

# AFTER A DISASTER



## INFORMATION TO HELP YOU AND YOUR FAMILY RECOVER

**For more recovery information:**  
Texas Extension Disaster Education Network  
<http://texashelp.tamu.edu>

Texas AgriLife Extension Bookstore  
<http://agrilifebookstore.org>

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## Keeping Safe

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- ◆ **Follow public announcements and obey official orders.**
- ◆ **Do not ride, drive, or walk through flooded areas.**
- ◆ **Never go around a police barricade.**
- ◆ **If you must work in or near floodwater, wear a life jacket.**
- ◆ **Wear protective clothing**—a hard hat, goggles, heavy work gloves, and watertight boots with steel toes and insoles (not just steel shanks).
- ◆ **Avoid unstable buildings and structures.**
- ◆ **Beware of electrical and fire hazards:**
  - Never touch any building, car, or other item that is touching a fallen power line.
  - Never touch an overhead power line.
  - Do not burn candles near flammable items or leave candles unattended. If possible, use flashlights or other battery-operated lights instead of candles.
  - Call an electrician or power company to report a downed power line or power outage.
- ◆ **Beware of gas leaks:**
  - Do not use flames or sparking devices until you are sure that no natural gas is leaking in the area.
  - Never turn the gas back on by yourself. Contact your local utility company to restore your gas service.
- ◆ **Prevent carbon monoxide poisoning:**
  - Do not use a portable generator, charcoal grill, camp stove, or other gasoline- or charcoal-burning device in any enclosed or partially enclosed area—even if the area is ventilated. Fans and open doors and windows will not prevent carbon monoxide from building up in the home.
  - If you start to feel sick, dizzy, or weak while using a generator or other gasoline/charcoal burning device, get to fresh air right away. Seek prompt medical care.
- ◆ **Store and transport gasoline safely:**
  - Always use an approved red safety container that has a warning label about the dangers of gasoline. Do not use a glass container or a used metal container that has held other petroleum products.
    - Fill the container to only 95 percent capacity to allow for heat expansion.
    - Before loading a filled, portable gasoline container into a vehicle, make sure that the cap and air vent cap are tight. Secure the container so it doesn't tip in transit.
- ◆ **Beware of wild or stray animals.** Call local authorities to handle them.
- ◆ **Beware of snakes:**
  - Wear snake-proof boots that are at least 10 inches high, or wear snake leggings.
  - Use a poking stick to announce your approach.
  - If you are bitten by a poisonous snake, don't try to treat the bite yourself. Go to the nearest hospital or clinic immediately. Note the appearance of the snake so you can describe it to a doctor.
- ◆ **Avoid mosquitoes and other insects.** Wear long pants, socks, and long-sleeved shirts. Use insect repellents that contain DEET or Picaridin.
- ◆ **Pace yourself and get support.** Try not to work alone.
- ◆ **Prevent injuries:**
  - Use teams of people to move bulky objects.
  - Do not lift anything weighing more than 50 pounds (per person).
  - When lifting heavy debris, bend your knees and lift with your legs, not your back.
- ◆ **Wear sunscreen.**
- ◆ **Treat wounds:**
  - Clean scratches, burns or cuts with soap and clean water.
  - Apply an antibiotic ointment.
  - Seek medical attention immediately if a wound swells or drains and if you have not had a tetanus booster in the past few years.

## Repairing Tree Damage

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- ◆ If damage is relatively slight (one or two main limbs on a healthy, mature tree), prune damaged limbs back to the trunk. Do not prune too heavily. Then wait to see if the tree recovers. Watch for signs of decay at the sites of wounds.
- ◆ Young trees can sustain a lot of damage and still recover. Remove only the damaged limbs.
- ◆ If the main upward-growing limb is broken, more than half the tree's crown (branches and leaves) is damaged, or fewer than half the tree's limbs remain, the tree may not survive. Even if it does, it will not regain its shape. Severely damaged trees should be removed.
- ◆ If in doubt, hire a certified arborist to assess and repair tree damage. Get more than one estimate and ask each person exactly what work they plan to do. Check their references and proofs of insurance.

# Basic First Aid

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## Broken bones

- ◆ While waiting for medical help, stop any bleeding by applying pressure to the wound with a clean cloth, immobilize the injured area, apply ice packs to limit swelling, and treat for shock, if necessary, by having the person lie down with his or her head slightly lower than the trunk and, if possible, the legs elevated.

## Cuts, scrapes, and punctures

- ◆ Wash the wound with soap and water.
- ◆ Apply a bandage to the wound.
- ◆ If the bleeding doesn't stop, put pressure on the wound with the palm of your hand and a clean cloth. Put on a clean bandage after the bleeding has stopped.

## Heat

- ◆ Exposure to excessive heat can cause heat exhaustion, cramps, and, most serious, heat stroke.
- ◆ Symptoms of heat stroke are hot, dry skin, often with red spots; a body temperature of 105 degrees F or higher; confusion and irritability; and chills. Without medical attention the victim may become delirious, unconscious, or even die. Until medical help arrives, move the person to a cool area, soak his or her clothes with water, and fan the person vigorously to cool the body.
- ◆ Symptoms of heat exhaustion are weakness, fatigue, giddiness, nausea, or headache. The skin is clammy and moist. The body temperature may be only slightly higher

than normal. Have the victim rest in a cool place and drink plenty of lightly salted liquids.

- ◆ When there is no power or air conditioning, prevent heat problems by doing strenuous work during the cooler parts of the day and drinking plenty of liquids.

## Stings and bites

- ◆ Wash the wound with soap and water.
- ◆ If possible, identify the animal or insect involved.
- ◆ If the wound is severe or the animal has escaped, take the person to a doctor.
- ◆ Treat minor wounds with over-the-counter medications for stings and bites. Home remedies include ammonia, meat tenderizer, tea tree oil, camphor, and a 50:50 solution of bleach and water.

## Choking

- ◆ Allow the person to cough. Don't pound on his or her back.
- ◆ If the person can't speak or breathe, stand behind him or her and make a fist with one hand. Place your fist just above the person's belly button. Your thumb should be toward the person's stomach.
- ◆ Reach around the person's body and grab your fist with your other hand. Make sure your elbows are pointed out.
- ◆ Quickly pull your arms in and up toward the person's head. This should dislodge the object blocking the airway.
- ◆ Repeat these steps until the person can breathe.

# Operating a Portable Generator Safely

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- ◆ To prevent carbon monoxide (CO) poisoning, never operate a generator indoors or in partially closed areas, even if you think there is enough ventilation. Opening windows and doors will not prevent CO from building to dangerous levels.
- ◆ Place the generator outdoors and away from windows, doors and vents where CO gas can enter the home.
- ◆ Keep the generator dry. Do not expose it to rain or place it on a wet surface. Operate it on a dry surface under an open, canopy-like cover.
- ◆ If anyone in the area where a generator is being used develops a headache, lethargy, weakness, nausea, or muscle aches, get medical help immediately.
- ◆ To prevent electrical shock, dry your hands before touching the generator.
- ◆ Plug appliances directly into the generator or use a heavy-duty extension cord that is rated for outdoor use. Make sure the extension cord is also rated (in watts or

amps) at least equal to the sum of the connected load. Be sure the cord has no cuts or tears and that the plug has three prongs with a grounding pin.

- ◆ Never plug the generator into a wall outlet in a house or other circuit. This could electrocute utility workers and/or neighbors who might be servicing the electrical system.
- ◆ Keep generator fuel out of your home and away from fuel-burning appliances. Turn off the generator and let it cool before refueling. A fuel spill on hot engine parts could cause a fire.
- ◆ Always keep a fire extinguisher near the generator.
- ◆ Never attempt to repair a generator. Only a qualified technician should perform repairs.
- ◆ Do not remove or tamper with safety devices.
- ◆ Do not touch hot engine parts.
- ◆ Keep children away from the generator and the fuel containers.

# Clearing Debris

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- ◆ Landowners are responsible for clearing debris from their own property after a disaster.
- ◆ Contact your city or county government to find out about recycling programs and the schedule for debris pickup.

