officers enforce the laws relating to furbearers in all 87 counties of the state. Of course they have many more duties in addition to the furbearer regulations, but they are always interested in and concerned about situations where violations are occurring. It is important, however, for trappers to police their own ranks and to help enforcement officers by reporting violators. People who take furbearers illegally are stealing from the honest citizens of the state.

Conservation and Trapline Management. Furbearer regulations are established for the entire state, or for large regions of the state, depending on the species. Conditions vary within such large areas and it is up to the trapper to practice conservation on his own trapline and to attempt to take only a portion of the surplus. This sounds simple, but is actually quite complicated because in many areas a number of trappers and hunters are competing for the same resource on the same area. Fortunately, trapping and hunting tend to be self-limiting for many species. The time and effort required to take these animals exceeds the benefit long before they are reduced to critically low levels. For other species which are not so resilient, regulations have to be correspondingly more restrictive.

On areas where trappers have exclusive or near-exclusive trapping privileges, individual trapline management is much more feasible. On these areas the trapper can manage not only the harvest, but in many cases the habitat as well. By doing so he can be assured of having a relatively high-sustained harvest year after year.



ECOLOGICAL SUCCESSION: Over time vegetation types change and become more mature, making conditions more favorable for different species of furbearers.

MINNESOTA'S FURBEARER RESOURCE

Minnesota is blessed with a rich and diverse furbearer resource. Because of Minnesota's geographic position, the state has furbearers representative of both northern and southern climates, and of prairies (and agricultural areas) and forests.

Minnesota's furbearer resource has a variety of positive values to trappers, hunters, landowners, campers, photographers and other outdoor users. Over the years, the economic value of the fur resource to Minnesota trappers and hunters has been from $3 million to $20 million annually. The other values are more difficult to measure. There is no doubt that the presence of beaver, otter, wolves and other animals adds immeasurably to the aesthetic value of outdoor experiences for many people.

Furbearers also sometimes have negative values such as predation on livestock by foxes or coyotes; destruction of sweet corn by raccoons; and flooding of roads, fields or forests by beaver. Although the positive values of furbearing mammals far exceed their more detrimental aspects, the damage that they cause costs hundreds of thousands of dollars annually in Minnesota. Trapping is the single most effective, safe and important tool for resolving these situations. Because the people who most benefit economically from furbearers – trappers and hunters – are not often the ones bearing the burden of the costs – livestock producers and farmers – it is in the best interest of trappers and hunters to provide assistance with wildlife damage problems whenever possible.

In addition to the values that people place on furbearers, all wildlife species have a function in nature. The ecological influences of these animals vary, and whether their influence is "beneficial" or "detrimental" depends solely on the perspectives of people, and not all people agree. Nearly everyone does agree, however, that all species of native wildlife do have a place in the Minnesota wildlife community. We all have a responsibility to wisely manage those species so that they can be perpetuated.

OPOSSUM

(Didelphis virginiana)

Description:

An adult opossum is about the size of a large house cat, and resembles a cream to gray colored rat with a pointed snout and a long, naked tail. The gray color is from the white guard hairs over black-tipped under-fur. The ears and tail are naked, and the ears are black at the base and lighter at the tips. The female has a fur-lined pouch on the belly, similar to that of a kangaroo. The tail is prehensile and can be used to grasp branches or other objects.

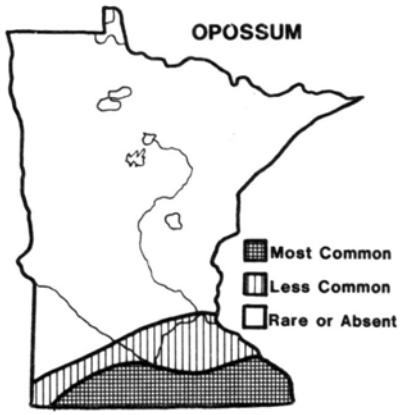
Biology:

The opossum is the only North American marsupial, and breeds in early spring. After a gestation period (length of pregnancy) of only 13 days, the partially developed young are born and crawl up the belly to teats in their mother's pouch, where they attach and remain for about two months. About nine young survive and by three months of age they can leave the pouch for short periods of time. Some will ride on the female's back by clinging to her fur, while others remain in the pouch. The young become independent at about four months of age.

Opossums have a loosely defined territory. Some confine their movements to 40 acres while others travel constantly. They are primarily nocturnal (active at night), and spend the day in a hollow tree, hollow log, brush pile, squirrel's nest or other dry safe place. Opossums will eat almost anything, including carrion, insects, fruit, small mammals, birds (including poultry), and many other items. They are often attracted to roadsides where they feed on road-killed animals, including other opossums. Having a relatively small brain, dominated by the olfactory (smell) regions, they are easily attracted by sweet or foul odors.

Habitat:

Opossum are found primarily in the woodlots of southern Minnesota. The susceptibility of their ears, nose and tail to frostbite apparently limits them from spreading farther north. Virtually all-adult opossums in Minnesota will have evidence of frostbite on their ears and tails. Areas of mixed woodland, brushland and cropland are good opossum habitat.



Sign:

Opossum tracks are distinctive especially the widely angled "big toe" of the hind foot. Opossum droppings though, are not distinctive and vary according to the type of food eaten.

OPOSSUM. Continued

Trapping Tactics:

Sets: Cubby, Livetrap

Traps or trapping systems: Small or medium doublespring body-gripping traps (#120, #220 or equivalent) in cubby or slotted box, livetraps 9" x 9" x 30" or larger.

Lures and baits: Almost any strong-smelling food lure or bait will attract opossums, including tainted meat, fruit or fish.

MUSKRAT

(Ondrata zibethica)

Description:

The muskrat is a rodent closely related to the field mouse, and resembles it except for size. Muskrats weigh from one to three pounds, are dark brown in color, and have a long, naked tail, which is flattened vertically. The muskrat's small front feet are used for holding vegetation, and its large hind feet are used in swimming. The hind feet are unwebbed but the toes are fringed with closely spaced stiff hairs, which help to propel it through the water. The muskrat swims with its head, rump and tail exposed above the surface of the water.

Biology:

Muskrats are very prolific and may breed from April to September. A female usually has two or three litters per year, averaging six to eight young per litter. The gestation period is about 30 days and the first litters are born in May, about one month after ice-out. Young muskrats are on their own in three to four weeks, and then usually establish territories 10 to 60 yards from their mother's den. Sometimes they travel several miles to find suitable habitat that is not occupied by another muskrat. Except in rare instances, young muskrats do not reach reproductive maturity until the spring following their birth.

Muskrats construct a den either in the bank or in a lodge, which they build in the water. When the den is on land, the muskrat may dig several chambers, with the burrow entrance below the water level. In periods of low water, it digs a tunnel or trench to provide access from the den to deep water. The lodge is built from mud and aquatic plants such as cattail or bulrush, and is usually two or three feet high and four to six feet across. There is normally one dry nest chamber dug out near the center of the house with two underwater entrances or "plunge holes." Sometimes several nest chambers will be constructed in a single large lodge. The greatest lodge-building activity is in late summer and fall. In forested areas, muskrats do not normally build their own lodge, but construct a den in the side of an active beaver lodge. This den is a separate chamber from the one used by the beaver.

Feeding platforms may resemble small lodges, but actually are loose rafts of vegetation where muskrats can crawl out of the water and feed. In winter, muskrats often construct "push-ups," which are hollow frozen shells of submergent vegetation constructed over a hole in the ice. These have no connection with the bottom substrate and are usually constructed near the lodges.

During the fall, there is some overland movement of muskrats, primarily due to the drying up of shallow ponds, which forces the muskrats to look for larger wetlands, which still contain water. The large-scale movement in the spring, just after ice-out, is related to the onset of breeding activity. At this time, muskrats establish territories, which they defend by fighting off other muskrats. Fighting may also occur if food is scarce or population levels are very high. But, for most of the year, there is little fighting and a number of muskrats share the same den.

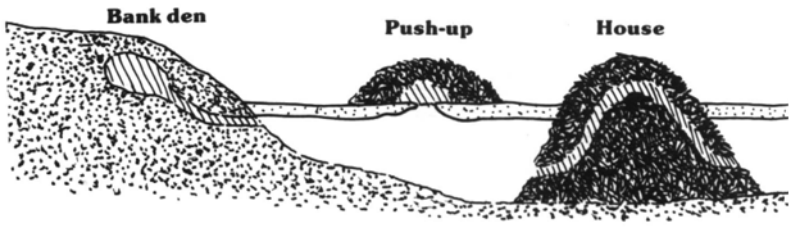
Muskrats occupy a small area, ranging only 100 to 200 feet from their den. They are creatures of habit and use the same trails, feeding platforms and toilet stations over and over. They are primarily vegetarians, eating the roots, shoots, stems, leaves, tubers and bulbs of aquatic plants, and other plants near the water's edge. Cattails probably rank first as a food item in Minnesota. The muskrat's diet may also be supplemented with clams, snails, crayfish, fish, frogs and even

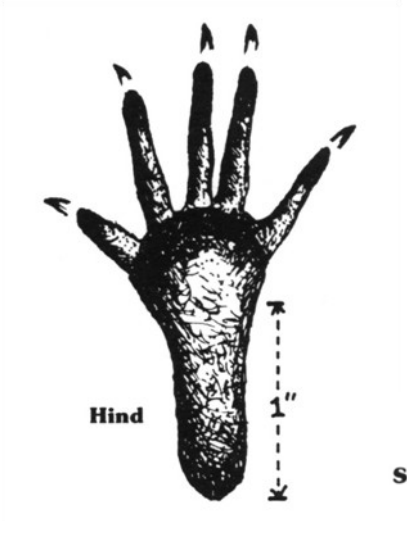
the carcasses of other muskrats, especially in winter or when vegetation is scarce. In forested areas, muskrats will eat the bark of pencil-sized twigs obtained from beaver food caches in winter.

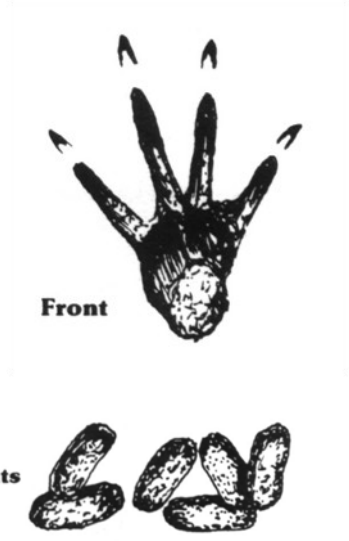
Habitat:

Muskrats are almost entirely aquatic and are found in marshes, streams, lakes, ditches and ponds – wherever there is enough food and water to support them. Areas with extensive stands of cattail are preferred, although bulrush, sedge, arrowhead and wild rice stands bay be used to a lesser degree. The water must be deep enough not to freeze to the bottom (usually at least 2 to 3 feet).

Muskrats construct a variety of structures. "Push-ups" are made only after freeze up. Bank dens are used extensively in spring and summer or, in some areas, year-around. Houses are built in the fall and are used from then until spring, with less use in summer.







Sign:

Muskrat sign is, of course, most often found near water. In marshes, the presence of muskrats is usually indicated by the occurrence of scattered dome-shaped lodges. In some areas, where muskrats primarily use bank dens, the burrows are not obvious and it is necessary to look for other signs of their presence. Evidence of feeding such as pieces of plants floating in the water and the presence of runs and channels through vegetation are indications of muskrat activity. The small "hand-like" prints of the front feet and the more elongated hind feet, both with long toes, are also fairly distinctive. The small brown pellet-like droppings are about one-half inch long and often found in feeding areas and on logs or rocks protruding from the water.

Trapping Tactics:

Sets: Feedbed, Trail, Bank Hole, Channel or Runway, Floating

Recommended traps or trapping systems: Conibear #110 or #120 (or equivalent), #1 ½ foothold (standard) or #1 or # 1 ½ guarded ("stop-loss") in shallow water or heavy vegetation areas.

Lures and baits: Usually not necessary for muskrats. Apple slices, carrots or corn are effective baits.

Comments: Muskrat traps should be staked in deep water and the heavier more durable #1 ½ foothold used to make the set. The weight of this trap is sufficient to drown a muskrat so no slide wire and lock is necessary in deep water. If the vegetation is such that a trapped muskrat may become entangles, or if the water is shallow, the guarded type or body-gripping traps should be used

BEAVER

(Castor canadensis)

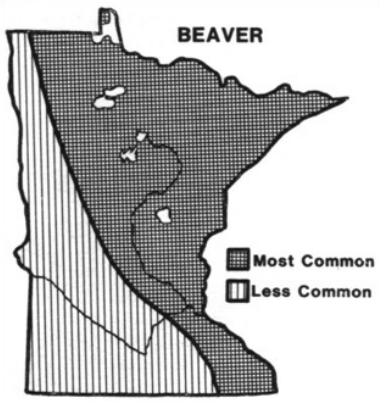
Description:

The beaver is the largest rodent found in North America, with adults commonly weighing 40 to 50 pounds and rarely reaching 70 or 80 pounds or more. It is highly adapted for aquatic life having large, webbed hind feet, and nostrils and ears constructed with valves to keep water out when the animal submerges. The second claw on each hind foot is split lengthwise and is used like a comb for grooming and to coat the fur with oil from its large oil glands. The fur varies from pale brown to almost black, is very dense and, when groomed with oil, will not soak through for several hours. The tail is very large, scaled and horizontally flattened, resembling a paddle. Beaver swim by propelling themselves with their hind feet while holding their front feet folded back against their body, and with only their head exposed above the surface of the water.

Biology:

Beaver usually live as a family group. The colony usually consists of the adult pair and their young of the year (kits), plus the young of the previous year (yearlings). Breeding occurs in the den in late January or February, and an average of five kits are born in May or June after a gestation period of 110 days. Normally only one female per colony gives birth, although there have been a few instances where two adult females captured under the ice in the same pond were observed to be pregnant. In the spring, before the young are born, the two-year-old beaver are normally forced from the colony to disperse and establish their own colony. It is these "travelers" that can be captured quite easily using scent mound sets in the early spring along larger streams. The movement continues into early summer. Some older beaver, referred to as "bachelors," live alone and do not have a dam.

Beaver are one of the few animals capable of manipulating their environment. They build dams on streams and small flowages to create a pond with a stable water level. The dam is constructed of sticks and mud, mixed with a few rocks if available. The upstream or pond, side is smoothly plastered with mud. Contrary to popular belief, the beaver does not use its tail as a trowel to apply mud to the dam. It serves primarily as a support while cutting trees and as a rudder while swimming. All members of the family, except kits, help keep the dam in repair. A lodge, or house, varying in size from 6 to 40 feet in diameter depending on the number of beaver in the colony, is built of sticks, tree limbs and mud, and contains a nest chamber, which has its entrance under water. Burrows are often dug into the banks of the pond and used as resting areas. When suitable banks are present, such as on large rivers or drainage ditches, beaver will not build a lodge, but will construct a bank den instead. The entrance to the den is under water and the tunnel leading to it may be 12 to 15 feet long.

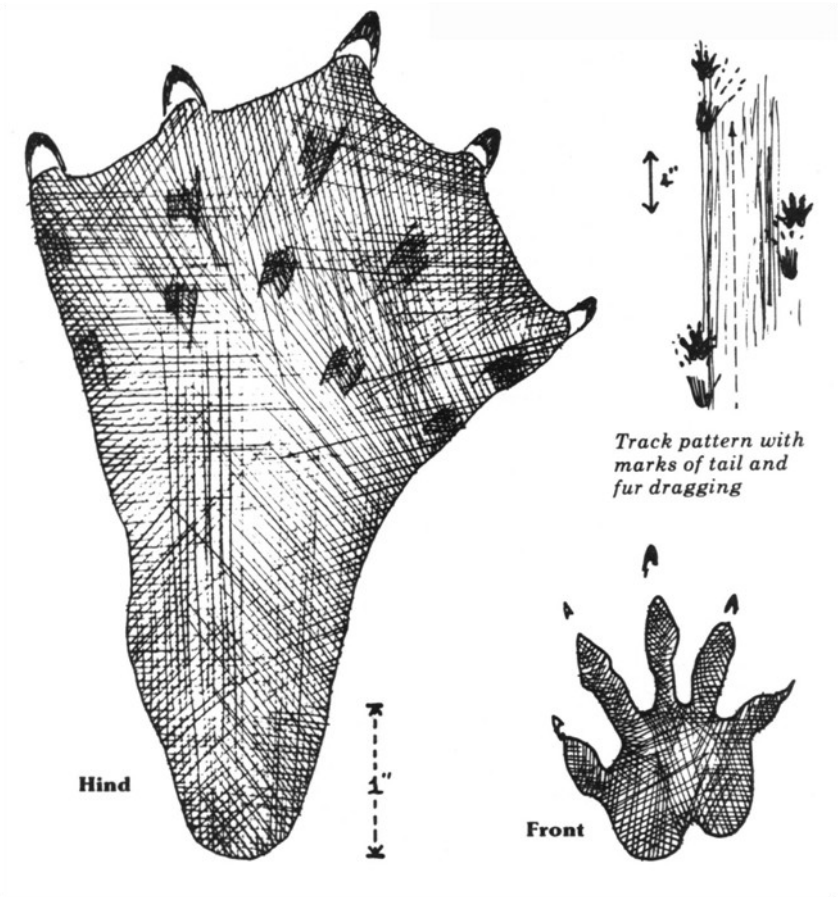


In the spring and summer, beaver feed mainly on small twigs and aquatic plants such as a water lily, cattail roots, sedges and on corn stalks or other terrestrial plants found near the water's edge. Beginning in late August, tree and brush cutting activity increases dramatically, and a food pile, or cache, is constructed near the lodge by anchoring branches, shrubs and small trees in the bottom of the pond. This activity peaks at the time of leaf fall. This cache, which usually consists of aspen, alder, willow, and birch, provides the green bark which serves as the late fall and winter food supply.

Beaver are very territorial and force away any beaver, which does not belong to the colony. The adults mark their territory by creating scent mounds, or "mud pies," on the bank or dam and depositing their scent, or castor, on these mounds.

Beaver can be found along any body of water that is deep enough for construction of a lodge or bank den, or any water flowage that can be dammed to create suitable water conditions. Because of their tendency to dam narrow flowages, they often create problems and cause considerable damage by blocking road culverts, drainage ditches or

streams flowing through pastures. When they dam the outlet of certain lakes, the lake levels may be increased 1 ½ to 2 feet causing flooding of docks, boat houses, the killing of trees adjacent to shore, and the killing of wild rice beds.



Sign:

Beaver cuttings and construction activities (dams, lodges, flooded areas, food piles) are the most obvious signs of their presence. The large, webbed hind foot track is also quite distinctive and can be found along the dam or at the base of slides or runways where the animals enter or leave the water to fell trees and drag brush.

Trapping Tactics:

Sets: Scent-mound, Den Opening, Open-Water and Under-Ice Bait, Runway, Spillway, Channel and Snare Sets.

Recommended traps and trapping systems: Large body-gripping traps (#330 Conibear or equivalent) in water sets only, foot hold traps #3, #4, #5 or 750s and slide locks, snares.

Lures and Baits: Commercial lures or beaver castor are good attractants, particularly in the spring. The castor is scraped from the castor gland of a previously trapped beaver, and mixed with mineral oil to provide a thick liquid solution. Fresh aspen (popple) twigs or branches make good bait, especially in the winter under the ice.

Comments: Open water techniques generally are blind sets in runways or channels or utilize castor scent or bait. Foothold traps are set an inch or two under the water and a little off-center if a front foot catch is desired. Traps should be set a little farther way and in 8 to 10 inches of water if a rear-foot catch is desired. Traps no smaller than #4 or #14 should be used when using the rear foot technique.

All open water trapping done with foothold traps ***must*** utilize drowning wires and sliding locks. Anchor the bottom of the wire in at least 3 feet of water with a large rock, a sack full of rocks, or a similar heavy object, or fasten the drowning wire to a long pole and jab it firmly into the mud. Do not underestimate the strength of a beaver. A 40-pound beaver is quite capable of dragging a 15 or 20 pound weight out of 3 feet of water. ***Use plenty of weight to anchor the drowning wire.***

In open water situations where adequate water is not available for drowning, some trappers use large body-gripping traps almost exclusively since snapped traps and wring-offs are virtually eliminated. Trap-shy beaver are less likely to be captured using the body-gripping trap, however, since in many sets a part of the trap must protrude above the water. It is also more difficult to "hide" these traps from other trappers.

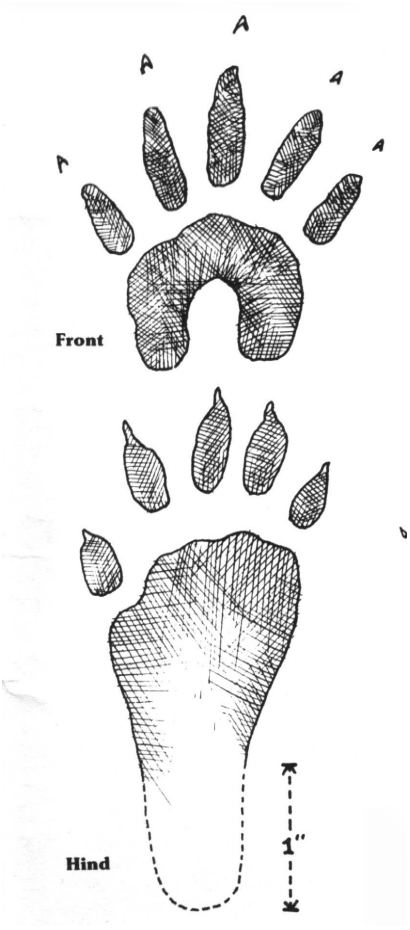
Under-ice techniques generally utilize bait or are blind sets made in den entrances or channels. A foothold trap sent on the bottom of the pond near a vertically placed, green aspen pole usually catches the beaver by the hind foot. A foothold trap placed on a platform fastened to a dead pole, and situated a foot or two below the ice usually catches the beaver by the front foot. This set is baited with a green aspen branch attached to the pole immediately above the trap.

RACCOON

(Procyan lotor)

Description:

Raccoon are well-known for their distinctive black mask and ringed bushy tail. Their coat has a grizzled appearance, with overall color ranging from gray to chocolate brown. The average adult weighs 15 to 25 pounds, with occasional large animals reaching as much as 35 pounds.



Biology:

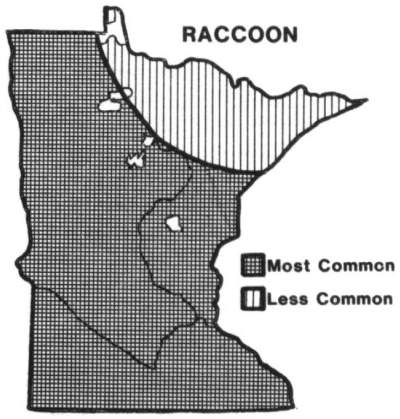
Raccoon breed from February 20 April with a gestation period of about nine weeks. An average of two to six young are born in a hollow tree, log or other protected den. The young remain with the female until fall and may den with her through the winter. Normally, a raccoon may range one or two miles from its main den.

Raccoon are most active at night and are natural explorers with a curiosity that can be used to the trapper's advantage.

Raccoons go into partial hibernation in winter, either alone or in groups, but they become active during warm spells and thaws. They are omnivorous and eat a wide variety of foods. During late summer and fall, they eat large quantities of fruits, grains and acorns. They are efficient predators, feeding upon nesting birds, eggs, fish, frogs, crayfish and insects.

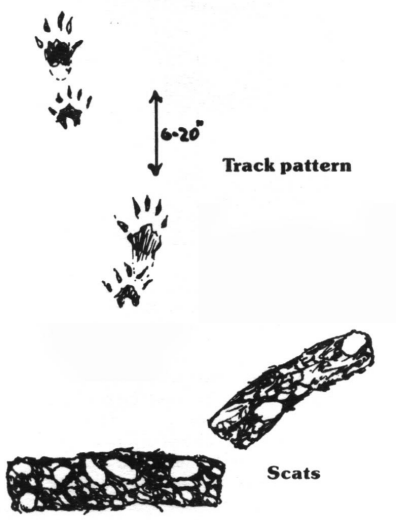
Habitat:

Raccoons are highly adaptable animals and are found over most of the U.S. and southern Canada. They are often found along streams, lake shores, and marshes, but they also live in upland areas. Although they are good swimmers, they usually stay in shallow water. Raccoons are common in suburban areas and around farms.



Sign:

The raccoon has a very distinctive and easily identifiable track. Often, only the front of the rear foot pad and the long, slender toes will show and the heel will not be visible except in soft mud, sand or snow. The scats are cylindrical and usually have little or no taper. The droppings may occasionally be found on limbs, logs or stumps.



Trapping Tactics:

Sets: Pocket, Obstruction, Spring Run, Cubby, Raccoon Box, Dirt Hole, Slanted Pole, and Cage Trap sets

Recommended traps or trapping systems: Doublespring body gripping sizes #120 or #220 Conibear (or equivalent) in cubbies or raccoon boxes; foothold sizes #1 ½ guarded ("stop-loss"), #1 ½ coilspring, #11 longspring, or #2 longspring with a large movable drag (like a tree limb) or a slide lock and drowning wire; cage or box traps at least 10" x 12" x 32".

Lures and baits: Raccoons are attracted to a wide variety of commercial and homemade lures and baits including fish, chicken, anise oil, fish oil, honey, apples and pastries.

RED FOX

(Vulpes vulpes)

Description:

Red fox have a thick pelage that varies from shades of red to sandy gold, with a lighter belly and black feet. The backsides of the ears are black. The animal has a white throat and chin, and a large, bushy white-tipped tail (at least a white-tipped hairs can nearly always be found). Variations in color include black (all black except for a white-tipped tail), silver (black with white-tipped guard hairs, giving the overall appearance of silver), and cross (normal red with a darker patch running along the back and across the shoulders forming a "cross"). These genetic variations may appear in the same litter. The Samson fox is genetically inferior, and represents the partial or total loss of the guard hairs. The average red fox weighs 8 to 10 pounds.

Biology:

Red fox reproduce in their first year. Breeding occurs in late January or early February, and the gestation period is 53 days. An average of five pups are born in late March or early April, often in a renovated den of another animal such as a woodchuck or badger. The pups stay with the adults until early fall, when dispersal begins. This "fall shuffle" is used to advantage by trappers who catch many of these dispersers. This dispersal period usually begins in October and it may continue through most of the winter. Some foxes never disperse, and others disperse later in the winter or as adults.

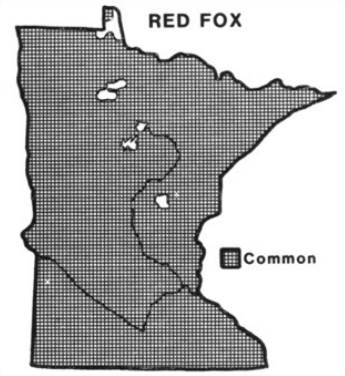
The red fox, like most predators, is an opportunist, which is quick to take advantage of any food available. Small mammals such as mice, rabbits and ground squirrels comprise the bulk of the red fox's diet. A fox will often cache uneaten food under litter or bury it is a hole to be eaten later.

Red fox tend to be solitary animals and always hunt alone. They do not normally use a den except when raising their young. During winter, a red fox will curl up on the snow using its tail to cover its nose and feet.

The red fox is primarily crepuscular being most active at dawn and dusk. Foxes have an average home range varying from one- to four-square miles.

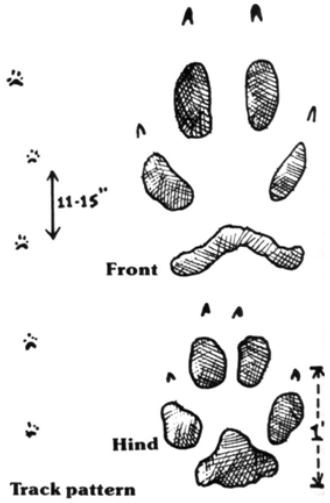
Habitat:

The red fox is extremely adaptable and thrives under a variety of conditions. It is common throughout Minnesota and is abundant in both the forest and farmland zones. Red fox often hunt in grassy fields or along fence lines where small mammals are abundant. They day may be spent curled up on a hillside with good visibility to observe potential danger. Fox avoid areas with established coyote populations, although some will be found in areas between coyote home ranges.



Sign:

Red fox tracks are usually more or less in a straight line and the hind foot is narrower and more pointed than the larger front foot. The heel pad is narrow and particularly in winter, little of the heel pad will show through the thick hair, which covers the foot. Red fox scats are variable and are similar to those of the other canids, although noticeably smaller than most coyote scats.



