When given the opportunity, grizzly and black bears will eat grain and livestock feed to supplement natural foods. As a farmer or rancher, bear-proofing your grain storage is one step that you can take to reduce the cost and safety risks associated with living with large carnivores.

This document has been developed by the Waterton Biosphere Reserve (WBR) to provide information on how to make your grain storage areas more bear-proof; recommendations below are intended to deter both grizzly and black bears.

Grain and feed storage facilities can hold thousands of dollars’ worth of agricultural products. Granaries come in a variety of shapes and sizes and are most often made of wood or metal. Wood and metal granaries with wood floors are not bear-proof; bears can rip out floors, tear out wood walls, and bend typical factory doors to gain access to the stored grain and feed.

By installing bear-proof retrofits, bear access to stored agricultural attractants can be eliminated. As a result, the risk to human safety and economic impact can be reduced. For wood granaries, electric fencing is the only bear-proofing option. For corrugated metal granaries, floor and door upgrades can often eliminate bear access.
CORRUGATED STEEL GRANARIES

BEAR-PROOF FLOORS

Bears are powerful animals and can rip out or dig under wood floors to gain access to stored grain and feed. Upgrading wood floors of corrugated steel granaries to concrete, steel, or hopper bottoms, can prevent bear access.

CONCRETE FLOOR

Metal granaries with wood floors can be bear-proofed with a reinforced concrete floor. One option is to pour concrete into a mould, then lift and bolt the granary onto the new concrete pad. To increase longevity of the concrete, create a new gravel pad. Another option is to use the existing wood floor and granary walls as the concrete “mould” and pour concrete inside of the bin. This reduces storage capacity by a few bushels but does not require a crane for lifting the granary. For both options, concrete should be 4-5 inches thick, with rebar supports.

STEEL FLOOR

Steel floors are a bear-proof alternative to concrete floors. Steel floors can be purchased from a manufacturer or be custom made. Many manufacturers make steel floors for delivery, and they can be delivered whole or in two halves.

To install any steel floor, a crane is required to lift the bin off the old foundation and onto the new foundation. To increase the floor’s longevity, prepare a new gravel pad. If installing a steel floor with raised sides, this will increase the bin’s storage capacity but it will also raise the height of the door. The new door height may be impractical and the frame may need to be lowered or a gravel ramp installed.

HOPPER BOTTOM

Corrugated metal bins can be lifted onto hopper bottoms as an alternative to flat bottom bins. Generally, hopper bottoms are more expensive than concrete or flat bottom steel options, but because the system is gravity fed, moving grain and feed is less labour intensive. To ensure the hopper bottom bin does not get blown over when empty, it should be anchored to the ground using a concrete slab or pilings, steel pilings, or cable or ground tether. All hopper bottoms bins should have a locking slide gate to prevent bear access.

Remember, installing a hopper bottom will change the auger length needed to fill your granary.
BEAR-PROOF DOORS

For most corrugated steel granaries, the factory-produced door is not bear-proof; many have a lip that bears can get their claws under and bend the doors. In 2010, local ranchers and wildlife managers helped design a bear-proof door for corrugated steel granaries. The bear-proof doors are made of 12 gauge sheeting with a gravitational latch and riser, like many garbage cans used in national parks. The doors are 30.75”x 47.75” with a welded hinge assembly.

Other door sizes can be accommodated by modifying these doors, or by building a custom door. Any custom-made door should meet the bear-proof specifications; make sure the door opens outward, there are multiple bolts or latch mechanisms, the frame is inset, and the door is made of at least 12 gauge steel sheeting. No matter what type of latches or bolts are used, make sure the door is shut and the locking mechanisms are fully engaged.

GRANARY REPLACEMENT

If your granary is beyond repair, a full replacement may be necessary. All hopper bottom bins, both smooth-wall and corrugated, are bear-proof as long as the slide gate locks.

If purchasing a new flat bottom granary, remember that a bear-proof door and steel or concrete floor will need to be installed.

Sea Cans, or steel shipping containers, are generally less expensive than traditional granaries and are proving to be bear-proof. Sea Cans can be purchased in a variety of lengths (generally 20’ – 40’) and heights (High Cubes, for example) with doors at one or both ends. The standard double swing doors are bear-proof and do not need to be adjusted. A number of bear-proof modifications to the Sea Can can be made to increase utility such as a pony wall to hold grain or feed away from the door, rooftop auger holes, and additional access doors. Haul-All Equipment has manufactured a walk through man door for WBR with gravitational latch and riser with 12 gauge sheeting, similar in design to bear-proof doors used in corrugated metal granaries.
**BEAR-PROOF GARBAGE CANS**

For small amounts of grain and feed or pet food, bear-proof storage options are not limited to traditional granaries. Bear-proof garbage cans are easy to use and move. Bear-proof garbage cans can be purchased from a variety of companies, and vary in size from 32 to 95 gallon storage capacity.

**SMALL STORAGE OPTIONS**

Impact resistant plastic
Bear-resistant latch
Steel reinforced lid

**DRY DRUMS**

Dry drum or plastic overpak containers were originally designed for spill containment but they are increasing in popularity as a bear-proof storage container. They have a screw-on lid and are available in a variety of sizes with 30 to 95 gallon storage capacity. Please keep in mind that dry drum containers are air-tight. Molding may be an issue for contents stored unopened for extended periods of time.

**TAKE STEPS TO CLEAN UP SPILLED OR OLD GRAIN**

When moving grain, spillage is a normal part of the process. Yet spilled grain is also an attractant to bears. Take reasonable measures to clean up grain on a daily basis. In situations with heavy bear traffic and heavy grain spillage, temporary electric fencing around a bear-proof bin may be necessary.

Even if grain has been removed from a bin, trace amounts of grain can still attract a bear. Grain can get stuck in cracks and ferment, which increases odour. If old granaries are not used or cannot be bear-proofed, move bins off site.

**ELECTRIC FENCING**

If a variety of grain bins are in use, consider electric fencing as a bear deterrent. Electric fencing is also an option for grain stored in bags or piles. For more information on electric fencing, see WBR's companion document on "Electric Fencing."

**BEARS ARE RESOURCEFUL**

We are reporting on large carnivore attractant management efforts that have worked so far. Despite these best practices, bears may try and find their way around something that is considered “bear-proof.” If they do, call WBR to discuss possible solutions.

Ensure modifications to your granary are not only bear-proof, but weather proof. Proper maintenance will increase the lifespan of any granary products outlined here.

Bears can detect food from miles away; secured attractants, particularly in the yard site, can reduce bear traffic and improve human safety.

**ADDITIONAL INFORMATION**

If you’re interested in bear-proofing your grain storage and live in Waterton Biosphere Reserve’s program area, you may be eligible for cost sharing. For more information, please email us at info@watertonbioshphere.com or visit our website at www.watertonbioshphere.com.

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