



**PRETTY AND TASTY** Resembling fairyland umbrellas, two shaggy manes push up from the moist forest floor along the Milk River. These mushrooms with shaggy or scaly caps on long stems are among Montana's most easily recognizable edible species. Often found in the fall under urban hardwood trees and along old logging roads, they taste best picked young and cooked quickly after harvest.

NATHAN COOPER



# MONTANA

## A BEGINNER'S GUIDE TO

# MUSHROOMING

Expert advice on what—and what not—to pick and eat.

BY CATHY CRIPPS

A brainstorm the previous week had produced an explosion of wild mushrooms. The forest floor was covered with fleshy fungi of all shapes, sizes, and colors: Frilly orange vases, bumpy white orbs, intricate yellow corals, and meaty purple monsters stood shoulder to shoulder. These wild mushrooms grabbed my attention: What were they, and, more importantly, were they edible?

That was 50 years ago, while I was living in a small cabin high in the Rocky Mountains of Colorado. I was trying to live off the land, surviving mostly on venison, grouse, berries, and wild plants. I wondered: Could I add wild mushrooms to my diet without poisoning myself?

Down the road in a former coal-mining town lived many European immigrants who knew about wild mushrooms. These “old-timers,” as my friends and I reverently called them, picked mostly king boletes and chanterelles, two well-known edible species. Occasionally I shadowed them to their secret spots, learning the habitats of a couple of species. I also picked up a bit from the few field guides I could find, though back then none had color photos.

Then one year a band of roving mycologists (mushroom experts) hosted a mush-

room foray near my cabin. What luck! I learned a huge amount from this eclectic group and by attending their subsequent mushroom festivals in Telluride, Colorado. Ultimately, this led to a long professional career studying and teaching mycology in Montana and a lifetime of collecting, cooking, and eating these delicious wild foods.

### The basics

Wild mushrooms are the fruiting bodies of fungi that sprout from soil or dead wood. Sustaining the mushrooms are networks of underground threadlike mycelium, which extract nutrients from soil and plants.

The best way to learn about wild mushrooms is to go out with an expert or, better yet, a group of experts. Second best is to consult regional field guides. The worst way is by trial and error, what I call “mushroom roulette.” Some people will cook almost any wild mushroom they find and, if it tastes good, figure it’s safe. Bad idea. It’s just a matter of time before they consume the “loaded chamber” and get sick, or worse.

Many wild mushroom species can cause severe stomach upset or other gastronomic problems. A few species are deadly. To learn how to safely harvest delicious wild mushrooms in Montana, stick with the popular edible—and easy-to-identify—species and

*Cathy Cripps is a mycologist and professor of plant sciences and plant pathology at Montana State University in Bozeman. She is the lead author of The Essential Guide to Rocky Mountain Mushrooms by Habitat.*

learn to avoid the most inedible and toxic ones, the most dangerous of which we've included in this guide (page 32).

### When and where to go

Timing and location are key to finding wild mushrooms. Though there are hundreds of species, each with unique habitats, all mushrooms sprout for a day to a week after a rain, making wet periods and wet places the most productive times and sites for foraging.

The best seasons are spring and fall, when rains are most common. May through June is usually a reliable period to hunt for morels and oyster mushrooms. Summer is often too dry for mushroom sprouting, though shaggy manes and giant western puffballs can show up in June and July, and black morels (especially the fire varieties) can be found at high-elevation burn sites as late as August, especially on north-facing slopes. For most species, however, it's not worth looking during the heat of summer or in a drought like we had in 2020. Last year the spring weather was so dry in southwest-

ern Montana that mushroom season was over by the end of May.

Favorable mushroom weather returns in late August if the area you're in receives late-summer rains. With enough moisture, early autumn is the time for chanterelles, king boletes, and several other varieties. These sprout first at lower elevations, then increasingly higher over subsequent weeks.

Note that even in wet conditions, certain mushrooms sprout only during certain times of the year, such as yellow morels in spring and chanterelles in fall.

Montana has many different wild mushroom habitats: riparian corridors, aspen stands, meadows, and conifer (pine, spruce-fir, and Douglas fir) forests. Most species in this guide sprout in conifer forests.

