



What to Do if Your Freezer Fails: Preserving Food in an Emergency

by Sarah R-P. Lewis

Though many people in Alaska preserve perishable foods by canning and drying, Alaska's freezers are well used and typically very full. Freezing foods is certainly the easiest method of food preservation, but not without pitfalls, especially in the small, remote communities of Alaska.

Freezers require power. In Alaska's small communities, power can be quite expensive. But most people are willing to pay this cost to easily preserve their harvests of Alaska's seasonal bounty, such as fish, game and berries.

Freezers can fail. Though durable in general, every freezer will eventually fail. Parts and repair services are hard to come by in many communities, and shipping a new freezer might take more than a few days.

Power can fail. Power outages of more than two hours are rare nowadays, but in communities powered by generators, longer outages do happen and should be prepared for.

In general, a half-full freezer with a closed door can keep food cold enough for one day. A full freezer can keep it cold enough for two days. If you know or suspect that the outage will be longer than two days, you need to take steps to save your food. But the very first step you take should be prevention.

STEP 1: PREVENTION AND PREPARATION

Because food is expensive in Alaska, a full freezer is a major financial investment. But money is probably not the only consideration: Time and the cost of gear to harvest fish and other Alaska foods are also significant investments you need to protect.

Here are some things to do to prevent or minimize



food losses before your freezer or power fails.

- 1. Purchase a thermometer.** Purchase a refrigerator/freezer thermometer and keep it in the freezer. If your freezer goes out and is off for some time, you can see how warm the freezer has become. Knowing the highest temperature that food has reached is the most important factor in determining whether the thawed food in your freezer is safe. Having a freezer thermometer also gives you more control over the quality of your frozen food. Keep the freezer temperature at zero degrees. **TIP:** Keep a bag of ice cubes visible in the freezer. If the freezer ever loses power and then regains it, the cubes will melt and refreeze. If you leave your home for a vacation or extended period, this might be the only way you'll know there has been a failure and you can check your food for signs of spoilage before using it.
- 2. Check the power source.** It's best to plug your freezer into a dedicated outlet that is not connected to a circuit protected by a GFI (ground fault interrupter) device. GFIs are easily

tripped by power surges, which can shut off power to your freezer. Homes in small Alaska communities should consider having a backup generator large enough to power the freezer, in addition to other potentially necessary items, such as heaters or a stove.

3. **Anticipate power failures.** If you anticipate an extended power failure (e.g., forecast snowstorm, construction in the area), reduce the freezer temperature to minus 10 or minus 20°F. The colder the food, the more time it takes to thaw.
4. **Make sure your new freezer has an alarm.** If you plan to purchase a new freezer, consider models that come with an alarm. Regardless of the reason the freezer is off, the alarm will sound to warn you if the temperature rises significantly. Alarms can also be purchased separately, including alarms that connect to smartphone apps.
5. **Lock the door.** Keep the freezer door locked if there are small children in the household. This prevents children from leaving the door open. Make sure that the lock cannot be accidentally engaged from inside the freezer.
6. **Check it periodically.** Check the freezer occasionally to ensure it works properly — especially if the freezer is not in an area you walk by daily. Make it part of your daily routine by keeping some regularly used items in it.
7. **Locate an ice source or alternate freezer site.** Locate a source of ice or dry ice or a friend or local store with freezer space available for your use, if needed. If you locate these sources in advance, your stress will be lower if your freezer is out of operation for a few days.
8. **Be prepared to preserve your food.** If there isn't a source of ice or a spare freezer available, or if a communitywide power outage is possible, keep canning and other preservation supplies on hand to preserve food when there is no chance of using your freezer soon.



STEP 2: UNDERSTAND FOOD SAFETY BASICS

Perishable foods, including milk, meat, poultry and eggs, should not be stored between 40°F and 140°F for more than two hours. To remain safe, these foods must either be cooked or refrozen before the two-hour mark has been reached.

If a food from a failed freezer still has ice crystals and feels as cold as if refrigerated, or if a thermometer in the freezer or an instant-read thermometer in the food still reads 40°F or lower, it can be safely refrozen, though the quality of many foods may decrease.

If refreezing is not possible because the freezer cannot be repaired in time and there is no alternate freezer site, the food must be cooked for immediate consumption or preserved for shelf-stable storage. Refer to the USDA charts at the end of this document for recommendations on when to discard frozen foods. A chart for recommendations on when to discard refrigerated foods can be found at <https://www.foodsafety.gov/food-safety-charts/food-safety-during-power-outage>.

