



**Farm and Ranch
Wildfire
Preparedness Guide
for
Small and Startup
Operations**

Introduction

Montana's agricultural community faces unique challenges when it comes to wildfire. During the fire season, Montana farmers and ranchers not only have to protect their operation's assets, but their homes and the personal infrastructure required to run their business. This guide is intended to help you prepare your operation for fire and know what to do if it is time to evacuate. To use this guide, read through the information provided and create suggested preparedness checklists.

Wildfires can be unpredictable and move fast. Being prepared before the flame front approaches can reduce the impacts of fire on your land and your livelihood. Wildfire preparedness will look different for everyone. Each farm and ranch will have different priorities based on values assigned by the owner. Keep these priorities in mind while working through this guide.



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Prevention

Humans start as many as 75% of wildfires in Montana. Two common causes of wildfires are debris burning equipment and vehicle use. Follow these tips to help prevent wildfires from starting on your property.



Debris Burning

Low moisture and windy days, combined with debris burning is a great recipe for wildland fires.

Though burning is a great way to remove dead vegetation and clean up land, before you burn, take the necessary precautions to ensure your burn pile does not become the next wildfire:

- When and where necessary, [obtain a permit](#) prior to burning or contact local authorities/sheriff's office.
- Check the weather forecast prior to the burn day, the morning of the burn, and the day after the burn for wind, temperature, and relative humidity conditions.
- Burn piles in the morning when humidity is higher, and temperatures are cooler.
- Before burning a debris pile, scratch a line down to mineral soil around the pile to help contain the fire. Keep piles small, gradually adding to the fire as it burns down.
- In Montana, you may legally only burn wood, vegetation, and untreated paper products. **Do not burn trash.**
- Be sure to have adequate equipment such as a shovel, rake, hoe, leather gloves, proper assistance, and a water supply with you.
- Continuously monitor burn piles. Keep debris in a contained area watching for flying embers and crawling flames.
- When the flames are out, turn over the dirt and ash to make sure the area is cold to the touch before leaving.
- Check your burn site the following day as stumps, roots, or logs may be holding heat that could re-ignite.

Farm equipment

- Get an early start! Start clearing grass and vegetation before 10:00 a.m. After 10:00 a.m., temperatures rise, humidity drops, and wind speeds increase.
- Clean and maintain your equipment to keep exhaust systems, spark arrestors and mowers in proper working order and free from carbon build-up. Spark arrestors are required on ALL portable, gasoline-powered equipment; including tractors, harvesters, chainsaws, weed-eaters, mowers, motorcycles, and all-terrain vehicles.
- Clear dry vegetation away from your cutting, welding, or grinding site. Work on a firebrick or concrete floor in an enclosed area; these materials are fire-resistant and eliminate fire spread.
- Keep engines free of oil and dust. Hot exhaust pipes and mufflers can easily start fires that you may not see until it's too late!
- Use string trimmers (weed eaters) to cut tall, dry grass.
- Prior to mowing or disking, walk the area and remove rocks and debris. Rocks or debris hidden in tall grass could ignite a fire if struck by a metal blade.
- When operating equipment, always look behind you to survey your work site for any possible ignitions.
- Keep a cell phone, plenty of water, a shovel, and a fire extinguisher with you in the event of a fire start.



**If a fire starts,
call 9-1-1
immediately**

Insurance

Having appropriate insurance can be one of the most important aspects of preparing your farm or ranch for wildfire. An up-to-date, accurate, and appropriate insurance policy might be the safeguard for maintaining your operation after a fire. Talk with your agent annually to ensure that all your assets are covered under your policy. Add additional coverage specifically for wildfire. Have a documented list of important, valuable, and insured items and their current condition, making sure to note the date of each item's listing. Take photographs and save them in a safe space or upload them to cloud storage. Note that most crop insurance doesn't cover human-caused fires; this includes human-caused wildfires that spread across farmlands.