Use a cloth or mesh bag, or other open container to carry the mushrooms you collect. Mushrooms quickly spoil if you store them in plastic bags or leave them in hot vehicles. They store best in cool

temperatures, so get them to a refrigerator as soon as possible. Many so-called "poisonings" have resulted from people eating ordinarily safe mushrooms that spoiled in warm storage.

Listed here are 10 common edible mushrooms and several poisonous ones. Use this article as a starting point, but also buy a regional (Rocky Mountain) mushroom guidebook or download online guides as backup to confirm your finds.

Note that very few species in Montana are deadly, but many can cause an upset stomach. Some people react even to the popular edible mushrooms listed here, so if you've never consumed a species before, eat only a small portion the first time to see how you react. Also note that all wild mushrooms should be thoroughly cooked.

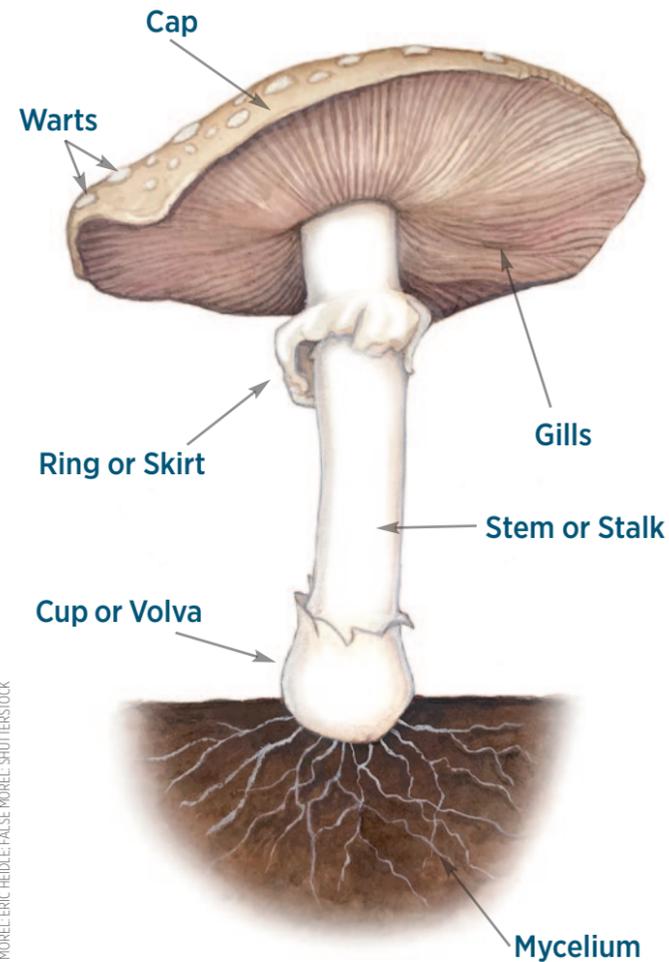
And always remember: When in doubt, throw it out. 🐾



**BOUNTY HUNTERS** Above left: Shaggy manes pop in the fall. Young ones, like these in the Gravelly Mountains, should be cooked soon after harvest. The inedible older specimens drip an inklike liquid from their cap, making them easy to identify. Above right: A haul of black non-fire morels harvested in early June in the Snowy Mountains. Black morels can be gray, brown, or black, but all have black ridges. Black "burn" morels sprout the year after a forest fire. Look for them on the perimeters of burn sites, where red conifer needles litter the forest floor.

