

MONTANA FISH, WILDLIFE & PARKS

# Mountain Lion Identification Course



MONTANA FISH, WILDLIFE & PARKS  
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Montana Fish, Wildlife & Parks (FWP) is the state agency responsible for managing wildlife and its habitat as well as providing wildlife-related recreation. Our public outreach programs promote appreciation, understanding, and stewardship of Montana's wildlife. FWP is funded through hunting and fishing license sales.

## Welcome

The Mountain Lion Identification Course is optional for anyone who wants to hunt mountain lions and for anyone interested in mountain lion ecology.

The course

- presents information about mountain lion biology, physiology, and behavior;
- explains how to determine the gender of a mountain lion; and
- details some of Montana's laws and regulations pertaining to mountain lion hunting.

Montana's mountain lion course and exam is a modification of the course and exam developed originally by Colorado Division of Wildlife in conjunction with a number of Colorado conservation organizations. FWP would like to thank the Colorado Division of Wildlife for developing this course and sharing it with Montana.



# Mountain Lions in Montana

Mountain lions are known by many names, including puma, cougar, and panther. Scientists consider “puma” to be the preferred common name. Existing only in the Western Hemisphere, they are one of North America’s biggest cats (adults sometimes weighing over 150 pounds). FWP estimates there to be between 2,000 and 2,500 mountain lions in Montana. Additional information about mountain lions and their biology, including how to avoid conflicts can be found on our Living With Mountain Lions web page.



Historically, mountain lions have been regarded and treated as unwelcome predators. In Montana, the mountain lion was a bountied animal from 1879 to 1962, an unclassified predator from 1963 to 1966, and classified predator from 1966 to 1970. In 1971, the Montana Legislature reclassified the mountain lion as a game animal and chartered the FWP Commission with setting hunting seasons.

Mountain lions, like other big game species, are now hunted for sport, recreation, and damage prevention.

Lion hunting is regulated in Montana by setting annual harvest limits (quotas) for each hunting district. Enforcement of these harvest limits is accomplished by monitoring the number of lions reported taken and then closing hunting districts when quotas or sub quota have been reached.

Lion hunting usually involves the use of dogs to tree or bay them. In Montana, in addition to hunting quotas, many lion hunting districts have female lion sub quotas. Hunters must be able to determine whether or not a lion is a female and whether or not it can be harvested. The main purpose of this education program is to provide hunters with the knowledge to tell the gender of a lion.

## Physical Appearance

The scientific name given to mountain lions is *Puma concolor*, meaning “cat of one color.” Yet, their back and sides are usually tawny to light-cinnamon in color; their chest and underside are white; the backs of the ears and the tip of the tail are black.

Males and females vary in size and weight, with males being about 1/3 larger than females. Adult males may be more than eight feet long and can weigh 135 - 175 pounds. Adult females may be up to seven feet long and weigh between 90 and 105 pounds.



Mountain lions are easily distinguished from Montana’s other wild cats—the bobcat and lynx. Lions, except for their kittens, are much larger than lynx or bobcats, and have long tails, measuring about one-third of their overall body length.

## Range, Habitat & Behavior

Mountain lions are the most widely distributed cat in the Americas, found from Canada to Argentina. They live in mountainous, semi-arid terrain, subtropical and tropical forests, and swamps.

Mountain lions maybe found in all parts of Montana—lions are most common where there is abundant prey, rough terrain, and adequate vegetation. They are active year-round.

While mountain lions tend to avoid people, they can and do live in close proximity to humans. They tend to be more active when there is less human presence.



*Mountain lion scat tends to be segmented, broken “cords” or pellets with small tails—or no tails at all. Seeing hair, bones, and teeth in the scat is common.*

The lion’s staple diet is meat. Deer and elk, the primary prey species, often are killed with a bite that breaks the neck or penetrates the skull or the kill is from a “choking” bite that crushes the windpipe. The carcass is fed upon and the remainder is cached by covering it with leaves, sticks, or conifer needles. After digesting its meal, the lion will return to feed again. This process is repeated until practically all edible portions have been eaten.