Recording essential information in one place can help with the organization of your policy and knowing who to call in case of an emergency. Consider using a table similar to the one below to clearly organize and understand your policy and what you have covered.

Policy Number	
Date of Purchase / Last Renewal	
Insurance Provider	
Agent Name, Organization	
Telephone Number, 24/7 Claims	
Key Coverages and Exclusions	<ul style="list-style-type: none">• -----• -----• -----

Livestock

An up-to-date livestock inventory is especially important during a wildfire. An inventory will help you manage decisions during response, such as whether to shelter your livestock in place or to relocate them, and alerting emergency responders of the number of head you have and their location. Update this information yearly with minimum and maximum counts, or when there are significant changes to livestock totals. Be sure to include expected livestock in the coming months. Keeping an up-to-date head count can greatly help with insurance claims in the case of losses during a wildfire.

Livestock Type	Number on Agricultural Operation (min/max number of applicable animals)
Dairy, Lactating	
Dairy, Non-lactating	
Young Dairy Stock	
Bulls	
Cattle and type: <ul style="list-style-type: none"> ● Cow and Calf ● Heifer ● Steer ● Mixed 	
Horses, Donkeys	
Sheep	
Goats	
Swine	
Llamas and Alpacas	
Poultry	
Other (e.g. mink, crickets, fish, etc.)	
Pets	
Location of livestock (Lat/long):	

Crop Protection

Cutting a fuel break

If given enough time, farmers can cut fuel breaks to protect their fields. You can use your equipment to cut a line of low grass or mineral soil between the fire and your field. A fire break should be two- to three-times as wide as the nearest vegetation is tall. Never put yourself in danger; only attempt this if there is plenty of time for you to cut and get back to safety. Keep in mind that while fuel breaks can be effective in stopping a fire from spreading into your crops, there is still a chance fire can jump a fire line.



Wet lines and sprinkler protection

Fire brands and burning branches can travel far ahead of a wildfire, occasionally jumping fire breaks. For this reason, a wet environment created by a sprinkler system can help further prevent these fire brands from igniting crops. If you depend on electricity for irrigation of crops, however, make sure you have a backup system in case of an electrical outage. This will often require installation of a generator that can power the irrigation systems. Any alternate power sources should be tested by an electrician for compatibility with both your home as well as your most critical equipment that you will rely on during evacuation. Maintain and test this alternate power source regularly. Protect yourself and the community around you by ensuring that any generator backup systems are properly installed to ensure no feed-back into the power grid.



A note on sprinkler protection planning

The wet environment created by a lawn or irrigation sprinkler system can also help protect important structures to your operation, such as a building that you might use to shelter animals in place. If, however, your operation does not have an extensive enough sprinkler system to protect all assets at risk, you will have to plan ahead of time to prioritize where you place the sprinkler systems. Similarly, if you are using sprinklers to protect many different assets, consider the limitations of available water pressure; you may have to prioritize what you protect. There is also a possibility that the fire affects the irrigation equipment or firefighters need the water and divert the flow.

Map

Create a map of your property

Having up-to-date maps of your property can help emergency services protect your assets if a fire is on your property. The map should include important operations and site features (examples listed below) with each item labeled. Consider sharing maps with the local fire suppression agencies and neighbors to improve suppression efforts and firefighter safety.