## Mushroom anatomy

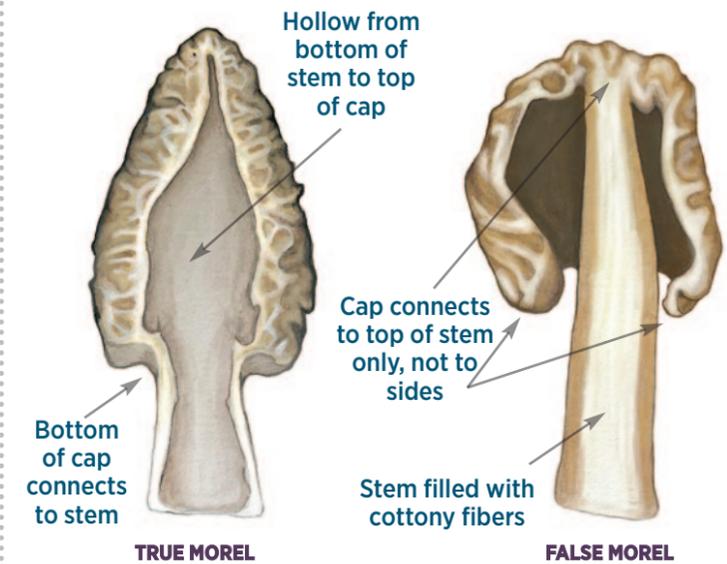
The most common mushrooms have a stem supporting a cap, with gills underneath. This "gilled" mushroom category contains the poisonous *Amanita* species (page 32). Only one of the edible mushrooms in this guide, the shaggy mane (page 31), has gills.



SCIENTIFIC ILLUSTRATIONS: LIZ BRADLEY  
TRUE MOREL: ERIC HEDDLE; FALSE MOREL: SHUTTERSTOCK



TRUE MORELS



TRUE MOREL

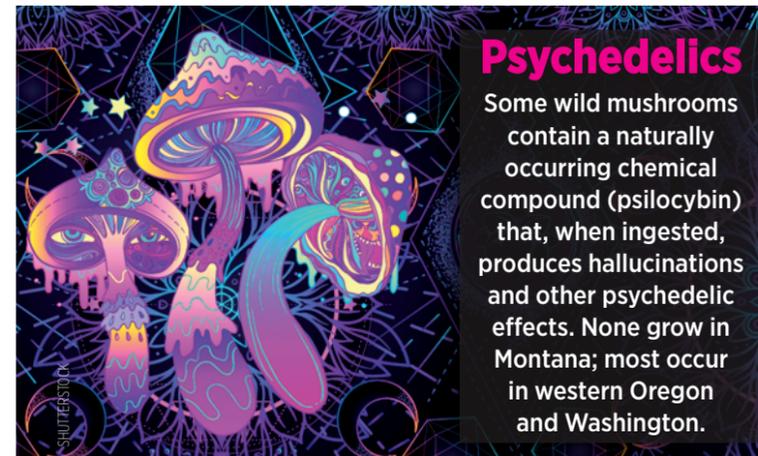
FALSE MOREL

## True or false morel?

To make a positive identification, cut the specimen in half lengthwise. The cap of a true morel mushroom attaches directly to the stem from top to bottom, like a hollow chocolate bunny. The cap of a false morel attaches only at the very top and hangs down over the stem like a folded umbrella.



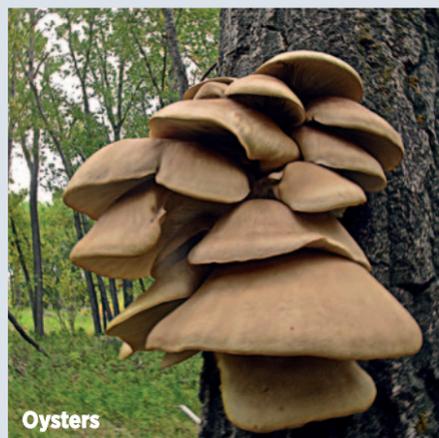
FALSE MOREL



## Psychedelics

Some wild mushrooms contain a naturally occurring chemical compound (psilocybin) that, when ingested, produces hallucinations and other psychedelic effects. None grow in Montana; most occur in western Oregon and Washington.

LEFT TO RIGHT: LESTER KISH; DAVE RUMMANS



Oysters

## Oyster mushrooms

*Pleurotus species*

Montana is home to two types of edible oysters: the grayish-brown *Pleurotus pulmonarius* that grows on cottonwoods and the white *P. populinus* found on aspens. Both grow in riparian areas in large clusters on logs or standing dead trees—hence the nickname “stumpies”—from May through June, then in early fall if conditions are wet. The stem is attached to one side of the oyster-shaped cap, and the cream-colored bladelike gills run down the short stem. The flesh of oyster mushrooms is soft and often consumed by insects before human harvesters can get to them.

