



Bear Aware Myths and Misconceptions

Bear Identification and Biology

MYTH: You can identify a bear's species based on its color, size, or scat.

FACT: Color, size, and scat can be misleading characteristics when identifying the species of a bear. Both grizzly bears and black bears can range in color from blond to black. Additionally, there is a larger size difference between the ages and sexes of a species than between both species, making size an unreliable identifying feature. The presence of a shoulder hump, the shape of their face and ears, and their tracks and claws can be more reliable characteristics to help you identify the species.

MYTH: Bears can't be woken up while hibernating throughout the winter.

FACT: Black bears and grizzly bears are hibernators. Hibernation is one of several kinds of reduced metabolic states. According to Brian Barnes, a leading researcher on hibernation, "hibernation in mammals is a matter of how an individual, [for example, a] ground squirrel or bear, reduces its metabolic demand (the rate that it uses energy) to levels that can be met throughout winter solely through the use of internal stores of fat." While hibernating (a form of torpor), a bear's metabolism, heart rate, and body temperature lowers, but it is not nearly to the extreme levels that occur in other hibernators, such as ground squirrels. It is important to remember that bears can be woken up from hibernation, and bear encounters can happen any time of year.

MYTH: Grizzly bears are more aggressive and dangerous than black bears.

FACT: In general, grizzly bears are more likely to be aggressively defensive of resources than black bears are because they evolved in open areas, requiring them to face conflicts head-on. Black bears, on the other hand, evolved in forested areas which allowed them to flee from conflict. Nevertheless, both species can pose a threat to humans, especially in close encounters. Your response in a bear encounter should depend on the bear's behavior, not species.

MYTH: Bears smell bad, and you can often smell them before you see them.

FACT: In general, a bear's body and breath smell neutral and earthy. They have a largely vegetative diet, and the chlorophyll in the plants they eat naturally neutralizes odor. If they have been rolling in a carcass, they can smell like the carcass. It is best to prevent bear encounters by employing multiple tactics rather than relying solely on your sense of smell. These can include paying attention to your surroundings with all your senses, making noise and travelling in groups, carrying bear spray and knowing how to use it, and avoiding dangerous situations.

Bear Research and Management

MYTH: Bears with ear tags or collars are “problem bears.”

FACT: Bears can be given ear tags or collars for many reasons, including research or because that bear has been involved in a previous conflict. Black bear cubs rehabilitated by FWP also carry ear tags. For this reason, you cannot determine if a bear has a history of conflict based on the presence of an ear tag or collar. To learn more about bear research in Montana, visit [our website](#) or our YouTube channel to watch videos like [this one](#) about black bear collaring efforts.

MYTH: Montana Fish, Wildlife & Parks relocates “problem bears” to new areas where there previously weren't bears.

FACT: Montana Fish, Wildlife & Parks has designated commission-approved release sites for grizzly bear captures and relocations. These release sites are not random and are only located in areas with an established grizzly bear population. It is important to note that these relocations of bears to mitigate conflicts are different from reintroduction efforts. Any translocation of bears as part of reintroduction efforts goes through a public approval process and aims to reestablish and maintain healthy grizzly populations in their historic range. Additionally, candidate bears for relocations/translocations do not have a history of conflict. Montana FWP recently relocated two grizzly bears from the Northern Continental Divide Ecosystem to the Greater Yellowstone Ecosystem to increase genetic diversity and connectivity between the two ecosystems. See a related video [here](#).

MYTH: You shouldn't report conflicts with bears because you will get in trouble, or the bear will need to be put down.

FACT: Early reporting of conflicts gives bears a better chance at survival. If a conflict has been ongoing, it is difficult to correct the bear's behavior. Each situation is unique, and our staff will work to do what's best for the people and bears involved in the situation. To report a conflict, please contact your [Regional Bear Manager](#). To follow grizzly bear mortalities in Montana, please visit our interactive [Grizzly Bear Mortality Dashboard](#).

Bear Encounters

MYTH: What you should do in a bear encounter depends on the bear's species ("If it's black, fight back; if it's brown, lie down; and if it's white, say goodnight").