Lions also known to prey upon beaver, rabbits, bighorn sheep, raccoons, antelope, turkey—even porcupines. They may also prey upon domestic animals including livestock and pets.

Since deer and elk are the animals most preyed upon by lions, lions tend to be most active when they are active—at dawn and at dusk.

Mountain lions are very difficult to find unless you know what to look for. The most obvious “sign” of a lion you might come across are tracks left in new snow or on soft ground. Less obvious, but just as telling, is scat (feces).

## Mating, Breeding, & Raising Young Lions

The importance of female lions to a healthy population cannot be overstated.

Females begin reproducing when they’re between 1½-2½ years old, and they breed, typically, every other year. Courtship begins when a roaming female in heat makes frequent calls and leaves scent that attracts males. After locating the female, the male accompanies her for just a few days, during which time mating occurs.

Breeding can take place throughout the year. Most females give birth between May and October, following a three-month gestation period. The average litter-size is three kittens.

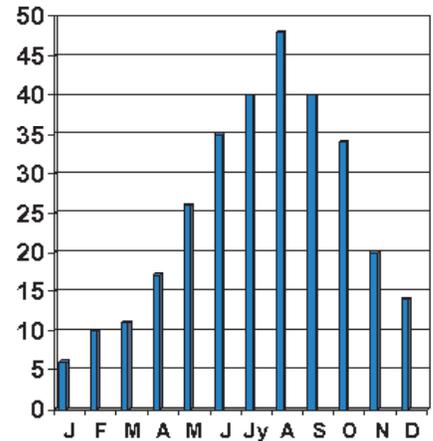
Newborn kittens are heavily spotted for the first three months of life, then the spots begin to fade. (Kittens may still have faded spots on their bodies when they are one year old.) At two to three months, the young are weaned and begin traveling with the mother. The kittens stay with her until they become independent at about 11 to 18 months.



Each year about 50 - 60% of adult female lions produce kittens, while another 25 -30% have dependent kittens from the previous year. Thus, about 75% of adult females might have dependent young at any given time.

## Mortality in Kittens

Based on research, kittens younger than six months old have about a 66% chance of surviving to adulthood—with their mother’s care. Orphaned kittens younger than six months old only have a 4% chance of surviving. Starvation is the main cause of death in orphaned kittens.



*Mountain lion monthly birth distribution*



Kittens older than six months have a 95% chance of surviving to adulthood—with their mother’s care. Kittens older than six months that have been orphaned have a 71% chance of surviving.

Seeing a female mountain lion alone does not mean that she is without dependent kittens. Females stop producing milk after eight to twelve weeks, so kittens may no longer be in her immediate vicinity after that time. In a Wyoming study, females were captured (during winter) away from their kittens 50% of the time.

## Hunters Play a Critical Role in Wildlife Management

FWP is asking hunters, guides, outfitters, and houndsmen to take plenty of time to determine the gender of the mountain lion.

Gender identification of mountain lions will help:

1. reduce unwanted female lion mortality;
2. reduce lion kitten mortality associated with orphaning;
3. increase hunter satisfaction, and;
4. meet FWP’s management objectives.

# Mountain Lion Gender Identification (Sexing) in the Field

Sexing is easiest when the lion is treed.

**Adult and sub-adult male lions** have a conspicuous black spot of hair, about one inch in diameter, surrounding the opening to the penis sheath behind the hind legs, and about four-to-five inches below the anus. Between the black spot and the anus is the scrotum and it is usually covered with silver, light brown, and white hair. The anus is usually hidden below the base of the tail.



*Male mountain lion. © Ken Logan.*

a male and female in this situation, you need to look at the distance between the black spot and the base of the tail (or the anus if visible). If it's clearly 4 inches or more then it is a male, if it's quite a bit less than 4 inches then it is a female. Please review the pictures below to see the difference. The left picture shows a female with a black spot and the right picture shows a male with a black spot. Typically, the tail would cover up the black spot on the female and you would not be able to see it at all.