## Using a chain saw

- ◆ See "Chain Saw Safety" below.
- ◆ Use a sharp saw. Follow the sharpening and maintenance instructions.
- ◆ Wear protective gear, including sturdy, nonslip gloves; high-top boots with nonslip soles (and preferably with steel toes); and a hard hat with face and hearing protection.
- ◆ Make sure the saw has an anti-kickback device. Cut with the lower part of the saw blade, not the tip or nose.
- ◆ Fill a gas-powered chain saw only when the engine is cool. If the saw runs out of gas, let it cool 30 minutes before refueling.

## Pruning

- ◆ Be careful of electric power lines. Leave extensive pruning around power lines to power companies. Do not use pruning equipment with metal handles.

# Chain Saw Safety

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- ◆ Know your saw and how to operate it before you use it. Read and understand the operator's manual.
- ◆ Be sure the chain saw is in good working order. The saw should be sharp and the chain should fit snugly but not be too tight. Make sure all the nuts and screws are tight and all parts are well lubricated. Do not use a saw that doesn't have a working safety mechanism.
- ◆ Fuel the saw in a safe place. Wipe any spilled fuel from the saw before starting the engine.
- ◆ Fill a gas-powered chain saw only when the engine is cool. If the saw runs out of gas, let it cool 30 minutes before refueling.
- ◆ Clear the area of other debris before beginning to saw limbs or trees.
- ◆ Wear sturdy, snug-fitting clothing that gives you freedom of movement. Do not wear anything loose that could catch in the moving chain. Tie back long hair.
- ◆ Wear protective gear, including sturdy, nonslip gloves; high-top boots with nonslip soles (and preferably with steel toes); and a hard hat with face and hearing protection.
- ◆ Before starting the engine, make sure the chain is not contacting anything. Never let the saw rest on your leg or knee when starting the engine.
- ◆ Shut off the motor when you are not using the saw, even if you are moving only a few feet.
- ◆ Always work with a buddy, but never allow someone else to hold the wood while you cut.
- ◆ When sawing down a tree, first determine the direction it will fall. Do not allow trees to fall into other tree branches. Make sure no broken limbs or other trees are caught in the tree you want to cut. Plan an escape route in case the tree jumps off the stump when it is cut. Leave medium-size to large trees to professionals.

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## Chain Saw Safety continued

- ◆ Make sure you have secure footing. If the ground is slippery from rain or steeply sloping, do not cut there.
- ◆ Do not work from a ladder or climb into a tree.
- ◆ Do not work near electric power lines. Leave extensive pruning around power lines to the power company.
- ◆ Be alert at all times. Remember that with the saw running you won't be able to hear someone calling to you.
- ◆ **Kickback is one of the greatest hazards of using a chain saw.** Make sure the saw has an anti-kickback device. To lessen this hazard:
  - Always hold the saw firmly with both hands and keep the left arm as straight and stable as possible.
  - Use a saw equipped with a chain brake or other anti-kickback device.
  - Watch for twigs that can snag the chain.
  - Cut with the lower part of the saw blade, not the tip or nose.
  - Maintain a high saw speed when entering, cutting, and leaving the wood cut.
  - Do not cut above mid-chest height.
  - Do not cut brush or shrubbery.
- ◆ Always shut off the engine before setting down the chain saw, even when you are retreating from a falling tree.

## Supply List for Returning Home

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Before you enter the home, check for gas leaks and damage to the electrical lines. If gas is leaking or the power lines are damaged, do not enter the home. When you return to your home after a flood or damaging storm, you will need items for cleaning up and making minor repairs as well as personal items.

### Cleaning supplies

- ◆ Air freshener, 8- or 9-ounce can
- ◆ Bleach, 82 ounces
- ◆ Bucket, 5-gallon, with lid
- ◆ Cleaner, household, 12- to 16-ounce bottle
- ◆ Clothes pins, 50
- ◆ Clothesline, 100 feet
- ◆ Detergent, liquid laundry, 50 ounces
- ◆ Disinfectant dish soap, 16- to 28-ounce bottle
- ◆ Gloves, latex, 2 pairs
- ◆ Gloves, work, 1 pair
- ◆ Masks, N-95 rating, 5
- ◆ Scouring pads, 5
- ◆ Scrub brush
- ◆ Sponges, 7
- ◆ Towels, cleaning, 18
- ◆ Trash bags, heavy-duty, 33- to 45-gallon, 24-bag roll

### First aid kit

- ◆ Aspirin
- ◆ Bandages, adhesive
- ◆ First aid booklet
- ◆ Gauze
- ◆ Gloves, sterile, 2 pairs
- ◆ Ointments, antibiotic and burn
- ◆ Soap

- ◆ Sunscreen, SPF 30
- ◆ Thermometer
- ◆ Wipes, antibiotic

### Food and snacks

- ◆ See pages 8 and 9 for suggested foods and food storage and preparation supplies.

### Insect repellent that contains DEET

### Medications, prescriptions

### Personal hygiene items

- ◆ Hand sanitizer, alcohol based
- ◆ Soap
- ◆ Toothbrush
- ◆ Toothpaste
- ◆ Towel, bath
- ◆ Washcloth

### Water (at least 1 gallon per person per day)

### Sturdy shoes (with toes and hard soles)

### Tarp, to cover roof damage or use as an outdoor shade

### Tools

- ◆ Ax
- ◆ Chain saw for clearing trees
- ◆ Hacksaw
- ◆ Hammer and nails
- ◆ Pliers
- ◆ Screwdriver
- ◆ Wrench
- ◆ Rope

# Evaluating and Handling Food and Drinks

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- ◆ Check each food or drink item in your home to determine whether it is safe to consume.
- ◆ **Do not taste any food or drink you think is spoiled! If in doubt, throw it out!**

## Throw away

- ◆ All food—even canned goods—and drinks that have been in contact with floodwater
- ◆ Meat, poultry, fish, seafood, eggs, milk, leftovers, soft cheese, refrigerator rolls and biscuits, and other potentially hazardous foods that have been above 40 degrees F for 2 hours or longer
- ◆ Food that has an unusual odor, color, or texture
- ◆ Cans of food that are bulging, opened, dented, or damaged
- ◆ Food or drinks in containers with screw-caps, snap-lids, crimped caps (as on soft drink bottles), twist caps, or flip tops that have come in contact with floodwater

## Disposing of unsafe food

- ◆ **If the garbage collection service is in operation:**
  - Wrap the food tightly in plastic wrap or aluminum foil and place it in a container with a tight-fitting lid.
  - Store the container in an area away from people and animals until it can be collected by your garbage collection service.
- ◆ **If the garbage collection service is not in operation:**
  - Bury the food at least 4 feet deep to prevent animals

from digging it up.

- Bury it in an area that will not be disturbed in the near future and is away from the nearest water well or other open water source (creek, stream, or pond).
- If you cannot bury the food, burn it. Contact local law enforcement officials to learn of county burning laws.

## Freezer items

- ◆ After a power loss, if the freezer temperature was at 0 degrees F or below, a full, well-functioning freezer should be able to keep foods frozen for **2 days**.
- ◆ A freezer that is only half full will keep foods frozen for about **1 day**.
- ◆ If the freezer has an appliance thermometer, check the temperature when the power is restored. If the temperature is 40 degrees F or lower, the food is safe to eat and may be refrozen.
- ◆ Some foods may lose their texture or flavor when refrozen.
- ◆ If the food in the freezer has begun to thaw, check each item to see if it is safe to eat.
- ◆ Most foods and beverages that have ice crystals, except for ice cream and frozen yogurt, can be refrozen.
- ◆ Throw out any food, except hard cheese, that has thawed and has been at 40 degrees F or warmer for 2 or more hours. Hard cheese may be refrozen.
- ◆ Do not rely on taste or smell to decide if something is safe to eat!