## Yellow morels

*Morchella americana*

These pale blond beauties fruit in spring under cottonwood trees along stream- and riverbanks and islands. Start hunting for yellow morels when the leaves on neighborhood lilacs reach the size of rabbit ears. The pine



Yellow morel

cone-shaped cap varies from gray to yellow brown and is covered with pits and ridges. Like all true morels, the cap edge is attached to the stem and the interior is completely hollow. Morels grow in patches, so if you find one, stop, squat, and look around; there are likely more nearby. Cut them in half lengthwise to check the interior for any small insects, which can be whisked out with a toothbrush.



Black morels

## Black morels

*Morchella species*

Several types of black morels grow in Montana. Though the caps of black morels can be gray, brown, or black, the mushroom's black ridges, which consistently darken with age, give them their name. Black morels resemble pine cones, making them frustratingly difficult to find in the conifer forests where they grow. As with yellow morels, the edge of the cap joins to the stem, making one big hollow inside.

Black “burn” morels (*M. septimelata*, *M. tomentosa*) come up one year after a fire on burned soil, sometimes fruiting in great abundance in June and July, especially after rains. Search the edges, where burned areas mix with unburned ones in a black-green mosaic, and where red conifer needles cover the ground.

Natural (non-fire) black morels (*M. brunnea*, *M. snyderi*) are found scattered in unburned forests and gardens from spring to summer. They are similar to burn morels but are usually brown.

Some people get sick after eating morels, especially the black varieties. Some people get sick if they consume wine with yellow or black morels.

## Giant western puffballs

*Calvatia booniana*

These large, white, solid orbs, ranging in size from softballs to volleyballs, have flat scales on top and are easy to recognize. Not all puffball mushroom species are edible, but these giants are tasty when young and pure white inside with a soft texture. Once the interior yellows even a bit, they develop an off odor and taste, and can produce an upset stomach when consumed.

Giant western puffballs fruit in open meadows and sagebrush prairies statewide in late June and July, and can be seen from roadsides. Most mushroomers cut the soft flesh into slices, which are then coated with flour, beaten egg, and bread crumbs and sautéed in butter, like you'd cook an eggplant. A single large specimen can feed a family. Like morels, giant western puffballs can be dried, stored in an airtight container, and reconstituted later in hot water.

Avoid small puffballs the size of a golfball or smaller, which could be the button stage of the toxic fly agaric *Amanita* mushroom (see page 32).



Western puffball

## King boletes

*Boletus edulis*

“Kings” are among Montana’s largest mushrooms. The caps can grow to the size of a dinner plate (though most are saucer-size) and are the color and shape of a nicely browned hamburger bun. Underneath the cap is a spongy layer of pores that turn from white to yellow as the mushroom ages. The fat white



King boletes

stem has small veins at the top and is edible.

Note that these mushrooms attract insects and worms, so cut off any infested portions before consuming.

Avoid any boletes with red pores on the underside of the cap. These are the toxic bolete species.

## Rainbow chanterelles

*Cantharellus roseocanus*

Also known as yellow or golden chanterelles, these frilly, vase-shaped mushrooms have ridges (not true gills) running down the stem, an apricot color, and a fruity aroma. They can go unnoticed because they often lie flat to the ground. These sturdy, hard-fleshed chanterelles grow in patches, so if you find one, others will likely be nearby. Hunt for them during a wet August and September in conifer forests, though they can appear earlier at lower elevations. Be cautious of inedible or poisonous look-alikes such as the false chanterelle (*Hygrophoropsis aurantiaca*), which, though vase shaped, is much softer and flimsier and has true gills.



Rainbow chanterelles

## Hawkings or scaly urchins

*Sarcodon imbricatus*

The common names say it all. These large, fleshy, brown mushrooms are covered with darker brown scales. Tiny “teeth” under the cap clinch the identification. This fungus forms large rings in conifer forests in late August and September and can be collected by the bushel. Older specimens taste bitter to some people, but young ones, with their strong (and, to many of us, delicious) flavor, are favored in spaghetti sauce and other dishes calling for firm-fleshed mushrooms. Beware of bitter-tasting look-alikes.



