



Natural Hazards Series



Storm Recovery

Guide for Homeowners

Table of Contents

1. Be Safe: Stay Healthy after a Disaster	4
Safety in a Disaster Area	
Dangers of Debris	
Approaching and Entering a Damaged Building	
Food and Water Safety	
You May Run into Critters in Unusual Places	
Avoiding Mold Hazards	
These are Trying Times	
2. Surviving and Recovering from a Power Outage	10
Using Generators for Electrical Power	
Play it Safe with Food	
How to Cook when the Power Goes Off	
Removing Odors from Refrigerator and Freezer	
Power Outage in Winter	
3. Restoring Storm-damaged Buildings	14
Determining Structural Damage	
Preliminary Repairs	
Dry Well to Prevent Decay	
Flooding and Damage-causing Pests	
Repairing the Roof After a Storm	
Strengthen Weak Points	
4. Salvaging Water-damaged Belongings	19
Caring for Large Electrical Appliances	
Salvaging and Cleaning Furniture	
Cleaning Carpets and Floors	
Cleaning Storm-soaked Clothing	
5. Lawn and Garden Losses	23
Salvage Tips	
Tree Debris and Renewal	
Assessing Landscape Tree Loss	
Small Fruit Strategies after a Storm	
Salinity and Turfgrass after a Hurricane	
6. Financial Recovery and Risk Management	27
Documenting Losses and Claims	
Filing for Insurance	
Homeowner's Insurance	
Flood Insurance	
Credit and Other Sources of Relief	
Contracting for Repairs and Rebuilding	
Contract Essentials	

Be Safe: Stay Healthy after a Disaster

Natural Hazards Series: Recovery - Part 1



The forces of nature – wind, water, earthquake and extremes of temperature – can leave behind debris-strewn areas, contaminated water, spoiled food, displaced wildlife and conditions which, if not treated properly, may lead to health problems. In these pages you'll find information to help you avoid and recover from some of the hazards created by wind and water; severe winter weather is covered in a separate publication. Remember to take care of *yourself* and your family first, then deal with the *things* you may have lost to the disaster.

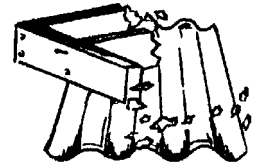
Safety in a Disaster Area

- Keep a radio on so you can hear bulletins and other announcements.
- Avoid riding, driving or walking through a flooded area. Flooded roads are weakened, ditches are hard to distinguish from roads and bridges may be washed out. Never go around a police barricade.
- Walk or drive cautiously. Debris-filled streets are dangerous. In flooded areas, washouts may have weakened roads and bridges, and they could collapse under the weight of your vehicle.
- Don't touch any building, car or other structure which has a fallen power line touching it. Call a professional electrician or power company representative to remove the line.
- Don't use flames or sparking devices until you're sure there is no natural gas leaking in the area.
- Be careful around damaged buildings and trees. These may fall if damaged severely.
- Wear protective clothing, sturdy shoes and gloves.
- Assume that water supplies are contaminated.
- Consider all foods that have been in contact with floodwater to be contaminated.
- Be aware that snakes, rodents and other animals may have taken refuge in storm debris or even in your home. Use a poking stick to announce your approach and allow animals to flee.
- If you are bitten by a poisonous snake, don't try to treat the bite yourself. Go to the nearest hospital for treatment immediately. Make a mental note of the appearance of the snake for identification and treatment purposes.

- Keep small children, pregnant women and people with health problems away from the flooded areas until cleanup is complete.
- If children are in the area, be sure they are safe and being cared for at all times. Never leave young children alone or allow them to play in damaged buildings or areas strewn with debris.
- Learn to recognize and deal with stress.
- If you get a scratch, cut or brush burn from flood debris and have not had a tetanus booster in the last few years, consult your doctor immediately.

Dangers of Debris

Debris is hazardous. It often has sharp or rough edges; it may cause falls; it may contain hazardous material such as asbestos, lead or fiberglass; and it may have been contaminated with chemicals or germs by the flood or storm.



Contamination

Floodwater may have flowed through the local sewerage system before reaching your property. If it has come from upriver, it may contain contaminated runoff. Such water may have elevated levels of fecal coliform and chemicals. Floodwaters may have picked up pesticides, herbicides, fertilizers, gasoline and other chemicals commonly held in household storage areas.