# Removing Odors from Refrigerators and Freezers

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- ◆ Remove the food.
- ◆ Take out removable parts and wash them with mild detergent; then rinse and dry. Also wash the door gasket.
- ◆ Wash the inside of the refrigerator or freezer with 1 tablespoon of baking soda in a quart of tap water or with 1 cup of vinegar in a gallon of tap water.
- ◆ Let the surface dry with the door open.
- ◆ If the odor persists, spread baking soda on shallow pans and put them on the shelves of a refrigerator or on the bottom and in baskets of a chest freezer. Leave the appliance open and unplugged.
- ◆ If the odor persists, use activated charcoal. This type of charcoal is extra dry and absorbs odors more quickly than does charcoal used for cooking. It is sold at drug stores and pet supply stores. To use activated charcoal:
  - Place the charcoal in pans or on paper in the bottom of the freezer or refrigerator, and leave it there for several days.
  - Turn the refrigerator on low and run it empty for a few days so odors will be absorbed.
  - If the odor remains, put in new charcoal.
  - When the odor is gone, unplug the appliance and rinse and dry the inside of the freezer or refrigerator.
  - Turn on the freezer or refrigerator, and it is ready for restocking with food.
- ◆ If the odor gets into the freezer's insulation, contact the manufacturer for suggestions on solving the problem.
- ◆ Sometimes nothing can be done to eliminate the odor.
- ◆ Visit this site for additional information: <http://web1.msue.msu.edu/msue/impro2/01500029.html>

# Hand Washing

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## ◆ Wash your hands

- Before preparing or eating food
  - After using the bathroom
  - After changing diapers or cleaning a child who has gone to the bathroom
  - Before and after tending to someone who is sick
  - After handling uncooked foods, particularly raw meat
  - After blowing your nose, coughing or sneezing
  - After handling an animal or animal waste
  - After handling garbage
  - Before and after treating a cut or wound
- ◆ Place your hands in water (warm water if possible) and scrub them with soap for at least 20 seconds. Clean the dirt from under your fingernails. Then rinse your hands and dry them thoroughly with a towel. Air dry them if no clean towel is available.
  - ◆ If the water supply is cut off or has been contaminated, wash your hands in disinfected water (water containing household bleach).
  - ◆ If you have no soap and water, use an alcohol-based product to clean your hands. Apply the product to your hands (read the label for the amount to use) and rub them together, making sure all surfaces of your hands and fingers are covered. Rub your hands until they are dry.

# Disinfecting and Finding Water

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- ◆ **Obey public announcements** about whether your tap water is safe to drink or to use for cooking and bathing.
  - ◆ **Shut off your incoming water valve** if you hear reports of broken water or sewage lines, to stop contaminated water from entering your home.
  - ◆ **If the water is unsafe**, use only bottled water, or boil or disinfect your water for drinking, cooking, cleaning, bathing, washing dishes, brushing your teeth, and washing your hands.
  - ◆ **If you have your own water supply**, such as a well, cistern, spring, or other private source, ask your health department or Texas AgriLife Extension office to inspect it for sanitary quality and to show you how to keep it safe. **Have the water tested** for disease-causing bacteria such as *E. coli* and for total or fecal coliform.
  - ◆ **Disinfect all water during a disaster.** Don't assume the water is safe unless you have test results to confirm it.
  - ◆ **If water is limited**, use an alcohol-based hand sanitizer to wash your hands.
  - ◆ **Never ration your water.** Drink the amount you need today and try to find more for tomorrow. Minimize the amount of water your body needs by being inactive and staying cool.
- Don't turn the tank back on until utility services are restored.
  - ◆ **Ice cubes**
  - ◆ **Toilet tank:** The water in the tank (not the bowl) is safe to drink unless chemical treatments have been added.
  - ◆ **Water pipes:**
    - Release air pressure into the plumbing system by turning on the faucet at the highest point in the house.
    - Then drain the water from the lowest faucet.
  - ◆ **Outside:** Rainwater and water from coiled garden hoses can be used after they have been disinfected.
  - ◆ **In an emergency:**
    - Underground water, such as from wells or springs, is less likely to be contaminated than surface water.
    - If underground water is unavailable you may use surface water from a creek, river, lake or pond, in that order. If possible, get the water upstream from inhabited areas, and dip it from below the surface.
    - Disinfect all underground and/or surface water before using it.
  - ◆ **Do not disinfect or drink water when** it is dark in color, has an odor, contains floating material, or contains chemicals from a spill such as oil or gas.

## Emergency water sources

### ◆ Water heater:

- Turn off the power that heats the tank, and let the tank cool.
- Place a container under the tank and open the drain valve at the bottom. Or, start the water flowing by turning off the water intake valve and turning on a hot-water faucet.

## Purifying water—It's often best to use more than one method

### Boiling

1. Strain the water through a clean cloth, coffee filter, or paper towel into a clean container (where possible) to remove any sediment or floating matter.
2. Boil the water vigorously for at least 1 minute.

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## Disinfecting and Finding Water continued

- The water is ready to use after it cools.
- To improve the taste, add a pinch of salt to each quart of boiled water, or pour the water back and forth from one clean container to another several times.

**Using chemicals—Strain the water (step 1 above) before using chemicals.**

**Bleach (from the home or grocery store):**

- Use unscented, liquid laundry bleach. Read the product label to find the percentage of chlorine, and use this table to determine how much bleach to add to the water:

Chlorine % (from the label)	Drops to be added per quart	
	Clear water	Cloudy water
1%	10	20
4–6%	2	4
7–10%	1	2

- Add the bleach, and stir or shake the container thoroughly. If you do not have a dropper:
  - Use a spoon and a square-ended strip of paper or thin cloth about  $\frac{1}{4}$  by 2 inches.
  - Put the strip in the spoon with an end hanging down about  $\frac{1}{2}$  inch below the scoop.

- Place the bleach in the spoon and carefully tip it. Water will drip from the end of the strip.
- Let the water stand for 30 minutes. If you can smell a slight chlorine odor, the water should be safe.
  - If you cannot smell a slight chlorine odor, repeat the dosage and let the water stand for 15 more minutes before using it.

**Tincture of iodine (from a medicine chest or first aid kit):**

- ◆ **For clear water**, add 5 drops of iodine per quart of water.
- ◆ **For cloudy water**, add 10 drops of iodine per quart of water.
- ◆ **If you do not have a dropper**, make drops following the instructions in Step 2 for disinfecting with bleach.
- ◆ Let the mixture stand for 30 minutes; then the water should be safe to use.

**Purification tablets (from a drugstore or sporting goods store)**

- ◆ Purification tablets release chlorine or iodine. Follow the package directions.
- ◆ Usually one tablet is enough for 1 quart of water.
- ◆ Double the dose for cloudy water.

## Living Without Power

Plan ahead so that if the power goes out you will know other ways to cook, foods to select, how to get light, how to communicate, how to keep cool (or warm), how to get water, and how to live without a sewer or septic system.

### Cooking

- ◆ You can cook on a camp stove, charcoal or propane gas grill, wood stove, or outdoor fire. Indoors, you can cook in a fireplace if the chimney has not been damaged or clogged by debris. Make sure the chimney damper is open. With a portable generator, you will be able to use small electrical appliances.
- ◆ Never use camp stoves or grills indoors.
- ◆ If you build a fire on the ground, make sure it is contained, with a ring of stones or metal drum around the fire bed. Build fires well away from buildings, and never in a carport. Sparks can easily get into the ceiling and start a fire.
- ◆ Never use gasoline to start a wood or charcoal fire.
- ◆ Tend fires carefully and put them out when you have finished cooking.

### Water

- ◆ If your home's water supply is cut off, bottled water should be available from local emergency supply distribution points. Each person needs 1 gallon per day.
- ◆ Water in toilet tanks (not the bowls) can be used for drinking after treatment, if cleaning chemicals are not placed in the tanks. You can also drain water from the water heater (make sure the power is off first).