Hawkings

## Shaggy manes

*Coprinus comatus*

These tall “inky-caps” have white, shaggy or scaly caps on long stems, resembling a closed umbrella. Easily recognizable are older specimens, which drip inklike liquid from their cap. At this stage they are no longer edible, but when picked young and cooked quickly after harvest—they deteriorate overnight in a refrigerator—they are a great addition to scrambled eggs or sauces.

Look for them in the fall along old logging roads or bordering paved roadways, at the base of urban hardwood trees, or under neighborhood shrubbery.



Shaggy manes

Note that shaggy manes can resemble the poisonous tall, white *Amanita bisporigera* (destroying angel), so be extra cautious with these. Also, as with Chantrelles, a tiny percentage of people can get an upset stomach from eating these mushrooms with or without alcohol.

## Sweet tooth or hedgehogs



Sweet tooth

*Hydnum repandum*

The pale apricot caps of these mushrooms look like those of chanterelles but have tiny white “teeth” below rather than ridges.

They sprout in conifer forests from August through October. The flesh is brittle and requires care when collecting and cooking. Their unique, delicious flavor makes them one of my favorites.

## Branched bear's heads



Branched bear's head

*Hericium coralloides*

Long white icicles hang from branches, all of which is edible. When cut up the texture is somewhat like crab meat, and when cooked with lemon and dill the seafood resemblance is enhanced. Branched bear's heads sprout in late spring in riparian areas on fallen aspens and cottonwoods. ■

CLOCKWISE FROM TOP LEFT: CATHY CRIPPS; SHUTTERSTOCK; LESTER KISH; CHANCE NOFFSINGER

CLOCKWISE FROM TOP LEFT: NATHAN COOPER; DAN ELLISON; NATHAN COOPER; NATHAN COOPER

# Toxic mushrooms



## Amanita species

Anyone who collects wild mushrooms should learn to recognize the *Amanita* species because some are deadly. The most poisonous ones grow along the West Coast, but Montana is home to the pure-white *Amanita bisporigera*, known as the **two-spored destroying angel** (not shown). This species is extremely rare in Montana and it's unlikely you will ever come across one.

All *Amanitas* have a cup (called a volva) or rings of tissue at the base of the stem (see illustration, page 29). Some have a ring on the stem or patches of tissue (warts) on the cap, or both. The two most common *Amanitas* in Montana are the:

### • Fly agaric (*Amanita muscaria*, yellow var.)

This pretty-but-toxic *Amanita* has a yellow cap with whiteish warts, a ring on the stem, and three rows of tissue near the stem base. While not deadly, fly agarics can cause serious poisonings that have sent people to the hospital. They can cause delirium and hyperactivity when eaten, followed by comatose sleep. Fly agarics show up in aspen and conifer forests in the fall.



Fly agaric



Panther

### • Panther (*Amanita pantherina*)

The panther is another pretty *Amanita* and looks like the fly agaric. It has a tan to dark brown cap with white patches, a ring on the

stem, and a distinct cup at the base. It contains the same poisons as the fly agaric and causes the same uncomfortable symptoms from which, fortunately, most people recover after 12 hours. It is a summer and fall mushroom found in conifer or mixed forests.



Funeral cap

## Generic little brown mushrooms

*Galerina marginata*, for example

You'll see many of what I call "LBMs" in forests, along trails, in mulch beds, and in lawns. Many are harmless, but a few can be deadly. One is *Galerina marginata*, or funeral cap, which contains the same serious liver-destroying toxins as some *Amanitas*. These little mushrooms have a greasy ocher cap and a ring on their slim stem. They show up any time of year in moss or mulch.

## Brain or walnut mushrooms

*Gyromitra esculenta*

This "false morel" has a wrinkled red-brown cap that looks like a brain or a walnut perched on a hollow stem. It can be deadly because, after consumption, a person's stomach produces monomethyl hydrazine (rocket fuel). The effect is cumulative, and if a sufficient quantity is consumed over time, the liver is destroyed. It fruits in conifer forests in late spring.