Trapping Tactics:

Sets: Dirt-hole, Scent-post, Flat set, Trail set (snow)

Recommended traps or trapping systems: Foothold #1 ½, # 1 ¾ or #2 with short chains (if staked) and good swivels at the trap and at or near the stake. If drags or grapples are used for fastening, extension chains of at least 3 to 4 feet should be attached. Snares are effective, in zones where legal.

Lutes and baits: Commercial lures, fox urine, tainted meat baits, and, in winter, skunk musk are all effective attractants for fox.

GRAY FOX

(Urocyon cinereoargenteus)

Description:

The gray fox is slightly smaller than the red fox, weighing an average of 6 to 8 pounds. Its pelage has a coarser texture than a red fox, and is colored by alternate bands of black and white on the guard hairs. There is reddish brown fur on the underparts of the body. The bushy tail is gray with a ridge of coarse, black hair along the top and on the tip.

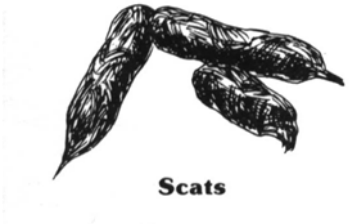
Biology:

Gray fox breed in late January or early February, with a gestation period of about 63 days. Three or four pups are born in April in a den similar to that of a red fox. The young disperse in late summer and fall, but travel shorter distances than do young red foxes.

Although the gray fox has a diet similar to that of a red fox, it eats more plant material. Unlike the red fox, it readily climbs trees when pursued. The gray fox is shy and seldom seen and usually is most active at night. During the day it rests in dense thickets. The home range of the gray fox is smaller than that of the red fox.

Sign:

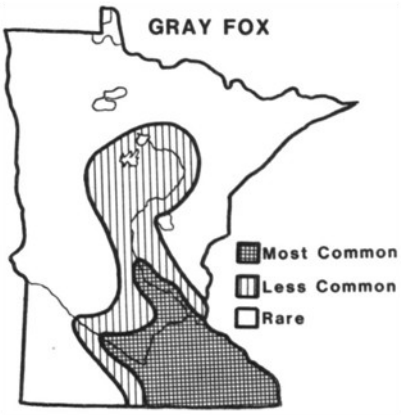
The gray fox is smaller and rounder than that of the red fox and, except for the claw marks, might be mistaken for that of a bobcat. Scats are similar to those of the red fox.



Scats

Habitat:

Gray fox primarily inhabit deciduous forest areas of central and extreme southeastern Minnesota, although they occasionally may be found in almost any area of the state. They prefer more dense, brushy cover than do red fox, and avoid both open and northern forest areas. Gray fox and red fox are rather intolerant of one another, but since their specific habitat preferences often separate them spatially, they often occupy the same general areas. There are no records of the two species crossbreeding.



Trapping Tactics:

The same tactics used for red fox will work for grays, the only difference being that the sets must be in or near woody cover, which is the gray's preferred habitat.

TIMBER WOLF

(Canis lupus)

Description:

The timber (gray) wolf is the largest member of the dog family; two to three times the size of the coyote. Most of Minnesota's wolves are gray in color, but black, cream, and reddish individuals also occur. Male wolves weigh about 80 pounds (about 10 pounds heavier than females). Wolves of 100 pounds or more occur rarely, and are considered very large.

Biology:

The wolf pack is a family group consisting of a pair of breeding adults and their young of one or more years. Only one female in a pack breeds each year, generally in February. After a nine-week gestation, an average of six pups are born in an underground den, which is often used for denning for several years. In early summer, the pups are moved to open areas or "rendezvous sites," where the pack congregates. By fall, pups are large enough to hunt with the pack. Young wolves may leave the pack when they become sexually mature in their second winter. They then attempt to find a mate, and may form a pack in an area not yet used by other packs.

Individual packs defend territories of 20 to 200 square miles (usually not more than one wolf per 10 square miles), and the members of the pack usually restrict their hunting and feeding activities to that area. Most wolf packs in Minnesota contain about five individuals, although as many as a dozen may rarely be present.

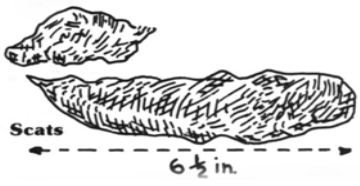
In Minnesota, wolves eat a variety of large and small animals, but white-tailed deer make up about 80 percent of their diet. Beaver are often taken in the spring and summer, while deer, and a few moose, are taken more frequently in winter. In areas of mixed farms and forest, domestic livestock are sometime preyed upon.

Habitat:

Wolves prefer the large, extensive forest areas of northern Minnesota. Their densities occur in the forested portions of the northern part of the state where deer population densities are high and human population densities are low. Although the wolf population expanded in range and numbers from the late 1970's to late 1990's, it has been relatively stable at about 3,000 wolves with no significant change in distribution. It appears that wolves in Minnesota have occupied the most suitable areas of the state and population numbers will fluctuate with changes in deer densities, as is the case in northern counties where wolves have been well established for decades.

Signs:

Wolf tracks are similar to those of a large dog and are more than twice the size of the average coyote track. The droppings are similar to those of coyotes, but generally larger (≥ 1 inch in diameter).

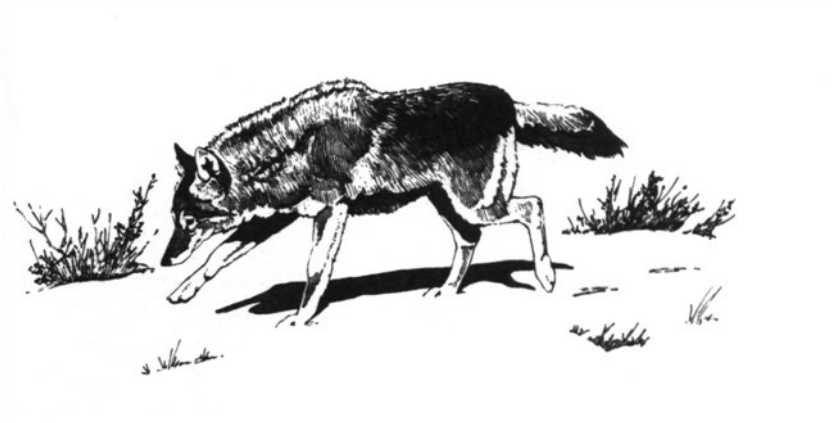


Trapping Tactics:

The timber wolf is a protected wild animal in Minnesota and defined as small game under the Minnesota Game and Fish laws. Trapping seasons are a recent development for wolves in the state although prior to federal protection under the Endangered Species Act, trapping occurred without regulation. Foothold traps using flat sets and dirt hole sets with bait or lures along travel routes are effective strategies for catching wolves. After freeze up conditions and throughout winter, snares set near bait can be effective, but caution must be used to avoid non-target animals such as white-tailed deer and moose.

COYOTE

(Canis latrans)



Description:

The coyote, sometimes known as the "brush wolf," resembles a small, lean German shepherd. Its gray fur is long, coarse and heavy. Typically, its underparts are light gray to white, with the remaining hairs broadly banded with black. Its tail is bushy and disproportionately large. The coyote's ears are long and erect and it carries its tail low when running. Adult coyotes average 25 to 30 pounds in weight, but adult males may rarely weigh up to 44 pounds.

Biology:

Coyotes breed in late January and February, with a gestation period of 63 days. An average of 5 to 7 pups are born in April or early May in a den, dug in loose soil or enlarged from one dug by another animal. The pups stay with the adults until autumn or mid-winter, when they disperse to find their own home territory.

Deer (most often in the form of carrion), snowshoe hare and mice are the coyote's favorite food. But coyotes are very opportunistic and will eat whatever food is available, such as fruits or berries in late summer, and occasionally sheep or poultry.

Coyotes tend to be solitary animals or live in small family groups. They are most active during evening and before dawn and normally move two to three miles a night. Adult males have large territories (15-25 square miles) in which they travel, but adult females occupy areas of six- to ten-square miles.

Sign:

Coyote tracks are oval in shape and the toenail marks, when present, tend to hook inwards. They can usually be distinguished from dog tracks, which are rounder and have deeper nail marks pointed outwards. Like all members of the dog family, the coyote's front foot is larger than the hind foot. Coyote scats are quite variable but are usually large, strongly tapering and contain much hair, bone or seeds.

Habitat:

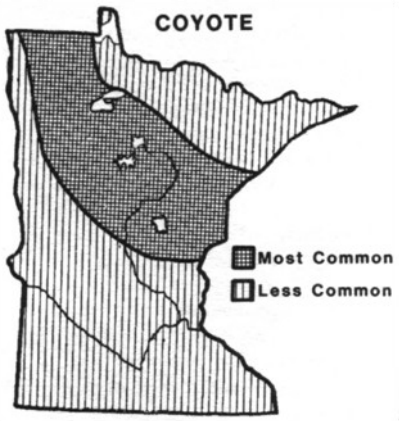
In Minnesota, coyotes usually live in transitional lands, which are a combination of farm land and forest, but they can survive will in open prairie or dense forest. Coyotes prefer to hunt in grassy fields or along the edges of fields for mice, and spend the daytime in forested areas. They are rare in areas occupied by gray (timber) wolves because the gray wolves will not tolerate their presence.

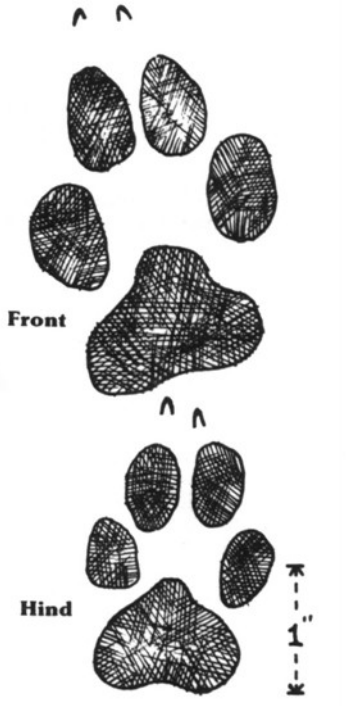
Trapping Tactics:

Sets: Dirt-hole, Scent post, Flat set, Trail set (snow)

Recommended traps or trapping systems: Foothold traps sizes #1 ¾, #3, #3N, #4 with short chains (if staked) and with good swivels at the trap and at the stake or in the middle of the chain. If drags or grapples are used, 3 to 4 foot or longer extension chains should be added. Snares are effective where legal.

Lures and baits: Commercial lures, coyote urine, tainted meat baits, gland lures and skunk essence are good for attracting coyotes.





WEASELS

LONG-TAILED
(Mustela frenata)

SHORT-TAILED
(Mustela erminea)

Description:

Weasels are relatively small, long bodied animals with short legs. Three species occur in Minnesota (long-tailed, short-tailed, and least), but only the long-tailed and short-tailed weasels are of value in the fur trade. Although both species may be found throughout the state, the long-tailed is most common in the southern half, while the short-tailed is most common in the northern two-thirds of the state. Long-tailed weasels are about 18 inches long including a 6-inch tail. The smaller short-tailed weasels are about 13 inches overall, with a 3- or 4-inch tail. Most of the year, weasels are dark brown with a white throat and belly, but in late fall they turn completely white except for a black-tipped tail. These white pelts are known as "ermine" in the fur trade.

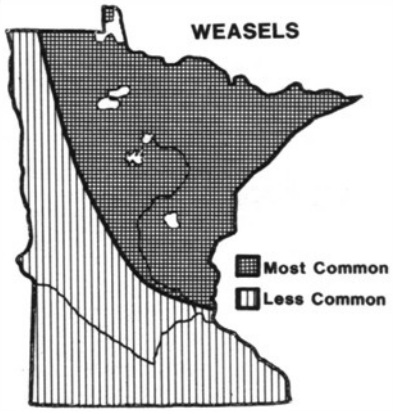
Biology:

Weasels mate during the summer, but, as with many members of the weasel family, they exhibit delayed implantation, and the young embryos do not begin developing until late winter or early spring, several months after breeding occurs. Litters of four to eight young are born in April or May. Weasel dens are lined with the fur of mice they have killed and are found in rock piles, old buildings, burrows, and hollow logs or stumps.

Weasels mainly prey on small mammals up to the size of rabbits, but some birds are taken. Like the closely related mink and fisher, weasels are efficient killers. Their sharp canine teeth pierce the skulls of their prey. Where prey is abundant, weasels may kill more than they can eat, caching excess prey items. Weasels eat their entire prey and do not suck the blood as many people believe. However, when surplus killing occurs many of their prey may only show wounds in the head or throat with no signs of feeding.

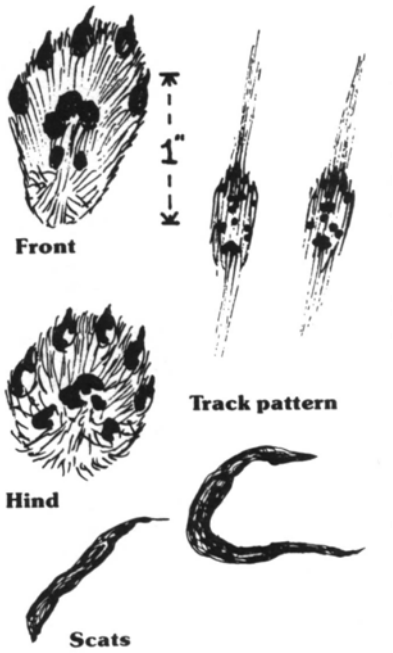
Habitat:

Weasels prefer brushy areas mixed with tall grass, such as brushy fence rows, willow swamps, beaver flowages, or recent cutover areas. They may occasionally occupy more open country, especially around wood piles, barns or old buildings.



Sign:

Weasel tracks are usually paired and the tracks will be spaced about a foot apart. In deep snow the spacing will often be irregular alternating long and short, and sometimes weasels will travel under the snow for short distances. Scats are long, slender and dark brown or black in color.



Trapping Tactics:

Sets: Cubbies or "weasel boxes"

Recommended traps or trapping systems: The #110 or #120 conibear or similar sized body-griping traps set inside cubbies or boxes work well for weasels, especially if equipped with a treadle type trigger. A #1 ½ longspring trap can also be set as a killing trap for weasel in the opening of a small cubby or a tin can if one jaw is propped in a vertical position.

Lures and baits: Weasels are attracted by fresh, bloody baits such as chicken or rabbit heads, the fresh meat of a muskrat or beaver, and by dead mice. Weasel musk is an excellent trapping lure that can be used for other animals as well. Mink musk is also a good weasel lure.

MINK

(Mustela vison)

Description:

Wild mink are dark brown to black, and usually have a white spot under the chin. Adult males weigh about 3 pounds, and females less than 2 pounds. Like most other members of the weasel family, mink have small round ears, a pointed nose, a long neck and body and short legs.

Biology:

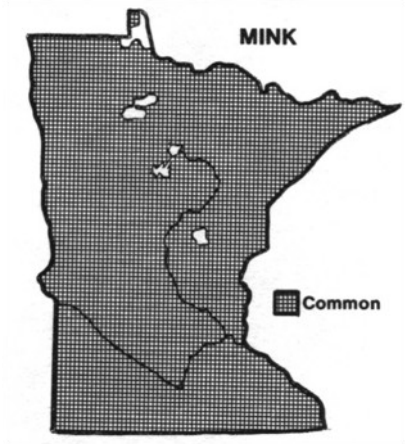
Mink breed in February, but because of delayed implantation, the fertilized egg does not attach to the uterine wall and begin developing until the weather is favorable to the litter's survival later in the spring. After a 31-day gestation, five or six young are born in dens made in debris piles, hollow logs, abandoned muskrat houses, or burrows. The female and young remain together until late summer when the young begin to disperse. The female remains close to her dens and hunts a territory she can cover in two or three days. The male's home range is much larger, and a particular area may be covered once every week or two. Males are very territorial and will not tolerate other male mink in their area, particularly during the breeding season. They may even kill young mink in the den.

Mink eat muskrats, fish, frogs, salamanders, snakes, waterfowl and eggs, and also prey on small mammals such as mice and rabbits. They are efficient hunters and frequently cache surplus food in their dens. Mink are mainly nocturnal, but frequently move about during the day. They are almost equally at home on land or in the water. While hunting, they inspect every hole, brush pile, hollow log or any food producing cover along their route of travel. They are creatures of habit, and visit the same places on each trip through an area.

Mink have well-developed scent, or musk, glands, and can release a strong odor, similar to the odor of a skunk, when alarmed or injured. They also discharge their scent to mark territory boundaries and during courtship displays.

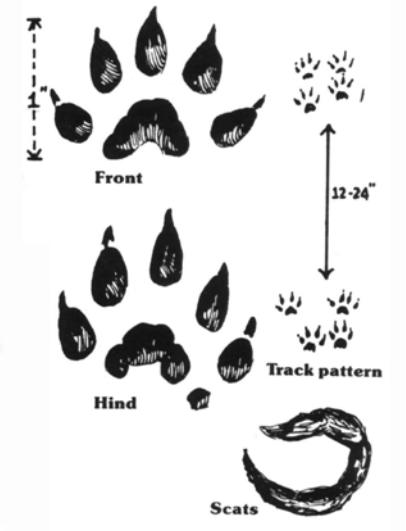
Habitat:

Mink are shoreline dwellers and so are most often found near streams, ditches, lakes, marshes or swamps. While hunting or dispersing, they may travel considerable distances from those wetlands.



Sign:

Mink generally leave paired tracks at 12- to 23-inch intervals, although they may also assume an open gait with all four feet separated. Mink occasionally toboggan on snow or dive under it for short distances. In soft mud, they leave a distinct round cat-like track with five toes and toenail marks. Mink scats are longer than those of weasels and are usually dark and long.



Trapping Tactics:

Sets: Obstruction (blind) set, Spring set, Pocket set, Channel set

Recommended traps or trapping systems: Number 120 or similar double spring body-gripping trap (do not use a #110 or other single spring body-gripping trap for mink in non-drowning sets because they are not strong enough to kill mink effectively), foothold traps with drowning slide lock (#11 double longspring, #1 or #1 ½ coilspring, # 1 ½ jump or longspring).

Lures and baits: Commercial lures, fish oil, and fresh muskrat or fish bait are effective for tracking mink.

BADGER

(Taxidea taxus)

Description:

The badger is a member of the weasel family and is a medium-sized heavy bodied animal. Adult females average about 17 pounds and adult males average 24 pounds. Badgers have a wide flattened body, short powerful legs and a short bushy tail. They are adapted for digging, having large front feet with massive claws over an inch long. They are Minnesota's most fossorial (burrowing) furbearer. The fur on the upper parts is grizzled gray and black with a slight yellowish tinge. The underparts and the short tail are yellowish. A white stripe runs from the nose to the crown of the head and tapers off on the neck or back. The badger has white cheeks and an elongated black spot in front of each ear. The feet are black.

Biology:

Badger breed in August or September. After a delay of about five months, implantation of the embryos occurs. Following a five- to six-week development period, an average of three young are born sometime from March to June in a den 2 to 6 feet below ground. The young stay with the female until fall, when they disperse.

The badger catches prey such as ground squirrels, pocket gophers and mice by digging them out of their dens. The badger digs a burrow, uses it for a time, and them moves on and digs another one. These burrows, and the accompanying mounds of dirt, are quite often a problem in hayfields and pastures, but if they are located along fence rows or field edges, they are valuable because many of them are used as dens by other animals such as rabbits and fox.

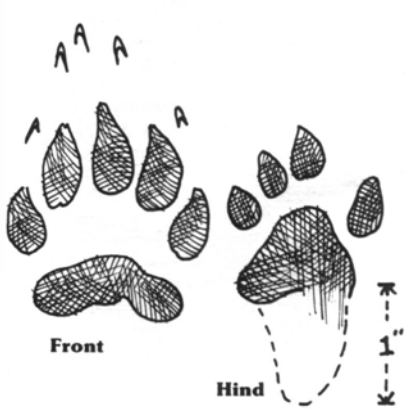
Badgers are active mainly at night, spending the daytime underground. Body fat is stored during late summer, which serves as an energy reserve for the coming winter. Badgers do not hibernate, but they do spend most of the winter sleeping under ground, occasionally coming out on an especially warm day.

Although they do not spray like a skunk, badgers will release a strong, musk odor from a pair of anal scent glands when disturbed.

Badgers live throughout most of Minnesota, preferring open prairie and pasture land where burrowing rodents are common. They also will live in mixed forest-farmland areas, but are rare in areas with extensive rocky or boggy soils.

Sign:

The most obvious indication that badger are present is the occurrence of tunnels, dug in open areas and fields, with a large mound of dirt in front of them. Often the badgers will excavate several shallow tunnels at the same site when digging out a gopher, and these series of tunnels and mounds of dirt may cover an area the size of a car. Badger tracks are sometimes mistaken for coyote tracks, but can be distinguished by the five toes, and the claw marks of the front feet, which are well in front of the toe marks. Badgers normally cover their droppings or leave them underground.



Trapping Tactics:

Sets: Burrow Entrance Set, Dirt-hole Bait Set, Scent-post Set

Recommended traps or trapping systems: #220 conibear or similar size body-gripping trap inside burrow entrance; #1.75 or larger foothold with long chain fastened to a long stake or a drag/grapple.

Lures and baits: Most baits and lures used for fox and coyote will also attract badger.

Comments: Avoid setting in inactive burrows – these are frequently used by rabbits, skunks and other animals. Avoid short chains or short stakes because the badger may dig out the stake and escape.

RIVER OTTER

(Lutra Canadensis)

Description:

Otter are large semi-aquatic members of the weasel family that weigh up to 24 pounds. They have a long cylindrical body with short fur, short ears, and a thick tail, which tapers gradually to the tip. The fur is a rich, glossy brown to black along the back, and pale brown or gray on the belly, on the throat and around the mouth. The otter's strong, streamlined body and webbed feet make it an agile swimmer.

Biology:

Adult otter may mate for life. After mating in late spring or early summer, an average of two or three young are born the following spring in April or May, following a period of delayed implantation. The den may be an abandoned beaver lodge, bank hole or hollow log. The young stay with the parents until next spring.

Otter are very adept at catching small fish and minnows, with rough fish comprising most of the otter's diet. Crayfish, frogs, turtles, muskrats, and small reptiles are also eaten. Otter regurgitate fish bones and scales at "toilet" areas spaced along their routes of travel. Often, these toilet areas occur at beaver dams.

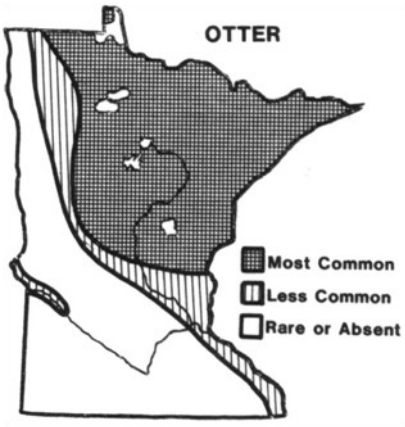
Otter have large territories, which cover many miles of shoreline or stream course. They also travel overland from one water body or stream to another. Their territories are marked on twisted tufts of grass with scent secreted from their anal glands.

Sign:

Otter sign in snow is often distinctive, with otter alternately running and sliding leaving a "dot-dash" pattern. The tracks are generally paired, but may be separated at slow gaits. Otter sign along streams and shorelines is often concentrated at "hauling out" places where matted and twisted grass and droppings will be found. Otter sign is also often concentrated on beaver lodges and dams.

Habitat:

Otter can inhabit nearly any wetland area, primarily rivers, small streams, lakes, and beaver ponds. They prefer remote areas away from frequent human disturbance.



Trapping Tactics:

Sets: Slide and Trail Set (water), Channel Set, Toilet Set

Recommended traps or trapping systems: Number 220 or 330 conibear (or equivalent) traps or foothold Some trappers use fresh beaver meat or fresh whole fish as a bait for otter.

Lures and baits: Lure if used at all, is used sparingly with otter musk being best. Beaver Castor will also work. Some trappers use fresh beaver meat or fresh whole fish as bait for otter.

Comments: Otter are strong, wary and trap shy. Traps should be placed in the water and concealed. Channel or beaver "run" sets result in many accidentally caught otter, especially runs on beaver dams, and should be avoided during closed otter seasons (especially in spring). Otters are fully protected in southern Minnesota.

STRIPED SKUNK

(Mephitis mephitis)

Description:

A member of the weasel family, the striped skunk is black with a white stripe on is forehead, a white patch on top of its head, and two white stripes that begin at the neck and extend back toward the hip region. The length of these stripes is quite variable. The large, bushy tail is mainly black, but is mixed with white to varying degrees. Skunks are wide-bodied, with a relatively small head. Most striped skunks weigh 4 to 10 pounds.

The spotted skunk, or "civet cat," is smaller and shaped much more like a weasel than the striped skunk, with normal weights being 1 to 3 pounds. It is black with a white spot on its forehead and interrupted white stripes over its back and sides. The bushy tail has considerable white, especially at the tip.

Biology:

Mating occurs in late February or March and, after a gestation period of about 63 days, an average of six young skunks are born in May. Both species of skunk are well known for their odoriferous defense mechanisms. They can spray an attacker up to 15 feet away, four to six consecutive times, with a bitter, stinging yellow fluid (mist). Striped skunks can be observed wandering about at any time of the day, but tend to be most active at night, while the spotted skunk is almost totally nocturnal. Both species are omnivorous and prefer mice, insects and their larvae, fruits and berries, carrion, frogs and eggs. They are effective predators on the eggs and young of ground nesting birds.

Spotted skunks are less common and more secretive than striped skunks, often living undiscovered on farms, while the striped skunk very rarely climbs trees, the spotted skunk commonly climbs trees in search of food and to escape enemies. Spotted skunks den and rest in dark places such as ground burrows or under old buildings.

In early winter, skunks den up and become inactive, but they do not actually hibernate. Mid-winter warm spells bring them out for hunting forays. Several skunks (sometimes eight to 10) often occupy the same den in winter, especially the females. Males den up later in the winter than the females, and normally den by themselves. In more southern locations, spotted skunks sometimes remain active throughout the year.

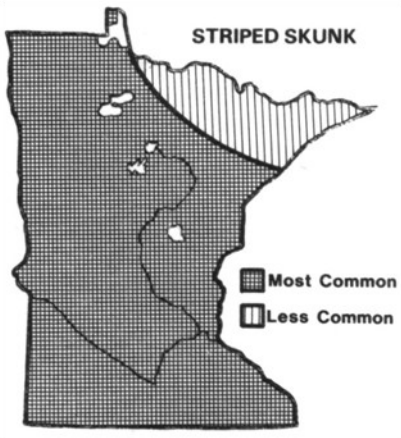
Habitat:

Although the striped skunks can be found statewide, they are most abundant in semi-open country with a mixture of small woodlots, brush patches, pastures, cropland, fence rows, brush piles, old buildings and farm yards. Spotted skunks prefer similar habitat, but are found only in the southern half of the state. Loss of native prairie and changing farming practices may be primarily responsible for the decline in spotted skunks, which are now rare in Minnesota.

Although commonly thought of in association with prairies, spotted skunks actually are closely associated with agriculture, particularly small farms. Spotted skunks are usually found around old buildings and grain storage facilities infested with mice and rats. Spotted skunks spread northward from the southern plains following the coming of farming to the Midwest prairies. They were first reported from Minnesota in 1892 and reached northern Minnesota by 1933.

Spotted skunk populations in Minnesota peaked in the 1940s, and then declined drastically. At the same time, spotted skink numbers were decreasing all over the Midwest. No one knows for sure why. Increasing farm size and efficiency, along with a decrease in on-farm grain storage were probably at least partially responsible. The suddenness of the decline at about the time DDT was coming into widespread use suggests that persistent pesticides may have also been involved, particularly since insects are spotted skunks' primary source of food in summer.

For whatever reason, spotted skunks are now rare in Minnesota. Although several Midwestern states have closed the season on these animals, such closures have apparently had no effect on spotted skunk numbers.