The bacteria which cause **tetanus**, or lockjaw, may lie dormant in soil. This is why cuts from tools or other objects that have been on the ground are particularly hazardous. Once the dormant forms (spores) of tetanus enter the body, they begin to multiply and form a powerful toxin that affects muscles. The most common symptoms are a stiffness of the neck muscles and painful spasms of the jaw muscles. Other muscle spasms may occur later. Tetanus frequently causes death. Symptoms of tetanus may appear from four days to three weeks after the wound is infected. About half the tetanus cases in the United States result from injuries considered trivial at the time they happen.

If you have not had immunization against tetanus and receive a scratch, cut or brush burn, consult a physician immediately. An immediate injection of tetanus antitoxin will last long enough to prevent infection from developing, if given in time.

Hazardous Materials

Some of the debris on your property may contain asbestos (roofing, siding, flooring tiles) or be painted with lead-based paint (pre-1978 paint). Airborne asbestos and lead dust are dangerous to inhale or ingest (eat), but they are generally harmless when wet. They should be handled with gloves and bagged while wet. Fiberglass fibers from insulation will irritate skin and lungs after contact or if inhaled; collect carefully and bag.

Burning

In areas where burning is permitted, be particularly careful not to burn asphalt roofing, vinyl siding or any form of treated lumber. The smoke can cause eye and lung irritation or other problems. Don't burn wood with lead-based paint since the lead fumes are poisonous.

Infestation

Proper cleanup and disposal of debris will reduce the potential for nesting by rodents, snakes and insects. If your debris will not be disposed of quickly, be sure to pile it as far from the building as possible to keep infestations in a concentrated area away from the home. Don't let children play on or around debris.

Approaching and Entering a Damaged Building



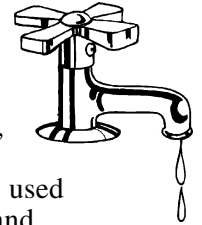
Before entering a damaged building, check for structural damage. Make sure the building is not in danger of collapsing. Look for leaning walls, sagging roofs and ceilings, and weakened support columns.

- Turn off any outside gas lines, and let the house ventilate for several minutes to remove escaping gas.
- Be sure all electric service is turned off before entering for the first time. If the main disconnect is inside the house, it would be wise to call your utility company for assistance. Even if power is out in your neighborhood, disconnect the main switch, fuse or circuit breaker at your home, and disconnect all circuits.
- When entering the building, don't use an open flame as a light source; use a battery-operated flashlight. **DO NOT SMOKE.**
- **Enter carefully.** Walking surfaces may be slippery or uneven. Check for a sagging ceiling; wet insulation or pocketed water can cause ceilings to fall. Once in, unplug all appliances that have been flooded. Remember that some appliances can shock you even after the power is turned off.

Part 3 of this series deals with determining and stopping structural damage.

Food and Water Safety

Water



After a major storm or flood, you must assume all water sources are contaminated until they are proved safe. Purify all water used for drinking, cooking and for washing eating and cooking utensils. Also purify the water used for washing hands, body and kitchen and bathroom surfaces. Do NOT try to use or purify water that has a dark color, an odor or contains floating material. Note that the purification procedures outlined here reduce biological contamination only; if you suspect chemical contamination, do not use the water.

Choose ONE of these methods to purify water that has biological contamination. Boiling is the most effective method of disinfecting of water, particularly for people who have severely weakened immune systems (infected with HIV/AIDS, cancer and transplant patients taking immunosuppressive drugs, or people born with a weakened immune system) and for infants and elderly who wish to take extra precautions.

- Boil water for one full minute in a clean container. The one-minute boil time begins after the water has been brought to a rolling boil. (The flat taste can be eliminated by shaking the water in a bottle or pouring it from one container to another.)
- If the water is clear, mix 1/8 teaspoon or 16 drops of unscented, liquid chlorine laundry bleach with one gallon of water and let it stand for at least 30 minutes prior to consumption. If the water is cloudy or colored, use 1/4 teaspoon per gallon of water. Be sure to mix thoroughly. If the treated water has a chlorine taste, pour it from one clean container to another several times.

References: *USDA Food Safety and Inspection Service, Keeping Food Safe During an Emergency, 2005 and Louisiana Department of Health and Hospitals, Office of Public Health, News Release, Drinking Water Warning Issued to Southeast LA Residents, August 31, 2005*

- Other treatments such as iodine or purification tablets are not recommended.

Water Well Purification

How do I clean and disinfect my well after a flood?

After a flood, it is important to take every precaution to ensure the safety of your well water. First, it is necessary to inspect and clean the well and pump before using them. You may want to have your water well driller or contractor check out the well before using it.