**Adult and sub-adult female lions** do not have the black spot behind the hind legs, below the base of the tail. The anus is directly below the base of the tail, and the vulva is directly below the anus. The anus and vulva are usually hidden by the base of the tail.

Depending on the position of the tail on a treed lion and the angle of view, you may notice a black spot on a female. Some females have black hair associated with their vulva which may be interpreted as a black spot. To tell the difference between

Sexing a treed mountain lion can, sometimes, be determined just by looking with the naked eye, but using binoculars makes sexing lions easier and less likely to lead to an incorrect determination.

If the lion's position in a tree obscures your view, get the lion to move a bit to give a better angle. Try banging a stout branch against the tree trunk, or, if there is snow on the ground, lightly toss a few snow balls toward the lion. Moving around the base of the tree may get the lion to change position as it moves to keep you in sight.



*Female mountain lion. © Ken Logan.*



*Male mountain lion. © Ken Logan.*

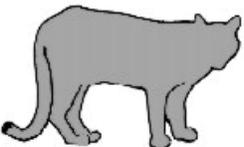
# Other Indicators of Gender

## Before You Ever See the Lion—

- More than one set of tracks often indicates a female with young.
- Stride length can be measured to help distinguish a mature male from an immature male or female.
- Track size can help you tell a mature male from a female.

## Size and shape comparisons:

**CAT IDENTIFICATION**  
*Field identification characteristics of Mountain Lion, Lynx, and Bobcat - physical markings and tracks in the snow.* (Montana Fish, Wildlife & Parks, 1999)

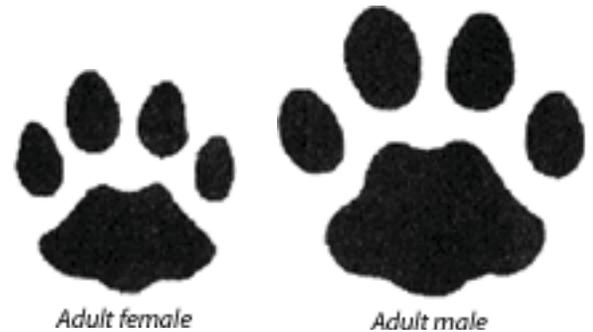
Mountain Lion	Lynx	Bobcat
		
 32" - 44"	 24" - 33"	
		
		
 3 1/2" - 5"	 3 3/4" - 4 3/4"	
		 22" - 26"
		
		 2 1/4"

- Note differences in tail length of lion and black markings on tip of lynx and bobcat tail.
- Lynx ear tufts are longer than bobcat ear tufts.
- Lion and lynx foot sizes are similar; bobcat is much smaller.
- Tracks are shown with shaded area representing impression of hair in the snow.
- Note track size and stride length differences between species.