FACT: Your response in a bear encounter depends on the bear's *behavior* rather than species. In a bear encounter, stop, stand your ground, and assess the bear's behavior. For more detailed guidance and what to do in specific scenarios, please refer to [our website](#).

MYTH: Making eye contact with a bear will make it angry.

FACT: It is important to look *towards* a bear to observe and assess its behavior. However, intense, prolonged eye contact (like eye contact that would make another person or dog uncomfortable) can be a threatening gesture in proximity in a stressful situation. In a defensive encounter, you should avoid threatening gestures because the bear already sees you as a threat. In a predatory/curious encounter, the bear is not threatened by you, so you can use intense eye contact among other tactics to appear threatening and help deter the bear.

MYTH: A good way to escape a bear encounter is running downhill because bears can't run downhill as fast as humans can.

FACT: Bears can easily reach 35 mph in rugged terrain, including uphill, downhill, and over downfall. No human can outrun a bear, and running can provoke them to chase you. In an encounter, it is best to stand your ground and assess the bear's behavior.

MYTH: A good way to escape a bear encounter is by climbing a tree.

FACT: This strategy used to be taught but is outdated and not the most effective way to handle an encounter. Both grizzly bears and black bears can climb trees. In an encounter, it is best to stand your ground and assess the bear's behavior.

MYTH: Bears have such a good sense of smell to make up for their poor eyesight.

FACT: In addition to their incredible sense of smell, bears also have great eyesight. They can see about as well as humans can, but they can see better than humans can in low-light conditions.

Efficacy of Bear Spray

MYTH: Bear spray doesn't really work.

FACT: Bear spray is highly effective and easy to use. In a study of encounters with polar bears, brown bears, and black bears in Alaska, bear spray was 92% effective in changing the bear's behavior and 98% effective in preventing injuries. Additionally, the 2% of people that were injured were only minimally injured (no hospitalization required).

Smith, T.S., S. Herrero, T.D. Debruyne, and J.M. Wilder. 2008. Efficacy of Bear Deterrent Spray in Alaska. *Journal of Wildlife Management* 72:640-645

MYTH: Firearms are more effective at deterring bears than bear spray is.

FACT: Firearms and bear spray can both be utilized as personal safety tools when in bear country, and the decision on which to use is a personal one. In a study on the efficacy of firearms for bear deterrence, both handguns and long guns were successful in deterring aggressive bears (84% and 76% respectively). They also found that firearm success rates decreased nearly 7-fold once a bear charged. Firearms can be effective when used properly, but they require practice and precision. Bear spray is a non-lethal deterrent that has a higher efficacy rate (92% for changing bear behavior), is quick and easy to deploy, and does not require precision when aiming. Many hunters choose to carry both bear spray and firearms in bear country.

Smith, T.S., Herrero, S., Layton, C.S., Larsen, R.T. & K.R. Johnson. (2014) Efficacy of firearms for bear deterrence in Alaska, *Journal of Wildlife Management* DOI: 10.1002/jwmg.342.

Smith, T.S., S. Herrero, T.D. Debruyne, and J.M. Wilder. 2008. Efficacy of Bear Deterrent Spray in Alaska. *Journal of Wildlife Management* 72:640-645

MYTH: You should run away once you spray a bear with bear spray.

FACT: You should spray your bear spray until the bear changes its behavior. If it continues to approach, keep spraying. When it disengages (reacts to the bear spray and takes its focus off you), quickly and carefully leave and get to an area of safety. Always keep an eye on the bear, be ready to spray again if needed, and do not run.

MYTH: Bear spray just makes the bear angrier.

FACT: Bear spray works by causing a painful burning sensation from the capsaicin on the animal's mouth, nose, and eyes. Because it is a painful and unfamiliar sensation for the bear experiencing it; they do not know why they are feeling this pain. The spray acts as a distraction and bears usually retreat at the sensation to take care of themselves and distance themselves from the source of the pain. Though it is temporary, bear spray affects the bear for about 30 minutes and distracts the bear long enough for you to escape the area.

MYTH: Bear spray doesn't work in cold weather.