WANTED
Reports of SPOTTED SKUNKS (*civet cat*)

Eastern Spotted Skunk
(Spilogale putorius)

State Threatened Species

— **Smaller** than Striped Skunk
adult length: 18—22 inches

— **White spots** or broken stripes

— **White tip** on tail

Striped Skunk
(Mephitis mephitis)

Common in Minnesota

— **Larger** than Spotted Skunk
adult length: 25—30 inches

— **Two white stripes** from head to tail

— Tip of **tail black**

Minnesota DEPARTMENT OF NATURAL RESOURCES

Report Sightings to:
Minnesota County Biological Survey **Report Line (toll-free)**
1-888-345-1730
or Gerda Nordquist (gerda.nordquist@dnr.state.mn.us)

MCBS

MARTEN

(Martes americana)

Description:

The marten is a tree climbing member of the weasel family, about the size of a mink. The fur is an ungrizzled red to yellow brown, somewhat darker on the back, and becoming blackish on the tail. The head and face are light tan and there is usually a light orangish spot on the chest. Adult males average 2 to 3 pounds and females average 1 ½ to 2 pounds.

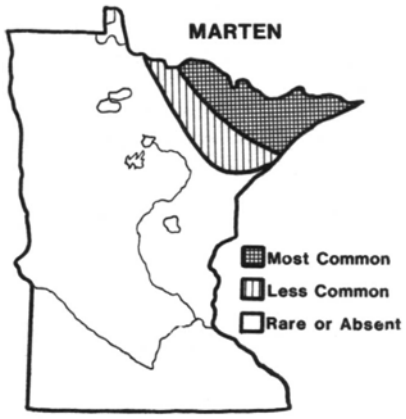
Biology:

Marten breed in mid-summer (July—August). After a period of delayed implantation and about one month of pregnancy, three or four young are born from March to May. A tree den is preferred.

Marten are primarily nocturnal and solitary hunters. They are active both on the ground and in trees. When traveling on the ground, they seldom actually touch the ground, but hop from one fallen log to another. They are opportunistic feeders, and prey on a variety of small to medium-sized mammals, such as mice (voles), chipmunks, squirrels and snowshoe hares. In summer they also eat berries, insects and birds. In the winter, marten nesting sites are always below the snow surface, but in summer they may use the crowns of conifers, hollow logs, brush piles or burrows.

Habitat:

In Minnesota, marten are found in the forest of the extreme northeastern parts of the state. They prefer large areas of mature to over-mature upland conifer and northern hardwood forest, especially where large amounts of fallen timber are present.



Sign:

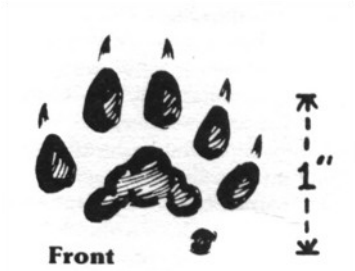
Marten tracks may be confused with those of a large mink or smaller fisher. The walking stride of marten is usually 6 to 9 inches, but the paired tracks of bounding marten may be from 1 to 4 feet apart. Marten scats are about the same size as mink and similar in shape to weasel and mink. In summer, berries and fruit may be present in marten scats, but generally not in those of mink.

Trapping Tactics:

Sets: Cubbies, Leaning Pole sets

Recommended traps or trapping systems: Livetraps, Number 120 or similar sized body-gripping traps, foothold #1 ½, snares.

Lures and baits: Commercial lures, skunk essence and beaver castor are attractive to marten. Fresh bait such as beaver can also be used effectively. Marten are easily trapped. In areas where marten are common, livetraps can be used effectively to set for high value males. Care should be taken not to place out too many sets where restrictive limits are in effect because overlimits can be taken easily. If these animals are captured and cannot be released, they should be salvaged and turned in to the state after first contacting a Conservation Officer and receiving permission to possess and transport them.



FISHER

(Martes pennanti)

Description:

The fisher is a member of the weasel family, resembling a very large mink. It weighs as much as a red fox, but has much shorter legs. The males weigh between 10 and 14 pounds, which is about twice the size of females. The fur of a fisher is a grizzled dark brown and approaches blackish on the rump and tail. On large males, the entire head, shoulders, and the back of the neck are yellowish in appearance because the guard hairs in these areas are light tan with dark brown tips. Many fisher have white spots on the chest at the base of each front leg. Although smaller, female fisher are usually darker and more uniform in color than the males, and their fur is more valuable.

Biology:

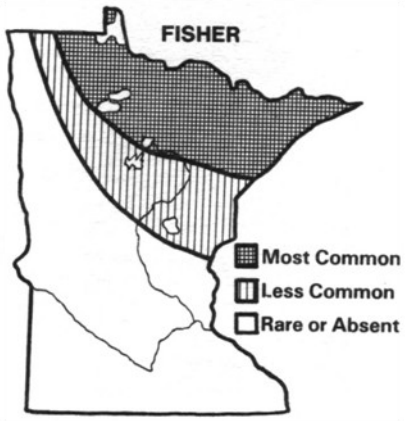
Fisher breed in March or April, with adult females breeding shortly after giving birth. The fertilized eggs exhibit delayed implantation and do not start developing until January or February of the following year. One to five young fisher are born in April in a hollow tree, log, or rock cavity. The young leave the female in early fall to find their own home territory.

Fisher are extremely agile and active predators. Excellent tree climbers, they can outclimb marten and red squirrels. They prey upon snowshoe hare, mice, squirrels, porcupine, and also feed upon carrion, particularly that of deer. Although they have a reputation for preying on porcupines, snowshoe hares and other small mammals are much more important in their diet in Minnesota. Fisher will also eat insects and berries.

Fisher range over 7 to 10 square miles, traveling at anytime of day or night. Males have larger ranges than females. Individual animals frequently use well-defined hunting trails. When feeding on a large food items such as a deer carcass, fisher may confine their activities to the immediate vicinity of the food source for a period of several days. Fisher are solitary, except during the breeding season and when young are with the females. The fisher gives off a foul musk odor when disturbed.

Habitat:

Fisher prefer larger areas of continuous forest, particularly older timber stands. They are adaptable and can live in a variety of forest types, but they avoid open areas. They prefer the edges of conifer stands when these are adjacent to stands of deciduous trees. Hollow trees, rock crevices, slash piles, abandoned beaver lodges in dry ponds, and old porcupine dens are preferred denning sites.



Signs:

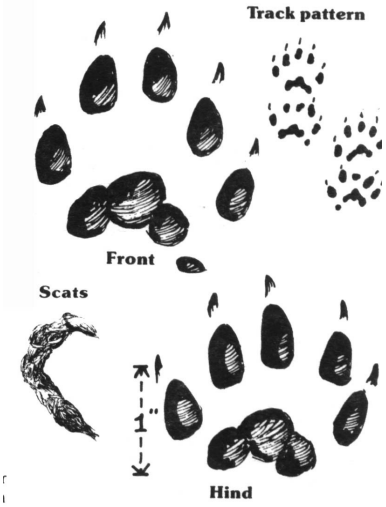
Tracks of small fisher may be confused with those of large marten. Both resemble the offset pattern of a mink. The walking stride of fisher is about 13 inches for males and about 9 inches for females. When jumping or bounding fisher generally average over 24 inches per jump and they may lope with all four feet separated or bound with front and hind feet nearly superimposed. The droppings are similar to those of marten, but larger. Like marten, they may contain the remains of berries or fruits in the summer. Sometimes fisher scats will contain porcupine quills.

Trapping Tactics:

Sets: Cubbies, Leaning Pole sets

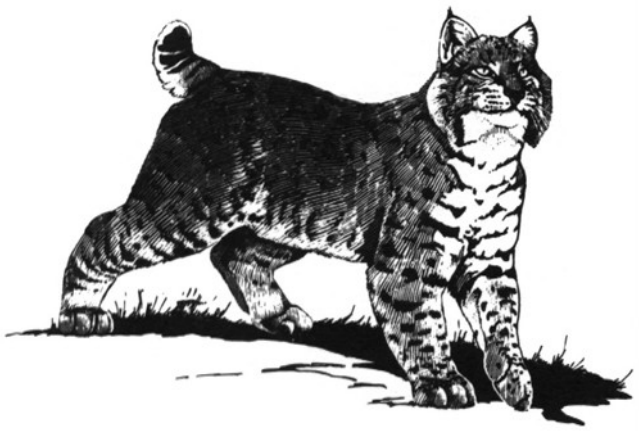
Recommended traps or trapping systems: Number 220 or similar sized body-gripping traps, foothold #1 ½, # 1 ¾ or #2 snares.

Lures and baits: Commercial lures, skunk essence and beaver essence are attractive to fisher. Fresh bait such as beaver can also be used effectively.



BOBCAT

(Felis rufus)



Description:

An adult bobcat stands about 20 to 30 inches at the shoulder and weighs 15 to 40 pounds. Short black tufts, up to an inch long, are found on the eartips. Extending from the ears to the chin is a white, black and gray ruff. The bobcat's fur is light fawn to rust brown in summer, and generally gray in winter. The bobcat is named for its 6-inch "bobtail." The tip of the bobcat's tail is black above and white below.

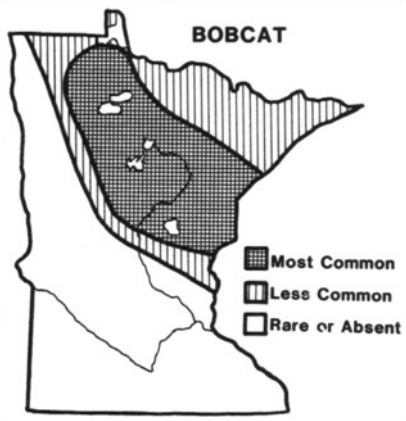
Biology:

Bobcats breed primarily in February and March, although they can breed anytime between January and June. They have a gestation period of about 50 days and most young are born in May. Two to four kittens are born in an abandoned den of another animal, a windfall with tangled roots or branches, or even under the foundation of a vacated building. The young stay with the female until some time during winter, when they disperse to find their own territories.

Bobcats are very secretive, and are active mainly at night. They have large home ranges, often exceeding 8- to 10-square miles. Bobcats normally hunt alone while crossing and recrossing their territories. Their main foods are snowshoe hare, deer, mice, small birds and porcupine. Bobcats occasionally kill deer as fawns in summer and as adults in winter by compressing the windpipe. They are opportunists but are almost entirely carnivorous and they do not like rotten or tainted food. When food is plentiful, bobcats may gorge themselves and then not feed again for days.

Habitat:

Bobcats prefer heavy brush areas in and around large lowland conifer stands, such as cedar, black spruce, or tamarack. These areas are also inhabited by their main prey, the snowshoe hare.



Sign:

The bobcat track is rounder than that of a coyote or a fox with no claw marks. Also, if a clear track can be located, bobcats have three distinct lobes on the rear edge of the foot pad. Scats are similar to those of coyotes, but tend to be more segmented and less tapering. Often times the scats are partially or wholly covered with grass or leaves and scratch marks are visible around them.

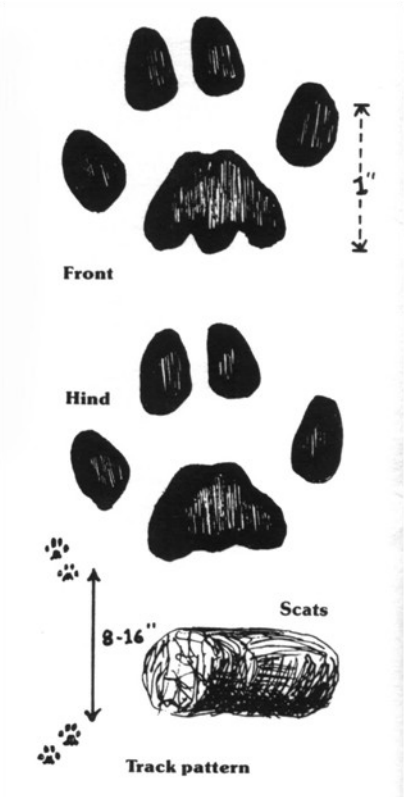
Trapping Tactics:

Sets: Cubby, Dirt-hole

Recommended traps or trapping systems: #1 ¾ - #3 foothold traps, #220 conibear or equivalent body-gripping trap.

Lures and baits: Commercial gland lures and baits are available or lures can be made using beaver castor, skunk essence, oil of catnip vor fish oil.

Comments: Bobcats are more dependent on their sense of sight and less dependent on smell than canines such as fox or coyote. Therefore, sets for bobcat can be made more effective by giving them some visual appeal in addition to the lure or bait. This is usually done by hanging a "flag" such as a bird wing, a strip of fur, or a feather near the set (but not directly over the trap).



TOOLS OF THE TRADE

TYPES OF TRAPS

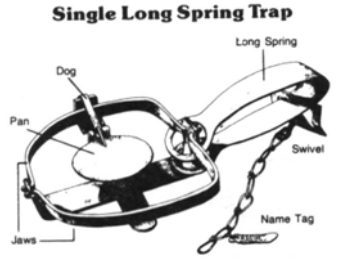
Traps are constructed in different designs and sizes to hold varying sizes and species of furbearers. Traps can be divided into three general categories: 1) those that hold the animal by the foot or leg (foothold): 2) those that hold the animal by the body and are usually intended to kill the animal (body-gripping or conibear type); 3) those that enclose the animal (box or cage type).

Table 1 lists appropriate trap sizes for various species. Although a variety of traps may work for various species, certain sizes and styles of traps have advantages for different situations. Recommended traps are listed under trapping strategies in the species sections.

Foothold Traps

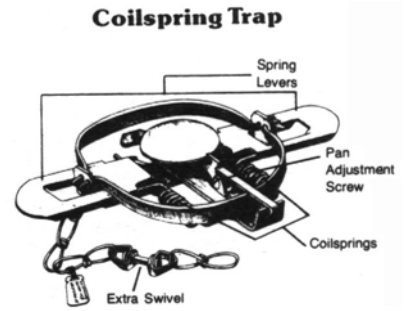
Each trap size is indicated by a number. Sizes may vary according to the manufacturer, but in most cases the smaller the number the smaller the trap.

Long spring traps are generally less expensive and heavier than other types of foothold traps. Where easy concealment is not a problem and the extra weight might be an asset (as in drowning sets for muskrat or beaver trapping), long-spring traps may be the best choice.



Guarded ("stop loss") traps are available in several styles. They employ an additional spring-loaded bail that prevents a muskrat or mink from escaping. Guards are almost essential if foothold traps are used for muskrats in shallow water or heavy vegetation. Many muskrat trappers use these types of traps almost exclusively. Although slightly more expensive than unguarded traps, these traps will quickly pay for themselves in extra muskrat, mink and raccoon held and are highly recommended.

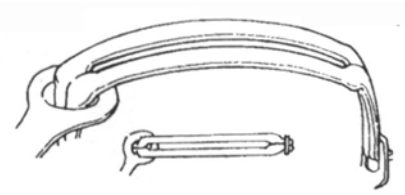
Under-spring or "jump" traps are more compact and therefore easier to conceal than are long-spring traps. While they are a little more difficult to set than long-spring traps, jump traps are a bit faster and frequently stronger for a given size. They are also a little lighter to carry. Some manufacturers produce double as well as single under-spring traps.



Coil-spring traps are the fastest of the foot hold traps. Available in sizes 1 through 4 from a variety of manufacturers, coil springs are often used in trapping predators. They have all the advantage of under-spring traps with the addition of increased speed.

Modified Foothold Traps

Trap modifications increase the efficiency of foot-hold traps, and reduce trap-related injuries. Unfortunately, some of these modifications are not yet commercially available, and must be made by the trapper. Contact the Minnesota Trappers Association for information on the latest trap modification techniques.



Offset Jaws

Offset jaw traps are manufactured so that a slight gap remains between the jaws when closed. This modification is designed to reduce trap injuries by increasing clamping forces and stabilizing the foot in the trap.

Padded Jaws

Recently, a padded jaw trap has become available commercially and it may offer potential for more safely trapping wary land animals in areas where the chance of catching non-target animals is unavoidably high. Although the idea of padding traps is not new, these traps utilize new materials and designs, which have proven very effective in preliminary tests.

Laminate Jaws

By laminating steel rods to the

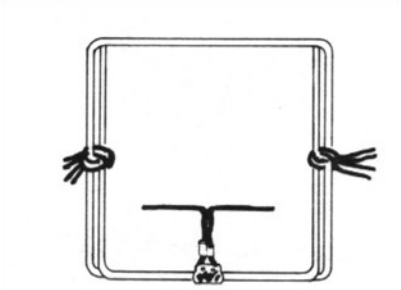
trap jaws, the surface area of the jaw is increased. This more broadly distributes the holding forces of the jaws, and tends to stabilize the foot in the trap resulting in reduced injuries and increased capture rates.

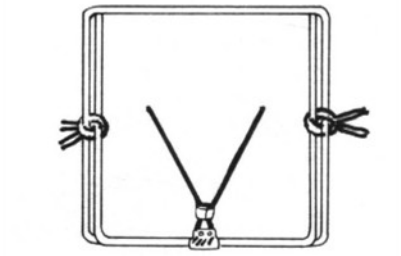
Center Swivels

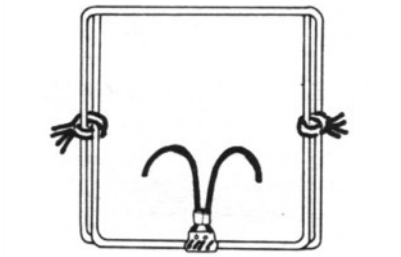
By relocating swivels to the center of the trap, the holding power is increased, resulting in fewer pull-outs.

Body-Gripping Traps

Body-gripping traps are the result of many years of research and design efforts. These traps are designed to catch the animal around the neck or the chest. When properly set, these traps usually kill the trapped animal quickly through a combination of striking and clamping forces. In an ideal situation, the animal will approach and enter the trap in such a way that it will be struck at the base of the skill, resulting in almost instant unconsciousness and rapid death. If a chest hold occurs, the animal may be killed by heart stoppage or suffocation, with death again coming quite rapidly. Catches on other parts of the body may cause death very slowly or may not kill at all. In order to be most effective, body-gripping traps must be set with careful attention to trigger placement and animal approach. Suggested trigger placements are shown in the accompanying illustration.


Beaver and Otter


Raccoon and Fisher


Mink

These traps are very popular with water trappers, and quite useful in some kinds of land sets: **CAUTION: Body-gripping traps are not adaptable to all types of furbearers, such as canines, or to a full range of sets. Canines instinctively avoid entering body-gripping traps and these traps may be dangerous when set on land.** Minnesota regulations prohibit the setting of certain large body-gripping traps on land.

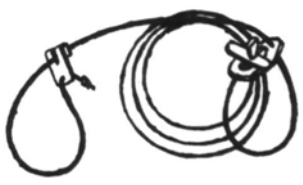
Cage Traps

Cage or box traps of various descriptions may be useful in trapping some species where the potential of taking domestic animals is high. Like the body-gripping traps, however, their use is rather limited, especially for wary species. Their cost, size and visibility are also disadvantages to their use on trap lines.

Snares

Snares are a simplified type of body-snaring device designed to capture an animal around the neck or body. Snares consist of wire cable with sliding locks, which may be either "locking" or "non-locking." Depending on the set, the lock type and the animal caught, snares either kill or hold the animal alive.

There are restrictions on snaring in Minnesota and snares are not recommended for inexperienced trappers. Anyone planning to use snares should seek advice and training from someone experienced with their use.


Snare

Specialized Traps - Dog Proof Traps

Trappers are innovative and modifications to existing commercially produced traps to make them more efficient and species selective while at the same time treating the animal respectfully is an ongoing process.

The introduction of completely new trap designs to the market is another example of this continuing evolution.

One of the most innovative developments in the trapping arena over the past ten years has been the introduction of commercially produced "*dog proof*" raccoon traps. All basic designs currently available consist of a small opening in a steel tube or box that is baited inside. The raccoon either pushes or pulls a firing mechanism inside the opening while attempting to steal the bait which causes the entrance hole to be suddenly restricted, holding the animal's foot.

Duffers

Various swiveling designs and gripping surfaces allow the trapped raccoon to be treated respectfully. This highly selective trap design has revolutionized raccoon trapping in many parts of the United States and due to their extreme selectivity these traps may be set in areas where a traditional foothold set or bodygripper may not be a wise or ethical choice particularly in areas where domestic animals may occasionally wander.

Duke DP

Because these traps are set completely exposed above ground, many of the common frustrations associated with traditional traps are eliminated such as freezing into the ground inoperable, misfires and the possibility of non target catches. Due to the unique firing mechanism, generally only animals with the ability to grasp and item with their paws are taken with this type of trap which severely restricts the species of animals that can be consistently taken in these traps.

Although these traps are commonly referred to as "*raccoon traps*" other animals may be caught in them occasionally. Regular trap tending requirements as required by law should always be observed. Striped skunks seem to be the most common secondary by catch although grey foxes are occasionally taken in rare circumstances as well.

Grizz Getters

According to a production Minnesota raccoon trapper who has used these traps extensively over the past several years:

The newest Innovation in foot hold traps is the "dog proof "or "DP" raccoon trap. These traps are designed to catch raccoon and severely reduce the chances of ever catching a domestic dog. The trap is basically a tube that you place bait into and as the raccoon reaches into the tube to get at the bait, it trips a trigger and is caught. These traps are not buried in the ground but set vertically above ground surface held in place by the "foot peg" incorporated at the bottom of the trap. These traps must also be staked down as the "foot peg" simply holds the trap in the "set position." These traps are versatile and can be set on raccoon trails, in and around old or abandoned buildings, in close proximity to live stock and near or in the water with the trap

opening above the waterline. They can be either staked solid for live holding sets or rigged for drowning dispatch.

Coon Cuff

I have found ground fish to be good bait. I put enough bait in the tube so that bait is just below the trigger and freeze the trigger down into the bait. I think the bait should taste good to the raccoon because the trigger likely won't be activated the first time the raccoon reaches into the trap to investigate. If it doesn't like the taste, it may not continue to work the set any further resulting in a miss. No bait or lure should be placed on the ground or around the trap in my opinion as I want the animal to focus strictly on the bait contained inside the trap.

Unfortunately, the DP although a fine trap isn't perfect and will occasionally catch feral cats in some situations, so caution should be exercised when setting near homes and farms. Bait selection in these areas appears to be the key to avoiding problems. I have found the use of sweet baits such as jams or jellies as opposed to fish baits in these areas to be an effective way to still consistently take raccoons while substantially reducing the chances of taking a feral cat .Avoid fat based baits such as peanut butter however. Although peanut butter is "sweet" and attractive to raccoons fat based baits may also attract cats as well.

DP traps work very well on raccoon trails in road right-of-ways. The same trails that are routinely set with medium sized body grippers can be set with DP's without the same concerns associated with bodygrippers.

An additional advantage to using this type of trap is the fact that many landowners will give you permission to trap raccoons on their property when using DP's despite the fact that they have denied access to other trappers in the past. Because of the selective nature of these traps, landowners feel more confident giving trappers access to their land without being concerned with Fido getting accidently caught .

Although I have used only a single brand of DP, I'm confident that other brands on the market will give the trapper similar positive results. JB

Alcatraz

Coon Dagger

TABLE 1. Approximate trap sizes for the various Minnesota furbearers.

	TRAP TYPES				
	FOOT HOLD		*BODY GRIPPING*		*BOX TRAP*
Furbearer	**Jaw Spread**	**Size**	**Jaw Spread**	**Size**	**Length, Width & Height**
Muskrat	4-5	1, 1 ½	4 1/2 – 6	110	19 x 6 x 6
Mink	4-5	1, 1 1/2, 11	4 1/2 – 6	110, 120, 160	* * *
Beaver	5 1/2 - 7 ½	3, 4, 5	7 – 12	280, 330	* * *
Otter	5 1/2 - 7 ½	3, 4	7 - 12	280, 330	* * *
Opossum	5	1 1/2, 11	6 - 7	160, 220 **	20 x 7 x 7
Skunk	5	1 1/2, 11	6 - 7	160, 220 **	20 x 7 x 7
Raccoon	5	1 1/2, 11	6 - 7	160, 220 **	32 x 10 x 10
Gray Fox	5 - 5 ½	1 1/2, 2	* * *		* * *
Red Fox	5 - 5 ½	1 1/2, 2	* * *		* * *
Coyote	5 1/2 – 6	1 3/4, 2, 3	* * *		* * *
Weasel	3 1/2 – 4	0, 1, 1 ½	4 1/2	110	16 x 5 x 5
Fisher	4 1/2 - 5 1/2	1 1/2, 2	6 - 7	160, 200 **	32 x 10 x 10
Bobcat	5 1/2 – 6	2, 3	7	220 **	* * *
Badger	5 1/2 – 6	2, 3	7	220 **	* * *

All Measurements given in inches

* Dimensions given are minimum sizes for single door traps - double door box traps should be longer than the lengths listed

* * USE ONLY WITH EXTREME CAUTION - when setting on land to avoid catching and killing non-target animals.

* * * Trap types without dimensions for a particular species are either ineffective or not normally recommended for that species.

BASIC TRAPPING EQUIPMENT

Before setting traps, a trapper must acquire some basic trapping tools. Determining what tools are needed is a matter of personal preference, terrain, weather and the type of trapping to be done. Some equipment is a necessity for any type of trapping while other tools are very specialized.

Trap Tags

Minnesota regulations require that all traps and snares be tagged or indelibly marked with the trapper's name and address, or driver's license or DNR number. Tags made from aluminum, copper or brass are best as they do not rust. Tags can be purchased commercially for little cost and are usually much better quality and less work than homemade tags.

Pack Basket

A trapper needs something in which to carry all equipment needed. Most trappers use a pack basket rather than a canvas pack because the basket is less likely to hold odors, more rigid and more convenient to use. A 5-gallon plastic pail also works well for carrying equipment. Lure and bait are usually carried in a separate pouch or in a trapper's coat pocket.

Wire

Wire and/or cable has many uses on the trap line. Wire can be used to repair chains, make drowning sets, or attach traps to stakes. It is also used to hold traps, baits, or even cubby pens in place.

Many trappers prefer a dark flexible wire for these purposes. Strong 16-gauge wire is recommended for muskrat and 10-gauge wire or cable for larger furbearers. Heavy lap-links or S-hooks are recommended for fastening fox and coyote traps.

CAUTION: Beware of kinks or nicks because they will weaken the wire. Do not twist wire tightly with pliers. It is best to leave extra length and twist it with your hands, then trim the excess. Wire twisted with pliers can break when an animal is in the trap. Do not use wire to extend trap chains – use chain or cable.

Pliers

Pliers are useful for cutting wire and adjusting traps. They should have a good cutting edge.

Hatchet

Every trapper encounters the need for a hatchet or small hand axe on the trap line. Stakes must be driven, and ice sometimes must be chopped in making or checking sets. A good hatchet should be kept with your trapping gear. Learn how to sharpen it and use it safely. Hatchets should be kept in a stout leather sheath.

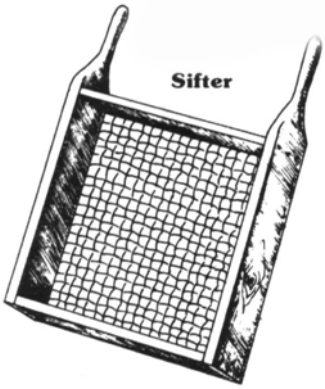
Digging Tools

Many sets require digging. Many trappers use a special trapping trowel that resembles a garden trowel with a long wooden handle. Other tools such as a mattock, mason's hammer, a heavy spoon or hatchet can also be used, but a trapping trowel is a good investment.

LAND TRAPPING EQUIPMENT

Dirt Sifter

A dirt sifter is simply a mesh-bottomed box. Most trappers make their own using a wood frame about 8" x 10" x 3" and tacking in a bottom of one-fourth inch hardware cloth or "hailscreen." A sifter is extremely useful in dirt or snow trapping. Sifting the covering material helps to prevent stones or twigs from jamming the trap and lends a natural appearance to the set.



Kneeling Pad

Some trappers use a square of cloth, rubber or plastic as an odor barrier and something to put the dirt on when making sets for animals such as fox and coyote. Others make these sets from a squatting position, letting only their clean rubber footwear touch the ground.

Gloves

Many trappers prefer to use gloves while making dry-land sets, although they are not essential. Cloth or rubberized gloves may be used, but all gloves should be kept clean and odor free. No bait, lure or other odors should be permitted on the gloves.

Pan Covers

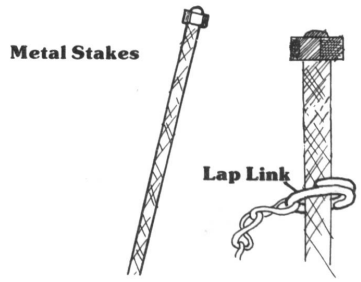
Pan covers are used by many trappers to prevent dirt or other materials from getting under the pan of the trap, and preventing it from going off. Pan covers can be made from fiberglass, latex and window-screen.