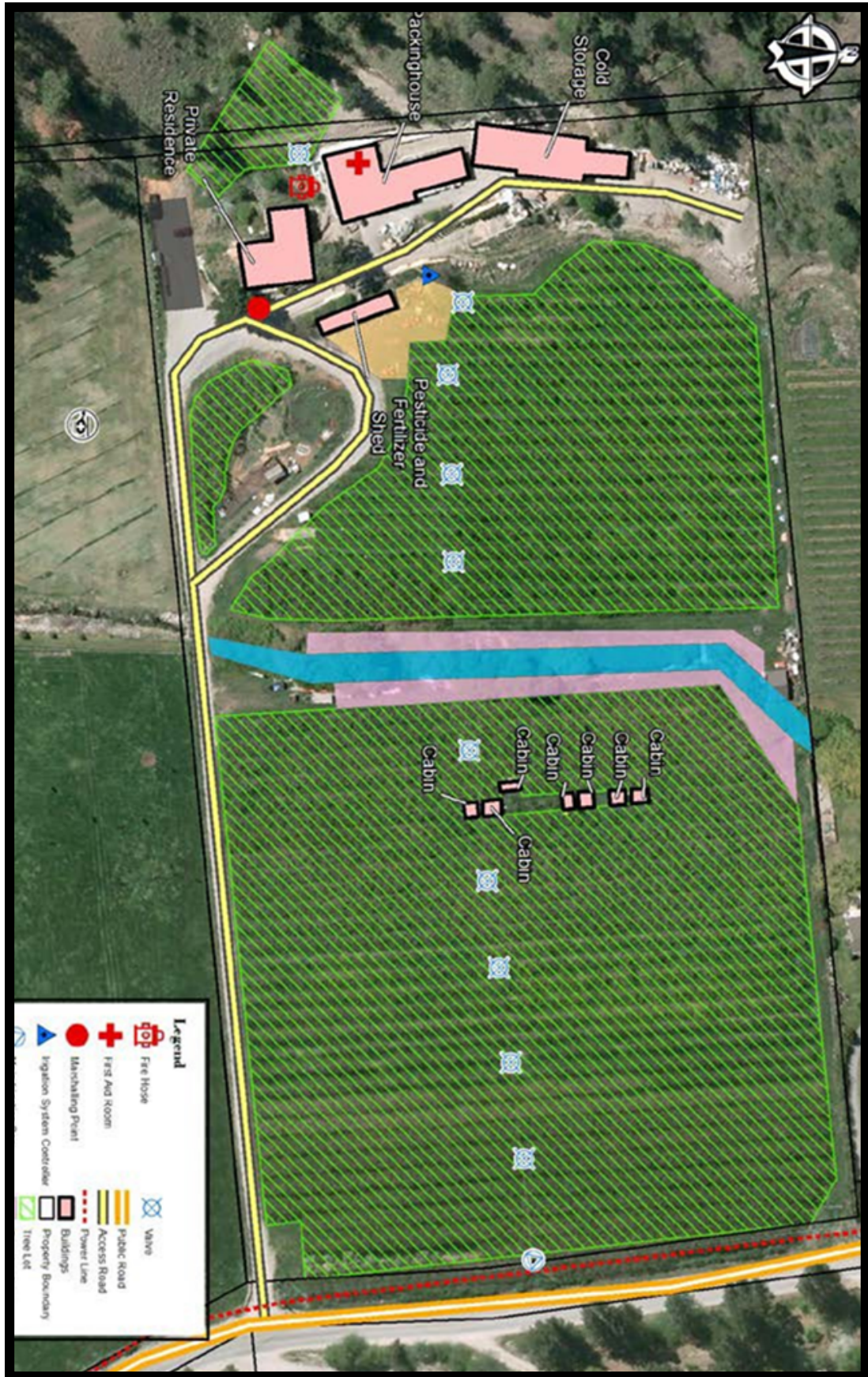
This map can also help emergency personnel identify and protect your most valued assets. Store a copy of the map in your emergency “Go Kit”, as well as taping it to the inside of a road-facing window/door in your home or other structure before you evacuate. Consider using a mailbox or lockbox that serves as an emergency information access point for responding personnel.