FACT: Research studies indicate that bear spray is limited by but not incapacitated by cold weather. In colder temperatures, bear spray has a smaller range and smaller cloud of dispersion. However, it is still functional at close range (1-2 m) even at -23 °C/-10 °F. You can carry bear spray in your coat to keep it warmer when outdoors in cold conditions, though this may increase the time it takes for you to deploy your spray. While it may be tempting to leave your bear spray at home in winter, it is best to carry it year-round because bear encounters can happen any time of year.

Smith, T.S., J.M. Wilder, G. York, M.E. Obbard, and B.W. Billings. 2020. An Investigation of Factors Influencing Bear Spray Performance. *Journal of Wildlife Management* 85:17-26

MYTH: Bear spray doesn't work in windy conditions.

FACT: Bear spray is an aerosol, so it is affected by wind. Headwinds and crosswinds can reduce its range, and tailwinds can increase its range. Nevertheless, the spray can overcome even strong headwinds and maintain functionality as it leaves the canister at 70 mph. While windy conditions may reduce the effective range of bear spray and cause the user to experience more of the cloud themselves, bear spray still works and is a better option than using no deterrent at all.

Smith, T.S., J.M. Wilder, G. York, M.E. Obbard, and B.W. Billings. 2020. An Investigation of Factors Influencing Bear Spray Performance. *Journal of Wildlife Management* 85:17-26

MYTH: Wasp spray and pepper spray (mace) are more affordable substitutes for bear spray.

FACT: While wasp spray and pepper spray for self-defense generally cost less than bear spray does, they are not adequate substitutes for deterrents in a bear encounter. Bear spray has been thoroughly tested and approved for use on bears by the Environmental Protection Agency, while wasp spray and pepper spray are not designed for large wildlife encounters. Unlike bear spray, wasp spray is a poison that can permanently affect both the bear and human. Additionally, wasp spray and pepper spray come out in a stream which requires a direct hit to affect the victim. Bear spray forms a cloud and does not require the user to have precise aim when deploying it.

Bear Spray Maintenance

MYTH: Expired cans of bear spray work just as well as non-expired cans.

FACT: Expired bear spray does not have the same efficacy rates as non-expired cans. The active ingredients (capsaicin and related capsaicinoids) do not expire, but the propellant can leak out over time and the gasket can wear out. An expired can of bear spray may not spray to its full range or may not spray at all. Cans of bear spray have expiration dates printed on them. The date can rub off easily, so be sure to note it on the bottom of the can in permanent marker. You should replace your bear spray after the expiration date, after it has been discharged for any reason, or after it has been left in extreme temperatures. You can read more about a biker's personal experience with using expired bear spray and watch a video of expired cans being discharged [here](#).

MYTH: You don't need to replace a can of bear spray after use.

FACT: Cans of bear spray lose pressure at an exponential rate (half of their pressure within the first 1.4 seconds of spraying). Scientists do not recommend firing a test spray from or relying on a can that has been used in a previous incident. The remaining pressure is unreliable and can create a much smaller plume distance than expected. If you wish to practice deploying bear spray, you can purchase inert canisters from various manufacturers or you can attend one of our [Bear Aware events](#).

Smith, T.S., J.M. Wilder, G. York, M.E. Obbard, and B.W. Billings. 2020. An Investigation of Factors Influencing Bear Spray Performance. *Journal of Wildlife Management* 85:17-26

MYTH: You should store your bear spray in your car so that you don't have to worry about forgetting it at home.

FACT: Bear spray cans can explode due to punctures or extreme temperatures (>120 °F). Bear spray should be stored in a temperature-controlled area away from children and uninformed adults. When transporting bear spray in a vehicle, you can store the can in a backpack or bear spray transport container to protect the can and contain the spray in case of an accident. Storing your can in a cooler can also help with temperature control.

MYTH: You can throw used or expired bear spray in the trash to dispose of it.