Stakes or Drags

Soil conditions, terrain and cover type dictate to the experienced trapper whether a stake or drag should be used. Staking traps has the advantage of holding the animal at the set where the trapper can locate it. Metal stakes are preferred to wood because they are more durable. A one-half inch concrete reinforcing rod with a five-eighths inch nut welded on top makes an excellent stake. The length of the stake needed varies with the texture of the soil in which they are used.

Drags or grapples are used where it is not practical or possible to drive trap stakes, or where the trapper desires the trapped animal to move a short distance away from the set. The best drag is a metal grapple hook that has two prongs for easy concealment. Green saplings, fence posts and rocks also can be used for drags in some situations. CAUTION: ***Drags should only be used by experienced trappers or under the supervision of someone experienced in their use.***

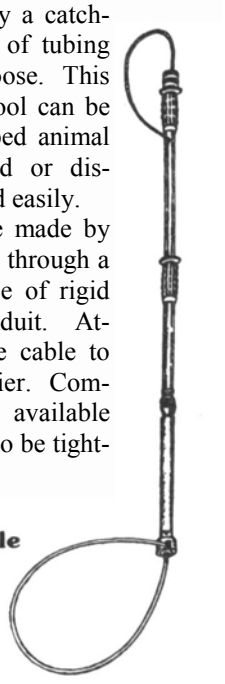
Caution: Check Minnesota Hunting and Trapping Regulations Handbook regarding the use of drags as they are not at this time legal to use statewide.



Catchpole

Many trappers carry a catch-pole, a pole or length of tubing with a rope or cable noose. This highly recommended tool can be used to control a trapped animal so it may be released or dis-patched more safely and easily.

A catchpole can be made by running a loop of cable through a three to four foot piece of rigid aluminum pipe or conduit. At-taching one end of the cable to the pipe makes use easier. Com-mercial catchpoles are available which allow the noose to be tight-ened without slipping.



WATER TRAPPING EQUIPMENT

Rubber Gloves and Rubber Footwear

Short rubber gloves or shoulder length gauntlets, and hip boots or chest waders are essential to keep the wetland trapper dry. Being wet and cold takes the fun out of trapping and can be dangerous. (See safety section on hypothermia.)

Although not required by law outside the boating requirements currently in place, the use of PDF's (personal floatation devices) while water trapping is strongly encouraged.

Drowning Devices

Drowning devices are simple one-way slide locks designed for use when trapping water animals, especially beaver and otter. When a water animal becomes caught in a trap it normally dives for deep water. Drowning devices are strung on a wire and permit the animal to go into deep water, but not return.

Staff

Many water trappers use a walking staff to help them navigate muddy shorelines. It can be used as a probe for finding muskrat runs. With a hook on one end, it is also a good device for retrieving traps in deep water. Use of a trap hook is much safer than reaching under water or ice to try to feel for a missing trap because of the risk of being accidentally caught.

Stakes or Drags

Wooden stakes are usually preferred to metal stakes for water trapping because they are often readily accessible along shorelines. Stakes should be at least an inch in diameter with a "Y" at the top or a downward pointing branch to stop the trap chain from passing over the stake. Such stakes should be driven below the surface of the water, out of sight of casual observers.

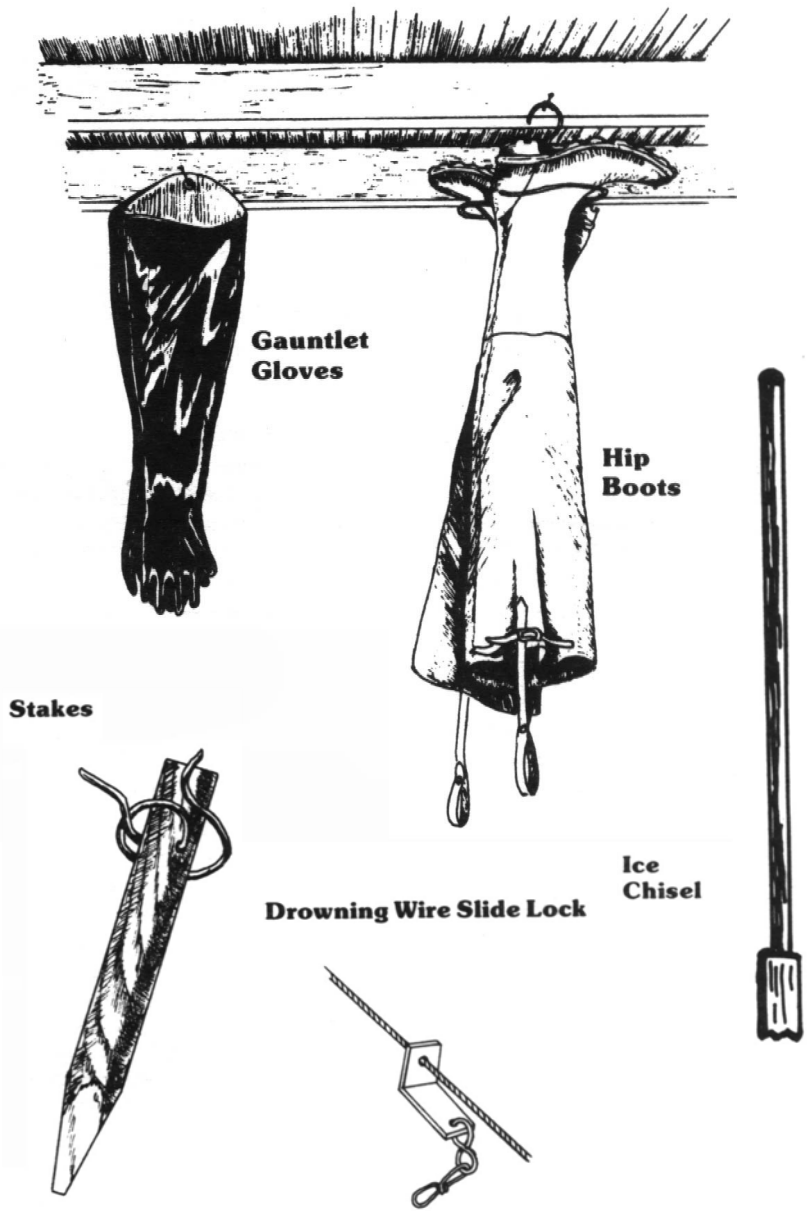
In beaver country, stakes should be pre-cut and dried. Green stakes will often be gnawed off by beaver.

Drags used in water sets are usually heavy objects, pieces of brick, iron or a rock. Drags should be used when the soil is too rocky or too loose to hold a stake. Drags are also used where a raccoon catch is likely because raccoons are very powerful and may pull out a stake in soft mud or pull out of a solidly staked trap.


Pack Basket

Ice Chisel

This tool is almost indispensable for setting traps under thick ice. An axe or hatchet may work under thin ice conditions, but an ice chisel is best for thick ice.



LURES, SCENTS AND BAITS

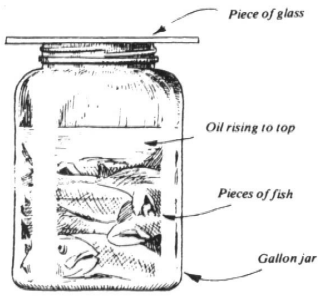
Bait, scents and lures are used as attractants or fear removers at sets.

Lures

There are three basic categories of lures. Gland lures are made from anal or other glands of the target animal. These lures may be effective because the odor may suggest that another animal of its species has been at a location and marked it, or because of sexual attraction. Food lures are liquid or semi-liquid concoctions of substances, which appeal to an animal's hunger. Curiosity lures can be any type of unusual scent designed to interest the animal and cause it to investigate further. Curiosity lures can be things like skunk essence, beaver castor or even cheap perfume.

Scents

Scents are generally the urine of the target animal and appeal to the animal's habit of marking its territory or serve as a fear remover.



Making Fish Oil

Baits

Baits are foods, which are attractive to the target animal. Baits may be fresh or tainted, or solid or liquid. Baits help hold the animal at a set and "work" it (explore), increasing the probability of the animal being caught.

Baits, scents and lures can be used alone or in combination. Beginning trappers would be wise to use commercial lures until they develop their own. A new bait or lure should be used only on a few sets until it has been proven successful. Only experience and experimentation will tell which lures will be effective in which situations.

Odors or lures and baits should be kept off the traps themselves and the soil covering the traps. Lure contaminated traps or soil may cause some furbearers, like fox or coyotes, to dig the traps out.

FUR HANDLING

Before setting traps, the trapper must be ready to care for the pelts. A good skinning knife, set of honing stones, gambrel, tail stripper, tail splitter, fleshing beam or board, fleshing tool, and an assortment of fur drying frames (stretchers) are needed. Well-handled furs bring significantly higher prices than poorly handled ones.

Skinning Knife

A sharp knife is needed if the catch is to be skinned properly. For making the initial cuts, slitting tails, and working on smaller furbearers, a skinning knife should have a slender pointed blade. A somewhat broader, rounded blade is useful in most skinning situations. Most trappers prefer a rather high quality knife with those two blade styles. Shinning knives should be kept sharp.

Skinning Knives

Honing Stones

Frequent touch up honing of a knife makes the skinning job go much more smoothly. An investment in a good knife should be matched with an investment in good sharpening stones. A relatively soft stone will cut the steel quickly to the desired angle; hard stones smooth the edge. A good trapper learns the proper use of both the knife and honing stones.

Gambrel

Gambrel

The gambrel is a device used to hang an animal by its hind legs while it is being skinned. The two hooks are usually inserted just above the ankle between the leg bone and the large Achilles tendon.

Fleshing Beam

A fleshing beam or fleshing board makes the fleshing task much quicker, safer for the fur, and easier for the trapper. Some trappers prefer a narrow rounded beam with a tapered point. Others prefer a flat board with a tapered point. Either tool works well. A fleshing beam can be made by tapering and smoothing a debarked piece of slab wood. A narrow beam about two or three inches wide works well for mink, weasel, and other small pelts. A wider beam up to eight inches makes a better surface for fleshing larger pelts such as raccoon, fox and opossum. Some trappers use a smooth, wooden drying frame for a fleshing board.

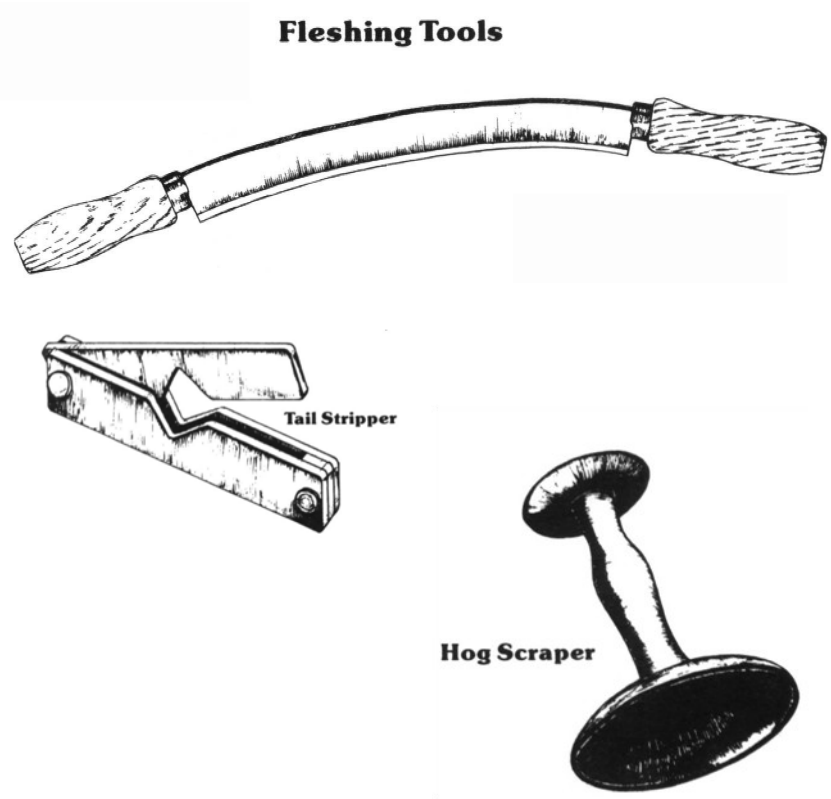
Fleshing Tools

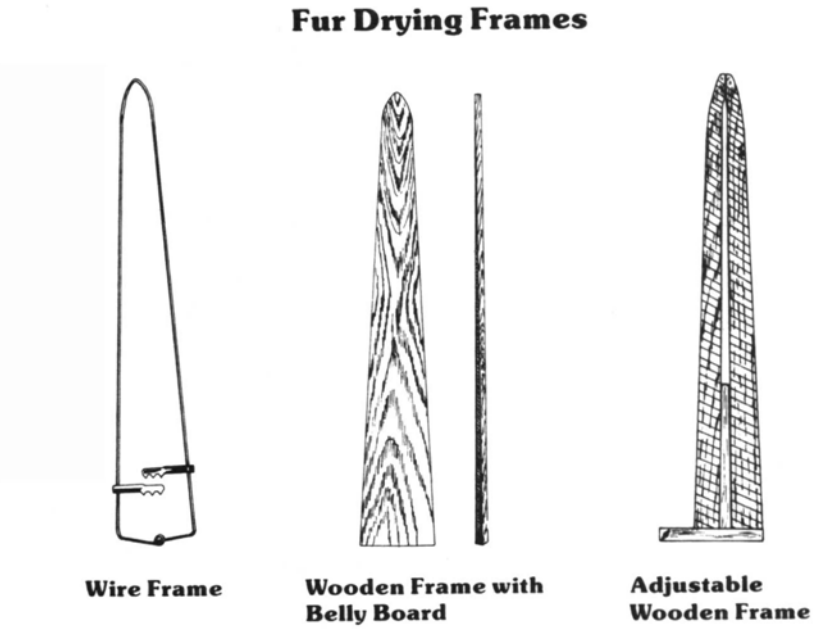
There are many types of fleshing tools. Draw shaves, hog scrapers, and table knives have all been used. Some American Indians still use hardwood wedges for fleshing pelts. Many trappers buy their fleshing tools from supply houses. Others make their own from old knives, draw shaves, or even sheet metal stock.

Whatever type of fleshing tool is used, take care so that excess flesh and fat is removed from the pelt ithout damaging the hide. Cuts affect pelt value as must as sloppy fleshing. Learn to use fleshing tools efficiently and properly.

Fur Drying Frames

After the pelt has been removed and fleshed, it is ready to be dried. All furs except beaver and badger are skinned and dried cased. The pelts are air dried while shape is maintained by a fur drying frame. Commercial wire frames are excellent, but some trappers still prefer either solid or adjustable wood drying frames. Remember to fit the frame to the fur rather than to stretch the fur to fit the frame. Bear in mind that the pelt dimensions desired by the fur market may change occasionally. Further information is presented in the fur handling section of this manual.





EQUIPMENT PREPARATION

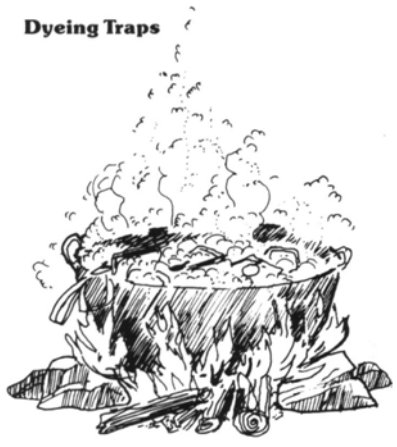
When taken care of properly, your traps and other equipment can provide years of trouble free use.

Inspection

All traps and other equipment (including new traps) should be inspected each year before use. Check for bent or broken parts, weak springs and damaged or broken chains on all traps. Parts are available for most traps and any weak or damaged traps should be repaired. All sharp edges and burs should be filed smooth, especially on the inside edges of the jaws. Trap pans should be adjusted so that they are level when set.

Preparation

All equipment used in land trapping should be clean and free of foreign odors. New traps should have a coating of oil which should be removed before use by washing with a mild, odorless detergent, by allowing the traps to soak overnight in a saltwater and vinegar solution, or by boiling in clean water and pouring or skimming off the grease. New traps will take dye better if a light coating of rust is allowed to form on them. On the other hand, excess rust should be removed from used, badly rusted traps with a steel brush or buffing wheel. Before dyeing or waxing, a small piece of wood, wire or the trap ring should be placed between the jaws to hold them slightly open.



Dyeing

Dyeing slows rusting of traps, makes them easier to conceal, and removes undesirable odors. Commercially available logwood chips, powder or crystals are probably the quickest and easiest substance to use, but traps can also be dyed in a solution of black walnut hulls, alder bark, sumac berries or maple bark. The solution should be brought to a boil in a large kettle, pan or bucket, which is firmly supported above a fire or stove. Traps should be tied together with wire by the chains in groups of six to make handling easier. The traps should then be submerged in the water, with enough of the wire hanging over the side of the kettle to retrieve the traps. The traps should simmer in this solution until they are an even black in color (usually about 45 minutes). Other metal equipment (stakes, drags, etc.) can be treated in this way.

A new method of treating traps, which has proven to be effective, and which requires only infrequent touch -ups, involves spraying clean traps with a penetrating, cold-galvanizing compound.

Waxing

Traps can be waxed to prevent further rusting and to improve their action and speed. This is especially important for traps used for land sets. Commercial trap wax or a mixture of paraffin and a small amount of beeswax can be used. Some trappers add a pea-sized piece of pine or spruce resin to the wax mixture to help conceal unnatural odors.

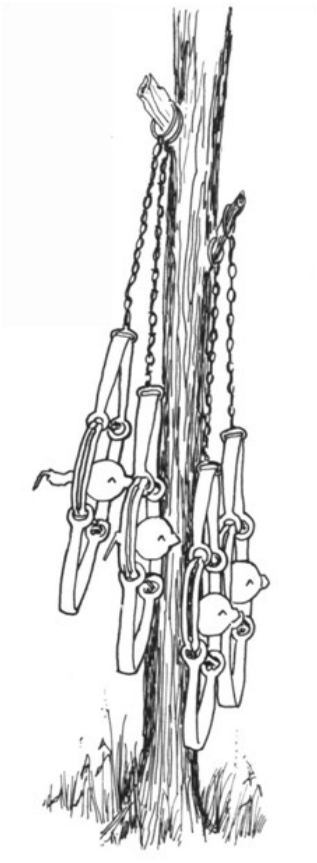
To wax dyed traps, submerge them in clean boiling water. Melt the wax on top of the water and when the traps are hot, pull them up through the melted wax and hang them to cool and dry. Some trappers coat traps with a thin wax film by placing hot traps directly into a very hot, pure wax solution. However, this technique is not recommended for beginning trappers because the hot wax is extremely flammable and it can also cause severe burns if it splashes.

Never wax conibear-type traps because it makes them dangerously sensitive and they may spring unexpectedly while they are being set.

Storage

After degreasing, dyeing, and waxing, the traps should be hung in a clean, well-aired area away from foreign odors. An ideal location is an open building such as a woodshed, away from the house. Every effort should be made to prevent contamination of the clean traps with lure, bait, human scent, gasoline, oil, smoke or blood. It is a good idea to wear gloves when handling clean traps. Never apply lubricating oil or grease to a trap.

Metal or wooden cage traps should be kept as clean as possible and should be stored in open air. Wooden traps are more effective if allowed to weather before use.



STANDARD SETS

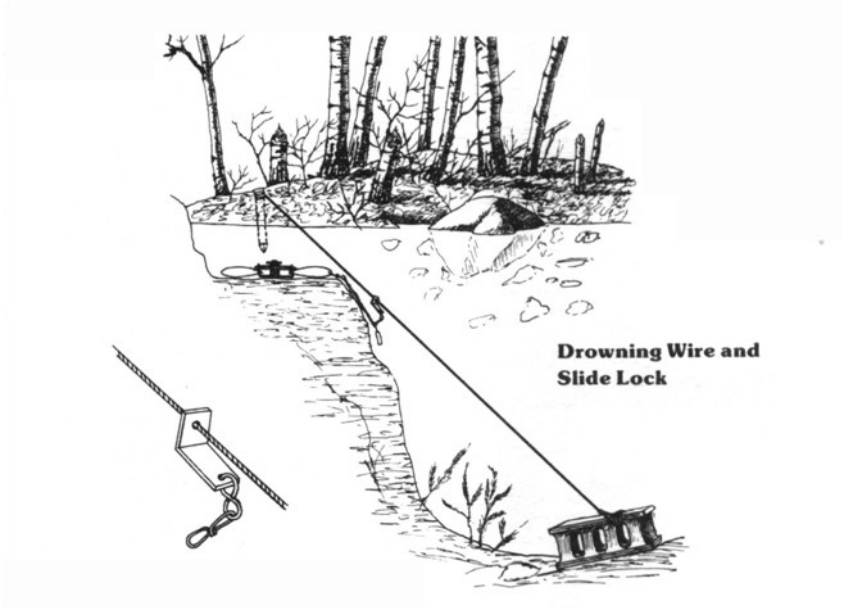
Since humans first began to take prey with traps, a large body of experience has been gained by trappers. A number of standard sets have emerged from that experience, and many are described in the following pages. Some experienced trappers would not want to be limited to just these standard sets, but nearly every trapper used some of them. Modifications of the sets are used to fit the situation encountered at a given time and place. New trappers should study these sets and practice making them before the season arrives.

Trap site selection is extremely important. A poorly constructed but well-placed set will often take more fur than a well constructed but poorly placed set. In fact, many trappers feel that trap placement is 80 to 90 percent of successful trapping. Learning the best sites for traps requires time, sign reading ability, and plenty of pre-season scouting.

TRAP FASTENING

Trap fastening is probably the most overlooked, yet one of the most important, aspects of trapping. Nothing causes more frustration to the trapper, or more problems for the animal and the trapper's image than to have an animal escape with a trap on its foot. Trappers should always "overstake" their traps and use good swivels and fasteners (use a larger stake than seems necessary). Most commercially available traps do not have adequate swivels for trapping predators. You can purchase good replacement swivels or make your own. For land trapping, lap-links or S-hooks are much better than wire for fastening traps to stakes. Wire, if used, should be of 12 gauge or larger, should be doubled, and should not be twisted tight with pliers, which can weaken the wire and cause a break later. Enough wire should be used so that it can be twisted by hand, and a wire cutter used to trim the excess.

Stakes, when used, should be made of strong material and be long enough to hold solid in whatever type of soil conditions are present. Always test a stake after driving it by pulling hard upwards. If it gives, use a larger stake or "cross-stake" it (see illustration). Cross-staking is very effective in sandy or loose soils, which will not hold a regular stake.



Various types of drags or grapples can be used by the knowledgeable trapper for fastening traps, but their use by inexperienced trappers is discouraged. Use of grapples and drags depends on the type of terrain and vegetation, soil conditions, and the type of animal being trapped. Also, some trailing ability is needed to find captured animals.

Feedbed Set

Muskrats create feedbeds, which actually are piles of food cuttings. These piles of clippings or cuttings can be easily distinguished from muskrat lodges because the feedbed is not piled much above the surface of the water. Muskrats are caught at these feedpiles by foothold traps set in 1 to 2 inches of water in front of the pile. The trap should be attached to a drowning wire or a heavy (#1 ½) trap should be staked in deep water. If the water is less than 1 foot deep, a guarded foothold trap should be used.

WATER SETS

Many new trappers start by trapping semi-aquatic furbearers, particularly muskrat and mink. Though less aquatic, raccoon will also be taken in water sets. The selection of sets present here is useful for those species as well as for beaver and otter. As noted earlier, body-gripping traps of suitable size or drowning sets should be used whenever possible for water trapping. When trapping muskrat and mink where the water is not deep enough to ensure drowning the catch, and body-gripping traps are not usable, guarded traps should be used.

For muskrat and mink, drowning sets need not be elaborate. Stake traps in deep water (12 to 18 inches) or use a sliding wire or cable to let the animal reach deep water.

Make sure the trap is firmly anchored since many raccoon are taken in muskrat sets. Beaver and otter require the use of a sliding lock on a strong wire of cable. Sliding locks can be made using angle iron. Commercial drowning locks and cables are also available.

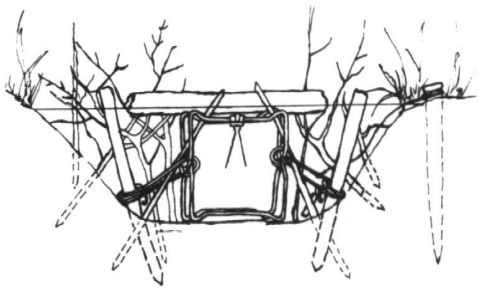
Float Set

Muskrat and some other aquatic animals tend to climb up on floating logs or other surface objects. The trapper can take advantage of that behavior by using existing floating logs or by building a small floatation platform and concealing traps where the animal will trigger them. Several designs are illustrated. When such sets are used in one foot or more of water, the weight of the trap will drown the muskrat. The trapper can avoid catching ducks by placing a crossed pair of branch hoops about 6”over the float as illustrated. Float sets are particularly effective where water levels fluctuate markedly.

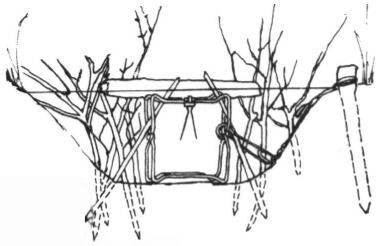
Channel Set

Most semi-aquatic furbearers follow well-defined trails under water. Since the animal commonly goes through restricted spaces, body-gripping traps of adequate sizes are ideal for trapping these channels. Where the channel is too large for the trap, it may be fenced or otherwise constricted using brush and similar natural materials. The trap is usually more effective if it is placed at the bottom of the channel. Mink will be taken occasionally in channel sets for muskrat. Beaver are effectively trapped in their channels, and otter may be caught in those sets as well

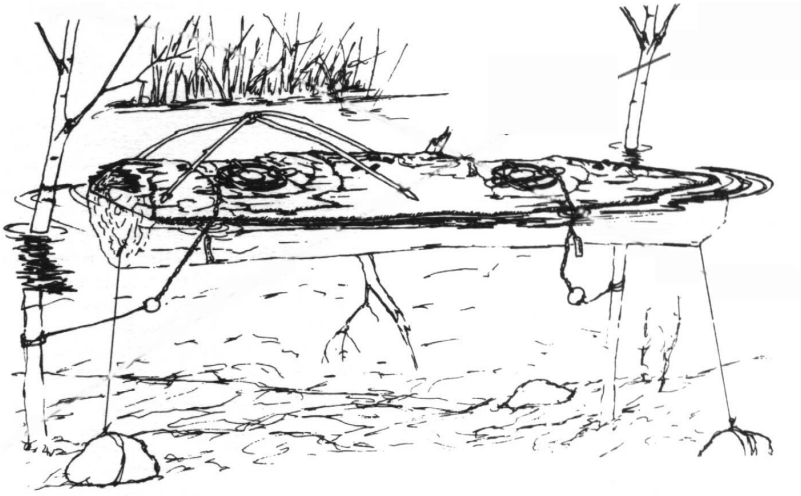
Channel Set (beaver and otter)

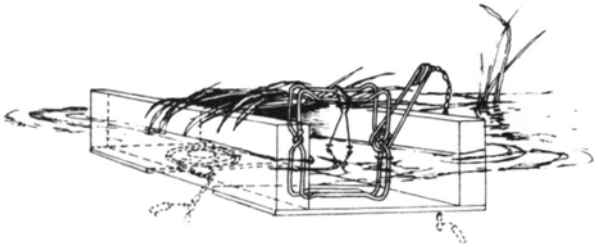


Channel Set (muskrat and mink)



Float Sets

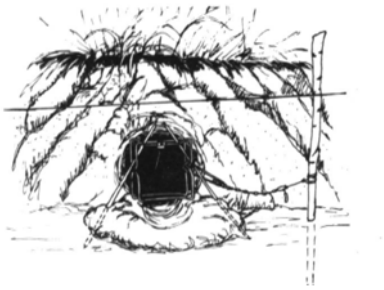




Bank Hole Set

Muskrats dig bank dens along streams, rivers, ponds and lakes. These dens may look like small underwater woodchuck burrows. Foothold traps can be used to capture muskrat at bank den entrances, but body-gripping traps are usually easier to use at the set location. No bait or lure is needed.