Important operation and site features to include in your map:

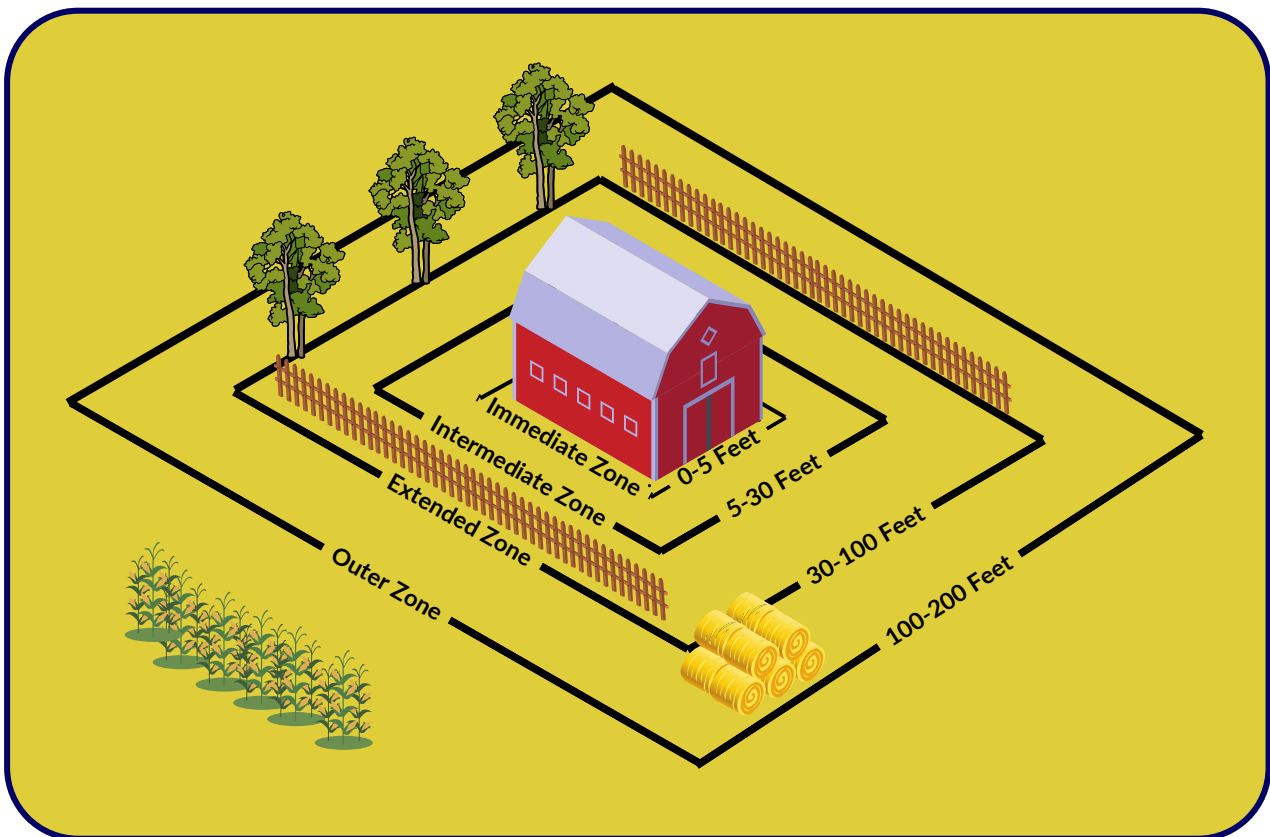
- Powerlines
- Surface water suitable for fire suppression
- Wells, tanks and pumps, standpipes, private water reservoirs (water hook-up locations for pump/sprinkler system)
- In-ground and above-ground irrigation systems (identified as gravity fed or powered)
- Water lines
- Gas lines
- Public reservoirs and other available water sources
- Label your property boundary and land use purpose. Grazing, crops, etc.
- Access roads
- Fences
- Gates/locks and cattle guards
- Structures such as main house, barns and sheds, produce/inventory storage, etc.
- Public parking and access areas
- Pastures, corrals
- Perennial crop production infrastructure (e.g. trellis systems)
- Access points to adjacent publicly managed lands
- Hazardous areas on the property, such as manure holding ponds and pesticide, fuel, and chemical storage locations.