Brain mushroom

## Thimble false morels or verpas

*Ptychoverpa bohemica*

These look even more like morels, but the caps have longitudinal wrinkles and not pits and ridges. The margin of the cap hangs free from the white stem, unlike a true morel, on which the stem and cap are one complete unit. While not deadly, this mushroom can cause gastronomic troubles in some people. Though the toxin is volatile and can be boiled off, it's still not a good idea to eat any of these. Note that they sprout in the same season and habitat as yellow morels.



Thimble false morel

## Rough-stalked boletes

*Leccinum aurantiacum*

Also called orange caps, these large boletes can be mistaken for kings, although they are found mostly in summer under aspens rather than conifers. Caps are orange to reddish brown, with a spongy layer underneath, like all boletes. The substantial whitish stems are covered with shaggy brownish-black scales. When cut open, the flesh inside turns pink, blue, gray, or black. Though listed as edible in some field guides, there have been numerous cases of poisonings, often when people ingested raw or undercooked specimens. They are best avoided. ■



Rough-stalked boletes



## Cooking wild mushrooms

**Preparation:** Stems of most species are edible, but you need to trim the bottom of stems to remove dirt. Check for maggots, worms, or other tiny critters and brush away. If the mushroom is infested with too many, discard. Refrigerate the mushrooms you don't cook. They store well in cool conditions for a week.

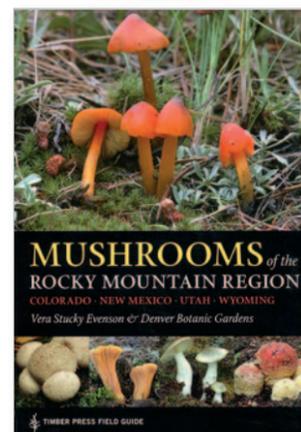
**Sauté:** This is the easiest and most popular way to cook mushrooms. Sauté in a good amount of butter or olive oil or a mixture of the two. Cook so the mushrooms aren't touching each other. Mushrooms are mostly water, and crowding ends up steaming rather than sautéing them. Some people add a little minced garlic, thyme, or both during the last few minutes of the sauté.

**Roast:** Toss mushrooms in olive oil, salt, and pepper and roast in a pan at 400 degrees F for about 20 minutes.

**Fry:** Some people like to dip mushrooms in flour, beaten egg, then bread crumbs and deep-fry them in oil.

**Season:** Like steak, cooked mushrooms taste best with a hearty dose of salt and pepper. Add a pinch of nutmeg to king boletes.

**Serve:** Eat cooked mushrooms plain, mixed with scrambled eggs, atop steaks, or added to sauces.



## Learn more

**GROUPS:** The best way to learn to identify mushrooms is with experts from the Western Montana Mycological Association (facebook.com/montanamushrooms) or the Southwest Montana Mycological Association (ccripps@montana.edu). Both sponsor seasonal mushrooming forays, though SMMA forays are cancelled for 2021.

**BOOKS:** *Mushrooms of the Rocky Mountain Region*, by Vera Evenson; *The Essential Guide to Rocky Mountain Mushrooms by Habitat*, by Cathy Cripps, Vera Evenson, and Michael Kuo.

**MUSHROOM ID:** You can send or bring strange or suspected toxic mushrooms to the Schutter Plant Diagnostic Lab at Montana State University in Bozeman for identification. (406) 994-5150; diagnostics@montana.edu.

## 10 wild mushroom safety tips

1. Before consuming any wild mushroom, be sure you identify the species and know it's safe to eat.
2. Never eat wild mushrooms raw; always cook them thoroughly.
3. Be especially careful if out with children. Instruct them never to eat a raw mushroom. Dogs can be sickened too.
4. Don't overindulge; eating too many mushrooms can cause an upset stomach.
5. Don't collect old, dried mushrooms. They won't taste good.
6. Always store mushrooms in cool, dry, dark conditions.
7. Morels give some people an upset stomach; test by eating a small cooked portion before ingesting any more.
8. Some people get an upset stomach if they consume wine with morels or shaggy manes.
9. The best way to positively identify gilled mushrooms is by taking a spore print. Lack of space prevents explaining here, but you can find information online.
10. If you suspect someone has been poisoned by a mushroom, call the Rocky Mountain Poison & Drug Safety (RMPDS) at (800) 222-1111.