STEP 3: FOOD PRESERVATION

Most food preservation methods used in non-emergency situations can also be used if the freezer needs to be cleared out quickly. The methods best suited to your situation depend on the equipment and preservation staples you have available, as well as the methods you have experience with. You do not want your first experience curing, smoking or canning meat and fish, for example, to be during



an emergency. Learn about and practice any of the methods you think you will realistically use. A few minutes of preparation and a bit of food preservation knowledge can be worth 100 pounds of frozen sockeye!

GENERAL NEEDS

Potable water: Many, though not all, preservation methods require potable water. Along with your household emergency supply of water, factor in water for cooking and preserving food. Base this extra amount of water on the size and contents of your freezer, and the preservation methods you will likely use. For example, raw, frozen meats and fish do not require water to be pressure canned, but cooked meats and fish, vegetables, fruits and berries do.

Stove top: Electric burners will be fine if only the freezer is offline, but if the home or community power is offline, a propane stove will be needed. Camp stoves and crab cookers work well. Keep extra propane on hand.

Coolers: Keep several on hand for temporary cold food storage or transportation.

Reference materials: Be sure to have tested preservation recipes, methods and processing times for the various types of food you will find in your freezer. And remember that an online version might not be available if your power is out. We recommend these publications:

- “So Easy to Preserve,” 6th edition, University of Georgia Cooperative Extension (available for purchase at your local UAF Cooperative Extension Service office)
- “The USDA Complete Guide to Home Canning,” https://mdc.itap.purdue.edu/item.asp?Item_Number=AIG-539
- Food preservation publications from the UAF Cooperative Extension Service, www.uaf.edu/ces/pubs



WATER BATH CANNING — TO PRESERVE FRUITS AND BERRIES IN JARS FOR SHELF-STABLE STORAGE

Required equipment in addition to general needs items:

- Jars specifically designed for home canning, from half-pint to quart-sized; two-part lids with unused flat lids
- A pot large enough to cover jars with water by one inch and still have room to boil
- A rack to hold jars off the bottom of the pot
- Canning utensils: jar funnel, jar lifter, cloth towels, hot pads

Required ingredients:

- Potable water

Optional ingredients:

- Sugar or honey
- Ascorbic acid or vitamin C tablets
- Powder and liquid pectin to make jams and jellies

QUICK PICKLING — TO ACIDIFY VEGETABLES WITH VINEGAR IN JARS AND WATER BATH CAN FOR SHELF-STABLE STORAGE

Note: Previously frozen vegetables will not make high-quality pickles, but they can be safely

preserved.

Required equipment in addition to general needs items:

- Water bath canning equipment (see above)
- USDA tested recipes for pickling vegetables

Required ingredients:

- Potable water
- Canning and pickling salt
- White vinegar, 5 percent acidity

Optional ingredients:

- White sugar
- Ascorbic acid or vitamin C tablets
- Spices

FERMENTATION PICKLING — TO ACIDIFY VEGETABLES WITH SALT FOR MEDIUM-TERM COLD STORAGE, IF AVAILABLE (NOT SHELF STABLE)

Note: Previously frozen vegetables are safe to preserve, but will not make high-quality fermented pickles.

Required equipment in addition to general needs items:

- Food-grade buckets, jars, plastic containers

Required ingredients:

- Potable water
- Canning and pickling salt

Optional ingredients:

- Spices

PRESSURE CANNING — THE ONLY SAFE WAY TO PRESERVE MEAT, FISH, SEAFOOD, POULTRY, GAME AND UNPICKLED VEGETABLES (AND MIXTURES OF THEM) IN JARS FOR SHELF-STABLE STORAGE

Required equipment in addition to general needs items:

- Jars specifically designed for home canning, from half-pint to quart-sized; two-part lids with unused flat lids
- Pressure canner (not a pressure cooker) with a dial gauge (tested annually) or a weighted gauge
- Rack to hold jars off the bottom of the pot
- Canning utensils: jar funnel, jar lifter, cloth towels, hot pads
- Manufacturer’s manual for use of the pressure canner

Required ingredients:

- Potable water

Optional ingredients:

- Canning and pickling salt
- Spices
- Stock

DRYING — TO PRESERVE MEAT, FISH AND GAME FOR MEDIUM-TERM COLD STORAGE AND FRUITS AND VEGETABLES FOR LONG-TERM, SHELF-STABLE STORAGE

Required equipment in addition to general needs items:

- A dehydrating system. The options range from screens for outdoor/sun drying (or drying in a well-ventilated heated room) to electric dehy-



drators and ovens. Throughout most of Alaska, it is challenging to dry foods outdoors, even in the warmer seasons.