### Suggested foods

- ◆ If you have no running water, buy foods that require little or no water in preparation. Choose low-salt foods to help minimize thirst.
- ◆ Many foods need no cooking—breakfast cereal, granola bars, cookies, crackers, jerky, ready-to-eat meats in cans or pouches, canned vegetables, peanut butter, trail mix, canned meals such as spaghetti/pasta, canned infant formula, and baby/toddler foods in jars.
- ◆ Open only as much of these foods as you will need for one meal to avoid the need for refrigeration.
- ◆ Choose foods that your family will eat during this stressful time. Be sure everyone eats enough to remain healthy.

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## ***Living Without Power continued***

- ◆ Hard candy will help keep the mouth moist if water supplies are limited.
- ◆ Take vitamins if you have them.
- ◆ Buy nonperishable (dry) foods for your pets.

### **Food storage and preparation supplies**

- ◆ Manual can opener
- ◆ Metal pans and cooking utensils for cooking on a fire or grill
- ◆ Aluminum foil and plastic wrap
- ◆ Plastic forks, knives, and spoons
- ◆ Paper napkins and plates
- ◆ Storage bags for food
- ◆ Paper towels
- ◆ Garbage bags for disposing of trash
- ◆ Ice chest—ice will probably be available at an emergency supply distribution center

### **Lights and communication**

- ◆ Have a flashlight and batteries (all the same size) for every member of the family.

- ◆ Use direct current-powered lights, solar rechargeable lamps, oil or kerosene lamps, or candles (with caution) as alternatives to electric light.
- ◆ Each home should have one phone that is connected to the wall (not a portable/cell phone), as well as a solar or DC charger for cell phones.
- ◆ With a battery-powered, crank, short-wave, or citizens band radio, you will be able to hear news reports and public announcements.
- ◆ Stay connected to the Internet with a satellite Internet hookup and a battery-powered laptop computer.

### **Cooling**

- ◆ Use battery-powered fans, solar fans, window shades, neck wraps saturated in water, and hats with brims to stay cool and protect from sunburn. Open windows if they are screened.

### **Toilet facilities**

- ◆ Make a toilet from a bucket lined with a garbage bag. Or use a portable camping toilet. Bury the waste.

## **Assessing Structural Damage**

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- ◆ Look carefully for damage. Sometimes storm damage to a structure is not obvious.

### **Before you enter**

- ◆ Turn off outside gas lines at the meter or tank.
- ◆ If you turn off the gas, a professional must turn it back on.
- ◆ Even if the power is out in your area, disconnect the fuses, main switch, or circuit breakers at your home, and disconnect all circuits.
- ◆ If water is present, call an electrician; do not try to turn off the power yourself.
- ◆ If the main disconnect is inside, contact the utility company for help.
- ◆ If no water is present, follow safe procedures to turn off the power or have a professional do it.
- ◆ Let the home air out to remove gas and odors.
- ◆ Do not turn the power back on until you know it is safe to do so.

### **Exterior**

- ◆ Look for:
  - Bulges
  - Sways

- Leaning walls

- Leaning roof lines

- Broken glass

- Downed power lines

- ◆ Check that the structural bracing is secured as tightly as it was originally.

- ◆ If the doors or windows do not open as they did before the storm, the structure may have shifted. There may be damage to gas lines, water lines, and electrical circuits.

- ◆ **Wooden buildings:** Look for parts that are cracked. These can be hard to detect.

- ◆ **Brick buildings:** Check for cracks in the masonry, especially near the corners and under and around doors and windows. If you are not sure that the building is safe, or if you see any indication of structural damage, call a building contractor, housing inspector, structural engineer, or architect to assess the building.

- ◆ Check for sewage and water line damage:

- If the sewage lines may be damaged, call a plumber, and do not use the toilets.

- If the water pipes are damaged, contact the water company, and do not use tap water.

*continued*

## Roof

- ◆ If possible, look at the roof from a distance. The ridge should be straight.
- ◆ If the ridge sags on an end or in the middle, the load-bearing walls have shifted.
- ◆ Look for missing or damaged shingles and loose nails.
- ◆ Check for potential leaks that could indicate structural separation. This is done more easily when it's sunny.

## Foundation

- ◆ Check to see that the building has not shifted on its foundation.
- ◆ Make sure the foundation joints have not separated from the wall.
- ◆ If the house is on piers, look at each pier to make sure it is in place and level.
- ◆ For stone or concrete foundations, make sure the plate bolts are not loose.

## Inside

- ◆ If you are sure the building is safe to enter and the utilities are off, enter cautiously.
- ◆ Do not use a flame as a light source.
- ◆ Do not smoke.
- ◆ **Check for gas leaks:**
  - If you smell gas or hear a blowing or hissing noise, open a window and quickly leave the building.
  - Check the outside main gas valve again and turn off the gas if you can. Call the gas company from a neighbor's home.
  - If you turn off the gas, a professional must turn it back on.

## ◆ Look for electrical system damage:

- Do not step in water or damp areas to get to the fuse box or circuit breaker; call an electrician for advice.
- If you see sparks or broken or frayed wires, or if you smell hot insulation, check the main fuse box or circuit breaker again, and turn off the electricity.
- ◆ Unplug all appliances that have been flooded.
- ◆ Check for wet insulation. If the insulation in a wall or attic is wet, it must be replaced. It will not dry out because it is sealed within the structure.
- ◆ **In the attic, use a good light to help you:**
  - Inspect the roof bracing. Roofs often have truss systems made of 2x4s and metal fasteners. Examine the truss for cracks or breaks.
  - Check that the roof plywood is attached securely to the truss system and that the nails or staples have not separated from the truss.
  - Look for sagging ceilings, wet insulation, and pockets of water that can cause ceilings or walls to fall.
  - Check the framing for ridge separation, loose knee braces, and loose rafters where the rafters join the walls.

## Walls

- ◆ Make sure the walls are vertical and straight. You can usually do this by eye or with a carpenter's level.

## Options

- ◆ Sometimes a structure should be removed rather than rebuilt.
- ◆ If you decide to repair the structure, it may need additional bracing before repairs begin.
- ◆ Before beginning or contracting for repairs, check with a local building official or permit office. You may need a permit to repair damaged buildings.

# Helping Family Members Cope

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Children can have a difficult time coping with trauma. They may be sad or afraid and reenact the disaster over and over to try to make sense of it. Their behavior may regress, and they may have problems such as loss of appetite, stomach aches and nightmares.

## To help children birth to age 5:

- ◆ Reassure them and give them physical comfort.
- ◆ Help them get back to their normal routines as soon as possible, including bed time.
- ◆ Encourage them to talk about their losses, such as the death of pets or the loss of toys.

- ◆ Monitor their exposure to news media reports about the disaster.

## To help older children:

- ◆ Give them extra attention and consideration. Temporarily relax your expectations of their performance at home and at school.
- ◆ Set gentle but firm rules for acting-out behavior.
- ◆ Give them structured but undemanding home chores and other activities.
- ◆ Encourage them to express their thoughts and feelings and be willing to listen.

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## Helping Family Members Cope continued

Some children suffer from long-term problems such as depression, prolonged grief, and post-traumatic stress disorder (PTSD). Symptoms include persistent sadness, irritability, loss of interest in activities they once enjoyed, loss of energy, sleeping problems, and even physical problems. If a child is having difficulty recovering from the trauma of a disaster, seek the help of a qualified mental health professional. Be alert to your child's behavior and feelings so you will know to seek help if necessary.

Adults also suffer various degrees of stress after a disaster. Some symptoms of stress are erratic behavior, anger, rapid mood swings, increased substance abuse, physical ailments (headaches, fatigue), flashbacks, strained relationships, difficulty concentrating, and sleeping problems. These are usually normal reactions to an abnormal situation.

## Caring for Pets

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- ◆ Check your pets for injuries, and treat minor injuries with your home first-aid kit.
- ◆ Make sure your pets have ample food and water and are contained in a safe area.
- ◆ Your home may be a very different place after a disaster, whether you have taken shelter at home or elsewhere. Don't allow your pets to roam loose. Familiar landmarks and smells might be gone, and your pet will probably be disoriented. Pets can easily get lost.
- ◆ While you assess the damage, keep dogs on leashes and cats in carriers inside the house. If your house is damaged, they could escape and become lost.
- ◆ Be sure pets are wearing collars with tags that have your name, address, and cell phone number (in case land phone lines are not working).
- ◆ Be patient with your pets after a disaster. Try to get them back into their normal routine as soon as possible, and don't be surprised if they have behavioral problems as a result of the stressful situation. As soon as possible after the disaster, have your pets examined by a veterinarian. Discuss with the veterinarian any behavioral problems that persist.
- ◆ To look for lost and found pets, call your local animal shelter. Also register at [www.petfinder.com](http://www.petfinder.com).
- ◆ To report an animal needing rescue, call your county's emergency management department.