FACT: Bear spray cans are considered hazardous materials and should not be disposed of in regular garbage cans or landfills. You have two options for disposing of canisters:

- 1) Drop off the can for disposal.
 - a. Bring expired bear spray to a place that accepts cans. Forest Service and state wildlife agency offices are good locations to consider. Waste management companies sometimes offer a disposal option or can accept bear spray during household hazardous waste disposal days. Please call ahead if you don't know if a location accepts bear spray.
- 2) Safely empty the can and throw it away.
 - a. If drop off isn't an option, you can spray the can until it's completely empty. Once it's empty, it can be wrapped in a bag and thrown in your normal garbage. It's imperative that cans be completely empty and depressurized before they enter the waste stream. Spraying bear spray can be hazardous, so it should be done with extreme caution and far away from homes, trailheads, campgrounds, buildings (air intake, etc.), pets, and livestock. Oils from bear spray can linger for some time after it's been discharged. Anecdotal evidence suggests that settled bear spray can be a bear attractant.

Attractants

MYTH: If you live in town, you don't have to worry about bear conflicts.

FACT: Montana is bear country, and that includes populated areas. Black bears can be found anywhere in Montana, and grizzlies can be found anywhere west of Billings. Their populations are growing, and bears are being found in areas they haven't been seen in in 100 years. While bears typically avoid humans, sometimes their food sources bring them close to town, or they are attracted to items left unsecured. It is important to properly secure garbage, grills, birdfeeders, pet food, chickens, fruit trees, and more, even if you live in town, to prevent bears from becoming habituated to humans.

MYTH: Bear-resistant coolers work properly without any additional measures.

FACT: Bear-resistant coolers are IGBC-approved storage containers when they are *locked*, either with a padlock or a nut and bolt. For a complete list of IGBC bear-resistant products, refer to [their website](#). To learn more about the IGBC's container testing program, watch [this segment](#) from ABC News.

MYTH: If you put sunscreen, lotion, bug spray, etc. on, it will transfer to your sleeping bag, blankets, etc., which will attract bears.

FACT: When possible, reduce the use of cosmetics. You can do this by wearing long sleeves and pants for sun and bug protection and wearing clean sleeping clothes in your tent. You can also use wipes or a camping towel to clean off your skin before bed. Nevertheless, the main concern is the container of concentrated attractant which should be stored properly.

Included Links

Bear Research and Management

- FWP Website – Grizzly Bear Management and Conservation: <https://fwp.mt.gov/conservation/wildlife-management/grizzly-bears>
- FWP YouTube Video – Finding a Black Bear Collar for Research: <https://www.youtube.com/watch?v=84SQPFog4SU>
- FWP YouTube Video – Successful Montana Grizzly Bear Translocations: <https://www.youtube.com/watch?v=84SQPFog4SU>
- FWP Website – Contact FWP Bear Managers: <https://fwp.mt.gov/conservation/wildlife-management/bear/contact>
- FWP Website – Montana Grizzly Bear Mortalities Dashboard: <https://experience.arcgis.com/experience/cfdfbb4a5c9f4758816b296410d3fc94>

Bear Encounters

- FWP Website – Bear Encounters: <https://fwp.mt.gov/conservation/wildlife-management/bear/be-bear-aware/bear-encounters>

Efficacy of Bear Spray

- Efficacy of Bear Deterrent Spray in Alaska: <https://www.bearwise.org/wp-content/uploads/2017/07/efficacy-of-bear-spray-smith-et-al.-2010.pdf>
- Efficacy of firearms for bear deterrence in Alaska: <https://wildlife.onlinelibrary.wiley.com/doi/abs/10.1002/jwmg.342>
- An Investigation of Factors Influencing Bear Spray Performance: <https://wildlife.onlinelibrary.wiley.com/doi/abs/10.1002/jwmg.21958>

Bear Spray Maintenance

- CBC News – “Does expired bear spray work? Don’t count on it, says Yukoner after scary encounter”: <https://www.cbc.ca/news/canada/north/bear-spray-expires-1.4703457>
- FWP Website – Bear Aware Events: <https://fwp.mt.gov/bear-aware/events>

Attractants

- IGBC Bear-Resistant Products: <https://igbconline.org/programs/bear-resistant-products/>
- ABC News YouTube Video – See how products are tested by bears to become certified ‘bear-resistant’: <https://www.youtube.com/watch?v=WCSGijd0HbU>

Additional Resources

- Interagency Grizzly Bear Committee: <https://igbconline.org/>
- Montana Fish, Wildlife & Parks: <https://fwp.mt.gov/>
- Montana Fish, Wildlife & Parks YouTube Channel: www.youtube.com/@MontanaFWP