Example of a Map



Buildings

There are many ways to make your buildings more resilient to wildfire. Complete this checklist to improve your Home Ignition Zone (HIZ). Although it is called the Home Ignition Zone, the recommendations can be adopted for any structure. Consider taking these steps when protecting structures such as your home, grain silos, barns, feedlots, and equipment sheds:



Immediate Zone (0-5 feet):

- Cover all vents with 1/8-in mesh screening.
- Fill any gaps in your building's siding and trim materials with quality caulk.
- Maintain caulk, seal annually.
- Fill any openings between the roof covering and the roof deck with a nonflammable material.
- Clean all fallen leaves and needles from this zone including gutters and roof valleys.



- Use only nonflammable fencing materials in this zone, especially where the fence attaches directly to building siding.
- Create a 3-to-5 foot clean and non-combustible perimeter using concrete or rock mulch.
- Remove all vegetation from this zone.
- Remove tree limbs that extend into this zone.
- Relocate all combustible materials, including garbage and recycling containers, lumber, trash, and patio accessories to outside this zone.
- Do not store combustibles under your deck or other ignitable structures, and clean out all plant debris, wood piles, and other easily ignited materials.
- Locate propane tanks at least 30 feet from any structures, preferably on the same elevation as the house.



Intermediate Zone (5-30 feet):

- Remove all dead grasses, weeds, plants, and foliage.
- Keep lawns and native grasses mowed and water all vegetation regularly to keep them from becoming dry.
- Grow non-woody, low height, herbaceous plants.
- Provide a minimum of 18 feet of space between remaining shrubs and trees. Increase spacing on steep slopes.
- Store firewood or other combustible materials at least 30 feet away from any structure.
- Remove any limbs 6-to-10 feet from the ground.
- Remove branches that overhang or touch the roof, making sure there is at least 10 feet of space between the structure and nearest branch.
- Clear vegetation around fences, sheds, outdoor furniture, and play structures.
- Create fuel breaks with non-flammable walkways, paths, and driveways.
- Isolated groupings of deciduous trees or shrubs are best to provide screening and privacy.

Extended Zone (30-100 feet):

- Thin trees to a minimum of 12 feet between tops of trees to break up continuous fuels. Spacing recommendations may increase due to slope, tree species, and other site conditions.
- Remove small conifers growing between mature trees to create a separation between ground vegetation and mature tree branches.
- Remove leaf and needle debris from the yard.
- Keep grasses and wildflowers under 8 inches in height.
- Clear vegetation from under large stationary propane tanks.
- Remove vegetation adjacent to storage sheds or other outbuildings.
- Maintain space clear of vegetation on either side of your driveway and access roads so that emergency vehicles can reach your structures. Trim trees & shrubs overhanging the driveway or road to maintain 15 feet of vertical clearance across the entire width of your driveway.



Outer Zone (100-200 feet):

- Create and maintain 6 feet of horizontal spacing between the tops of trees.
- Remove small seedlings and saplings growing between and underneath mature trees.
- Proper thinning and pruning in this zone will make a significant difference in protecting your home and other structures.
- Re-sprouting of shrubs will happen; monitor re-sprouting regularly to guard against the creation of ladder fuels. Thin and prune when necessary.
- Remove dead trees and shrubs.
- Trim back trees and brush along all access roads so that there is 15 feet free of vegetation to maintain clearance for emergency vehicles
- Dispose of heavy accumulations of ground litter and debris.
- Make sure your address is clearly visible from the road

Landscape

Preparing your land for wildfires:

By preparing your operation for wildfire throughout the year, you can help to slow the spread of wildfire on your property and help to improve the chances of successful suppression. Reduce contiguous fuels by cutting fuel breaks in fields and timber, and having water trucks and pumps stashed and primed during fire season. Make sure that your friends and family know where the fuel breaks and staged equipment are in the case of an emergency.



Controlled Burns

To further reduce fuels, help improve grazing, nutrient availability, and soil water retention, consider implementing prescribed burns in the spring, before and during ‘pre-green up’ fuel conditions, when vegetation is receptive to a low intensity burn, and before relative humidity and fuel moisture levels are low. Prescribed burns require precise timing, thorough planning, and an experienced crew of participants. If you are interested in getting fire on your property, it is important that you work with professionals or with those who have significant experience managing controlled burns.