## Caring for Livestock

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- ◆ When it is safe to do so, check pens, barns, and sheds for damage, and check pastures for debris. Move animals to safe areas.
- ◆ Make sure animals have plenty of feed and water. They might also need vitamins and electrolytes to help them recover from stress.
- ◆ Check animals for injury and tend to minor injuries promptly. If possible, contact a veterinarian for help with seriously injured animals.
- ◆ To report an animal needing rescue or for help with carcass disposal, call your county's emergency management department or your county Extension office.
- ◆ For information or guidance on building a carcass composting pile, contact your county Extension office.
- ◆ To locate hay for sale, call the Hay and Grazing hotline of the Texas Department of Agriculture (877-429-1998). Or, go to [www.agr.state.tx.us](http://www.agr.state.tx.us) and check the "Links/Resources" section.
- ◆ Document and report all livestock and poultry losses immediately to the county Farm Service Agency (FSA). For the number of your local FSA office, call the Texas FSA at 979-680-5151 or go to [www.fsa.usda.gov/tx](http://www.fsa.usda.gov/tx).
- ◆ Report missing livestock to your county emergency management office.

# Controlling Mold

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- ◆ As soon as it is safe to return home after a storm, begin cleaning up and drying.
- ◆ Mold testing is not usually needed.
- ◆ For extensive damage and mold growth, hire a reputable firm that is licensed to repair water damage and remove mold.

## Doing the clean-up yourself

After water damage:

- ◆ Cover damaged areas of the roof with a water-proof tarp to prevent more damage.
- ◆ Take an inventory of your home and belongings.
- ◆ Dry all wet materials as quickly as possible. If possible, use air conditioning or heat with fans and dehumidifiers. If you have no power but have access to a generator, run a dehumidifier indoors.
- ◆ Remove wet carpets right away.
- ◆ Discard upholstered fabric furniture.
- ◆ Cut away wet wallboard and remove all damp insulation right away, even if the wallboard looks dry.
- ◆ Use nonphosphate detergents to clean. Phosphate residue is mold food.
- ◆ Do all you can to speed the drying of subfloors, slabs and wall framing before replacing insulation, wallboard, and floors.
- ◆ Before replacing insulation, use a moisture meter to make sure the moisture content of the studs and sheathing is no more than 14 percent by weight.
- ◆ Remove wet insulation from the attic if it is saturated from blowing rain.
- ◆ Protect yourself. Wear long sleeves, long pants, sturdy shoes, gloves, and a mask or respirator (N-95 or better). If you are sensitive to mold, wear splash goggles.
- ◆ Isolate the work area and ventilate it to the outdoors. Seal off the contaminated area from the rest of the house.
- ◆ Remove and discard moldy materials.
- ◆ Clean small items in the washing machine.

- ◆ Clean all surfaces. Remove, don't just kill, the mold. Dead spores can cause health problems.
- ◆ Use a disinfectant to kill any mold missed by the cleaning. Use a solution of 1 cup bleach to 1 gallon of water. Do not use it in the air system.
- ◆ **Remain on mold alert:** Continue looking for signs of moisture or new mold growth. If mold returns, repeat the cleaning.
- ◆ Do not rebuild or refurbish until all affected materials have dried completely.

## In hot, humid climates:

Mold can grow even if you do not have water damage but lose power.

- ◆ Ventilate the house as much as possible.
- ◆ Minimize the amount of moisture that you add to the inside of the home through showers, cooking, laundry, etc.

## Choosing a mold contractor

- ◆ Check the phone listings for specialists in painting, restoration, carpet cleaning, furniture repair, and water damage.
- ◆ Make sure the business is licensed for mold remediation. Ask to see the licenses, including those of the people doing the work.
- ◆ Ask for and check references.

## A remediation contract should specify:

- ◆ What is to be corrected, including a diagram that shows where the work will be done
- ◆ How long it will take to complete the work
- ◆ The materials required, such as lumber, sheetrock, carpet and padding, and paint
- ◆ Who will provide the renovation materials
- ◆ How the contaminated items will be handled
- ◆ Who will remove the debris from the site
- ◆ Warranties of work and guarantees on remediation

# Controlling Insects

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## Mosquitoes

- ◆ Empty all containers of standing water and cover them, including cans, children's toys, tires, potted plants, and buckets. Cover openings in rain barrels.
- ◆ Stay indoors as much as possible between dusk and dawn.
- ◆ When outdoors, wear loose-fitting, light-colored clothing. Wear long-sleeved shirts and long pants.
- ◆ When outdoors, use an insect repellent containing DEET.

## Fire ants

- ◆ Stay out of flood water that may contain floating mats of fire ants. If you are in a boat, do not touch ants with the oars. If you must work in flood water, wear rubber boots, rain gear and cuffed gloves so fire ants cannot reach your skin.
- ◆ To kill floating ants, spray them with 2 ounces of Dove® dishwashing liquid mixed with 1 gallon of water.

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## Controlling Insects continued

- ◆ Be very cautious after a flood. Fire ants can be almost anywhere—under debris, in furniture, under carpet.
- ◆ Wear gloves, long-sleeved shirts, long pants, socks, and shoes to protect yourself. Spray your shoes and lower pants legs with an insect repellent that contains DEET.
- ◆ If you are using a shovel or other tool, spread talcum or baby powder on the handle to keep fire ants from climbing it.
- ◆ Treat ants with a fast-acting household or lawn and garden insecticide. Aerosol products containing pyrethrins or pyrethrum (tetramethrin or allethrin) labeled for use on “ants” or “crawling insects” will kill the ants quickly. Spray as many of the ants as possible. Also spray surfaces and cracks of infested objects and debris. Do not use these sprays on ponds.
- ◆ Do not use fire ant baits immediately after a flood.
- ◆ If you are stung, use an over-the-counter medicine for insect stings or bites. Home remedies include ammonia, meat tenderizer, tea tree oil, camphor, and a 50:50 solution of bleach and water. If you have an allergic reaction (shortness of breath, unusual swelling of the sting area or nausea) get medical help right away.

### Houseflies

- ◆ Put food waste and other organic matter in garbage bags and tie the bags securely. Do not let food residue accumulate in your garbage can. Clean the can regularly.
  - ◆ Patch damaged window screens and keep doors closed.
  - ◆ Place sticky traps, ultraviolet light traps, or resin strips (fly strips) around your home. Put fly strips within 6 feet of the floor.
- ◆ Use fly baits such as Quick-Bayt® and Golden Malrin®. Spray insecticides that contain pyrethrins will also control houseflies.

### Blow flies

- ◆ Quickly dispose of decomposing animal remains where blow flies might lay eggs. Bury dead birds, cats, dogs, opossums, etc., at least 12 inches deep or place them in tightly closed garbage bags.
- ◆ Remove all food residue from your garbage can and keep it clean.
- ◆ Place sticky traps and ultraviolet light traps around your home.
- ◆ Patch damaged window screens and keep doors closed.
- ◆ Use insecticide sprays that contain pyrethrins.

### Insect repellents

- ◆ Check the container to make sure the product has been approved by the U.S. Environmental Protection Agency (EPA). Never use a product that is not approved by the EPA.
- ◆ Read and follow the directions on the product label.
- ◆ Do not apply an insect repellent on cuts, wounds, or irritated skin.
- ◆ On young children, do not apply an insect repellent on the hands or near the eyes or mouth. Instead, apply it to your own hands and then put it on the child.
- ◆ Do not spray in small enclosed areas. Avoid breathing the spray or using it near food.
- ◆ Use just enough repellent to cover your clothing and/or exposed skin.
- ◆ Wash your hands after applying repellent.
- ◆ Use a repellent that contains DEET.

