

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

*by Sarah Lewis*

Though many people in Alaska preserve perishable foods by canning and drying, Alaska's freezers are very 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 very 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 before your freezer or power fails to prevent or minimize food losses if it

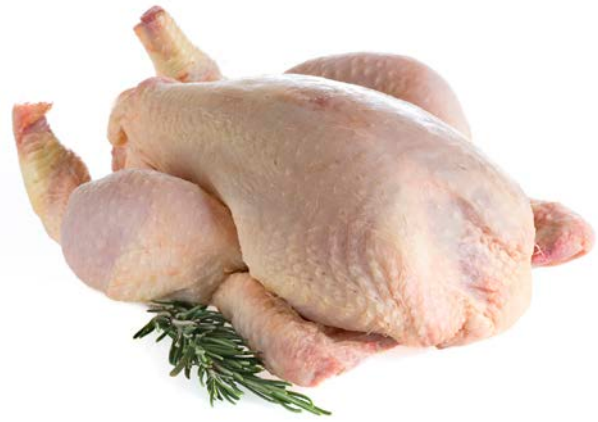


happens. The following is adapted from Colorado State University Extension Publication 9.357:

1. **Purchase a thermometer.** Purchase a refrigerator/freezer thermometer and keep it in the freezer. If your freezer goes out for any reason 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 or not 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 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, shutting 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 like heaters or a stove.

3. **Anticipate power failure.** If for any reason you anticipate an extended power failure (e.g., forecasted snow storm, construction in the area), reduce the freezer temperature to  $-10$  or  $-20^{\circ}\text{F}$ . 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, investigate models that have an alarm. No matter why 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. But make sure that it is a lock that cannot be accidentally engaged from inside the freezer.
6. **Check it periodically.** Check the freezer occasionally to be sure it works properly — especially if the freezer is not in an area that 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  $40^{\circ}\text{F}$  and  $140^{\circ}\text{F}$  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  $40^{\circ}\text{F}$  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. See USDA charts at the end of this document for recommendations on when to discard refrigerated and frozen foods.

## Step 3: Food Preservation

Most of the food preservation methods used in non-emergency situations can also be used if the freezer needs to be cleared out quickly. The methods best for your situation depend on the equipment and preservation staples you have available and what 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.

### General Needs

**Potable water:** Many, though not all, of the 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 off-line, but if the home or community power is off-line 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. For example:

- “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,” [http://nchfp.uga.edu/publications/publications\\_usda.html](http://nchfp.uga.edu/publications/publications_usda.html)
- Food preservation publications from the UAF Cooperative Extension Service, [www.uaf.edu/ces/pubs](http://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 dehydrators 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

**Final note:** A few minutes of preparation and a bit of food preservation knowledge can be worth 100 pounds of frozen sockeye!

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The following charts are from the USDA Food Safety and Inspection Service publication “Keeping Food Safe During an Emergency.”

## Refrigerated Foods: When to Save and When to Throw it Out

FOOD	Held above 40°F for over 2 hours
<b>MEAT, POULTRY, SEAFOOD</b>	
Raw or leftover cooked meat, poultry, fish or seafood; soy meat substitutes	Discard
Thawing meat or poultry	Discard
Meat, tuna, shrimp, chicken, or egg salad	Discard
Gravy, stuffing, broth	Discard
Lunchmeats, hot dogs, bacon, sausage, dried beef	Discard
Pizza, with any topping	Discard
Canned hams labeled “Keep Refrigerated”	Discard
Canned meats and fish, opened	Discard
<b>CHEESE</b>	
Soft cheeses: blue/bleu, Roquefort, brie, Camembert, cottage, cream, Edam, Monterey Jack, ricotta, mozzarella, Muenster, Neufchatel, queso blanco, queso fresco	Discard
Hard cheeses: cheddar, colby, Swiss, Parmesan, provolone, Romano	Safe
Processed cheeses	Safe
Shredded cheeses	Discard
Low-fat cheeses	Discard
Grated Parmesan, Romano, or combination (in can or jar)	Safe
<b>DAIRY</b>	
Milk, cream, sour cream, buttermilk, evaporated milk, yogurt, eggnog, soy milk	Discard
Butter, margarine	Safe
Baby formula, opened	Discard
<b>EGGS</b>	
Fresh eggs, hard-cooked in shell, egg dishes, egg products	Discard
Custards and puddings	Discard
<b>CASSEROLES, SOUPS, STEWS</b>	Discard
<b>FRUITS</b>	
Fresh fruits, cut	Discard
Fruit juices, opened	Safe
Canned fruits, opened	Safe
Fresh fruits, coconut, raisins, dried fruits, candied fruits, dates	Safe
<b>SAUCES, SPREADS, JAMS</b>	
Opened mayonnaise, tartar sauce, horseradish	Discard if above 50°F for over 8 hours
Peanut butter	Safe
Jelly, relish, taco sauce, mustard, catsup, olives, pickles	Safe
Worcestershire, soy, barbecue, Hoisin sauces	Safe

