



FIRE SAFETY

QUICK REFERENCE GUIDE



FARM SITE FIRE SAFETY

PREPARE YOUR PROPERTY

- Keep your property & buildings tidy - reduce garbage and clutter
- Maintain grass to 10 cm in height within 10 m of any structure
- Maintain (cut) vegetation and trees under and beside power lines
- Cut grass in ditches to 10 cm in height or down to the soil



- Create a fuel break between ditches and structures
- Turn off electric fences during high fire hazard conditions
- Place fuel tanks, wood piles, and combustibles at least 10 m from any structure

- Ensure your blue rural address sign is clearly visible from the road
- Know your legal land description for your farm site and building/operating sites
- Know where emergency services can access your farm site and other building/operating sites



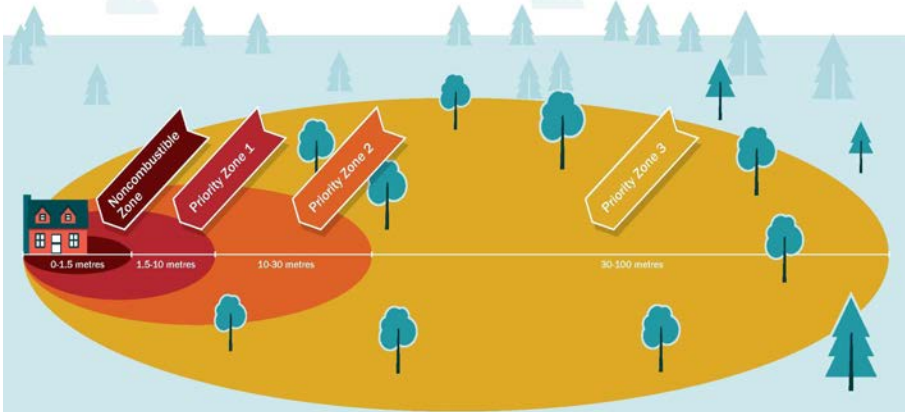
- Ensure emergency vehicles can access your farm site and building /operating sites
- Clearly mark water sources for emergency use
- Make sure emergency vehicles can easily access water sources



FIRESMART YOUR PROPERTY

WHAT CAN I DO TO REDUCE MY RISK?

FireSmart's Home Ignition Zone is a good way to start reducing your risk from potential grassfire damages.



"Home Ignition Zone" by FireSmart Canada, used under CC

NON-COMBUSTIBLE ZONE (0 TO 1.5 M)

- Maintain a 1.5 m non-combustible surface around each building and attached structures
- Use rocks, concrete or non-flammable materials for ground cover
- Remove all flammable materials (leaves, dead-fall, etc.)
- Avoid woody shrubs, trees and firewood in this area

PRIORITY ZONE 1 (1.5 TO 10 M)

- This is a fire-resistant area
- Plant low-density fire-resistant plants and trees
- Use rock instead of mulch/bark for filling tree beds
- Keep grass maintained to 10 cm in height
- Enclose deck or place gravel underneath to create a fire-resistant area
- Don't place burn barrels, fire pits, or fuel storage in this area
- Create a break between wood fences and structures with metal or non-combustible materials



FIRESMART YOUR PROPERTY

WHAT CAN I DO TO REDUCE MY RISK?

FireSmart's Home Ignition Zone is a good way to start reducing your risk from potential grassfire damages.

PRIORITY ZONE 2 (10 TO 30 M)

- Limb all evergreen trees up 2 m with a crown spacing of 3 m
- Keep grass maintained to 10 cm in height
- Burn barrels and fire pits need to adhere to fire services standards
- Remove all dead-fall and debris from this area

PRIORITY ZONE 3 (30 TO 100M)

- Firebreaks are put in this zone
- Thin and prune all shelter belts
- Keep grass maintained to 10 cm height
- Maintain and cut ditches to 10 cm height

- Most rural properties have multiple buildings
- Prioritize the most important structures
- Structures may have zones that overlap





GRASSFIRE SAFETY FACTS

WHAT IS A GRASSFIRE?

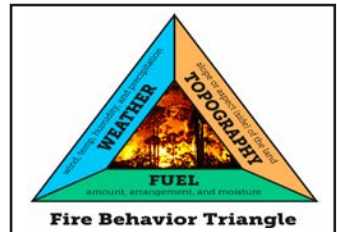
- Grass is a fine vegetation type - fire burns through it faster and starts easier than heavy fuels
- Grassfires can start quickly and spread rapidly - at times traveling more than 10 km/hr
- Grassfires generate enormous amounts of heat - the taller and drier the grass, the more intense the fire



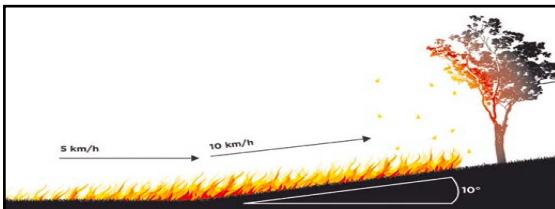
PC: C. Klatt

WHAT FACTORS AFFECT GRASSFIRES?