Muskrat Bank Hole Set



Trail Sets

Many water animals travel the same trail each time they pass over a given spot. Blind sets in these trails are often very productive. They are also selective if properly placed. Muskrats can be taken by concealing a foothold trap underwater where their trails are evident. The trap should be placed so that the animal's foot comes between rather than over the jaws as it approaches. Muskrat lure can be placed above the trap to enhance the set, but it is not necessary. Be sure to follow the precautions for drowning the animal, or use a guarded trap if deep water is not available, or use a small body-gripping trap.

Beaver and otter can be taken at trails using a strong foothold trap carefully concealed in 3 to 4 inches of water at the base of the trail. The use of a sliding lock and drowning wire is essential for beaver and otter trapping.

Muskrat Trail Set

Spring Run Set

Spring runs or small streams entering larger bodies of water are essentially natural channels. They are attractive to muskrat, mink, otter and raccoon. Foothold traps of appropriate size and a drowning wire should be used. In some cases, appropriate sized body-gripping traps also may be used effectively. Where the spring run is small and shallow, raccoon will frequently move along or across them at the edge of the larger body of water. Therefore, a wise trapper must make sure such sets are secure for raccoon as well as the smaller mink and muskrat.

Spring Run Set

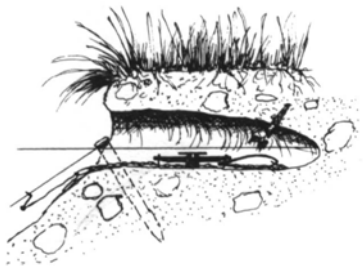
Underwater Ice Beaver Bait Set

Many beaver are trapped under the ice by using fresh bait such as aspen or poplar. As illustrated, either foothold traps or body-gripping traps may be used. A hole is chopped into the ice near where the beaver lives or feeds. Then a trap and bait are fastened on a dry pole, which is pushed deep into the mud and anchored above the ice to a cross pole which cannot be pulled through the hole in the ice. If the trap used is a foothold trap, it should be secured to the lower portion of the pole in such a manner as to prevent the beaver from reaching the hole in the ice. This prevents the beaver from getting air and thus ensures drowning.

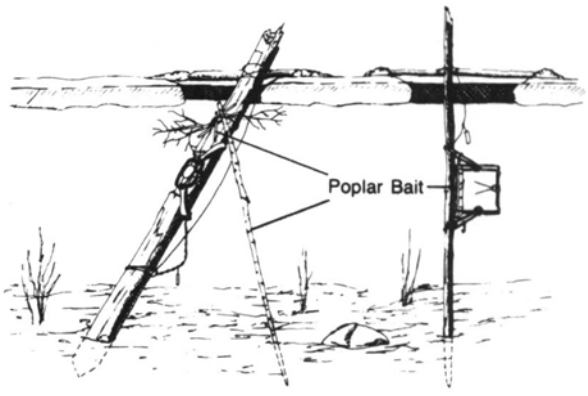
Pocket Set

The pocket set will take mink, muskrat, and a raccoon quite effectively. An upward sloping hole with its base a couple inches below the waterline is dug into the stream bank so that the back of the hole is above the water. For mink and muskrat the hole should be about 6 inches in diameter and 12 inches deep. Pockets for raccoon can be made as much as twice that size, but it is unnecessary. Use either a body-gripping trap of appropriate size or a foothold trap with a drowning wire or a heavy drag. The pocket is baited with a fish or a honey-based bait and an appropriate lure. In areas where free-ranging dogs may occur, the trapper should avoid meat baits and raccoon gland lures. Locating the set under low handing cover, like branches or exposed tree roots, and keeping the trap well inside the pocket are also helpful in keeping dogs out of these sets. Muskrat musk and beaver castor are excellent lures for pocket sets.

Pocket Set



Under Ice Baited Beaver Sets



Obstruction Set

Another type of trail set makes use of the habits of the furbearer upon encountering an obstruction. Raccoon and mink tend to enter the water at the same place each time they encounter an obstruction on the bank, often forming a visible trail. Water sets at those points can be quite productive. The traps should be well bedded and may be covered with water-soaked leaves or mud. A drowning set should be used. No bait or lure is needed.

Obstruction Set

Spillway Set

Beaver, muskrat and otter often use the same path or spillway to cross a beaver dam. Traps can be set in such path spillways. Foothold traps should be set as described for trail sets. If body-gripping traps are used, they must be set in the water (generally below the dam in the spillway).

Spillway Set

Scent Mound Set

Beaver make mud mounds and mark them with castor, much like fox and coyote mark prominent objects with urine. A well-concealed trap in 3 to 4 inches of water with a sliding lock drowner at either a natural or artificial scent mound will account for some Beaver in open water trapping particularly in the spring.

Beaver Mound Set

Otter Toilet Set

Otter create and regularly use certain spots for toilets. These spots are generally near the water and contain numerous piles of otter droppings. A foothold trap can be set in 3 to 4 inches of water where the otter leaves the water to visit the toilet and should be properly attached to a drowning wire and one-way slider.

Otter Toilet Set

LAND SETS

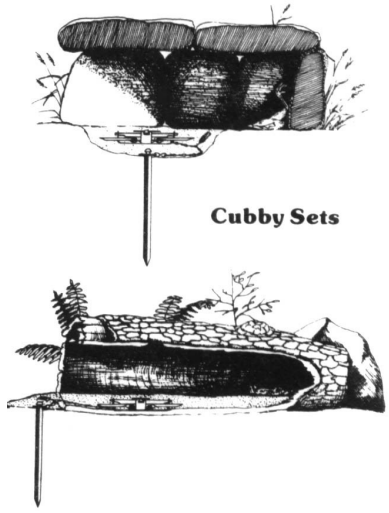
Precautions – Traps at Land Sets

Body-gripping traps can be used in some land sets with the proper precautions. These precautions for not capturing domestic animals are necessary because a body-gripping trap normally kills its catch. Therefore the use of body-gripping traps on land is generally discouraged for beginners. Use of large body-gripping traps on land is illegal in Minnesota. The two sets that involve body-gripping traps in trees tend to reduce the possibility of capturing domestic animals (except cats) if these sets are made as illustrated.

Trail sets and log crossing sets are often recommended by trapping manuals for use in land trapping. Such sets can be selective if used by an experienced trapper, but their use requires both extreme caution and long experience. For these reasons, we do not recommend using these sets for trapping land furbearers.

Cubby Sets

Much like the bank cubbies and pocket sets mentioned under "Water Sets," cubbies can be used effectively for land species that will enter a closed space. They work well for weasel, skunk, raccoon, opossum, fisher, marten, mink and even bobcat. They are not effective for fox or coyote. Cubbies are pens or boxes that prevent the animal from approaching the bait or lure from any side except that guarded by



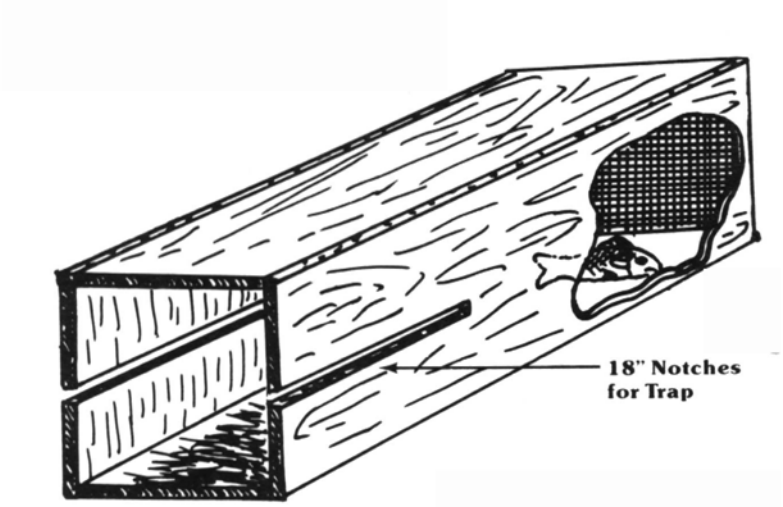
Cubby Sets

the trap. Hollow logs or trees, stumps and drain tiles are natural cubbies. A trapper may construct others of sticks, logs, bark or rocks. Boxes with one end removed, or with holes cut in them are also types of cubby sets.

Some types of cubby sets can be made using body-gripping traps if there is no danger of catching non-target animals. Where that danger is present, foothold traps are a much better choice. When used, they should be entirely inside the cubby entrance, and they should be of an appropriate size for the species being taken.

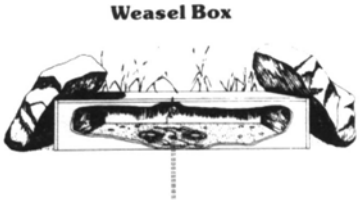
Raccoon Boxes

Another type of cubby can be used effectively for raccoons. An open ended wooden box about 9" x 9" with its opening guarded by a medium sized body gripping trap is placed vertically on a tree no more than 6' above the ground. The trap can be held in place by staples, light wire, or sticks. (Be sure not to anchor both jaws!) Baits of fish, beaver castor, or honey with anise can be used. This set can take domestic cats so it should not be used where there is danger of catching them. Be sure the box is securely fastened to a tree.



"Dog-proof" Raccoon Sets

Raccoon Box



Weasel Box

Weasel Box Set

A small wooden box with holes cut in the ends is an excellent weasel cubby. The holes should be about 2 ½ to 3 inches in diameter. The box can be baited with grain (to attract mice), bloody bait, weasel scent, or a combination of those baits. Small body gripping or solidly staked underspring traps in sizes 0 and 1 with a very light pan action are appropriate. A large flat rock placed on top of the box will prevent other animals from getting into the set.

Box Trap Set

Box Traps

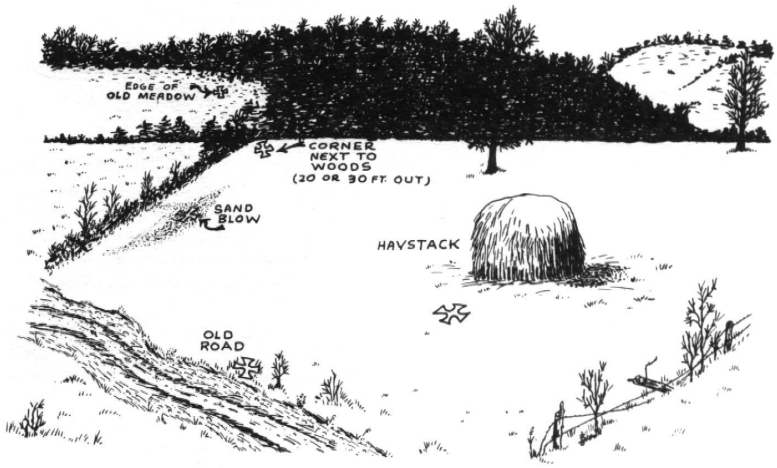
Box traps are self-contained cubbies, thus they can be used effectively for the animals that will enter an enclosed space. In many cases, carefully covering the box trap will make the set more effective, and also may help in hiding it from thieves. In most instances, the bait should be placed behind the treadle or trigger, with just a few "appetizers" near the front opening and just inside the door. Single door traps may work better than those with double doors, particularly for raccoon and fisher.

Dirt-Hole Sets

The dirt-hole set is an extremely good producer for nearly all predatory furbearers. Making the dirt-hole set for fox and coyote is the most demanding construction, and the instructions below are written for that type of set. Site-selection is all-important. The set should be made in a relatively open spot where visibility is good on all sides. Naturally, fox activity should be evident in the area.

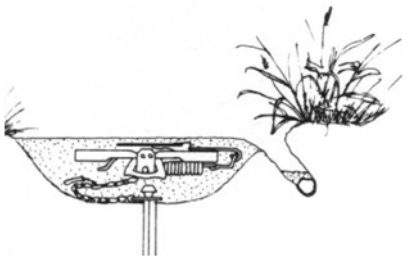
After selecting the site, all necessary equipment should be made ready, and the trapper should go directly to that spot. The bait hole should be dug with a clump of weeds, a rock, a small stump, or some similar backstop. It should be about 2 ½ to 4 inches in diameter, 6 to 8 inches deep, sloping back about 60° under the backstop. All dirt removed should be placed in the sifter. In areas where free-ranging dogs may be present, the trap should be set as near the lip of the hole as possible. Some trappers offset the trap slightly to the right or left of center to assure a front foot catch.

Good Locations for Coyote and Fox Sets



Dirt-Hole Set

Dirt-Hole Set



Finished Set

Next a triangle of sod about 8 to 10 inches on each side is removed in front of the hole. The point of the triangle should touch the hole, giving it the appearance of a fox-dug cache. Dirt is removed from the triangle until the trap bed is sufficient for the trap to sit below the surface.

The trap is staked so that the stake and chain will be directly under it. Only about 8 inches of chain should be used. After the stake is driven, pull hard on the chain. If the stake moves, the trap is inadequately anchored. Either add an additional stake or move the set to a location where the stake will hold adequately. Cover the stake and excess chain with a smooth layer of earth and bed the trap carefully. The trap should not rock or shift position. In wet or freezing weather the trap should be bedded in dry sand, anthill dirt, or a trapping antifreeze may be used. Antifreezes, which are used, include salt, calcium chloride or commercial products. When using salt or calcium chloride, traps should be heavily waxed to prevent rusting.

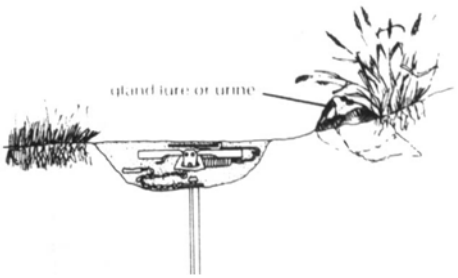
After adding the pan cover (if used), the trapper can cover the trap with sifted soil. The pan cover can be a piece of clean cloth, a plastic "baggie," nylon window screen, or crumpled waxed paper. The pan cover should go over the pan of the trap and under the jaws. The soil should be level, and the trap should be buried no more than one-half inch below the surface. The trap pan should be as close to the front of the bait hole as possible.

For coyote and bobcat, the set is made a bit larger with larger traps and with the trap set farther back from the hole. When trapping strictly for raccoon, raccoon lure may be used and fox urine is unnecessary. Skunk and opossum may also be caught in these sets. Mink and fisher are sometimes taken at dirt-hole sets.

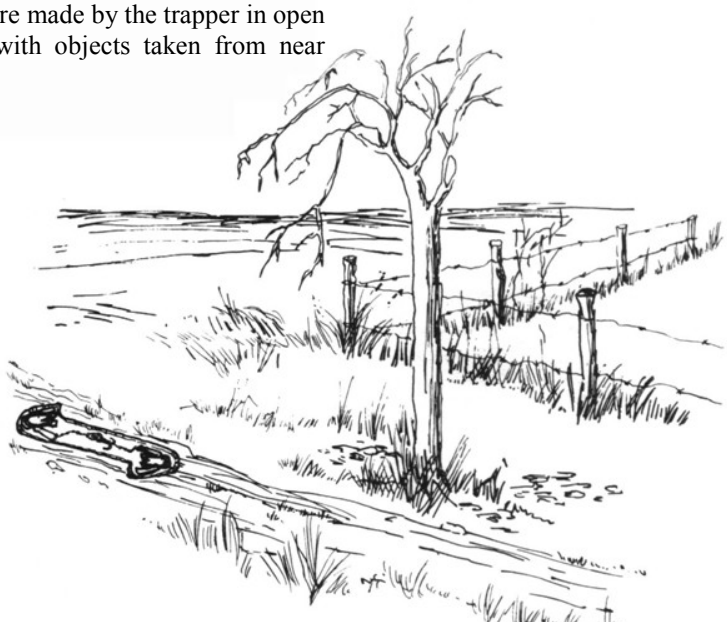
Scent Post Set

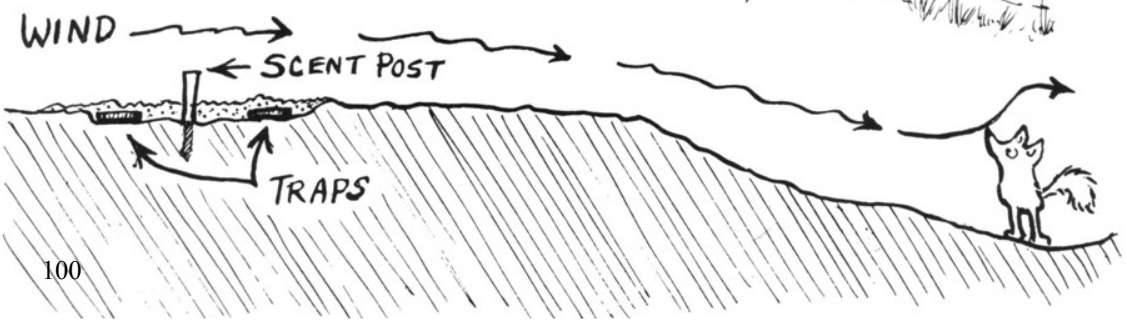
Like domestic dogs, coyote and fox urinate on prominent objects along their lines of travel. Trappers can take advantage of that habit to catch these furbearers. Raccoon, skunk and opossum also many investigate post sets for fox. A small prominent object, like a protruding stone, grass tuft, or stick, serves as the post. A liberal amount of fox urine and a few drops of gland lure are placed on it. The trap is carefully bedded and concealed a few inches away from the post, so that the animal will step on it while urinating. Traps should be covered and staked as with the dirt-hole set. Scent posts can be natural, but most often are made by the trapper in open areas with objects taken from near the set.

Scent Post Set



Double Trap Scent Post Set





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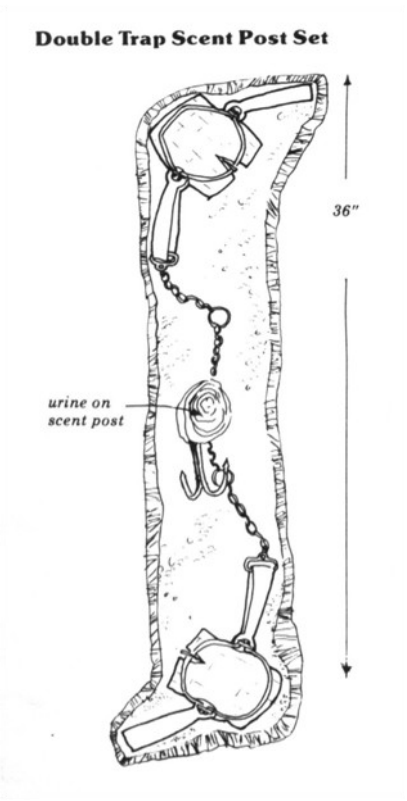


Slanted-Pole or Running Pole set

A second "dog-proof" set for raccoon, fisher and gray fox is the slanted-pole set. A leaning pole is baited at the top with suitable bait. The trap is placed lower on the pole, but at least 5 feet above the ground. Medium body-gripping traps can be stapled (the jaw nearest the bait) to the pole. The trigger should be set on top and to the side to permit the animal to enter the trap to the shoulder before springing it. This also prevents small mammals such as squirrels from springing the trap. A pan type trigger (as illustrated) is commercially available, and very useful in this set. The traps should be carefully screened or concealed in all cases, and the trapper should be sure the animal will be suspended above the ground and away from the tree. This set will catch cats, so the trapper must use it with caution where they may be found.

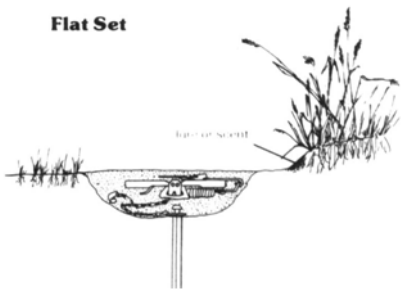
Fish, beaver meat, and raccoon meat are good baits. The bait should be screened with conifer branches or leaves so that it is not visible from above. Suitable lures may be used as well. Fish oil dribbled along the pole or the tree trunk will help lead the animal up it.

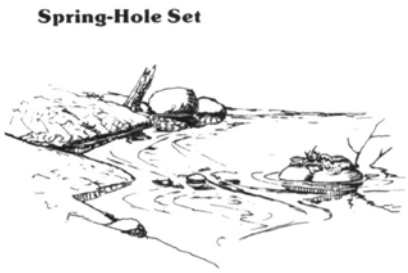
Spring-Hole Set

The spring hole set is effective for raccoon and fox. It takes advantage of the habit of the fox to avoid wet feet. A site with permanent water (preferably a non-freezing spring), several inches deep and 3 feet or more wide is selected. A large piece of moss-covered rock or sod is placed about 12 inches out from the bank. A second, smaller rock or sod, fitted to the inside of the trap jaws, is placed about half way from the bank edge to the bait sod. The trap and drag should be concealed below the surface, but the "stepping stone" should be above the water and stable on the pan. The trap should be adjusted so that the pan is level and rather stiff in action. Bait and lure placed on the bait sod should be carefully hidden to prevent birds from stealing the bait or getting into the set. Spring-hole sets work best in late fall and winter in most areas.

Flat Set

The flat set is quite similar to the dirt-hole and scent post sets. No bait hole or post is used, but the set is lured and liberally sprayed with fox urine. The flat set is an excellent choice where fox are acting shy of dirt-hole sets.





TRAP CHECKING

In Minnesota, all non-drowning sets must be checked at least once each day. Since most furbearers are primarily nocturnal (active at night) the responsible trapper checks his trapline as early in the day as possible. This practice minimizes the amount of time that animals are held alive in the traps. It also reduced the chances of trapped animals escaping or being stolen.

Trappers who must attend school or work should try to quickly check all of their sets in the morning and remove their catch. After school or work, the trapline can be revisited, traps reset, and other sets rechecked.

Before ever setting a trap, the trapper should have the necessary knowledge and equipment to properly handle any capture animal. If trapping with foothold traps on land, the trapper should have the proper equipment for killing target animals, and a catchpole (or something similar) for releasing non-target animals.

When checking traps, the trapper should always approach as close as necessary to determine that nothing has been captured and that the set is not disturbed. When trapping wary furbearers such as fox, coyote or mink, try to keep disturbance near the set to a minimum.

Checking traps regularly is one of the most important requirements of responsible trapping. ***If you cannot check it regularly at the proper time, do not set it.***

KILLING TRAPPED ANIMALS

Whenever possible, drowning or killing sets should be used for animals such as beaver, mink, muskrat, raccoon, skunk, opossum and weasel. Kill-type sets are not recommended for the larger land furbearers because they can be hazardous to people and domestic animals and they are generally ineffective. For these reasons, large kill-type traps are prohibited for land sets in Minnesota.

Animals trapped in foothold traps in upland areas should be shot in the chest of head with a .22 caliber rifle or pistol.

Always be careful that the bullet does not strike the ground, a rock or the trap and ricochet, and be sure of the background before shooting. Skunks should never be shot in the head because of the increased possibility of contacting or spreading rabies virus, which maybe concentrated in brain tissue.

Young trappers who do not have a firearms safety certificate should restrict their trapping to water sets and small upland carnivores, which can be captured in small kill-type traps, or they should trap only in the accompaniment of an adult.

Older, more experienced trappers can kill trapped animals by stunning them with a hard, sharp blow with a heavy hardwood or metal tool, which renders them immediately unconscious. Once the animal is unconscious, death is assured by compressing the chest near the heart. This method is not recommended for trappers who lack the strength or experience to do it properly.

Furbearers held in box traps can be shot or drown by submersing the trap in water or gassed with an engine exhaust after covering the trap.

RELEASING NON-TARGET CATCHES

If there is a high chance of catching a non-target animal in an area, the set should be moved, if possible, or a cage trap or a selective set using foothold traps should be made. Do not use kill-type traps in areas where a non-target animal is likely to be caught, unless it is used in a way that prevents a non-target animal from entering it. With body-gripping traps, unlike foothold or cage traps, you lose the option of releasing the animal. The key to minimizing injury with a foothold trap is to use the proper size, fasten it properly, and check it frequently, preferably in early morning.

To safely remove a dog or other animal from a trap alive and unhurt and with the least risk of injury to yourself, it is best to use a cable slip-noose device on a rigid handle, referred to as a catchpole or "hog choker." The best types have a locking device, which allows the noose to be locked at any size. With patience, the noose can be slipped over the animal's head and then tightened. It should not be tightened to the point that it causes the animal to stop breathing.

Once this has been done, the animal can easily be kept immobile by standing or kneeling on the handle of the noose. With the animal's head pinned to the ground, it is unable or unwilling to do much struggling and the trap can be removed from its foot. Depending somewhat on the animal's disposition, some care should be taken in releasing the noose once it has been taken out of the trap. It should be kept at arm's length when the noose is loosened and watched carefully to make certain it does not try to bite.

If you capture a dog and you know who owns it, you should go and explain to them that you accidentally trapped their dog, rather than simply releasing it and letting the owners find out for themselves. If traps are tended regularly each day, seldom is there ever permanent injury to the dog's foot except in very cold weather.

In an emergency you can remove an animal from a trap without a catchpole by placing a blanket over its head to calm it, but this method is not always effective or easy.

Some trappers carry a 3-foot square piece of plywood in their vehicles with a 2-inch by 12-inch notch cut vertically into one side of it. They then place the plywood on edge with the animal's leg extending through the notch in the board. The animal and its teeth are then on one side of the board, and it foot and the trap are on the other side. The trapper can then remove the trap from the animal's foot without being bitten.

SKINNING AND FUR HANDLING

Proper fur handling is very important. It can bring much personal satisfaction from doing a job well and it can also result in a better price from the furbuyer. Fur handling starts at the trap site.

If trapped in water, the furbearer should be rinsed clean of any mud or vegetation. Next, attempt to remove as much excess water as possible. Muskrat can be held by the head and shaken to remove much of the water. Furbearers can be stroked with your hand from the head to the tail to squeeze out water, or rolled in dry snow to clean and soak up excess water. In cold weather, do not lay a wet animal on ice or any metal surface because the guard hairs will freeze to the surface and the pelt may be damaged when the animal is picked up. If animals are carried in a vehicle, they can be placed on a newspaper. If the animal's fur is still wet, it should be hung up by the head or forelegs in a cool place to finish drying. Be sure not to hang too long since the pelt may spoil in warm weather. All pelts must be dry before being placed on a drying frame.

If the furbearer is trapped on land, brush or comb it to remove any burrs or dirt before skinning. The trapper should be cautious of parasites such as fleas, ticks, and mites that may be on the animal's fur (especially land furbearers). If fleas or ticks are a problem, the animals can be placed in a plastic garbage bag and dusted with flea powder when they are removed from the trap.

It is advisable for trappers to wear plastic gloves when skinning. Furbearers should be skinned as soon as possible after they are killed. The skin is easier to remove when the animal is fresh and damage to the pelt is less likely.

There are two recognized ways of skinning animals called "cased" and "open." All furbearers except beaver and badger are prepared cased. Cased furs are removed from the animal by slitting the fur across from one hind foot pad to the other and pulling it down over the animal's head they way we take off a pullover sweater. Open pelts are prepared by skinning down the belly and tacking the pelt out flat. Animals with furred tails have the tail split on the underside and left on the pelt. Hairless tails, like those of muskrat, beaver and opossum are removed at the hair line.

CASED FURS

Muskrat

The muskrat is a good example to describe the procedures on skinning cased furs. The first step is to cut the pelt around the tail and all four feet at the fur line. Next, the pelt is cut from the heel of each hind foot to the anus. By pulling the pelt and cutting connective tissue where necessary, the pelt is peeled down from the hind legs and the tail. Aside from the initial cuts around the feet and tail and down the hind legs, the muskrat pelt can be removed from the body without using the knife. Cuts will be required to remove the pelt at the ears and eyes.

Cuts for Skinning Muskrat

If desired the carcass can be hung by the hind legs, using a gambrel at a convenient height. The pelt is pulled down the carcass as far as it will go, exposing the base of the forelegs. Pass a finger between the foreleg and the pelt; then using a push and pull motion, strip the skin from each leg.

When both forelegs are free, pull the pelt down the carcass, past the neck to the base of the ears. The head of the carcass should be partially exposed. Locate the cartilage that attaches the ears to the skill and cut as close as possible to the skull. Pulling the pelt lower should reveal the connective tissue around the eyes. The tissue should cut close to the skull using a sharp knife. If done properly, no fur should be left on the carcass around the ears and eyes. The pelt is pulled down again, finally exposing the loose flesh around the lips. The pelt is freed from the carcass by cutting around the lips and through the nose cartilage. The pelt is ready to be fleshed, "stretched" and dried, or it can be frozen fur side out in a plastic bag. Do not roll up pelts before freezing. Heavy pelts are extremely good insulators and rolled pelts may begin to spoil and warm in the center before the cold can penetrate, particularly if several pelts are placed next to each other.