<b>FOOD</b>	<b>Held above 40°F for over 2 hours</b>
Fish sauces (oyster sauce)	Discard
Opened vinegar-based dressings	Safe
Opened creamy-based dressings	Discard
Spaghetti sauce, opened jar	Discard
<b>BREAD, CAKES, COOKIES, PASTA, GRAINS</b>	
Bread, rolls, cakes, muffins, quick breads, tortillas	Safe
Refrigerator biscuits, rolls, cookie dough	Discard
Cooked pasta, rice, potatoes	Discard
Pasta salads with mayonnaise or vinaigrette	Discard
Fresh pasta	Discard
Cheesecake	Discard
Breakfast foods — waffles, pancakes, bagels	Safe
<b>PIES, PASTRY</b>	
Pastries, cream filled	Discard
Pies — custard, cheese filled, or chiffon; quiche	Discard
Pies, fruit	Safe
<b>VEGETABLES</b>	
Fresh mushrooms, herbs, spices	Safe
Greens, pre-cut, pre-washed, packaged	Discard
Vegetables, raw	Safe
Vegetables, cooked; tofu	Discard
Vegetable juice, opened	Discard
Baked potatoes	Discard
Commercial garlic in oil	Discard
Potato salad	Discard

## Frozen Foods: When to Save and When to Throw it Out

<b>FOOD</b>	<b>Still contains ice crystals and feels as cold as if refrigerated</b>	<b>Thawed. Held above 40°F for over 2 hours</b>
<b>MEAT, POULTRY, SEAFOOD</b>		
Beef, veal, lamb, pork, and ground meats	Refreeze	Discard
Poultry and ground poultry	Refreeze	Discard
Variety meats (liver, kidney, heart, chitterlings)	Refreeze	Discard
Casseroles, stews, soups	Refreeze	Discard
Fish, shellfish, breaded seafood products	Refreeze. However, there will be some texture and flavor loss.	Discard
<b>DAIRY</b>		
Milk	Refreeze. May lose some texture.	Discard
Eggs (out of shell) and egg products	Refreeze	Discard

<b>FOOD</b>	<b>Still contains ice crystals and feels as cold as if refrigerated</b>	<b>Thawed. Held above 40°F for over 2 hours</b>
Ice cream, frozen yogurt	Discard	Discard
Cheese (soft and semisoft)	Refreeze. May lose some texture.	Discard
Hard cheeses	Refreeze	Refreeze
Shredded cheeses	Refreeze	Discard
Casseroles containing milk, cream, eggs, soft cheeses	Refreeze	Discard
Cheesecake	Refreeze	Discard
<b>FRUITS</b>		
Juices	Refreeze	Refreeze. Discard if mold, yeasty smell, or sliminess develops.
Home or commercially packaged	Refreeze. Will change texture and flavor.	Refreeze. Discard if mold, yeasty smell, or sliminess develops.
<b>VEGETABLES</b>		
Juices	Refreeze	Discard after held above 40°F for 6 hours.
Home or commercially packaged or blanched	Refreeze. May suffer texture and flavor loss.	Discard after held above 40°F for 6 hours.
<b>BREADS, PASTRIES</b>		
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.
<b>OTHER</b>		
Casseroles — pasta, rice-based	Refreeze	Discard
Flour, cornmeal, nuts	Refreeze	Refreeze
Breakfast items — waffles, pancakes, bagels	Refreeze	Refreeze
Frozen meal, entree, specialty items (pizza, sausage and biscuit, meat pie, convenience foods)	Refreeze	Discard

## 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

**[www.uaf.edu/ces](http://www.uaf.edu/ces) or 1-877-520-5211**

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