## Working with the Federal Emergency Management Agency (FEMA) \_\_\_\_\_

- ◆ FEMA may provide emergency assistance if your area has been declared a federal disaster area and if you are approved for Individual Assistance.
- ◆ FEMA assistance under the Individuals and Households Program (IHP) is money or other assistance to help with critical expenses that can't be provided in other ways **Assistance is not provided for losses that are covered by insurance.**
- ◆ To apply for help from FEMA:
  - Complete the application form (call 1-800-621-3362 or apply online at [www.fema.gov](http://www.fema.gov)). FEMA does not accept applications by mail or at Disaster Recovery Centers, unless the center has computers for public use.
  - On the application you must provide your Social Security number, current and pre-disaster address, phone number, description of your losses, directions to your damaged property, type of insurance coverage, and total household income.
- ◆ After you have sent in the application, FEMA will send you a copy of your claim and a registration identification number. It will be on all official correspondence about your claim. Do not share this number with anyone.
- ◆ About 10 to 14 days after you register, a FEMA inspector will call to make an appointment to inspect your property.

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## ***Working with the Federal Emergency Management Agency continued***

- ◆ About 10 days after the inspection, FEMA will tell you whether you qualify for IHP assistance. If so, FEMA will send a check or deposit funds to your bank account. FEMA will also send a letter telling you how to use the money (repairs, rent, etc.).
- ◆ If you do not qualify, FEMA will tell you why you were denied and how to appeal. Appeals must be made in writing and mailed within 60 days. You will be mailed a Small Business Development (SBA) Disaster Loan application to apply for a low-interest loan. The SBA processes disaster loans for homeowners and renters.
- ◆ FEMA cannot provide money for losses covered by insurance. Not filing an insurance claim will not make you eligible for FEMA assistance if your loss is insured.
- ◆ **If you have insurance, FEMA may be able to help if:**
  - Your insurance settlement is delayed or not enough to meet your disaster-related needs.
  - You have exhausted the living expenses payable by your policy.
  - No rental property is available in your area.
- ◆ You have up to 12 months from the date you registered with FEMA to submit your insurance information for review.

## **Homeowner's Property Insurance**

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- ◆ For answers to questions about property insurance, call the Texas Department of Insurance (TDI) consumer help line at 800-252-3439.
- ◆ If your property has been damaged, contact your insurance company immediately. The company will tell you what your policy covers, when the deadline for filing a claim, and how much you must pay as a deductible. The company will also tell you whether you should get estimates for repair work or wait until a claims adjuster has assessed the damage. Never make extensive permanent repairs until a claims adjuster has visited your property to assess the damage.
- ◆ Prepare for the adjuster's visit by gathering documents to substantiate your losses. You might make an inventory of lost or damaged items or provide the adjuster with photographs from before and after the disaster. Also gather any receipts you have for lost or damaged items.
- ◆ Prepare a list of everything you want the adjuster to check, including structural damage (cracks in walls, floor and roof damage, etc.).
- ◆ If you must make temporary repairs to prevent further loss, keep your receipts.
- ◆ If you must relocate because your home isn't livable, keep your lodging receipts.
- ◆ Be very careful about hiring a contractor to make repairs. Be sure to hire someone who is reputable. Contractors whose bids are very low may do poor-quality work. Contractors who require a large payment up-front may be trying to take advantage of you. Never hire people who show up unannounced and offer to do repairs.
- ◆ If a Presidential Disaster Declaration has been issued for your area, you should register with the Federal Emergency Management Administration (FEMA) to determine whether you are eligible for federal assistance. Call 1-800-621-3362, or register online at [www.FEMA.gov/register](http://www.FEMA.gov/register).

## **Recovering Home Wastewater Treatment Systems**

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- ◆ During and after a disaster such as a hurricane, you need to prevent untreated wastewater from leaving your wastewater system and harming people, animals, and the environment.
  - ◆ The proper response depends on the type of disaster and the type of treatment unit you have.
  - ◆ Plug any floor drains in the home to prevent water from backing up into the home.
- After the flood**
- ◆ Do not use the wastewater treatment system until the floodwater has receded from all components of the system.
  - ◆ Check the system for any signs of damage to its surface, such as:
    - Exposed components
    - Damaged lids
    - Damaged inspection ports

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## ***Recovering Home Wastewater Treatment Systems continued***

- ◆ If the components are filled with floodwater, call a service provider to check the system for sediment or other debris.
- ◆ Do not pump the tanks empty or below their normal operating level because the ground is usually saturated after a flood. Empty tanks tend to float, which could damage the piping or even cause the tanks to float to the ground surface.

**For a trench distribution system with inspection ports,** the service provider may be able to pump water from the trenches to help the soil dry and aerate.

**For systems that use electrical power,** restarting the system depends on the flood elevation:

- ◆ **If the floodwater covered only the tanks and the components in the tanks,** it may be possible to restart the system without further evaluating the components.
- ◆ **If the floodwater covered the components on the ground surface** (such as air pumps or panels), have the system inspected by a service provider to determine its condition before using the system or restarting electrical service.

**For a spray distribution system,** the wastewater may not be treated to its normal expected quality.

- ◆ Do not use it for a day or two to allow the microbes in the system to recover and provide proper treatment.
- ◆ Make sure the disinfection treatment component is working correctly.
- ◆ Limit activity in the distribution area while the ground and grass are moist after spray distribution.

## **Electrical outages**

**For systems that do not use electricity**

- ◆ Conventional septic tank/soil absorption systems will continue to operate properly. Continue using the system.

**For systems that use electricity**

**During the outage**

- ◆ Limit water use to essentials such as toilet flushing and hand washing.
- ◆ Minimize or eliminate laundry, bathing, showering and dishwashing.
- ◆ Stop all water use if the outage is extended or the plumbing begins to drain slowly.

## **Once power is restored**

**After an outage of less than a day**

- ◆ Limit laundry and dishwashing if the system has an advanced pretreatment component.

- ◆ If you have minimized water use, your system will probably recover by itself.

**After an outage of more than a day**

- ◆ Do not wash laundry or dishes for a day.
- ◆ Limit shower time and bathwater volume for at least 1 day.
- ◆ Allow the system to continue to operate normally until the water level drops to the normal operating level in the system.
- ◆ A time-dosed system may take 24 hours to distribute all the stored water.
- ◆ If the system has a high-water alarm, it may sound when the power is restored, depending on your water usage during the power outage.
- ◆ Silence the alarm if it has a silence switch option.
- ◆ Contact your service provider if the alarm stays on for more than 24 hours.

**For an on-demand pumping system** (low-pressure or sub-surface drip distribution system)

1. Immediately after the outage, manually control the length of time that the treated wastewater is delivered to the dispersal field. Otherwise, the first dose after the power is restored can overload your system, and untreated wastewater could flow onto your lawn.
2. Check the system design information for the usual dosage and rest times. Allow the pump to operate for its usual dosage time; then turn the power off by flipping the breaker.
3. Wait for the specified rest period; then allow another dosage for the usual amount of time.
4. Continue this pattern until the pump turns off by itself after its normal dosage time.
5. Or, ask your service provider for instructions on how your system should be brought back into operation after a power outage.

**For a spray distribution system**

- ◆ Make sure the disinfection treatment component is working correctly.
- ◆ Limit activity in the distribution area while the ground and grass are moist after the treated wastewater is sprayed there.

# Preventing Fraud

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## Price gouging

- ◆ Be alert for price gouging. If you believe that you are a victim of price gouging after a disaster, report the incident to the consumer hotline at the Office of the Attorney General at 800-252-8011.