Grazing for Fuel Reductions:

Grazing around your home and adjacent buildings can greatly reduce the quantity and size of available fuels. Strategic grazing areas in need of protection can slow the spread and reduce the intensity of wildfire. Grazing on the borders of your property can also be helpful in reducing the spread of wildfire as it approaches your land. Fuels that are closer to the ground spread fire slower, are easier to contain, and throw less embers.



Forestry:

If your property includes woodlands, create a forest management plan. A forest management plan can be beneficial to landowners in many ways. A well-managed forest can provide timber, increased grazing for livestock and wildlife, improve forest health and resilience, and reduce fire severity on your property.

In order to create a management plan for your forest, it is important to identify your management intentions and what steps can be taken to achieve your goals. If you are unfamiliar with forest ecology and/or forest management, a great place to start is contacting your local service forester. A service forester will provide a free site visit and consultation to help you understand how your forest can be managed to reach desired outcomes. Service foresters can identify what tools can be utilized to improve stand health, as well as possible funding opportunities to help you reach your goals.



To contact your local service forester visit: dnrc.mt.gov/serviceforestry



Evacuation

Being prepared for evacuation is a critical part of wildfire preparedness. Make sure all family members and employees are familiar with these plans. Use this checklist to get your operation ready. Build an emergency contact list of neighbors, friends, family members, insurance provider, and local emergency response units.

When evacuating, be sure to leave your lights on so emergency responders can see your home, important information such as maps that you have left behind, and the surrounding property.

Before the Fire:

Plan and Practice

- Create a communication plan with all family and personnel.
- Appoint an out-of-area point of contact to update during a wildfire.
- Designate emergency meeting locations and ensure that everyone is aware of set locations.
- Plan and practice at least two evacuation routes. Ensure all family and employees are familiar with evacuation routes.
- Conduct a mock evacuation yearly.
- Protect your investment with insurance.
- Have fire extinguishers and other tools (shovels, rakes, water pumps, buckets, hoses, ladders) on hand and train personnel to use them.
- Familiarize yourself and others with the location and use of gas, electric, and water main shut-off controls.
- Consider pets when creating an evacuation plan.
- Have an emergency plan specifically for farm animals. Refer to the Livestock section for more information.

Build Emergency “Go Kits”:

- N95 respirators
- Include personal protective equipment (PPE) to wear during evacuation: bandana, goggles, leather gloves, long shirt and pants (cotton or wool), sturdy leather boots, cotton hat. Natural fibers, especially wool, are less likely to ignite and will not melt.
- Flashlight and headlamp
- Extra car keys, credit cards, and cash
- Maps marked with evacuation routes



- Prescription medications
- Spare eyeglasses and contact lenses
- First aid kit
- A dedicated toolbox with a shut-off wrench, pliers, and all-purpose knife.
- Battery powered AM/FM radio
- Two way “walkie-talkie” radios
- Spare batteries
- Copies of important documents (birth certificates, passports, insurance policies, evacuation and property maps)
- Water bottles and food
- Pet food and water, leashes, pet supplies, and medications
- Sanitation supplies
- Change of clothing
- Spare chargers and battery packs (cell phones, laptops)

When evacuating

- Monitor fire weather conditions and fire status.
- Stay tuned to your TV or local radio stations for updates or check appropriate websites.
- Alert family and personnel to any changes in situation.
- Evacuate early. Leave when advised to leave by local authorities. Delaying evacuation time may jeopardize your life and the lives of responders.



- Turn on irrigation.
- Evacuate livestock.

2. When evacuating, always:

- Keep your cell phone fully charged
- Leave a note with your contact information and out-of-area point of contact where emergency responders can find it.
- Check on neighbors and alert them to prepare for evacuation.
- Dress in the PPE in your Go Kit
- Carry car keys, wallet, ID, cell phone and spare batteries.
- Load vehicles with emergency supplies and Go Kits
- Drink plenty of water to stay hydrated.