Raccoon

Another good example of skinning a cased fur is the raccoon. The first step in skinning a raccoon is to cut the pelt around the "ankles" and "wrists" where the long fur ends. Next, the pelt is cut from the heel of each hind foot to the anus and around the anus. Finally, a cut is made from the anus straight down the tail about 4 inches. Start peeling the pelt down the hind legs by pulling the pelt and by cutting connective tissue where necessary. After the pelt is removed from the hind legs, the carcass can be hung at a convenient height by it hind feet. Peel the pelt off the carcass around the anus. If the raccoon is a male, reproductive organs will be connected to the pelt. These are cut off as close to the pelt as possible. Now peel the pelt from around the base of the tail exposing a couple inches of the tailbone. Clamp a tail stripper around the tail bone with one hand and hold the base of the tail with the your other hand and attempt to pull the tail bone out of the tail by pulling the tail stripper (see drawing). If the tailbone does not pull out, extend the cut several more inches toward the tip of the tail. Free more of the tail bone from the pelt by cutting the connective tissue and then try to pull the tailbone out as described before. Once the tailbone is pulled, extend the cut on the tail

straight to the tip. A tail-slitting guide may be helpful, but is usually unnecessary if a sharp night is used.

The pelt should now be pulled down the carcass as far as it will go exposing the forelegs. Further expose the foreleg by cutting the connective tissue. Wrap fingers from both of your hands around the raccoon's foreleg and support it while pushing the pelt down. Keep pushing until the raccoon's forefoot passes through the pelt and the pelt is free. Repeat this process with the other foreleg.

As with the muskrat, the ears, eyes, nose and lips should be cut free without leaving any fur on the carcass. The pelt is now ready to be fleshed or placed fur side out in a plastic bag to be frozen.

Skinning Raccoon

Fleshing Cased Furs

Fleshing is the act of removing the fat and muscle from the skin. Before the pelt is ready to be fleshed its fur should be dry and free of any mud or burrs. Pelts with a lot of fat, such as raccoon, skunk or opossum pelts, should be allowed to hang fur side in and cool until the fat stiffens or hardens. If the pelt is frozen, it should be removed from the plastic bag and thawed completely but slowly (don't leave it next to a stove or heater).

The fleshing job is made easier by using a fleshing beam or fleshing board (see diagram). The trapper should try to match the shape of the beam or board with the type of fleshing tool used. One-handed scrapers, hog scrapers and two-handed scrapers with a straight blade work well on the flatter beams and boards. A two-handed scraper with a curved blade works well on a rounder beam or board. Regardless of the equipment used, care should be taken not to apply too much pressure on the pelt. This could cut the hide or the roots of the fur and lower the value of the pelt.

Fleshing Cased Pelts

To start fleshing, the pelt is slipped over the fleshing beam or board with the fur side in. If the animal has a tail that is left on the pelt, the tail is usually fleshed first. It is important that all the fat be cleaned from the tail because if any is left on it may spoil or get into the fur.

Many trappers like to flesh a narrow strip around the bottom of the pelt after fleshing the tail. Next, start at the head and flesh a strip down the length of the pelt. The pelt is turned or rotated on the beam or board so that the trapper can flesh another strip alongside the first strip. The pelt is turned until all of it has been fleshed. A sharp knife can be used to trim around the lips, eyes and ears. Forelegs should also be checked for fat and fleshed if necessary. A clean dry rag, feedbag or a paper towel can be used to soak up extra grease or loose fat. Some furbearers, especially red fox and weasel, will only have a small amount of flesh or fat on the pelt and it will only be necessary to scrape where the trapper sees flesh or fat.

Wire Stretchers

Cased furs are always arranged on stretchers in such a way that the forelegs and belly will be centered on one side of the stretcher and the eyes, ears and back will be centered on the other side. Place the pelt fur side in on the stretcher, centered as described, and pull the pelt down the stretcher until snug. Wire stretchers usually have two or more arms that move up and down the stretcher. These arms are attached (pronged) into the edge of the hide in the center of the stretcher. Muskrat pelts are attached at the tail and belly portions of the pelt each on a separate arm. All other cased pelts have the tail portion of the pelt attached to one arm and the two hind legs attached to the other arm. The arms are pulled toward the bottom of the stretcher until snug. The pelt is then wiped clean and is ready to dry. The fur side of the pelt must be completely dry before it is placed on a wire stretcher, or the stretcher may rust and damage the pelt.

Completed Raccoon Pelt

Wooden Stretchers

Place the pelt on the board fur side in and center as shown on page 48.

The pelt should be placed smoothly and evenly on a board with the tail well cleaned and opened. Pull snug but ***do not overstretch,*** as this will cause the fur to look thin. It should be fastened to the board with a few tacks or pushpins around the skirt and a few along the edge of the tail. Cut off the lower lip or use one tack to hold it in place. Let the skin of the front legs stick out free from the pelt, but trim them so that they do not hang down against the pelt. Do not fold the front legs together nor turn them back inside the pelt as either way can cause rot and hair slip. The back legs of the pelt can be fastened with one or two tacks.

With the one piece drying board, a belly board is necessary. The belly board is 5/16" x 5/16" x 30" and sloped or tapered from one end to the other so it can be removed after the pelt is dry. Place the smallest end between the drying board and the pelt on the belly side and push it ahead until the belly board goes up to the head of the pelt. With an adjustable wooden drying board, no belly board is necessary. Again wipe clean. The pelt is now ready for drying.

After the pelt has been boarded, it should be hung to dry in a place away from the stove, sunlight or strong, hot winds. If it is dried too fast the leather will be ruined. A temperature of 55° to 60° F. (13° to 15° C.) is about right. Pelts of foxes, cats, fisher and coyote are only partially dried then turned fur side out, as described later, to finish drying.

The pelts will dry in 24 hours to one week, depending on the amount of air movement passing through the drying place. They should be wiped with a dry, clean rag occasionally to take of sweat and any fat that might work out of the leather. When the pelts have been on the drying board long enough to dry, they should be taken off and hung by the nose until the head and legs are full dry before selling. Cased pelts should not be folded, but should be packed flat, one on top of the other. Folding makes a crease and takes away some of the good appearance.

Note:

The tails of the following animals should have the tail bone removed and then split open to the tip and dried.

Mink*	Red Fox	Fisher
Otter*	Gray Fox	Bobcat
Skunk*	Coyote	Badger
Raccoon*	Weasel	

Spread the tails of these animals open and nail, tack or pin open until dry. Use plenty of nails or pins to be sure the edges are even. This will give it a better appearance. Many trappers and buyers prefer to tack open the tails of all the animals above.

SPECIAL INSTRUCTIONS BY SPECIES – CASED FURS

Mink: Market Fur In

The following step-by-step procedure illustrates an alternate method of handing a "cased" fur.

Fasten a small steel trap firmly to a solid support. Place the right hind foot of a mink in the trap and it will be held solidly, yet remain movable while the animal is being skinned. First, cut the front feet off at the top of the footpad. The next cut is made by holding the left hind foot of the mink straight out toward you and making the cut from foot pad to foot pad along the back legs just in from of the anus on the belly side.

Take the right hind foot of the mink out of the trap and put the left hind foot of the mink into the trap and hold the tail out toward you. Cut down the tail past the anus to meet the first cut. Now slice down the opposite side of the anus and the pelt is open with no fur being wasted and the anus not cut open to free scent and oil glands, which would be harmful to the fur and result in strong odor.

Next work the legs and tail out. This is done by simply pushing down with thumb and finger between the skin and carcass near the base of the tail on each side and moving outward toward the foot, separating the pelt from the carcass in quick, easy movements. The pelt is pulled down the hind legs to the foot and cut off to leave the claws on the carcass.

The bone is then pulled out of the mink tail. Next the mink is placed with both hind feet in the trap and the pelt pulled down over the head as the front legs are pulled through. Skin carefully around the head cutting the ears off close to the skull and using great care not to cut the eyes and lips.

Otter: Market Fur In

The otter is one for the most difficult furbearers to skin. The otter has more connective tissue holding its pelt to the carcass so the pelt must be cut free more than pulled free. Once removed, the pelt is placed on the scraping board and thoroughly cleaned of all fat, flesh and blood. Though difficult to scrape, care should be taken not to use too sharp a knife or scraper that will expose the hair roots through the leather. If the otter is not well cleaned the remaining fat will quickly burn and discolor the leather side, thereby reducing its market value. When well cleaned, place on a standard drying board, pull tight and nail into position. The tail should also be opened and nailed on the board.

Skunk: Market Fur In

Skunk should be skinned the same as raccoon. Most of the trouble from skunks is their smell, which creates a problem while skinning and in storage as well. Also, because of the possibility of skunks having rabies, always wear rubber or plastic gloves when skinning and do not skin animals that appear sick or are behaving abnormally.

Hang the skunk by one hind leg and open the pelt by slitting from one hind footpad in a straight line past the anus to the other footpad. Much care should be taken in skinning around the anus to the other footpad. Much care should be taken in skinning around the anus to prevent cutting it open to release the scent. Leaving a small patch of fur around the anus helps prevent cutting the scent gland ducts. Split the tail open on the underside

and remove the tailbone. Skin as described for the raccoon or mink. All flesh and fat should be fleshed from the leather on a fleshing beam or board. When fleshed, the entire pelt can be soaked in vinegar for one-half hour to remove most of the scent from both the pelt and your hands. Rinse, turn the fur out and hang loose by the nose in an airy place, until the fur side is dry. When dry, turn fur side in and place on a standard drying board or wire stretcher. Fasten with closely spaced nails around the skirt. Spread the tail open and nail that way. Use a belly board. Hang in a cool, dry place until dry. When dry, remove from the board and again store in a cool, dry place.

Gray Fox, Red Fox and Coyote: Market Fur Out

Hang the animal by one hind foot. Two cuts are made, one from each hind foot to the anus following the line where the belly fur and back fur meet. Then cut from the anus up to the tail 2 or 3 inches and finally around both hind feet. The tailbone is removed as described for raccoon. Skin out the hind legs and continue to pull the pelt down over the front legs, cutting free any connective tissue while doing so. A little extra pressure is needed to pull the small neck part over the head, but when this is done, the ear cartilage shows, and this should be cut off close to the skull. Using great care, cut the eyes, lips and nose free, and the fur is then free of the carcass. Check the leather side closely, and remove all excess flesh and fat. Do not forget to spread the tail open and clean it in the same way. Place the pelt on a standard drying board or wire frame fur side in. Use a belly board. Fasten with nails along the bottom. The neater the job, the better looking it will be to the buyer.

Allow to dry in a cool, dry place. When partly dry (not sticky but flexible) remove from the board and turn it fur side out, where it should remain until fully dry. If the pelt gets too dry to turn fur side out, it can be resoftened by wrapping in a damp cloth. Do not try to force an over-dry pelt inside out or it might tear. When completely dry, remove it from the board, and hang it nose up in a cool dry place. Then brush the fur lightly or hold it upside down and "snap" it to give a good appearance.

Weasel: Market Fur In

Weasel is very easy to skin. Skin as described for the mink. Take care not to pull the pelt too hard or it may tear.

Weasel pelts dry rapidly, and should be placed on proper drying boards as soon as skinning is completed. Bloodstains should be removed by light washing with clean water. When the pelt is on the drying board fur side in, a tack at each hind foot and one at the base of the tail will hold it in place. Excess fat and flesh should now be carefully removed.

Pelts should remain on the drying boards until completely dry in order to prevent wrinkling after being removed. Wrinkling spoils the appearance and reduces size and value. Use a belly board as you do for mink. This permits easier removal from the board when dry. Dry away from heat.

When fully dry, remove the pelt carefully from the drying board to prevent tearing. Store pelts in a cool dry place. Lay flat, or hand on strings through the eye holes. Do not fold the pelt because this may cause cracks and always leads to a poor appearance. Split open all tails and always remove the tailbone.

Fisher: Market Fur Out

Skin as for raccoon or fox. Remove all flesh and fat. Be sure to flesh large male fisher well, as they have a tendency to get stiff when dry.

The pelt should be placed on standard drying boards, fur side in. The tail on fisher should be spread open, cleaned, then fastened open to dry. When partly dry, remove from the drying board and turn fur side out by starting at the nose. When turned, return them to the drying board until fully dried.

Bobcat: Market Fur Out

Although the claws are sometimes left on bobcat pelts, there is no necessity for this. Unless you have a special order for claws on be sure to remove them from the pelt. It is sometimes a good idea to slit the skin of the front leg rather than try to pull the paw through. Bobcat has small necks and big heads. Much pressure is necessary to pull the pelt down over the head, so take your time to prevent tearing. Cut the ears off next to the skull, and skin carefully around the eyes, nose and lips, until the pelt comes free. Remove all flesh and fat from the leather. Place on a standard drying board with the fur side in. Pull it down and nail around the skirt. Use a belly board. Spread open the hind legs and nail them open to dry.

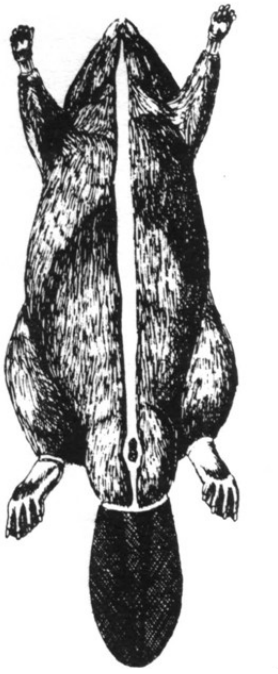
When the leather side of the pelt is partially dry, remove it from the drying board and turn fur side out by starting at the nose and working to the rump. Return it to the drying board, nail and then hang in a cool dry place until it is dry. When dry, remove the drying boards, brush the fur out lightly, and hang by the nose in a cool, dry place until it is marketed.

OPEN FURS

Beaver

Beaver are handled "open" and can be skinned either clean or rough. Clean skinning take longer, but little or no fleshing is required. Some trappers like to rough skin beaver on the trapline or at home and then flesh the pelt on a beam.

Proper Cuts for Skinning Beaver

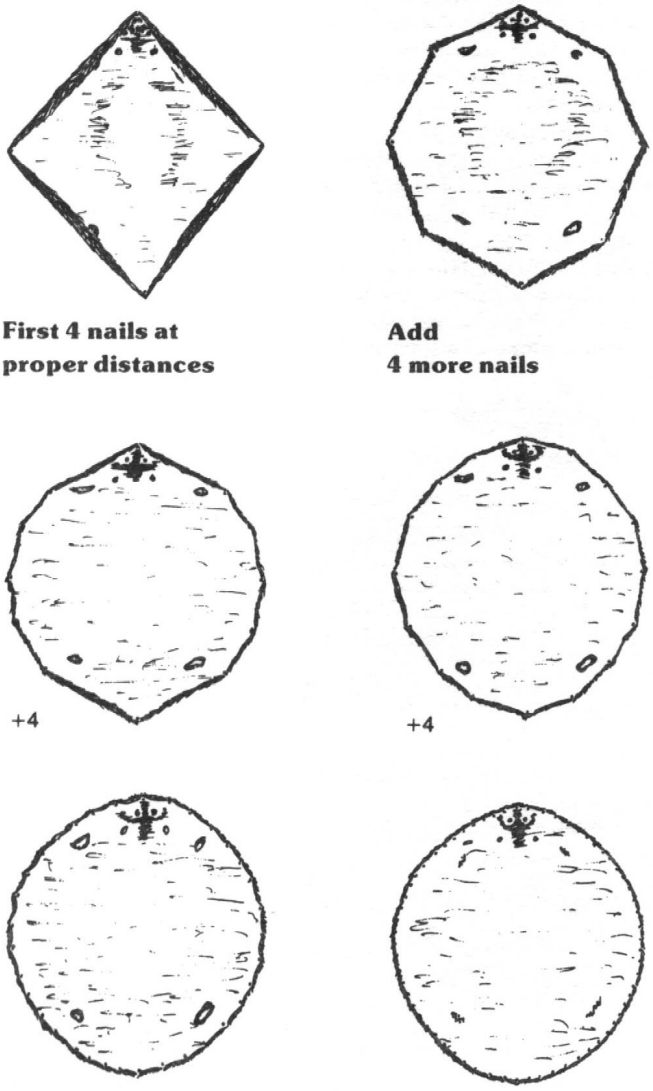


The fur should be clean and dry before skinning. The first step is to remove the front and hind feet. Some trappers chop these off with a hatchet, but with a little practice they can be removed easily with just a knife. Some trappers remove the tail while other leave it attached and use it as a "handle" while skinning. Lay the beaver on its back and make a straight line in the fur from the lower lip to the base of the beaver's tail with the tip of your index finger. Slit the belly skin along this line, being careful not to cut into the body cavity or to damage the castor glands on either side of the cloacae (anus). Begin to pull and cut the pelt free along this midline cut. Beaver are difficult to skin and knives must be kept sharp. Work toward the back of the beaver, one side at a time, keeping the hide taut to avoid cutting it. Do not slit the leg area but pull the hide off over the legs. When the skin is loose on the underside of the animal, flip it over and cut the skin loose from the back up to the head. Cut carefully around the ears, eyes and nose to free the pelt from the carcass.

Fleshing Beaver

The skin should be hung in a cool place to allow the fat to stiffen or "set." This will make the fleshing job easier. Some trappers flesh beaver by tacking the pelt out tightly on a board with at least eight nails and using a knife or flat fleshing tool to remove fat and flesh from the outside edges of the pelt toward the center. Pelts that were skinned very clean may not require fleshing. Beaver are most easily fleshed on a beam with a two-handled fleshing knife. A nail head sticking out slightly at the tip of the fleshing beam will hold the pelt when the trapper leans his body against it. Flesh a strip of the pelt down the midline of the back and another strip at right angles across the pelt. Each of the "quarters" can be easily fleshed. Any holes made while skinning or fleshing should be sewn shut with even stitches before the pelt is nailed to a drying board.

Steps in Nailing a Beaver Pelt to a Drying Board



Boarding Beaver

Beaver pelts should be nailed to heavy plywood, the end of a cable drum, or on some other flat surface in a round or wide oval shape. It helps to have permanently drawn concentric circles or ovals of various sizes marked on the board to serve as a guide when nailing. Be careful not to overstretch the pelt. Place the nails according to the accompanying illustration. When finished, the nails should be not more than 1 inch apart. Use nails at least 2 inches long and, once the pelt is nailed up, pull it away from the board up onto the nails so that air can circulate behind it.

Pelts can also be sewn onto a hoop frame of metal or wood. The pelt should be sewn loosely using stitches one inch apart. Once it has been attached all the way around, the stitches can be pulled tight all around. Some metal hoops are adjustable and the stitches can be tightened by increasing the hoop size. Some trappers hoop beavers using metal hog rings rather than heavy thread or cord.

Leg holes should be trimmed and sewn or nailed closed.

Beaver should be dried in a cool place away from direct sun. As the pelt dries, wipe it from time to time with a clean dry cloth to remove grease or oil coming out of the leather. After the pelt is dry, remove it from the board or frame, brush the fur, and hang or stack the pelts leather-to-leather, fur-to-fur.

Badger

Badger is the only other Minnesota furbearer, which is sometime dried and stretched "open." However, it is easier to hang badger and initially skin them "cased," as described for a raccoon or fox. They can be fleshed on a beam, then the belly fur is slit down the midline from anus to lip, and the pelt is tacked out in a rectangular shape. Some buyers prefer badgers stretched and dried cased in a wire or wooden frame similar to a raccoon. It is best to check with your buyer to see which he prefers before stretching badger pelts.

Recommended Stretcher Sizes

Recommended wooden stretcher sizes for various furbearers are listed on page 60. If homemade wooden stretchers are constructed, the edges of the boards should be rasped or sanded round and smooth after cutting to shape.

CARCASS UTILIZATION

MEAT

Beaver, muskrat and raccoon can be used for human consumption. The meat from these animals is very good if prepared properly. Animals that are freshly caught, skinned and gutted will taste the best. The front and hind -quarters and back meat are most commonly utilized, while the rib cage area is usually discarded. All meat should be soaked in salt water overnight before preparing. All fat should be carefully removed from raccoon and parboiling further helps to eliminate fat and the taste it imparts to the meat. All oil should be skimmed or poured off after boiling.

Beaver and muskrat carcasses can be sold to fur farms as animal feed or to sled dog trainers. Carcasses should be gutted and frozen while being stored.

Most dogs will eat beaver and muskrat carcasses. These can be used as excellent supplements to or substitutes for dog food.

The meat from many furbearers can also be used as trapping bait. Muskrat is excellent bait for mink. Pieces of beaver or muskrat, either fresh or tainted, work well for canines and cats. Skunk is a good fox and coyote bait, especially in winter, as is bobcat.

High school biology teachers in your area might want carcasses or skulls for use as teaching aids in anatomy or taxonomy classes.

The trapper should attempt to utilize the full value of every furbearer.

GLANDS

Many trappers are unaware of the value of glands of animals that they trap. Some glands have commercial value and others are valuable to the trapper for formulating his own lures. On beaver, castor glands and oil sacs, both found in the anal area are of value and can be removed by carefully pulling and cutting the flesh away from the glands. The oil sacs are light in color and contain a yellowish, oily fluid. The castor glands are darker with a veined appearance. Care should be taken to keep the pair of castor glands joined together. Castors are normally dried before selling, but can be frozen. To dry, hang them over a rope or wire. Dry them for one day, turn over, and dry for two weeks a room temperature, then freeze until sale. Beaver castor is used extensively in the perfume industry as well as by lure manufacturers.

Members of the weasel family (mink, weasel, skunk, otter, fisher) have anal glands, which contain a powerful musk useful in lure making. These glands open in the anal area and are pod-shaped, containing liquid musk. They can be cut loose ***carefully*** with a minimum of squeezing and should be kept cool or frozen until used.

The glands of weasels are particularly valuable as an attractant for mink, otter, weasel or canids.

The anal glands and footpads of canines are often used in lure making for those species. The glands of raccoons, opossums, badgers, and muskrats are less commonly collected for lure making.

Caution: Glands should be doubly or triply sealed before placing in the family freezer, and even then you do so at your own risk! Skunk glands can be removed by the method described above, but it is easier (and safer) to withdraw the musk with a syringe and inject it into a jar that can be tightly sealed and stored in a cool place (there is no need to freeze pure skunk essence).

RECIPES

RACCOON RECIPES

Roast Raccoon

Place the dressed raccoon in a large pot, and cover with water. Pit one or two pods of red pepper in the pot and salt the water to taste. Parboil until tender, then remove and place in a baking pan. Sprinkle with black pepper and flour. Add some stock to the roast as it is being baked. Onion may be added if desired. Cook until brown.

Fried Raccoon

Cut a young dressed raccoon into small pieces suitable for frying. Place the meat in a bowl and cover with milk. Let it stand for 30 or 40 minutes. Remove the milk and roll the meat in flour, which is well seasoned with salt and pepper. Fry in deep fat until brown. For gravy, pour off most of the fat, leaving just enough to cover the bottom of the pan. Add three tablespoons of seasoned flour and brown. Pour about two cups of milk, used for soaking meat, into browned flour and cook until thick, stirring constantly.

MUSKRAT RECIPES

Fried Muskrat

Cut muskrat into 6 pieces. Season with tenderizer salt and pepper and rub in a little flour. Let this rest for a minute, then dip each piece in a beaten egg followed by cornmeal. Brown on all sides in very hot bacon fat.

Put browned meat into a heavy iron or copper pan and continue cooking in a moderate/slow oven for about an hour.

A cream gravy can be made just as you would for fried chicken. Pour off all but about 3 T. of the fat. Add 3 T. flour and cook for about 2 minutes. Slowly pour in 1 ½ cups of sweet milk and stir until thickened. Serve gravy over the muskrat.

Barbecued Muskrat

Marinate whole animals in a sauce made of equal parts hot catsup, Worcestershire sauce and plain cider vinegar for at least 24 hours. Cook over charcoal fire and, using a long handled brush, paint the meat with the marinade of 15 minutes throughout the cooking.

BEAVER RECIPES

Fried Beaver

Remove fat and cut beaver into pieces. Soak overnight in cold water, drain. Cook until tender in a pot with a small amount of water and a piece of bacon. Season and brown in bacon or cooking fat. This is recommended for small beaver only. Wild rice, grapefruit salad and watercress with oil and vinegar dressing will top off the meal.

Atlanta Special

Remove fat from the beaver and cut up. Soak overnight in salt water. Parboil with 1 bay leaf, 2 medium onions, and garlic until about half-cooked. Drain, roll in flour, and brown in hot fat. Season with salt and pepper. Bake in covered pan in a moderate oven until tender. Gravy can be made from the drippings.

HOME TANNING

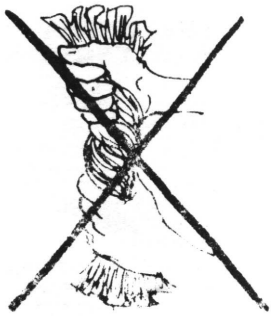
Instead of selling your pelts you may wish to keep some for your own use, either as garments or for display. This may be especially true for smaller or lower grade pelts which may bring little money, but which would make attractive furs when tanned.

This section is just a brief introduction to home tanning using a non-caustic tanning solution. Many other tanning methods and solutions can be used, including acid tans and some commercial tanning compounds.

Pelts to be tanned should be salted heavily on the flesh side, rolled or folded, and placed in a cool place for several days to allow the skin to cure. (Note: ***Never salt a pelt that you intend to sell as a raw fur*** – dry it as described in preceding sections.)

If the skin has already been dried, it should be soaked in a solution of cool clean water containing ¼ cup of salt, 1 ounce of borax and 2 ounces of detergent per gallon. The soaking should continue only long enough to soften the skin. A thin skin such as a fox will soften in one to two hours while a large beaver may take 8 to 10 hours.

After the hide has been salted and allowed to cure, all flesh and fat should be removed by scraping with a fleshing tool or knife. Particular attention should be paid to removing excess flesh around the eyes lips and ears. The ears should be turned inside out. Once all fleshing is completed, wash the skin several times in lukewarm (not hot) water containing a mild dishwashing detergent. All traces of fat and oil must be washed from the skin.



Place the hide in a pickle solution of 1 pound of salt and ½ pound alum for each 2 gallons of water. Make enough solution to completely cover hides. Leave the hides in solution of two to three days (muskrats) to two weeks (beaver). Stir once a day.

Remove hides from pickle solution, rinse thoroughly in clean running water, and hang up for an hour or so to drain. Next, lay the skin flat on the floor and apply a solution of one part leather oil (or Neatsfoot oil) to two parts hot water. Work oil into the hide with a steel brush, then fold hide flesh side to flesh side and leave it overnight. The next day, wipe excess oil off the skin with a soapy rag and then hang it up to dry. Watch closely and stretch and work the hide when it shows signs of drying. A good way to soften hides is to pull them back and forth over the dull blade of an axe tightened in a vice. The more the hide is worked and stretched while drying, the softer it will be. Take care with thin hides not to stretch them too vigorously, as they may tear.

After drying, the flesh side of the hide can be rubbed with sandpaper to get a smooth finish. Hides tanned for wall hangings need not be softened and can be nailed on a board to dry in the shape desired. They can be attractively displayed by attaching a felt backing in the shape of the pelt, but larger, trimmed with pinking shears or (for beaver) by lacing them in a willow hoop.

FUR GRADING

Fur pelts consist of skin ("leather"), guard hairs and underfur. The guard hairs are the long glossy hairs that overlay the shorter, denser underfur. The guard hairs help to repel moisture in addition to protecting the underfur from damage. The underfur primarily serves to insulate the skin, especially in the cold climates. For this reason, furs from northern areas are generally higher in quality and of more value that those from southern regions.

Fur "primeness" refers to the degree of development of the animals winter pelt. All furbearing animals undergo at least one annual molt. Summer pelts are thin and flat and are of little or no value as furs. In the fall, as the days begin to shorten, the winter fur grows in. Although many people think that low temperatures cause pelts to prime, the primary process is actually regulated by photoperiod (day length). Weather can make some differences, however. For example a cloudy, gray fall will cause furs to prime up more quickly than they would in a bright, sunny fall because of the difference in light levels.

Primeness of a pelt is usually determined by examining the skin or leather side, although fur length and quality are also important. Unprimed pelts will be a dark blue or black color on the skin side – hence the term "blue pelt." They will also be "flat" or lacking in guard hairs or underfur. Fully prime pelts will be a creamy white on the skin side, indicating that the hair follicles are fully developed. If the hair follicles are not developed fully enough, the hair will fall out or "slip" during the tanning ("dressing") process.