## Home repair

- ◆ After a disaster, many people go door-to-door offering to do repair work. Some may be honest, but some may take your money without completing the job or use inferior materials and do shoddy work. Before hiring a contractor, ask for references and proof of insurance. Check with the references to make sure the person does good-quality work and is dependable.
- ◆ Get written estimates from more than one contractor. The estimate should include a complete description of the work to be done, time schedules, and payment schedules.
- ◆ Read and understand all contracts you sign. Keep copies of everything you sign. Any contract you sign for work on your homestead must contain the following warning next to the space for your signature:

***“Important notice: You and your contractor are responsible for meeting the terms and conditions of this contract. If you sign this contract and you fail to meet the terms and conditions of this contract, you may lose your legal ownership rights in your home. KNOW YOUR RIGHTS AND DUTIES UNDER THE LAW.”***

- ◆ Never sign a contract that has blanks.
- ◆ Never pay a contractor in full or sign a completion certificate until the work is finished and acceptable. Never hire someone who says he or she must be paid in full before the work is complete.

## Identity theft

- ◆ After a disaster you will need to share personal information to get relief benefits from government agencies or other organizations, or to get replacement identification documents. Be cautious. Identity thieves may pose as government officials or agency representatives. Ask them for identification, and verify it.
- ◆ Keep an eye on your bank statements, credit card statements, and other statements to watch for unauthorized purchases or withdrawals.
- ◆ About 60 days after the disaster, request copies of your credit report from all three major credit bureaus—Experian, TransUnion and Equifax.
- ◆ If you believe someone has stolen your identity, report it immediately to your bank, credit card company and local law enforcement. You might want to add an Initial Security Alert to your personal credit report. This alert, which remains on your report for 90 days, notifies anyone who reviews your report to take extra steps to verify your identity before granting credit. You need to request the security alert with only one credit bureau. It will automatically notify the other two to place an alert on your file.

# Obtaining Assistance

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## Assistance for you and your family

- ◆ Your county has an emergency management plan and is prepared to provide shelter, food, and water to disaster victims. Radio and television stations will have information on shelter locations and distribution sites for food and water.
- ◆ If your property has been damaged, report it to your insurance company and file a claim as soon as possible. Be sure the company knows how to reach you if you move to a different location.
- ◆ If your county is declared a disaster area, you may be eligible for monetary help from the Federal Emergency Management Administration (FEMA).
- ◆ If you are unable to return to work, you may qualify for unemployment insurance and/or disaster unemployment assistance, but first you must apply for regular unemployment benefits. Call 1-800-939-6631 or visit [www.twc.state.tx.us/ui/uiclaim.html](http://www.twc.state.tx.us/ui/uiclaim.html).

- ◆ If you have suffered extensive damage and a tax filing deadline is near, the Internal Revenue Service (IRS) may postpone the deadline. For more information, call the IRS at 800-829-1040.

## Assistance for your farm or ranch

- ◆ In counties declared disaster areas, farmers and ranchers may be eligible for special assistance programs. Begin by contacting the local office of the Farm Service Agency (FSA). The FSA provides low-interest loans to help agricultural producers recover from disasters. The FSA also has a cost-share program to help repair damage caused by natural disasters.
- ◆ The Texas Department of Agriculture’s Linked Deposit Program helps producers who lose livestock or other agricultural commodities. Contact TDA at 512-936-0273.

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## Obtaining Assistance continued

- ◆ Farmers and ranchers should also apply for FEMA assistance to cover damages to their homes or personal property.

### Assistance for your small business

- ◆ If you are self-employed or own a small business, contact the Small Business Association (SBA) at 800-659-2955 or a local SBA disaster recovery center. The SBA makes physical disaster loans to help repair property and replace inventory and loans to help with financial losses. Apply for assistance from the SBA as soon as possible. To apply, you will need federal income tax information, a short history of the business, personal financial statements, and business financial statements.
- ◆ If you have business insurance, file a claim with your company as soon as possible. Whether you have insurance or not, file a claim with the SBA first so you don't miss the filing deadline.
- ◆ Have your business structure inspected by a structural engineer and get a detailed report of the damage. Also make a comprehensive inventory of losses.
- ◆ Self-employed persons are eligible for disaster unemployment assistance through the Texas Workforce Commission. Call 800-939-6631 or visit [www.twc.state.tx.us/ui/uiclaim.html](http://www.twc.state.tx.us/ui/uiclaim.html).

## Reclaiming Flooded Soils

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### Freshwater flooding

- ◆ Freshwater flooding from rivers, overflowing sewage and septic systems, and other sources can affect soil fertility and soil properties and harm the environment.
- ◆ Remove any debris that prevents floodwater from draining away.
- ◆ Wait until the floodwater has receded or soaked into the soil before beginning recovery efforts.
- ◆ If dead plant debris is no more than about 1 inch deep, till it into the soil. If debris is deeper than 4 inches, remove it mechanically or with a prescribed burn.
- ◆ Before conducting a burn, be sure there is no hazardous flood debris in the area (such as propane tanks, pressurized-gas cylinders, refrigerators, air conditioners, petroleum containers, or tires).
- ◆ Before tilling debris or removing it mechanically, know where all underground and aboveground utilities and pipelines are located. Call toll free 1-800-344-8377.
- ◆ If a flood has left soil sediment on top of the original soil, till deeply to incorporate it if the sediment is less than 8 inches deep. If it is deeper, ask your county Extension agent about other options.
- ◆ Once the soil is dry, have it tested by submitting a sample to the Texas AgriLife Extension Service Soil, Water and Forage Testing Laboratory. Submittal forms and instructions are online at <http://soiltesting.tamu.edu> and at your county Extension office.
- ◆ If floodwater covered a storage shed, garage, machine shop, sewage treatment system, or livestock feeding

area, the soil may be contaminated by microbes, pesticides, hydrocarbons, or heavy metals. Special tests must be done to determine this. To find a laboratory that does such tests, contact the National Pesticide Information Center 1-800-858-7378, <http://npic.orst.edu/tech.htm>.

### Saltwater flooding

- ◆ After saltwater flooding from tidal surges, the soil salinity level will be reduced only when rain or irrigation leach the salt out of the upper soil profile or carry it away in overland flow. Clear field edges, ditches, and drainages of debris so water drains easily.
- ◆ Till dead plant material into the soil or remove it with a prescribed burn.
- ◆ Have your soil tested for salinity level. Immediately after the tidal water drains away, collect samples from the top 3 inches of the soil at 10 to 15 locations. Mix these subsamples together to make one sample and submit it to the Texas AgriLife Extension Service Soil, Water and Forage Testing Laboratory. Forms and instructions are online at <http://soiltesting.tamu.edu> and at your county Extension office.
- ◆ Also have your soil tested for fertility, as the floodwater may have leached out nitrogen and other nutrients. For a fertility test, take samples at a depth of 6 inches.
- ◆ Do not replant until the salinity level is appropriate. This depends on the soil type and the amount of salt that has accumulated. A great deal of rain may be needed to reduce salt levels to the point that an area can be replanted.

# Disinfecting Water Wells and Stored Water

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- ◆ If your well has been flooded, assume that the water in it is contaminated.
- ◆ Do not use the well water for drinking, cooking, making ice, brushing your teeth, or even bathing until you are sure that it is not contaminated.
- ◆ During the disinfection process, do not allow people or animals to drink or have prolonged contact with water from the system.
- ◆ **To make the water safe after a flood:**
  - Add chlorine to the well to disinfect it (instructions below).
  - Have the water tested to make sure that the disease-causing organisms have been eliminated.
  - Also disinfect most water treatment equipment, such as water heaters, softeners and pressure tanks.
  - During the process, temporarily disconnect or bypass drinking water filters such as carbon filters and reverse osmosis systems.
  - Treat the well when faucets and toilets will not be used for at least 12 hours, preferably 24 hours.
  - During treatment, do not use an automatic watering system for animals or irrigation.
  - The most common sources of chlorine for well disinfection are dry chlorine (at least 65 percent calcium hypochlorite) and liquid household bleach (5.25 percent sodium hypochlorite).
  - Do not use bleach that has a “fresh scent,” lemon fragrance, or other additives.