## Female and Male Mountain Lion Track Sizes:

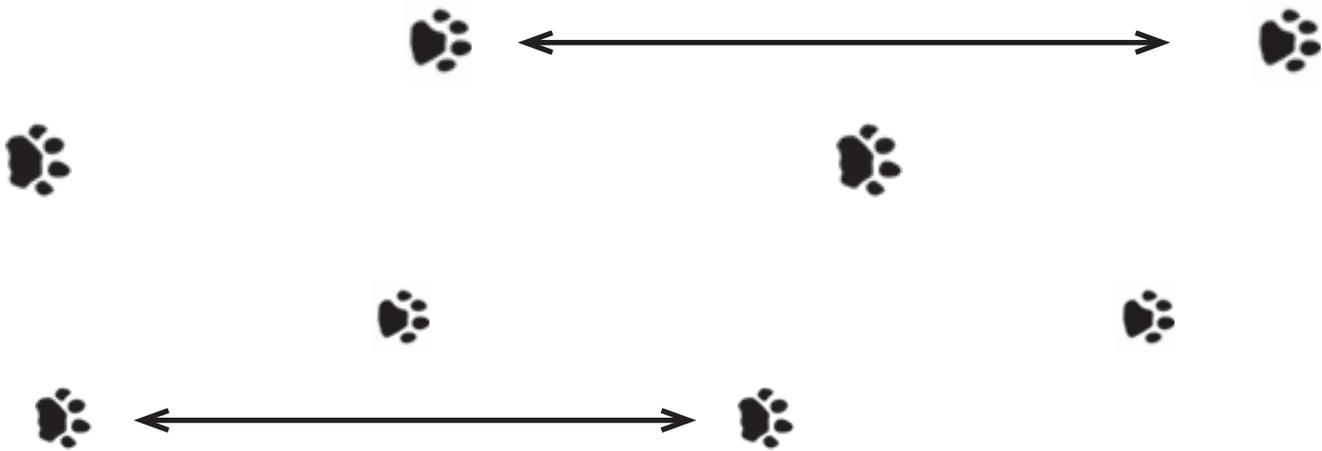
The track of large adult males may be up to 5” wide the average male will have tracks approximately 4” wide. Adult females leave tracks 3.5” in width or less.

Another way to determine gender from tracks is to measure the plantar (“heel”) pad. Since a lion in a walking gate usually places its hind foot on the track left by the same-side front foot, the hind track will usually be the most distinct and easiest to measure. The plantar pad width for a female adult lion will usually be less than two inches wide; a male’s will usually be greater than two inches wide.



## Stride Length

When walking in snow, on level ground, mature males will have an average stride greater than 40”. Females and young lions will have a shorter stride, measuring less than 40”. Illustration of tracks below, shows a male stride (top) and a female stride (bottom).



*Two or more sets of tracks together usually indicate a female with young.*

## Review

1. The most reliable way to determine whether a lion is a male or female is by identification of their external genitalia.
2. If treed, a lion can be encouraged to move, perhaps providing a better view to determine its gender.
3. Tracks, individually or as part of a “trail”, can be used to obtain a preliminary determination of gender.

# Important Mountain Lion License Requirements and Seasons

## License Requirements

**Mountain Lion License** - To hunt mountain lions, you must purchase a general mountain lion license or apply for and be drawn for a special mountain lion license. Licenses are available online at <http://fwp.mt.gov>, or at most FWP offices, and through authorized license providers until August 31 each year. After August 31 the general mountain lion license is only available at FWP offices and a 5-day waiting period applies before the license may be used.

**Resident Hound Training License** – This license entitles the holder to use dogs to aid in chasing mountain lions during the hound-training season from December 2 through April 14 of the following year. A person may not kill a mountain lion or bobcat with a resident hound training license.

## Hunting Seasons



### **Fall Season**

The fall season generally coincides with Montana's general big game season in October and November. Hunters with either a general mountain lion license or a special mountain lion license may harvest a legal lion in any open district. Use of dogs is prohibited.

Female mountain lions with kittens may not be taken. If a lactating female with kittens is killed accidentally, the hunter has to inform FWP as soon as possible, so that an attempt can be made to backtrack the mountain lion and locate the kittens. No mountain lion with visible body spots shall be killed.

### **Winter Season**

The winter season runs from December through April 14. A hunter with a general lion license may legally harvest a lion

using dogs in any open general license-hunting district. Hunters with a valid special mountain lion license may legally harvest a lion with dogs only in the hunting district for which the special mountain lion license is valid.

Female mountain lions with kittens may not be taken. If a lactating female with kittens is killed accidentally, the hunter has to inform FWP as soon as possible, so that an attempt can be made to backtrack the mountain lion and locate the kittens. No mountain lion with visible body spots shall be killed.

### **Hound Training Season**

A hunter with a valid general mountain lion license, special mountain lion license, or resident hound-training license may legally chase lions in any valid hunting district statewide from December 2 through April 14.