- The Fire Behavior Triangle describes how fuel ignites, flame develops and fire spreads
- Grassfires are more likely when there are the right conditions:
 - Weather - hot, dry, windy
 - Topography - slope or coulee
 - Fuel - lots of cured material



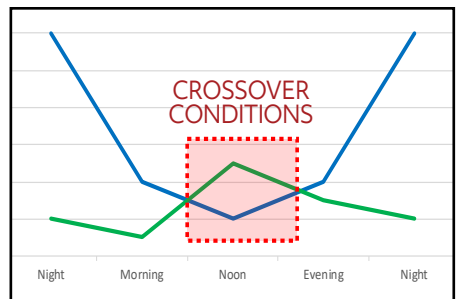
"The Fire Behavior Triangle" 2017 from <https://learn.weatherstem.com/modules/learn/lessons/121/12.html>



"The effect of upslope" by State of Victoria (Country Fire Authority), used under CC

- Grassfires move faster on slopes than on flat ground
- Slopes increase wind speed - increasing fire rate of spread

- Extreme fire hazard conditions (crossover conditions) exist when **ambient relative humidity** is less than **ambient air temperature**
- Crossover is an indicator of extreme burning conditions and extreme grassfire risk





GRASSFIRE SAFETY FACTS

GRASS CURING RATES AND GRASSFIRES

- Grass curing is the process of grasses dying and drying
- The browner a grass, the more cured it is
- The more cured a grass is, the more intensely it will burn and the faster the fire will spread
- Grasses respond quickly to changes in air moisture - they absorb moisture from damp air overnight and lose moisture very quickly in extreme conditions
- Cured grasses can be ready to burn very early in the day



0% CURED



50% CURED



100% CURED

MATTED VS. STANDING GRASS

- Grasses that are matted versus grasses that are standing act differently in grassfire scenarios
- Generally, matted grasses burn slower than standing grasses



MATTED GRASS

- Common in early spring
- Burns slower (less surface area)



STANDING GRASS

- Common in late summer/fall
- Burns faster (more surface area)



EQUIPMENT FIRE SAFETY

KNOW THE CONDITIONS

- What are and how dry are fuels?
- What are current/forecasted weather conditions?
 - Humidity
 - Temperature
 - Wind
- Is there a fire ban/restriction in place?



KNOW THE RISKS

- Fires start from material collecting on hot engine components
- Fires start from sparks & rock strikes
- Fires start from component failures
- Extreme fires are more likely during extreme conditions: high temps, low relative humidity, high winds

FARM EQUIPMENT CHECKLIST

- Minimize equipment activity during high fire hazard conditions (hot, dry, windy, low relative humidity)
- If equipment must be used in high fire hazard conditions, try to work outside of peak hazard times
- Maintain your equipment in clean and good working condition
- Park vehicles in areas with no combustible materials
- Carry a fully functioning extinguisher, firefighting tool, and water on every piece of equipment
- Let equipment cool off before leaving it or bringing into a building
- Never leave running equipment unattended
- Carry a cell phone (or radio) and have emergency contacts programmed in it
- Know where you are (legal land description), potential water sources and field access points for emergency services
- Have an emergency response plan in case of equipment fire



FARM ANIMAL FIRE SAFETY

PLAN AHEAD

- If you have farm animals or livestock, you should make animal emergency plans
- Practice your plans before you need them
- Know when you need to make a decision - moving farm animals & livestock takes time and equipment



KEEP ON PROPERTY

1

- Maintain a fuel-reduced area (less than 10 cm height) to move animals to with a continuous & maintained firebreak around it
- Keep the fuel-reduced area as wet as possible
- Ensure all animals are outside of structures
- Keep enough feed and water in the area in case you evacuate without the animals

REMOVE FROM PROPERTY

2

- *If you have time - animals in danger means you are in danger*
- Know what you are moving - keep a current inventory
- Evacuate to a planned site outside the danger area
- Keep hauling/transporting equipment in working order, fueled, and ready to go

CUT THEM LOOSE

3

- *You won't have a lot of time - make sure your plan reflects this*
- Know what you are cutting loose - keep a current inventory and make sure animals are identified
- Know where the farm animals & livestock are coming from (legal land description)
- Cut fences to give farm animals & livestock a chance to escape the fire
- Consider fire insurance for your farm



FEED STORAGE & FIRE SAFETY

WHAT CAUSES BALE FIRES?