Some furbearers are at their best for some uses before the skin is fully prime. These include raccoon and fox, which have better color early in the season, and muskrat and beaver which, when fully prime in the leather are past prime in the fur.

Once the fur has completely grown in, it begins to deteriorate, either by fading or by damage or loss of hair. By late winter, most furbearers begin to show signs of "rubbing" (guard hair breakage), "shedding" (loss of guard hairs), or singeing (curling of guard hairs – especially in otter and mink). However, the time of acceptable primeness varies for different furbearers, fur value goes down after primeness much more rapidly than it goes up. Therefore, furs taken slightly before full primeness are much better than those taken after prime.

In addition to primeness, a number of other factors influence the value of pelts. Pelts are graded (sorted) according to species, region of origin, size, primeness, color, texture, density and amount of damage. Relative value for the various types of furs is determined by availability (supply) and by contemporary fashion (demand). Because a majority of fur from this country is exported, value is also influenced to a large extent by international economics and the strength of the U.S. dollar (generally a strong dollar will result in lower prices and vice versa).

Some of the things that graders look for in pelts are discussed briefly below.

SIZE

Pelts are graded according to sizes such as small (S), medium (M), large (L), and extra large (XL). Sizes are based on pelt measurements (length and width) and vary by species and region. For beaver, the term "blanket" refers to a stretched and dried pelt measuring over 65 inches, length and width combined. Generally, the larger the pelts the higher its value, but pelt color and quality are also important. For example, female fisher are general smaller than males but because they tend to have darker, silkier fur, they are usually more valuable.

COLOR AND TEXTURE

Color and texture are very important in determining the value of some species. For muskrat, beaver, otter, mink and fisher, the darker and finer haired pelts are usually preferred to the lighter coarser types. In mink and otter, buyers look for an even change in fur color from the underfur to the guard hair, without a distinct band (known as a "clear" pelt). "Cotton" mink are mink with white underfur contrasting with the guard hairs. This condition is very evident by blowing into the fur and looking for the white underfur. Cotton mink usually have very little value. Red fox occur in several color phases, with the more cherry reds being most preferred of the standard phase and the less common "cross" and "silver" phases being high value variations. "Samson" fox are animals which are partially or totally lacking guard hairs, but which are have apparently normal underfur. This results from a genetic or hereditary condition and these types of pelts have little or no commercial value, although they make an interesting tanned fur or a warm garment. Good dark raccoons without a yellow cast to the fur are preferred. For bobcats, current demand is for the lighter more heavily spotted cats such as those that come from areas to the south and west of Minnesota. Also, paler and softer western and northwestern type coyotes are preferred over the darker and coarser eastern types of coyote such as occur in Minnesota.

FUR DENSITY AND LENGTH

Generally, thicker or heavier furs are used for trimming garments and the lighter, flatter pelts are used for coats or jackets. This is especially true of raccoons, where most southern raccoons and flatter pelts are referred to as "coat types." Most Minnesota raccoon are classified as "heavy" or "semi-heavy" and are used mainly for trim. Badger are among the most variable furbearers in terms of pelt quality and value. Light-colored badger with dense fur may be quite valuable while darker badger nearly lacking in underfur are of little commercial value.

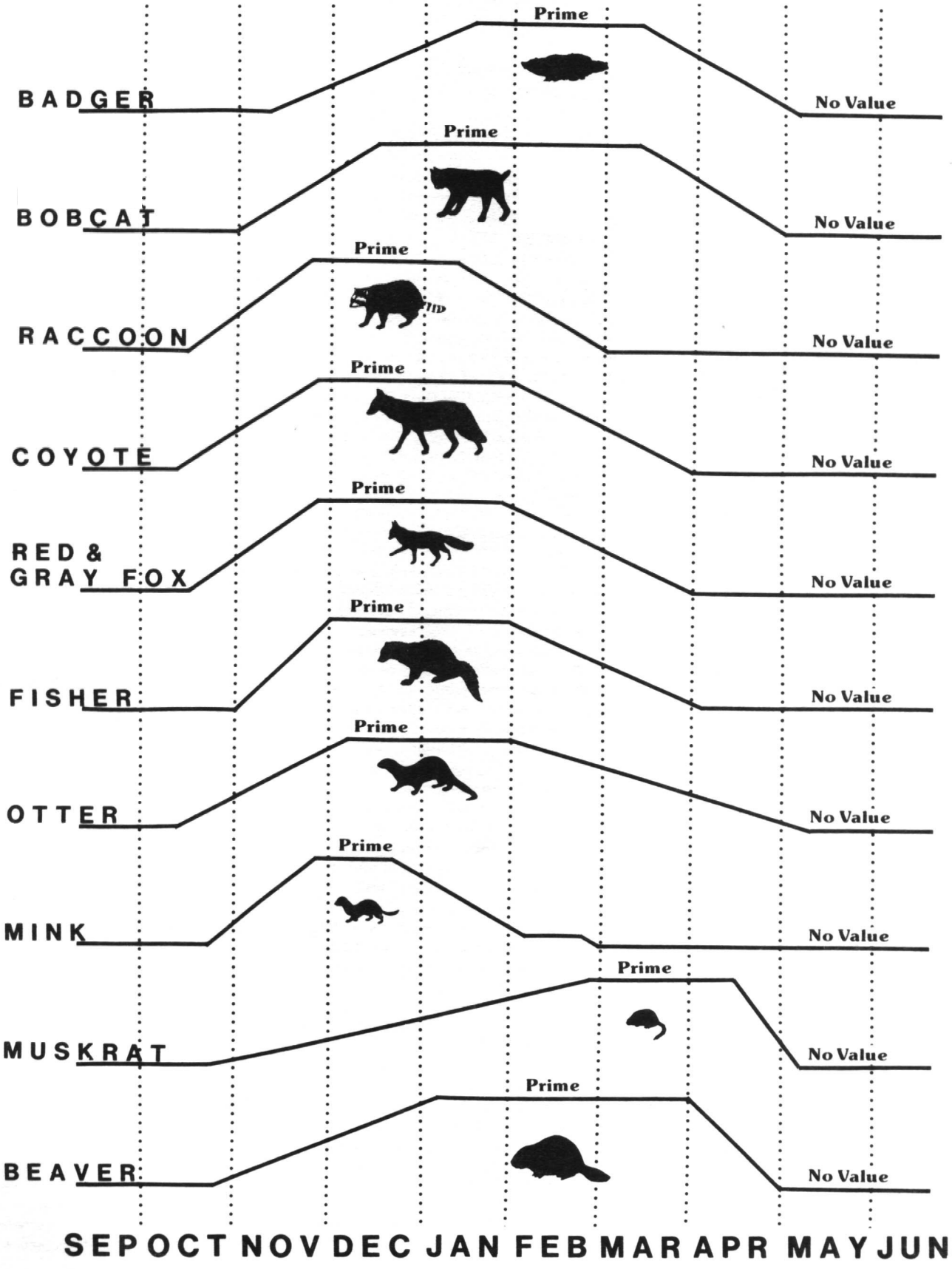
In recent years, there has been a decided preference in the fur industry for "long-haired" types of fur (such as raccoon, fox, coyote) as opposed to short-haired types (beaver, otter, muskrats).

GRADES

All of the measurements of quality discussed above, except size, are used to assign pelts to quality "grades." The top grade usually includes one-fourth to one-third of a season's collection and is referred to as "Ones" (written I) or as "Ones part Twos" (written I pt. II). These are the top quality or near perfect pelts. The "Seconds" (II's) are flatter, slightly rubbed, very slightly damaged, or slightly off-color pelts, but still fairly average with a solid, usable amount of fur. Seconds represent the bottom end of the quality range that most good manufacturers would be likely to use.

Furs below II's are referred to as "low-grade" and are used in cheaper garments and for trim. Thirds (III's) are badly rubbed or flat (unprimed) pelts and fourths (IV's) are extremely bad and of very little value. Damaged and badly damaged pelts may be put in a separate category or included in grades III or IV.

Approximate times of fur primeness for Minnesota furbearers. Most furbearers are "acceptably prime" before full primeness is reached, and for many their color and hair quality is actually best before the skin is fully prime. Quality declines rapidly after full primeness.



SAFETY AND SURVIVAL

All trappers should constantly be aware of the potential hazards, which they might face while trapping. Young trappers should practice the "buddy system" and should always try to avoid venturing out on the trapline alone. Also, it is a good idea to get into the habit of always letting some responsible person know exactly where you are going and approximately when you expect to return. All trappers are advised to take a first-aid course and to carry a first aid and survival kit with them. The items needed in this kit would depend on how remote the trapline is. Some of the most common hazards likely to be encountered on the trapline are discussed briefly below.

HYPOTHERMIA

Hypothermia (exposure) is one of the most dangerous hazards a trapper is likely to face. Extremely cold weather is not required to cause hypothermia, in fact in wet, windy weather, hypothermia can occur at temperatures of 40 to 50° F. or higher. Hypothermia can occur in minutes if a victim is immersed in cold water.

Hypothermia results from loss of body heat and is characterized by uncontrollable shivering, difficulty in speaking and loss of coordination. If body heat is not restored, death will result. Hypothermia is especially dangerous because the cooling of the body slows mental processes and leads to irrational thinking and mistakes in judgment. Also, the loss of coordination can result in stumbling, falling and the loss of the ability to walk. Pulse and respiration slow and the victim lapses into unconsciousness and, unless help is rendered rapidly, dies.

Early signs of hypothermia should be a warning to the trapper to seek shelter as quickly as possible. Build a fire. If possible, remove wet clothing and get into a warm sleeping bag or dry clothes. Drink hot fluids and eat high-energy foods such as candy or dried fruit. Do not consume alcohol, as this will lead to a further slowing of body functions. If with a partner, share body heat. In extreme cases of hypothermia, full recovery of body temperature may take hours and medical assistance, if available, may be required to gradually bring the body temperature back up to normal.

FROSTBITE

Frostbite most commonly occurs on exposed skin (nose, ears, face) or the extremities (hands, feet). It results from freezing of the flesh and is indicated by whiteness or blanching of the skin accompanied by a tingling sensation. Feeling in the affected area decreases and the skin will be cold and frosty. The best treatment is thawing in warm water ***(not hot)***. Do not rub the affected area. On the trapline, a bared hand can be held over the face until the frostbitten areas hurt again. In extreme cold do not handle metal objects (such as traps) with your bare hands or frostbite can result in a very short period of time.

THIN ICE

Many trappers have necessity to travel on ice, but it should never be considered entirely safe, even under the coldest conditions. Ice on lakes and ponds is generally stronger than river ice because the currents create weak spots. Ice near shore is often weaker because of buckling action breaking and refreezing it. Springs in lakes sometimes cause upwelling of warmer water, which can weaken ice, and schools of fish such as carp, may congregate and create thin ice spots because of the water circulated by their fins. Ice can be a foot thick in one spot and only 1 inch thick 10 feet away.

New, clear ice is generally the strongest. Ice mixed with snow or slush appears white and is not as strong as clear ice. "Candle ice" results from solid ice decomposing (usually in spring) and forming into long vertical needles. This ice makes a hissing sound when walking on it.

As a general rule, 2 to 4 inches of clear ice are required for a single person on foot and 5 to 7 inches are required for a snowmobile. There is not general rule for white ice and personal judgment is required. It is a good idea to check to see how thick the clear ice is under the white ice.

Candle ("rotten") ice appears black and is not very strong for its thickness. Usually, candle ice under 2 feet thick is unsafe and good judgment is needed even on ice thicker than that. In most cases, this ice is safer in the early morning if subfreezing temperatures occurred the night before causing the vertical needles of ice to freeze together.

If you break through the ice, ***always turn around and attempt to climb out at the point where you fell in,*** since the ice held you to that point. Even if near shore do not continue on, but turn back the way you came. Place you hands and arms on the unbroken ice and work forward by kicking your feet. If the ice breaks, maintain your position and slide forward again. Once onto unbroken ice, don't stand but roll away to solid ice.

If you are with someone else and they break through, do not rush to the edge of the hole to attempt to rescue them. Throw them a rope or extend a pole, branch or other object to them and pull them out.

Once out, get a fire going as quickly as possible unless shelter is close at hand. If no shelter is available build two fires, one on each side. If traveling on a snowmobile, carry extra clothing and a sleeping bag and change out of your wet clothes. Wool clothing is preferable to down or synthetics and will provide some insulation even when wet.

CUTS

Cuts are one of the most common injuries to trappers. A supply of bandages, adhesive tape and gauze dressing will be sufficient for most minor cuts. Butterfly bandages can be used to temporarily pull together a deeper cut that could require stitches.

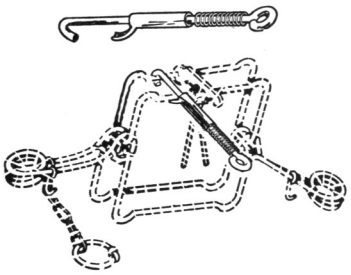
One of the worst situations that can occur is to cut your foot or leg with an axe. For that reason, it is a

good idea to use a saw rather than an axe whenever possible. If a cut is made through your boot, do not remove the boot if at all possible because you will be unable to get it back on. Push an absorbent dressing through the cut in the boot, and then tie something around the boot to apply pressure to the wound to stop the bleeding.

Heavy bleeding can usually be controlled by applying pressure directly to the wound. If that fails, pressure may need to be applied to a pressure point on the body or, as a last resort, a tourniquet may have to be applied. A tourniquet cuts off blood flow and can lead to gangrene and loss of a limb if not frequently loosened. Trappers should take a first aid course or consult a first-aid book before attempting these techniques. Elevating an affected limb will ease blood pressure and slow bleeding.

GETTING LOST

It is easy to get "turned around" while trapping, especially in an unfamiliar area or when it is impossible to see landmarks. Trappers should always carry a good compass and an accurate map. Even in more settled areas, fog, rain or snow can obliterate familiar landmarks and cause difficulties for the trapper without a compass.



Conibear Safety Device

If you do become lost and you do not have a map and compass to help guide you out, make yourself comfortable and stay in one place until you are found. It is a good idea to carry some sort of survival kit.

GETTING CAUGHT IN A TRAP

All trappers face getting their hands accidentally caught in one of their own traps while setting or checking. For foothold traps on land, this seldom presents a problem, since the trapper can usually open the trap by applying pressure to the springs with his feet.

Never reach through the ice with your hands to check or attempt to find a trap. If your arm is through the ice and your hand is caught in a trap, you are in serious trouble. Use a trap hook to recover traps or make certain that you have cut a hole large enough to pull the trap up through if necessary.

If you are caught in a conibear trap, use a rope with an end loop to free yourself. Place your foot in the loop, double the rope through the holes in the springs, and pull upward on the free end with your other hand or by looping it over your back and holding it in your teeth (ask an instructor to demonstrate). Practice this release method before needed and when setting large body gripping traps always have a length of rope with a loop close at hand. Always use a safety device when setting these traps.

FUR MARKETING

Although most buyers will buy pelts "in the round" (whole), it is generally to the trapper's advantage to skin and stretch his own furs, if at all possible. Improperly cared for furs, however, can be a beat total loss, so it is important to seek advice from someone knowledgeable or to carefully study the instructions in this manual.

Well-cared-for-furs give a trapper the satisfaction of having done a job well and completely, and the pay benefits in at least three other ways: 1) Properly skinned, stretched and dried pelts are more valuable than whole animals; 2) The trapper who handles his own fur can present a larger "lot" of fur to a buyer, rather than a few animals at a time, and he therefore has more bargaining leverage; and 3) Stretched and dried furs can be hauled, shipped, or stored more easily and allow the trapper to take advantage of the market or markets promising the highest return. Whole animals or "green" (wet, unstretched) pelts must usually be sold quickly and to a nearby buyer.

Frozen pelts should be thawed before being sold. Make sure that they are slowly thawed in a cool place. A wet hide can spoil in a few hours if it becomes too warm.

Stretched and dried pelts should be removed from the stretcher and stored in a cool, well-aired place away from direct sunlight until it is time to sell them. Fur should be stored and shipped leather-to-leather or fur-to-fur, never leather to fur. Most trappers hang the fur in bundles from rafters or other areas. Care should be taken to see that mice cannot get at furs because their gnawing can do considerable damage. If the furs are to be stored for an extended period of time, regular fur cold storage (32° F.) is advisable,

There are a number of ways of selling pelts, and it often pays to shop around before selling. There are some of the ways that a trapper can sell:

1) To a local fur buyer. These people sometime advertise in newspapers and usually are known by most local trappers. An advantage of this method is personally dealing with the buyer.

2) A traveling fur buyer. These buyers usually make periodic visits to local sporting goods stores or other shops and they frequently advertise in newspapers. As above, the trapper has the advantage of dealing personally with the buyer.

3) A mail firm. Some fur buying companies buy pelts through the mail. These companies usually advertise in trapping magazines.

Unfortunately the trapper doesn't get to deal with the buyer personally and the pelts must be packaged and mailed.

4) Fur buyers at a fur auction. These auctions are usually listed in trapping magazines and they may be run by trappers' organizations or by private firms. The trapper does not get to deal personally with the buyers, but he canusually set a minimum bid or can bid on his own furs. Auctions have the advantage of competitive bidding, and usually a small commission fee is charged.

If pelts are to be shipped, pack them flat, fur-to-fur or skin to skin (never rolled or folded) in large burlap bags (sewn shut) or heavy boxes. Never ship furs in plastic bags because they can mildew and spoil. Make certain that all pelts are completely dry before shipping.

The trapper's and consignee's name and address should be conspicuously marked on the outside of the package. The trapper's name, address, license number and a list of the numbers and species of furs contained in the package should be enclosed and must be attached to the outside of the package. The trapper should also keep a copy of this list for his records. It is a good idea to insure these shipments for their estimated value.

If furs are to be shipped to another country (Canada, for example) special regulations apply. Customs declaration forms are required for all furs shipped out of the country, and for some species an export permit is required. Check the trapping regulations or contact an enforcement officer or customs official before taking or shipping any furs out of the country or they may be seized. Many trappers sending furs to Canadian auctions prefer to send them through a broker, who has the necessary permits and handles all of the paperwork for them.

WILDLIFE DISEASE

Because trappers' activities routinely bring them into contact with animals, they should be aware of diseases and parasites carried by wild animals and should take common-sense precautions. Since doctors may not routinely look for some types of diseases, which may be contracted from wildlife, it is the trapper's responsibility to inform the doctor of his outdoor activities is a puzzling disease should develop.

RABIES

The primary wildlife carrier of rabies in Minnesota is the striped skunk. Rabies is also occasionally found in foxes and raccoons, but is very rare is all other Minnesota furbearers.

Rabies is a virus that attacks the nervous system and is usually transmitted in the saliva of an infected animal when it bites a non-infected animal. In addition to bites, the virus can enter through a cut or scratch while skinning an infected animal or by coming into contact with the eyes, nose or mouth.

Rabies occurs in two forms in wildlife. In the "furious" form, the animal becomes irritable and aggressive, loses it fear and may attack other animals. In the "dumb" form, the animal becomes lethargic and may suffer various forms of paralysis.

If you are bitten or scratched by any wild animal, wash the bite area thoroughly with soap and water and contact a physician immediately. If possible, the animal involved should be captured or killed without damage to the head and refrigerated (not frozen). Trappers should avoid shooting skunks in the head (since most rabies virus is in the brain) and should wear rubber gloves while skinning. A new vaccine against rabies (Human Diploid Cell Vaccine – HDCV) is now available which provides some pre-exposure protection from rabies without serious side effects. Trappers who handle a lot of carnivores may want to consult with their doctor about getting this vaccine.

TULAREMIA

Tularemia is a bacterial disease of mammals found primarily in rabbits, beavers and muskrats in Minnesota. The disease often results in white necrotic (dead) spots in the liver of infected animals. The disease can be transmitted to humans through cuts or scratches while skinning infected animals, from drinking contaminated water during water-borne outbreaks, from flea, tick or insect bites, or rarely, from eating undercooked meat.

LYME DISEASE

This is a relatively new disease caused by a spirochete (type of protozoan) transmitted by a small red and black tick commonly known as the deer or bear tick (not the tick commonly found on dogs). The disease is known to occur in east-central Minnesota and is characterized by circular skin lesions with possible headaches, nausea or fever and, in some cases, arthritis in one or more joints and heart problems. Most exposures from this small tick occur from May through October. Doctors may not routinely look for this disease so people with these symptoms who may have been exposed to tick bites should inform their doctor of that fact.

PARASITES

A number of parasites, primarily tapeworms, can be contracted from wild animals if good hygiene is not practiced. One of the most serious of these is the tapeworm *echinococcus*, the larvae of which form cysts in the liver and lungs of humans, deer, moose and livestock. Microscopic eggs of this tapeworm may be found in the feces of foxes, coyotes, wolves or dogs, and human infection can result from contamination of hands and accidental ingestion of eggs.

Raccoons are host to a roundworm, which also sheds microscopic eggs in raccoon feces. Their eggs are not infective for about 30 days. They then can become airborne as dust and inhaled or can

be accidentally ingested. People coming into contact with areas where raccoons have lived or concentrated such as in barns, chimneys and attics or people who have pet raccoons are most susceptible to infection. The eggs hatch after ingestion and the microscopic larval worms migrate into the nervous system (spinal cord, brain) or into the eye. Symptoms are nervous system disorders and severe infections may result in death.

MANGE

Red foxes and coyotes are commonly afflicted with a parasitic mite infestation, which causes a condition known as mange. The most common type of mange is sarcoptic mange and it is cause by microscopic mites that burrow in the skin and deposit their eggs as they go. With time, the eggs hatch and the infestation increases to the point that the animal's hair begins to fall out and the skin becomes thickened, crusted with scabs and cracked. Mange is spread from animal to animal by contact. In Minnesota is may become epidemic when red foxes are abundant and result in widespread die-offs. Mange is nearly always fatal to red foxes and coyotes, but is seldom contracted by gray foxes. Trappers should take care in handling animals, which have mange, since it is possible for humans to experience mild infections of the mites, which cause a red itching rash.

TRICHINOSIS

Trichinosis is caused by a nematode (roundworm) parasite, which produces the disease in man and many other domestic and wild animals. Nearly all mammals are susceptible to infection with this parasite, which encysts in the muscle of the host and is then transmitted by eating the raw or poorly cooked meat. Infestations are often most severe in the well-oxygenated active muscles such as the diaphragm or eye muscles.

If carnivorous wild animals such as raccoons, bobcats, bear or opossums are to be eaten, the meat should be properly prepared by cooking, freezing or curing to destroy the encysted parasites. Cooking to an internal temperature of 137° F., or freezing at 5° F. for 20 days, –10° F. for 10 days, or –20° F. for six days will kill trichinae. Curing should follow approved government regulations.

A few simple, common-sense precautions will greatly reduce the risks of contracting diseases or parasites from wild animals: 1) Wear plastic or rubber gloves when skinning or handling furbearers or scats; 2) Wash hands thoroughly after handling animals; 3) Avoid animals that are behaving abnormally or that are obviously sick; 4) Do not drink directly from streams or lakes; 5) Cook all wild game thoroughly; and 6) Inform your doctor of your wildlife-related activities if a puzzling illness should develop.

TAXES AND THE TRAPPER

All earning from trapping should be reported as regular income for tax purposes. However, a trapper should also keep accurate records and receipts of expenses incurred while trapping, most of which can be deducted. Traps and other equipment, which are purchased only for trapping can be deducted, either in a single year (for small purchases) or can be amortized over several years (for large purchases). If you keep a daily log with odometer readings, mileage can be deducted at a standard rate per mile. Other items, such as trapping cabins, can be deducted only if they are purchased or built solely for trapping. Trappers who trap as a hobby may deduct expenses only up to the amount of their earnings. Only trappers who trap as a business may claim a loss.

THE FUTURE OF TRAPPING

Every trapper has both a role and a stake in the future of trapping. Each trapper must work to become as knowledgeable about wildlife and trapping as possible; must be willing and able to share that knowledge with others; and must behave responsibly at all times.

Today's society is becoming more and more dominated by people who have spent their entire lives in towns and cities and who have little practical understanding or appreciation of nature or life and death processes. Many of them have an idealized view of the natural world based on what they have learned through television or movies. Some have difficulty accepting the fact that death is a normal and essential part of the functioning of healthy ecosystems, and have an even more difficult time understanding and accepting death caused by humans. Some of these people are totally and strongly convinced that they are tight and no amount of information or persuasion is likely to change their minds. The majority, however, are basing their attitudes on the facts and information they have been exposed to, thus far and, given more information, they can come to a more balanced understanding.

It is essential for trappers to conduct themselves responsibly and to help educate others about wildlife and natural processes. This should not be done in a loud, arrogant or condescending way, but quietly and with sincerity and respect for the feeling and beliefs of others. Realistically, you can never expect to change the minds of people who are strongly anti-trapping. The best you can hope for is that they will respect your position. However, if you present factual information in an honest and objective manner, you can influence people whose attitudes are not strongly held and who lack understanding of this complicated issue.

RECOMMENDED STRETCHER SIZES

Length		Base	Shoulder	Neck	
MUSKRAT	Large	22	7 ½	6	6
Average	21	7	6	5 ½	
Small	20	6 ½	5 ½	5	
MINK	Large males	40	5	3 ¼	8 ½
Large females	36	4	3	8	
OTTER	Large	65	8	6 ¾	15
Average	58	7 ½	6	13 ½	
Small	50	7	5 ½	12	
OPOSSUM	Large	38	8	6	10 ½
Average	36	7 ½	5 ½	10	
Small	32	7	5	9	
SKUNK	Large	40	8	6	10 ½
Average	38	7 ½	5 ½	10	
Small	34	7	5	9	
RACCOON	Large	48	10	7 ½	12 ½
Average	42	9	6 ½	12	
Small	34	8	5 ½	11 ½	
GRAY & RED FOX	Large	56	8	6	11 ½
Average	54	7	5	11	
Small	50	6 ½	4 ½	10	
COYOTE	Large	75	13	9 ½	14
Average	70	12	9	13	
Small	65	11	8	12	
WEASEL	Large	22	3	2 ½	5 ½
Average	16	2 ½	1 ¾	4	
Small	12	1 ¾	1 ¼	3	
BOBCAT	Large	70	10	7	12
Average	60	9	6 ½	11	
Small	48	7	5	10	
FISHER	Large male	50	8	6	10
Large female	48	7	5	9 ½	
MARTEN	Large male	40	5	3 ¼	8 ½
Large female	36	4 ½	3	7 ½	

All Measurements In Inches

LURES

A Lure is anything used to attract or entice an animal to a given location. It appeals to hunger, curiosity, reproductive urge or a need to defend a territory. It is an object which the animal either sees or smells

Term	*Definition*	*Why it attracts*	*How it is used*
Scent Lures	Any lure which attracts or lures an animal by smell	Most animals have a highly developed sense of smell and will hone in on odors from a distance.	Scents broadcast their effect more widely than other lures, and also retain a stronger odor for a longer time than baits or urine; as a result, they are often more effective in colder weather
Gland	Scents made from the glands of animals, usually from the reproductive tract	The animal is attracted to this because of sexual instinct	Normally used alone or with a visual attractor. A small quantity is generally on or around the set.
Urine	An animal liquid waste product used to attract or lure an animal by smell	The animal attracted for several possible reasons: sexual instinct, curiosity, territorial instinct, communication reasons	Generally used for canine sets. Sprinkle a small quantity of urine on or near a scent post or near a bait set. May be used in combination with any other lure.
Curiosity	Scents made from oils or blends of oils and glands	The animal is attracted out of curiosity to investigate an unusual but appealing odor.	Used to draw the animal into the vicinity of the set from a distance. Sprinkle a small amount well away from the set but in the surrounding area.
Food	Scents made from food oils or extracts	The animal is attracted due to hunger or appetite.	Sprinkle a larger quantity on or near set so animal must pass through trap. May be used to enhance the odor of the bait.
Bait Lures	A food substance which attracts or lures an animal to a given location	The animal is attracted due to hunger or appetite.	For fresh bait, a food or curiosity scent may be used to draw in the animal. All animals can be attracted by the proper bait.
Fresh Bait	Any unspoiled food substance used as bait	The animal is attracted due to hunger or appetite.	For box or cubby sets, bait is placed so the animal must pass through the trap to reach it.
Tainted Bait	Any food substance used as bait which is partially spoiled so it gives off a strong odor	The animal is attracted due to hunger or appetite.	In some sets, the bait is attached directly to the trigger (e.g., for semi-aquatic species). At bait a station, the trap or snare is placed at some distance from the bait on trail leading to or from bait.
Visual Lures	An object which attracts or lures an animal by sight. The object should be natural but unusual. It may flutter in such a way as to arouse curiosity, such as a wing or a feather. It might be a bleached bone lying on the ground.	The animal is attracted by sight to investigate an unusual object.	Most effective for bobcats and canines. Place an object near a bait set but in a location where it can be seen for some distance (e.g., bleached bone near a dirt hole set or a wing hung in a fairly open area to bring the animal closer to the trap).