## Decontaminating and disinfecting a well

1. If the well is shallow, has been flooded by surface water, or is in an unconfined aquifer, pump it out to remove any potential contaminants. Pump out at least 3 well volumes of water from a faucet near the wellhead. At a minimum, pump the well for at least 1 hour before beginning the disinfection process.
2. Remove the plug or screen on the well cap to access the inside well casing.
3. Turn off electric power to the pump.
4. Remove the well cap.
5. Determine the amount of chlorine needed:
  - a. Measure the amount of water standing in the well. The standing water depth in the well is the depth of the well minus the static water level, which is the level of the water table in a well when the pump is not operating.
  - b. If you do not know the well’s standing water depth, use a volume of bleach equal to twice the depth value for the diameter of the well casing (see Table 1 or 2). For example, an 8-inch casing diameter with unknown standing water depth would require 3 gallons of household bleach.
6. Prepare a solution of bleach and water, and pour the solution into the top of the well. The amount of bleach depends on the depth of water in the well and the diameter of the well casing, which is a steel or plastic pipe placed in a well to maintain the well opening and to serve as the lining to the well.
7. Recirculate the water by connecting a hose to a faucet and spraying the water back into the well for at least 10 minutes.
8. Open every faucet in the system and let the water run until the smell of chlorine can be detected.
9. Close all the faucets and seal the top of the well.
10. Drain all water heaters to allow the chlorinated water to circulate through the hot water system also.
11. Flush out household plumbing, including the water heater. Make sure the water is clear and free of sediment.
12. Allow the chlorinated water to stand in the system for at least 12 hours, preferably 24 hours.
13. The next day, operate the pump by turning on all faucets, beginning with those outside, and flushing out the water until there is no chlorine odor.
14. Dilute the beach by placing the appropriate amount of bleach (Table 1 or 2) in a 5-gallon bucket and filling the bucket with clean water.
15. Use a funnel to pour the solution around the sides of the well casing.
16. Connect a garden hose to a nearby faucet and wash down the inside of the well.
17. Continue the washing process for 10 minutes, and make sure you can smell a strong chlorine odor.
18. Do not operate the water system for 2 hours.
19. After 2 hours, open the faucet closest to your well.
20. Allow the water to run until you can smell a strong odor of chlorine, then close the faucet.
21. Go to the next faucet and repeat. If you do not smell the odor, check the chlorine rate and add more chlorine to the well, repeating steps 1 through 4.
22. Do not operate the water system for at least 12 hours, preferably 24 hours.
23. Flush the remaining chlorine from the system. Begin by turning on the outside faucets and letting the water run until the chlorine odor dissipates.

*continued*

**Disinfecting Water Wells and Stored Water continued**

- 24. Let the water run on the ground to reduce the load on your septic system. However, do not let the chlorinated water run onto lawns, gardens, or other plants because chlorine can injure them. Place the garden hose so that it drains into a field or low-lying area away from desirable plants. Be careful not to discharge the chlorinated water directly into a pond, lake, river, or stream.
- 25. Turn on the indoor faucets until the system is completely flushed.

**Testing the well water**

- ◆ After disinfection, have the well water tested by a certified laboratory to make sure there is no bacterial contamination.
- ◆ Some county health departments and local hospitals may also test water samples for bacteria. The cost ranges from \$8 to \$30.
- ◆ Well disinfection does not eliminate hydrocarbons (fuels, oils), pesticides, heavy metals, or other types of contamination. If you suspect such contamination, the water will require special testing and treatment.
- ◆ For a list of Texas laboratories certified to analyze drinking water samples, see the Texas Commission on Environmental Quality Web site at [http://www.tceq.state.tx.us/assets/public/compliance/compliance\\_support/qa/sdwa\\_lab\\_list.pdf](http://www.tceq.state.tx.us/assets/public/compliance/compliance_support/qa/sdwa_lab_list.pdf).

- ◆ For more information, call the Texas AgriLife Extension Service at 979-845-2425.

**Checking for damage to the well**

- ◆ Inspect the well for physical damage.
- ◆ Look for signs of leakage.
- ◆ If it appears damaged, consult a licensed water well contractor to determine whether repairs are needed.
- ◆ If the pump and/or electrical system has been under water, do not turn on the pump. There is a danger of electrical shock or damage to your well or pump.
- ◆ Once the floodwaters have receded and the pump and electrical system have dried, have a qualified electrician check the wiring system.

**Obtaining clean water**

- ◆ **Find an alternative source of water for drinking, cooking and washing:**
  - A public water supply
  - A neighbor’s well if you know it is safe
  - Bottled water
  - If you can’t find a convenient source of safe water, boil your well water for 1 minute before using it.

**Table 1. Amount of chlorine laundry bleach (about 5.25 percent hypochlorite) needed for shock chlorination.**

Standing water depth in well	Casing diameter				
	4 inches	6 inches	8 inches	10 inches	12 inches
10 feet	½ cup	1 cup	1½ cups	1 pint	2 pints
25 feet	1 cup	1 pint	2 pints	3 pints	4½ pints
50 feet	1 pint	1 quart	2 quarts	3 quarts	1 gallon
100 feet	1 quart	2 quarts	1 gallon	1½ gallons	2 gallons
150 feet	3 pints	3 quarts	1½ gallons	2 gallons	3 gallons

**Table 2. Amount of high-test hypochlorite (65–75 percent hypochlorite) needed for shock chlorination.**

Standing water depth in well	Casing diameter				
	4 inches	6 inches	8 inches	10 inches	12 inches
10 feet	–	–	–	–	–
25 feet	–	–	–	¼ pound	¼ pound
50 feet	–	–	⅓ pound	½ pound	¾ pound
100 feet	–	⅓ pound	¾ pound	1 pound	1½ pounds
150 feet	¼ pounds	½ pound	1 pound	1½ pounds	4 pounds

# Salvaging Important Papers, Books, and Photos

- ◆ Dry papers, books and photos before mold sets in. For best results, dry them slowly.
- ◆ Before drying, wipe book covers with a solution of one part rubbing or denatured alcohol and one part water.
- ◆ Carefully remove framed items from their frames. If an object is stuck to the glass, do not remove it; take out the backing material and dry the object inside the frame, glass side down.
- ◆ If papers or photos are muddy or dirty and are still wet, rinse them very gently in a bucket of cold, clean water before drying. Do not rinse books.
- ◆ **If the items are very damp:**
  - Blot them gently with a clean, dry sponge, clean paper or bath towels. Do not blot on hand-written ink or fragile surfaces. Do not use newspaper for blotting.
  - Sprinkle papers, photos, and book pages with cornstarch or talcum powder to absorb moisture. Leave the powder for several hours and then brush it off.
- ◆ To dry papers and photos, lay them flat on a surface covered with absorbent material. Separate the papers if possible
- ◆ You might have to wait until they are partially dry before you can separate them. Place books on the top or bottom edge with the leaves separated. Do not stand books on the front edge.
- ◆ Dry items out of direct sunlight. Use an oscillating fan to increase air circulation but don't let it blow directly on the items.
- ◆ When books are partially dry, place them on a flat surface with a slight weight to keep the pages from warping.
- ◆ Alternate drying and pressing the books until they are thoroughly dry. This helps prevent mildew.
- ◆ For valuable books that are nearly dry, consider pressing the pages with an electric iron set on low. Although this is a tedious process, it may be worth the effort. Separate the pages to prevent musty odors.
- ◆ **When books are thoroughly dry:**
  - Close them and use C-clamps to help them retain their shape.
  - Wipe vinyl and leather book covers with a light coating of petroleum jelly or leather or vinyl dressing.
- ◆ **If you don't have time to clean and dry your books and papers immediately:**
  - Put each book or paper in a sealed plastic bag in the freezer to prevent mildew.
  - Place wax paper between the layers of paper bundles or books so they can be separated easily when removed.
- ◆ Even if your papers appear to have dried successfully, they may disintegrate because of substances that were in the floodwater or rainwater. To be certain valuable or historic papers and photos are preserved, take them to a professional conservator. To find one near you, contact the Foundation of the American Institute for Conservation at 202-452-9545 or by e-mail at [info@aic-faic.org](mailto:info@aic-faic.org).



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