3. If time allows

- Tape property map to the inside of a front-facing window and/or mailbox.
- Open/unlock gates to allow livestock to escape and to give firefighters access.
- Move equipment into safe zones that are clear of vegetation.
- Close all doors and windows (leave them unlocked) and turn on all lights inside and out of homes, barns and other structures.
- Shut off propane tanks.
- Gather other irreplaceable, easily carried items, such as family photos and small heirlooms.

Livestock

There are several options for protecting or evacuating livestock; having a plan in place before a fire could make all the difference. Shelter and evacuation options vary greatly depending on the type and number of livestock you have, and your ability to mobilize them. For all options, ensure you have a minimum of 30 days of feed for animals safely stored on your property in the instance that fire disrupts typical feeding routines.

Sheltering livestock in a structure. This option means keeping animals in a structure on the farm/operation, such as a barn, where they will be protected while personnel evacuate. This may be the best option if home preparedness measures, sprinklers, and other protections are in place at the time of the emergency. Such measures include:

- Reducing or removing combustible materials in the 30-foot surrounding farm structures.
- Building or retrofitting structures with fire resistant materials.
- Installing sprinkler protection with suitable water pumps and backup power.
- Ensuring that animals will have access to food sources, water, and ample living space. Keep in mind you may not be able to return for many days.
- Practice setting this up and moving animals to structure.
- Act early. Begin relocation as soon as danger is apparent

Moving livestock to an on-site outdoor location. Under this alternative, some or all animals would be moved to a pasture, open field, or other outdoor area that would provide protection from the threat. The outdoor location should include/be:

- A fenced area adequate to contain the number livestock.
- As far from nearest timber as possible
- Free of combustible fuels (this means either mowed, grazed to stubble, plowed, or irrigated).
- Enclosed with a fire-resistant fence.
- Free of barbed wire.
- Free of overhead power lines and other falling hazards.
- Enough water and feed for 3 days.
- More than one route in and out.



Relocating livestock off site: Relocating livestock off site means moving them off the farm/operation and away from danger. In a situation where a wildfire threatens a large area, this may require moving animals out of the region

- Identify one or more “buddy farms” that have agreed to receive and care for animals. These arrangements can be documented in writing. It is important they be in a different area not likely to be impacted by the same wildfire. Have two alternative routes to each identified “buddy farm”.
- Identify and have ready needed transportation for animals.
- Select a method for quickly identifying farm animals that do not already have ear tags, brands, or other identifying marks. This could mean painting on hooves or collaring.
- Determine transport equipment required to move selected animals, appropriate loading facilities, and ability to maneuver haulers in and around the farm.
- Act early. Give yourself plenty of time to evacuate animals.

Free the animals. In some situations, it may be best to open gates and cut fences to allow animals the freedom to protect themselves. This may be the only option if there is no time or other options, it is safe for you to do so, and the freed animals would not endanger others such as motorists on a roadway. Notify emergency personnel that animals will be loose. Be prepared to mark animals by painting hooves or collaring for later identification.



Resources

1. For Fire Restrictions, Current Fire Info and more visit <https://www.mtfireinfo.org/>
2. More Information on Animals <https://www.halterproject.org/>
3. Post Fire Recovery <https://www.farmers.gov/protection-recovery/wildfire>
4. Air Quality <https://svc.mt.gov/deq/todaysair/>
5. DNRC Service Forester <dnrc.mt.gov/serviceforestry>
6. Crop recovery services/insurance: <https://www.fsa.usda.gov/programs-and-services/disaster-assistance-program/noninsured-crop-disaster-assistance/index>

Looking for more?

Use the Farmer's Campus "Wildfire Resilience Planning Workbook" to create an in-depth wildfire preparedness plan for your operation: <https://farmercampus.com/fires/> (scroll to the section titled "Your Wildfire Preparedness Workbook")



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