Bale fires happen in all kinds of baled feed - new or old, hay or green-feed, stored inside or outside.

Bale fires occur when bales have excessive moisture (above 20%). This moisture allows respiration to continue, creating excess heat and bacteria growth.

With enough bacteria activity and oxygen, enough heat is created to cause spontaneous combustion.



HOW CAN I PREVENT A BALE FIRE?

1. Make sure you are baling at moisture levels 15% or less
2. Check your moisture levels throughout the day while baling
3. Check internal temperature of bales (less than 54°C)
4. If you are purchasing feed, know the history of the bales and check internal temperature regularly
5. Store your bales away from major roadways and other areas with easy public access
6. Store your bales away from power lines and other potential ignition sources
7. Store your bales in multiple locations with smaller quantities at each location
8. Keep the ground around your bale storage area well maintained with reduced (under 10 cm height) or no combustible materials
9. Consider fire insurance for your feed stores





FIREBREAKS & FIRE SAFETY

WHAT IS A FIREBREAK?

A firebreak is a strip of land with all flammable materials removed. It may be constructed before or during a fire for the sole purpose of controlling the fire.

Firebreaks facilitate access to a fire, and can slow or stop a fire.



HOW DO I MAKE A FIREBREAK?

1. Clear debris to bare soil to provide a continuous barrier between your farm or building site and a potential encroaching grassfire
2. Use a disc or cultivator to make your firebreak. Be sure to cut grass or vegetation down to 10 cm and take 2 passes (opposite directions)
3. If using a road as a firebreak, ensure the road does not have vegetation or grass on it
4. Burnt firebreaks can be effective, but come at a higher risk of out-of-control fires. Burnt firebreaks are only a temporary measure as grass will grow back.
5. Maintain your firebreak down to mineral soil - you need to ensure it remains vegetation free throughout the fire hazard period
6. If a slope is present, increase the width of your firebreak
7. Use natural firebreaks and barriers if available - creeks, rivers, roads

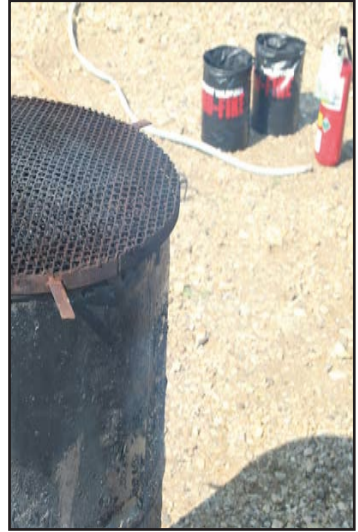




BURNING SAFETY

BURN BARREL CHECKLIST

- Never burn if there is a fire ban or restriction
- Place your burn barrels at least 10 m away from any structure.
- Have a 3 m radius of non-combustible materials and secure the barrel on all sides
- Have a metal grate on top with 7-16 mm mesh spacing
- Have your water source/tools/fire extinguisher ready
- Don't burn if winds exceed 10 km/hr
- Never leave any fire unattended
- Take materials to a waste transfer station if it is not safe to burn



BURN PIT CHECKLIST

- Never burn if there is a fire ban or restriction
- Have a 3 m radius of mineralized soil with no combustible materials surrounding your pit
- Get a controlled burn notification and follow it's conditions
- Have your water source/tools/method for extinguishing ready
- Don't burn if winds exceed 10 km/hr
- Never leave any fire unattended
- Check for hot spots for 10 days after the burn is complete



Get your controlled burn notification *before* you burn at www.specialareas.ab.ca



BACKYARD FIRE SAFETY

BACKYARD FIRE CHECKLIST

- Never have a fire if there is a fire ban or restriction
- Place your fire-pit at least 10 m away from any structure
- Have a 3 m radius of non-combustible materials around your fire-pit
- Fire-pits should be no larger than 0.6 m in diameter and non-combustible material
- Flames should not get higher than 1 m
- Burn clean and dry wood - not garbage
- Be ready to put out the fire - have a water hose, shovel and other tools on hand
- Never leave any fire unattended



SOAK IT. STIR IT. SOAK IT AGAIN.