## Some Important Laws and General Regulations

For a complete set of laws and regulations check the mountain lion regulations.

### **Hunting Hours**

One-half hour before sunrise to one-half hour after sunset each day of the hunting season. See official sunrise-sunset tables in the mountain lion regulations.

## Hunter Orange Requirement

Any person hunting or accompanying a hunter as an outfitter or guide must wear a minimum of 400 square inches of hunter orange (fluorescent) material above the waist, visible at all times.

## Recorded or Electronic Devices

It is unlawful to use any recorded or electronically amplified bird or animal calls or sounds or recorded or electronically amplified imitations of bird or animal calls or sounds to assist in the hunting, taking, killing, or capturing of mountain lions.

## Two-Way Communications

It is unlawful to use two-way communications to hunt mountain lions ('Hunt' in this context means to pursue, shoot, wound, kill, chase, lure, possess or capture). When hunting mountain lions or bobcats with dogs, this rule applies when dogs are placed on tracks in a district open to mountain lion or bobcat harvest. The rule shall not be interpreted to prohibit the possession or use of two-way radios for safety or other legitimate purposes, nor does it prohibit the use of radio tracking equipment to locate dogs when hunting mountain lions or bobcats.

## Night Vision Equipment

It is illegal to use night vision equipment or electronically enhanced light gathering optics for locating or hunting mountain lions or other game animals.

## Legal Mountain Lion

Any mountain lion not accompanied by kittens with spots. No mountain lion with body spots shall be killed. A hunter may take only one legal mountain lion each year.

## Procedures to Follow Upon Harvesting a Mountain Lion

- Immediately after killing a mountain lion, hunters must cut out the proper month and date of the kill from the appropriate license and attach it to the hide in a secure and visible manner.
- Evidence of sex must remain naturally intact on the hide.
- Hunters must personally report their mountain lion kill within 12 hours by calling the Mountain Lion Reporting Number at 1-877-FWP-WILD or 1-877-397-9453.
- Hunters must personally present the hide and skull within ten (10) days of harvest to an officer of FWP residing in the administrative region in which the license was filed, for the purpose of:
  - inspection and registration of kill
  - verify evidence of sex
  - removal of a tooth for aging purposes
  - issuance and attachment of a hide tag. The hide tag must thereafter remain attached to the hide until tanned
  - issuance of a trophy license, which costs \$50
- It is unlawful for anyone to possess, ship, transport, sell or purchase any mountain lion, or part thereof, unless the animal has been tagged as prescribed.
- As a condition of hunting in Montana, a hunter harvesting a mountain lion must, if required by FWP, physically return to the kill site for inspection.



## Waste of Game

Mountain lions are excluded from being considered as “suitable for food” under big game regulations. A person that harvests a mountain lion must possess the head and hide, with evidence of sex naturally attached. The remaining carcass may be left in the field or taken out.

## Remember -

It is illegal to “hunt on private land without first obtaining permission from the landowner or person in charge.”

If dogs, running a mountain lion, cross onto private property, it is the responsibility of the hunter to secure permission before going on to the private land--if the hunter follows without getting permission, he or she can be charged with “unlawfully entering upon private lands without permission to take wildlife..”

## A Last Word -

This course does not provide all the information you need to know to safely and legally hunt mountain lions in Montana. To learn more, obtain and read a copy of the current Mountain Lion Regulations, available online (<http://fwp.mt.gov>) or at FWP offices. This brochure is updated as necessary to reflect any changes in applicable rules, laws, and regulations pertaining to hunting mountain lions.

## Thank You -

This completes the instructional portion of the Mountain Lion Identification Course. Thank you for taking the time to study this material.

You may now continue to the exam portion of the course. It is an interactive, online exam consisting of 25 questions. Instructions are found at the beginning of the exam. You must achieve a score of 80% to pass. If you score less than 80% correct, you may take the exam again.

Good Luck!