Animal	***Baits***	***Scents***	***Urine***	***Visual Attracters***
Beaver	green aspen, willow or birch	beaver castor or beaver oil glands		partially peeled sticks behind trap
Badger	woodchuck, beaver or other rodent meat, tainted or fresh)	badger scent gland		dirt holes
Muskrat	Carrot, parsnip, apple or orange peel, cattail or lily pad root, sweet flag, bulrush or parts of other marsh plants	musk glands from muskrat		anchored, floating raft or log invites rat to crawl out of water light from hole in ice sight of bait
Weasel	rabbit, squirrel, beaver	weasel scent gland		dark hole in box set
Mink	fresh fish, fresh muskrat or beaver meat	fish oil scent, mink gland scent, beaver castor scent, muskrat musk scent	mink urine	dangling wing near box set (the dark hole in the box simulates a natural cavity
Otter	fresh fish	fish oil scent, other gland scent		whole fish or artificial fish at trap
Marten	squirrel, rabbit, beaver, raspberry jam	marten glands, beaver castor		dark hole in the box simulates a natural cavity
Fisher	beaver meat, fish,	fisher gland scent, beaver castor, anise, rat musk		attracted to dark holes, box set dirt holes
Wolverine	meat	wolverine gland, beaver castor, fish oil		large bait
Fox, Coyote	beaver meat (tainted or fresh), entrails, mice, scraps from game birds or animals	fish oil, gland lures, skunk oil	bobcat urine or urine from animal you are trapping	attracted to almost any unusual but natural looking feature near a trail (e.g., tuft of grass)
Bobcat	fresh meat, such as rabbit, fish or beaver	anise, catnip scent, fish oil, beaver castor and other gland scents		wing or other object which twirls in the wind; grass ball dark enclosed area (e.g., cubby)
Raccoon	beaver meat, fish, sweet corn, marshmallows	fish oil		dark hole in box set wing, feather or other object which flutters in the wind

FUR DAMAGE TERMS

- ***Speared or Clipped*** – guard hair or underfur is missing or fur is eaten by mice before the pelt is prepared.
- ***Tainted*** – this is hair-slip of guard hair and underfur, and is one of the worst kinds of damage; it is caused by rotting of the pelt before dressing.
- ***Loose*** – top hair coming out because of roots exposed in early caught skins or because of too deep scraping.
- ***Bitten*** – usually found in beaver and muskrats and caused by late spring trapping but sometimes may be from poor food or over-population.
- ***Snared*** – fur rubbed off pelt by snare wire.
- ***Scored*** – path of bullet of knife through fur leaving long, bald, bloodstained marks.
- ***Badly shot*** – peppered by shotgun or large rifle. Bad bites are often listed in this class.
- ***Badly sewn*** – where leg holes and cuts are poorly sewn or where bad damage has caused much sewing.
- ***Burnt*** – pelt cracked by fast drying beside a stove or in hot wind or sun. Also caused by grease left on pelt.
- ***Flat*** – guard hairs lying flat due to lack of underfur, found mostly in unprimed pelts.
- ***Low*** – not fully developed guard hair or underfur, generally found in early-unprimed pelts.
- ***Rough*** – heavy rubbed skins, late caught.
- ***Complete*** – fully covered with guard hairs, usually found in unprimed pelts.
- ***Immature*** – skin taken too early with less than usual growth of guard hair and underfur, generally shows weak guard hair short in development.
- ***Overgrown or Springy*** – usually found in late caught skins when the underfur begins to fall out or has already fallen out.
- ***Coarse*** – pelt hard to the touch, late caught.
- ***Overstretch*** – stretching the pelt beyond normal size. Thins the leather and give flat weak appearance.
- ***Understretch*** – stretching smaller than normal size causing wrinkles and sloppy appearance.
- ***Singed*** – guard hairs bent or hooked – most common in mink and otter when pelt is affected by warm weather and bright sunlight. Sometimes caused by excessive handling of the pelt and by heat drying.

GLOSSARY

- ***American Fur Company*** – early fur trading company founded by John Jacob Astor in 1811.
- ***Body gripping trap*** – a trap, which catches and holds an animal by the body, usually designed to kill the captured animal.
- ***Blue Pelt*** – an unprimed pelt which, when dried, is a dark blue or black on the skin side.
- ***Cage Trap*** – a trap designed to enclose an animal, and usually to hold it alive.
- ***Cache*** – food stored for use at a later time – for example the food pile of branches made by beaver or a mouse buried by a fox.
- ***Carnivore*** – an animal that primarily eats other animals.
- ***Carrying Capacity*** – a term referring to the number of annuals that a given area of habitat is capable of supporting.
- ***Courier de bois*** – early independent French fur trapper and trader.
- ***Cased Pelt*** – a pelt that has been skinned by cutting across the hind legs and pulling it down over the body.
- ***Castor*** – an odorous substance produced by paired glands in the beaver widely used in lures and the perfume industry.
- ***Catchpole*** – a slip-noose on a rigid handle used to aid in releasing accidental capture or too-small animals.
- ***Clear Pelt*** – in mink and otter this term indicated an even change in fur color from underfur to guard hairs.
- ***Cotton Mink*** – a mink pelt where underfur is white.
- ***Delayed Implantation*** – in animal reproduction refers to the fertilized egg not implanting and beginning development for some time after mating occurs.
- ***Dispersal*** – the one-way movement of animals from their place of birth or home range, often coincides with sexual maturity.
- ***Diurnal*** – active during the day.
- ***Drowning Device*** – a one-way slide lock that allows an animal to go to deep water but not return.
- ***Echinococcus*** – a tapeworm parasite that can form cysts in humans and other animals.
- ***Ecological Succession*** – the progressive changing types of plants, which occurs over time – for example following a fire.
- ***Ermine*** – the white color phase of the weasel.
- ***Ethics*** – a code of responsible and acceptable behavior.
- ***Fleshing*** – the act of removing excess fat and meat from a pelt.
- ***Fleshing beam*** – a large wooden or fiberglass form designed to hold and support the pelt while fleshing.
- ***Foothold trap*** – a trap designed to catch an animal by the foot or leg and to either hold it alive or drown it.
- ***Foot snare*** – a trap designed to catch long-legged animals by holding the leg or foot in a wire noose.
- ***Fossorial*** – an animal adapted for burrowing or digging.
- ***Frostbite*** – a serious health hazard involving the freezing of skin or other body tissues.
- ***Fur Dressing*** – the tanning process.
- ***Fur Stretcher*** – the frame for allowing fur to dry in a standard shape – does not actually stretch the pelt.
- ***Gait*** – the way that an animal moves its feet when it walks or runs.
- ***Gambrel*** – a frame or device used for hanging an animal by the hind legs for skinning.
- ***Gestation Period*** – length of pregnancy.
- ***Grapple*** – a hook like device attached to the trap, which allows an animal to move from the trap site before becoming entangled.
- ***Green Pelt*** – a pelt that has not been stretched or dried

- ***Guarded Trap*** – a trap with an extra spring device to pin the animal and prevent it from twisting or pulling free.
- ***Guard Hairs*** – the long, glossy hairs that overlay and protect the softer, denser underfur.
- ***Habitat*** – the place where an animal lives, principal components are food, water and shelter.
- ***Hair Follicle*** – the part of the skin that produces and holds the hair or fur.
- ***Herbivore*** – an animal that primarily eats plants.
- ***Hibernation*** – a state of inactivity that some animals enter in winter.
- ***Home Range*** – the area over which an animal travels in its day-to-day activities.
- ***Hudson's Bay Company*****--** – an early Canadian fur trading company that continues active to this day.
- ***Hypothermia*** – a serious health risk involving loss of body heat resulting in loss of coordination and eventually death if corrective measures are not taken.
- ***Lap-link*** – a metal ring attaching the trap to the stake so that the chain can rotate.
- ***Lyme Disease*** – a potentially serious disease transmitted by the deer or bear tick.
- ***Nocturnal*** – active at night.
- ***Northwest Fur Company*** – one of the major companies in the early Fur Trade era headquartered in Montreal.
- ***Omnivore*** – an animal that includes both animal and plant materials in its normal diet.
- ***Open Pelt*** – a pelt skinned by cutting down the midline of the belly.
- ***Opportunist*** – an animal that takes advantage of the most abundant or easily obtainable food source.
- ***Pan Cover*** – a piece of canvas, cloth, plastic, window screen or other material placed over the trap pan to prevent soil from getting under it.
- ***Pelage*** – the hair or fur of an animal.
- ***Pelt*** – the hair or fur of an animal plus the skin.
- ***Photoperiod*** – the length or amount of daylight, helps regulate fur priming, breeding, etc.
- ***Prime Pelt*** – normally refers to a pelt in which the winter fur is completely grown in and the hair follicles completely mature.
- ***Rabies*** – a serious viral disease of warm-blooded animals transmitted primarily in the saliva of infected animals.
- ***Raw Fur*** – a pelt that has not been salted or tanned (may be stretched or dried).
- ***S-Hook*** – a device for attaching the trap chain to the stake to allow the trap to rotate around the stake.
- ***Samson Pelt*** – a pelt lacking or nearly lacking in guard hairs.
- ***Scats*** – the droppings or feces of animals.
- ***Scavengers*** – an animal that feeds primarily on carrion (dead animals) rather than killing its own food.
- ***Swivel*** – a device placed at either or both ends of the trap chain and sometime in the middle of the chain to allow the trap to freely move with the animal's foot and reduce injury caused by twisting.
- ***Tanning*** – the process of preserving a hide by treating it to make leather.
- ***Territory –*** the portion of an animal's home range that is defended against trespass by other individuals of the same species.
- ***Trap Bed –*** the hole dug in the ground in which traps are placed.
- ***Trap Hook –*** a pole with a hook at one end to help find and recover traps from water, can also double as a wading staff.
- ***Tularemia –*** a bacterial disease of rabbits and rodents that can be transmitted to humans through cuts or scratches while skinning infected animals.
- ***Underfur –*** the soft, dense fibers underlying the guard hairs that provide the primary insulation for the animal.
- ***Verendrye –*** the primary founder of the northern Minnesota fur trade.
- ***Voyageurs –*** French Canadians employed by the early fur companies to transport furs and trade goods through the wilderness primarily by canoe.

ACKNOWLEDGMENTS

This text was developed using information from a variety of sources. Some of the information was adapted by permission, from ***Trapping Furbearers: Student Manual*** by Dr. Ronald Howell, Louis Berchelli, Gary Parsons and Mark Brown; published by the New York State Department of Environmental Conservation.

Drawing on pages 2, 32, 34, 36-40, 43, 45, 46, 48, and 49 are by Michael Stickney of the New York Department of Conservation. Animal artwork on pages 16, 17, 24, 25, 26, and 27 is by Dan Metz. Remaining animal illustrations are by Charles Schwartz and are reprinted by permission from ***Trapper Education: Primitive Skills Series***, by Ken Kelm, Ralph Duren and Dave Erickson, published by the Missouri Department of Conservation. Cartoons on pages 5 and 33 are by Kent Olson and are reprinted by permission, from ***Kansas Fur Harvest Manual*** by F. Robert Henderson, published by Kansas State University Cooperative Extension Service. The land set location illustration on page 43 is reprinted from ***Trapping Iowa Furbearers*** by Tom Berkley, published by the Iowa Conservation Commission.

Information for species biology, behavior and distribution came from unpublished DNR records, various ***DNR Reports*** leaflets and from Mammals of Minnesota by Evan Hazard of Bemidji State University. Information on the history of the fur trade in Minnesota was adapted from an article entitled Fur Trade 1976. Roots, Minnesota Historical Soc., Vol. 5, No. 1 and from The Beaver In Minnesota by William H. Longley and John B. Moyle published by the Minnesota Department of Conservation.

Bill Berg, Jim Breyen, Todd Eberhardt, Nick Gulden, Gary Johnson, Bill Peterson, Terry Simon, Greg Spaulding, Lloyd Steen and Terry Wolfe of the Minnesota Department of Natural Resources and Dan Croke, Russ Davis, Robert Gessner, Michael Lance, Keith Larson and Pete Stupar of the Minnesota Trappers Association reviewed this manual and offered helpful comments or suggestions. We would also like to thank Paulette Tichenor who typed several early drafts of this manuscript.

Thanks to the Minnesota Trappers Association for providing the financial support for this printing.

HOW TO RELEASE A DOMESTIC ANIMAL FROM A BODY GRIPPING (RACCOON) TRAP

Although an uncommon occurrence domestic animals have at times been accidentally caught in body gripping traps set for raccoons and other similar sized fur animals. Sadly in most cases, the reason that animals were ultimately lost was due primarily to a lack of familiarity with these devices by the person attempting to free the animal. This handout is an attempt to educate the outdoor enthusiast in the proper method of releasing an accidentally caught animal.

Do not attempt to pry the jaws apart as the springs will prevent the trap from being forcefully opened in this manner in most cases.

If a domestic animal is accidentally captured in a body gripping trap- don't panic. The animal can be simply and safely released in a very short period of time if you follow these simple steps and make a mental commitment to think and act rationally.

Step One: Remain Calm and speak soothingly to the animal.

This will help reassure the animal and make your job easier.

Step Two: Taking a spring in each hand squeeze the springs and twist the trap so the trap jaws are not placing pressure on the animal's windpipe.

This virtually eliminates the chances of the animal being lost and allows a considerable amount of time to completely release the animal. The animal can now breathe freely which helps to calm both the animal and the aide.

Lock Springs by Hand

Step Three: Squeeze together one of the springs using both hands if necessary until you're able to fasten the safety lock over the arms of the spring.

Step Four: Repeat the same process for the other spring. Slide the animal's head out of the trap

Rope Method Alternative

If you cannot squeeze the springs of the trap by hand; a piece of rope, your belt or a dog leash can help gain the necessary leverage.

Step One: Thread the rope through the large rings of one spring where the spring meets the rotating jaws of the trap

Step Two: Bring rope around and thread it back through the initial ring far enough to provide a "handle" to grip

Step Three: Put your foot on one end and pull on the free end with steady pressure. This will compress the spring enough to attach the safety locks to the spring relieving considerable pressure.

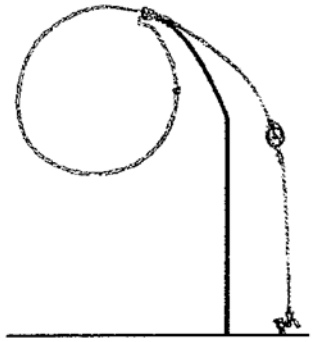
Step Four: Repeat on remaining spring and release animal.

Minnesota Trappers Association

www.mntrappers.org

PAID ADVERTISEMENT

Cable Devices



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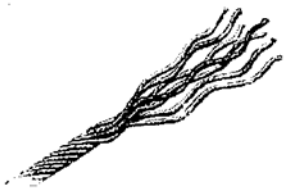
Non-Powered Cable Device

Content Standard - *Students demonstrate an understanding of cable devices, and responsible techniques for using them*

Introduction

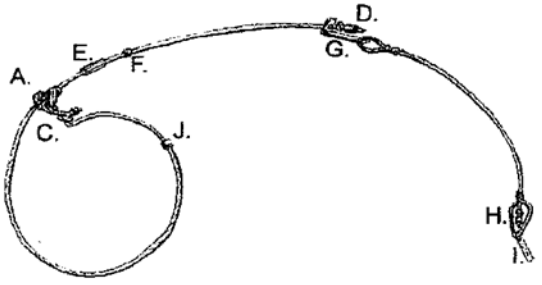
Responsible trappers can use cable devices to make selective sets for many furbearers. Animals often travel the same trails and paths on a regular basis. Locations where the trail narrows are good places to set cable devices. Place cable devices correctly in the center of the line of travel, so the targeted furbearer will walk into it. Furbearers are accustomed to walking through weeds and brush, so cable devices do not alarm them.

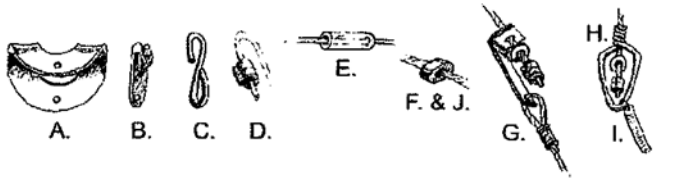


Natalene Cummings

Multi-strand steel cable - Used in modern cable devices

Identify cable device equipment and materials





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7x7 Cable

7x19 Cable

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A. Relaxing Lock
B. Non-Relaxing Lock
C. J-Hook Breakaway Device
D. End Ferrule
E. Stabilizer Tube
F. Maximum Loop Stop
G. Inline Swivel
H. End Swivel
I. Trap Tag
J. Deer Stop

Cable Devices

Modern cable devices are made from stranded steel cable. Various sizes are used, but 3/32" is popular. State trapping regulations may require you to use a specific size of cable.

Non-Powered Cable Device

A non-powered cable device uses forward movement of an animal to place and close the loop on its body or neck.

Powered Cable Device

The powered cable device uses a mechanical feature, such as a spring, to place or close the loop of the cable on an animal's body or limb. An example of a powered cable device is the coil-spring activated Belisle™ Cable Device, which uses a foothold-like pan system to activate springs that place and tighten a cable around the captured animal's foot.

Relaxing Lock

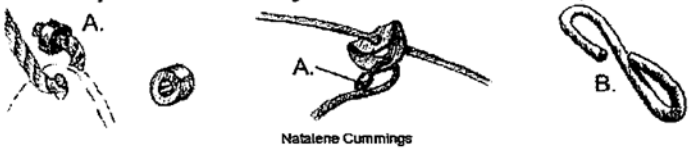
A relaxing lock will move in either direction on the cable. When an animal pulls against the device it tightens, drawing the loop smaller. If an animal does not pull against the device, it relaxes. Animals can be released unharmed from cable devices with relaxing locks set as restraining systems on land. Many types of relaxing locks are available. Some relaxing locks are made to break at a given strength, allowing larger animals such as deer to escape.

Non-Relaxing Lock

A non-relaxing lock keeps a cable from loosening after an animal is caught. It will close the cable loop tighter when pulled, but it will not relax when tension stops.

Breakaway Devices

In some live-restraining land set situations, trappers must use breakaway devices to allow deer, livestock, or other large mammals to escape. Breakaway devices are parts of a cable system that allow an animal to escape from the loop if the animal pulls against it with sufficient force. Ferrules, S-hooks, and J-hooks are examples of breakaway devices.



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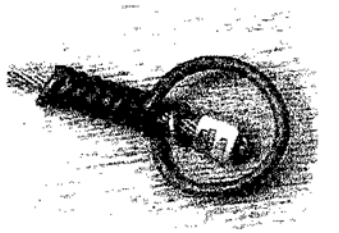
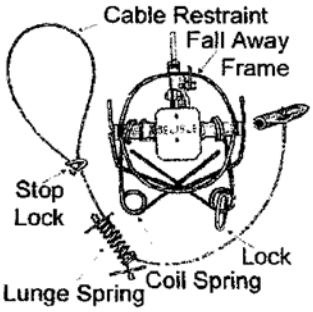


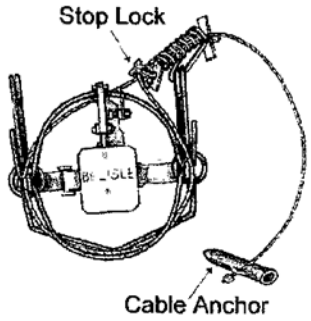
Ohio DOW Photos

Cable swivel and ferrule



Joe Goodman

Unset Spring-activated Cable Device



Coil-Spring Activated Cable Device

Breakaway Devices

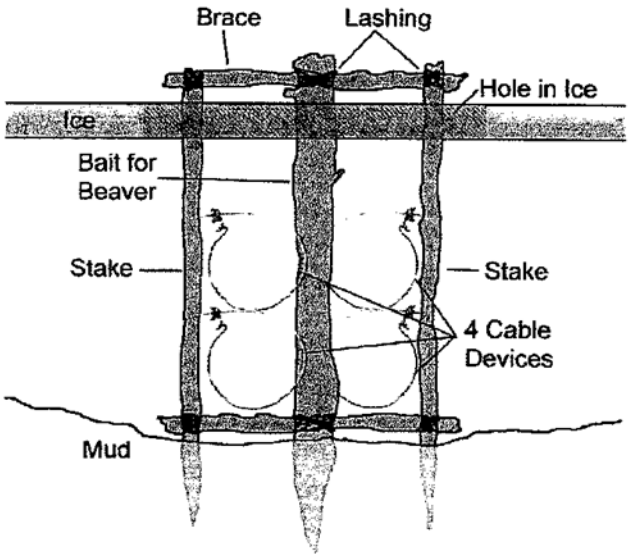
A. Breakaway Ferrule
B. Breakaway Hook

Make certain you thoroughly understand cable device regulations. Regulations vary from state to state according to furbearer management needs, and the need for selective trapping.

Using Cable Devices for Aquatic Furbearers

Cable devices can be set on land or in water. Trappers commonly use cable devices for beaver. Setting cable devices in water is one way to increase selectivity.

A careful trapper can make sets underwater using cable devices. The cables can be attached to stout poles and stuck in the mud to make channel sets or baited sets for beaver. During the winter, trappers can chop a hole in the ice and push poles through the hole into the mud with cable devices baited for beaver. The under ice beaver set is one of the rare times when bait is used with a cable device.

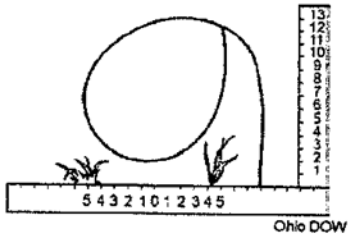


Silvertip Productions

Cable devices can also be set as live-restraining traps in water and anchored on land. This will allow the furbearer to leave the water.

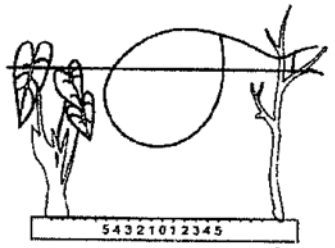
Using Cable Devices for Furbearers on Land

Set non-powered cable devices to catch beaver around the body. Set non-powered cable devices to catch fox and coyotes around the neck. Fox and coyotes have tapered heads that are wide behind the ears, so cable restraints around their necks will hold them well. Some powered cable devices are designed to place the cable loop on the animal's foot, others will place it around the neck.



Ohio DOW

Beaver Set On Land

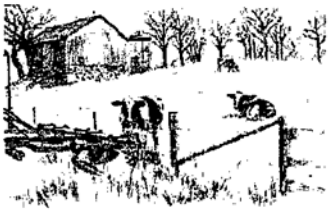


Ohio DOW

Beaver Set in Water

Ohio DOW Photo

Set made on beaver trail

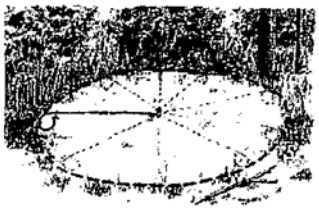


Natalene Cummings

Avoid setting cable devices in areas of high human or domestic animal activity.

Natalene Cummings
Pack Basket

Natalene Cummings
Coyote



Natalene Cummings
Restraint Circle - Should be free from entanglement

Boiling

Boil cable devices in water mixed with baking soda to remove the oil and dull the appearance. This makes the cable device less visible. Use 4 tablespoons of baking soda for every 12 sets of cable devices, along with enough water to keep the devices covered for one hour of boiling. After boiling add more water to the container until it overflows and drains the scum off the top. This prevents re-contaminating the cable devices with oil when you lift them out. Many successful trappers use cable devices prepared in this manner, but there are options if you want a darker appearance or some natural scent.

Some trappers boil cable devices a second time with a few logwood crystals for a darker appearance. Do not make cable devices too dark, or they will be too visible.

An option to using logwood crystals is to boil the cable devices in water with bark, moss, plant leaves, or spruce needles collected from your trapping areas. This will darken the cable devices and add some natural scent.

Handling and Storage

Use a strong wire to remove the cable devices from the hot water. Let them dry. Once the cable devices have cooled, you can handle them with gloves that are free of any scent. Hang the devices in a dry place where they will not absorb any unnatural odors.

Prepare enough cable devices to last you the season. Discard cables after capturing an animal. Cables will kink after a catch, and possibly weaken. A kinked cable will not close smoothly. Inspect all other parts of the cable device for damage or weakening before using them again.

Explain procedures for making selective sets using cable devices

Entanglement is a concern when setting cable devices. Animals caught in cable devices need freedom of movement. It is unlikely they will pull hard enough to hurt themselves, unless they tangle the cable on something. Set cable devices where there is no chance the animal can contact brush, fences, or other objects. Prevent the animal from reaching anything it could climb over, suspending it in the device with its feet off the ground. It is helpful to use shorter cables to prevent animals from reaching anything to cause a problem.

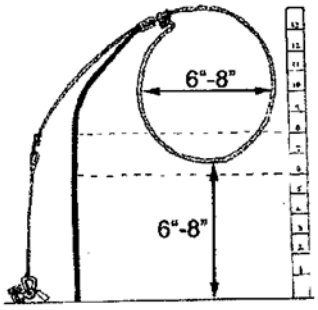
Cable Devices

Natalene Cummings

Avoid setting cable device where animals can become entangled on fences, trees, rocks, or logs.

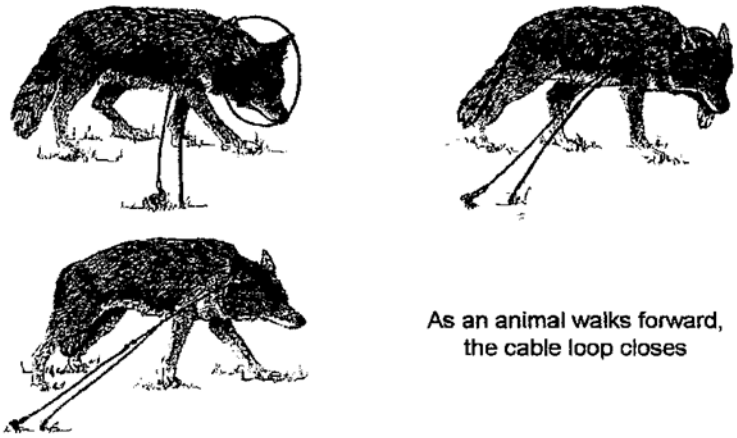
Do not set cable devices in trails used by people, domestic animals, or deer. To avoid deer, you can place a limb or pole horizontally immediately above your cable loop to make deer jump over the top. Keep the jump pole low or the deer will try to go under it instead of over it. Avoid using limbs or poles in a way that could create an entanglement problem for a captured animal. Do not anchor jump poles. Poles should easily fall out of the way when an animal is caught.

Cable devices work best in animal trails or blind sets where the animal will encounter it as it travels. Do not use bait or lure with non-powered cable devices on land. Places where the path narrows are best. Center the cable loop in the path. The size of the loop and the height from the ground to the bottom of the loop will help you catch the animal you want and avoid other animals.



Wisconsin DNR

Fox Cable Device



As an animal walks forward, the cable loop closes

From "Missouri Cable Restraint Training Manual."
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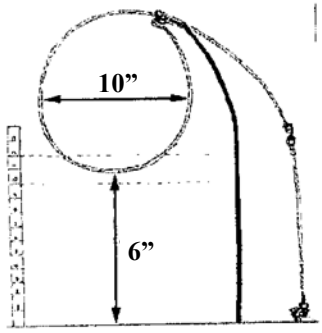

Wisconsin DNR

Coyote Cable Device

Loop sizes and heights

Fox cable loops should be 6 to 8" in diameter and the bottom of the loop should be 6 to 8" off the ground.

Coyote cable loops must be 10 inches in diameter and the bottom of the loop should be 6 inches off the ground.

Beaver cable loops set on land should be 9 to 10" in diameter and the bottom of the loop should be 2 to 3" off the ground.

Beaver cable loops set in water for swimming beaver should be 9 to 10" inches in diameter with 1/3 of the loop above the water line.