Make Sure Your Fire Is Out

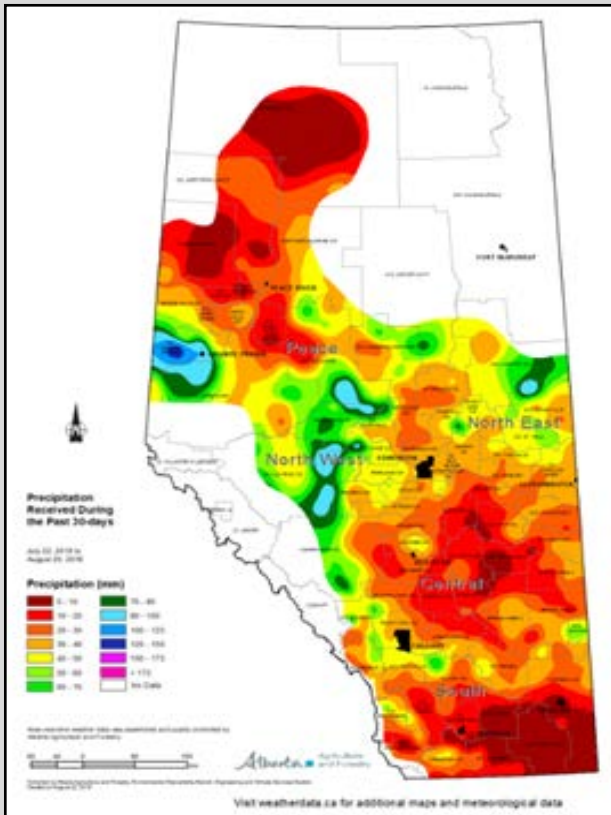
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GRASSFIRES & WEATHER

MONITOR YOUR WEATHER CONDITIONS

- Current and forecasted weather conditions play a major factor in grassfire risks
- Keep informed of current and forecasted weather conditions at <http://agriculture.alberta.ca/acis/climate-maps.jsp>
- Extreme weather conditions are usually accompanied with fire restrictions and bans
- The more extreme the weather conditions, the more likely a fire will occur and the more dangerous it could be
- Always check www.albertafirebans.ca for current fire restrictions and bans in your area

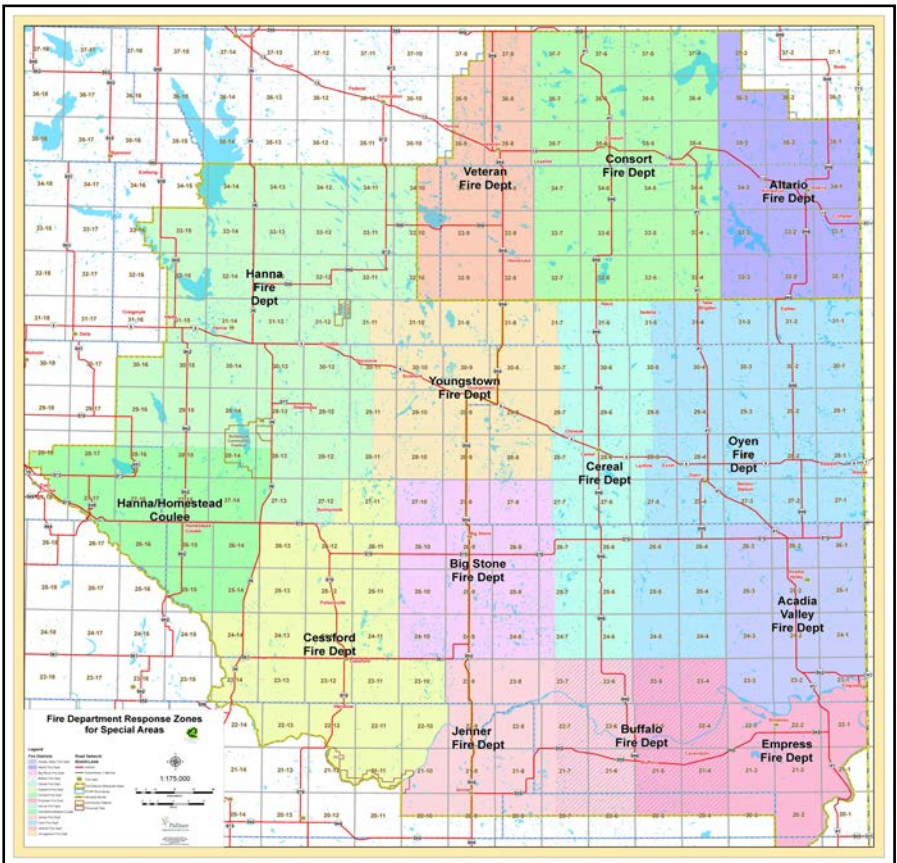




FIRE DISTRICTS

SPECIAL AREAS FIRE DISTRICTS

- Special Areas has 13 fire districts and volunteer-based fire departments
- Special Areas has a full-time Fire Chief and Deputy Fire Chief to support 14 rural fire departments
- Special Areas partners with neighboring municipalities to fund emergency services capital and operating expenses



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