Required ingredients:

- Potable water
- Canning and pickling salt

Optional ingredients:

- Ascorbic acid
- Sugar or honey
- Brining and marinating ingredients

MEAT PICKLING, CURING AND SMOKING — TO PRESERVE MEAT, FISH AND GAME FOR MEDIUM-TERM COLD STORAGE

Required equipment in addition to general needs items:

- Food-safe pans, trays, containers
- A smoker
- Wood chips for the smoker
- Manufacturer’s manual for use of the smoker

Required ingredients:

- Potable water
- Canning and pickling salt
- Curing nitrates

Optional ingredients:

- Brining and marinating ingredients

FOOD PRESERVATION NEEDS

	Water-bath canning	Quick/Vinegar Pickling	Fermentation/salt pickling	Pressure canning	Dehydrating vegetables & fruit	Dehydrating meat & fish	Pickling, curing, smoking meat and fish
Potable water	X	X	X	X	X	X	X
Stove top or burner(s)	X	X		X		X	X
Canning/canner manuals	X	X		X			
Canning jars with new flat lids	X	X		X			
Water-bath canning pot with bottom rack & lid	X	X					
Canning utensils	X	X		X			
Canning and pickling salt		X	X			X	X
Vinegar, 5% acidity		X					
Food-grade preparation containers			X				X
Food-grade storage containers or bags			X		X	X	X
USDA/Extension tested recipes		X		X			
Pressure canner with bottom rack				X			
Dehydrator or oven					X	X	
Smoker and wood chips							X
Curing nitrates							X

References: Colorado State University Extension Publication, If Your Freezer Stops, 9.357

FROZEN FOOD DURING POWER OUTAGE SAFETY CHART

Type of food	Contains ice crystals and feels cold as if refrigerated	Exposed to temperatures of 40°F (4°C) or above for more than 2 hours
Meat, poultry, seafood		
Meat, poultry, seafood — all types of cuts	Refreeze	Discard
Stews, soups	Refreeze	Discard
Dairy		
Milk	Refreeze (some loss of texture)	Discard
Eggs (out of shell) and egg products	Refreeze	Discard
Ice cream, frozen yogurt	Discard	Discard
Cheese (soft and semi-soft)	Refreeze (some loss of texture)	Discard
Hard cheeses	Refreeze	Refreeze
Shredded cheeses	Refreeze	Discard
Cheesecake	Refreeze	Discard
Fruits		
Juices	Refreeze	Refreeze (discard if mold, yeasty smell, or sliminess develops)
Home or commercially packaged or blanched	Refreeze (will change texture and flavor)	Refreeze (discard if mold, yeasty smell or sliminess develops)
Vegetables		
Juices	Refreeze	Discard after held above 40°F (4°C) for 6 hours
Home or commercially packaged or blanched	Refreeze (may suffer texture and flavor loss)	Discard after held above 40°F (4°C) for 6 hours
Breads and pastries		
Breads, rolls, muffins, cakes (without custard fillings)	Refreeze	Refreeze
Cakes, pies, pastries with custard or cheese filling	Refreeze	Discard
Pie crusts, commercial and homemade bread dough	Refreeze (some quality loss may occur)	Refreeze (quality loss is considerable)
Other foods		
Casseroles: pasta, rice-based	Refreeze	Discard
Flour, cornmeal, nuts	Refreeze	Refreeze

Continued on page 8

FROZEN FOOD DURING POWER OUTAGE SAFETY CHART

Continued from page 7

Type of food	Contains ice crystals and feels cold as if refrigerated	Exposed to temperatures of 40°F (4°C) or above for more than 2 hours
Breakfast items: waffles, pancakes, bagels	Refreeze	Refreeze
Frozen meal, entree, specialty item (pizza, sausage and biscuit, meat pie, convenience foods)	Refreeze	Discard

Sarah R-P. Lewis, Extension Faculty, Health, Home and Family Development.

This work is supported by the U.S. Department of Agriculture’s National Institute of Food and Agriculture.


In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA’s TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at How to File a Program Discrimination Complaint and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov.

USDA is an equal opportunity provider, employer, and lender.

More research-based information can be found at:
www.uaf.edu/ces or 1-877-520-5211/907-474-5211




The University of Alaska (<http://www.alaska.edu/alaska>) is an equal opportunity/equal access employer and educational institution. The university is committed to a policy of nondiscrimination (<http://www.alaska.edu/nondiscrimination>) against individuals on the basis of any legally protected status.