- Do not turn on the pump until an electrician or well contractor has checked the wiring. There is a risk of electrical shock! After the proper inspections have taken place, run the pump and discard the water until the well water runs clear.

- Most important, after a flood, you should disinfect the well. This can be accomplished by following the procedures outlined below; however, it is advisable to hire a well contractor to disinfect the well for you.
- Pump the well for several hours to reduce the cloudiness and contaminant levels in the water.
- Pour 4 gallons of a chlorine bleach solution into the well. Chlorine bleach solution consists of 1 gallon of bleach with 3 gallons of clean water. Open every faucet and pump the water until the water coming out of the faucet smells like chlorine, and then turn off each faucet. If you do not smell chlorine at the faucet, add a little more chlorine solution until the smell is detected.
- Let the system sit for 24 hours.
- Open the faucets and run the water until the chlorine smell disappears.
- Have the water sampled and tested. The water IS NOT safe for drinking until lab results show no indication of total coliform bacteria. You can discuss the final lab results with the lab or local parish health unit. It is important to remember that disinfection will not remove chemicals which may have contaminated your well during a flood.

Foods and Food Preparation Items Contaminated by Flood Water

- Do not eat any food that may have come into contact with floodwater.
- Discard all food that came in contact with floodwaters including canned goods. It is impossible to know if the containers were damaged and the seal compromised.
- Discard wooden cutting boards, wooden spoons, plastic utensils, baby bottle nipples and pacifiers. There is no way to safely clean them if they have come in contact with contaminated flood waters.
- Thoroughly wash metal pans, ceramic dishes and utensils with hot soapy water and sanitize by boiling them in clean water or by immersing them for 15 minutes in a solution of 1 teaspoon of chlorine bleach per quart of water.
- Clean and sanitize all kitchen surfaces, especially those that may have been contaminated by floodwaters.
- Wash and sanitize your dishes, utensils and kitchen appliances before using them.

Foods Flooded While “on the vine”

Discard any fruits and vegetables you did not harvest before a flood. This applies to any food product which was maturing or mature at the time of the flood, both above and below ground. Examples include squash, cabbage, broccoli, tomatoes, potatoes and

carrots. Most home garden plants will die from the flood. In the absence of specific research on the safety of produce from a plant which was exposed to flood water before fruit set, and given the uncertainty of what may have been in the floodwater, the LSU AgCenter recommends pulling up and discarding a flooded garden and replanting it.

You May Run into Critters in Unusual Places

Many animals in the path of a major storm are displaced and left homeless. It's common to find these animals seeking shelter and food in areas close to people — in houses, storage sheds, barns and other buildings — and under debris. Structures damaged in a storm are particularly attractive and provide easy access for wildlife.

Outdoors

- Watch where you place your hands and feet when removing or cleaning debris. If possible, don't place your fingers under debris you intend to move.
- Wear snake-proof boots at least 10 inches high or snake leggings in heavy debris areas where snakes are likely to be found.
- Never step over logs or other obstacles unless you can see the other side.

As soon as possible after a storm, remove from around houses and buildings all debris that provides protective cover for displaced animals. Keep the lawn and field vegetation mowed at a low level to eliminate protective cover. Remove any potential food source such as household trash, waste grain or other foods that might attract mice and rats and the snakes which prey on them.

Seal all openings around the house a quarter-inch and larger to exclude snakes and other animals. Check weatherstripping at corners of doors and windows. Use expanding foam sealant around water pipes and electrical service entrances. Holes in masonry foundations should be sealed with mortar. Holes in wooden buildings can be sealed with fine 1/8-inch mesh hardware cloth or sheet metal.

To prevent squirrels from jumping onto roofs, trim trees near the house. Close openings to attics and eaves of houses and buildings with heavy 1/2-inch wire mesh or soffit vents.

Rats, mice and squirrels are unwelcome post-storm guests. They can damage property and, in extreme cases, pose a potential health problem. It's a good idea to get rid of them.

Tips on Rodent Traps and Baits

- Poison baits registered for rat and mouse control contain anticoagulant and nonanticoagulant toxicants. All rodent baits are effective in controlling these pests.
- Snap traps are effective in capturing nuisance rats and mice. Successful trap baits for the trigger mechanism include bacon skin, peanut butter, oatmeal and cotton balls. Check traps each day.
- Traps, including No. 0 or 1 leghold traps, box traps and cage traps, will catch squirrels. Regular rat traps will catch flying squirrels. Good baits are apple, cracked corn and pecans removed from the shell, peanut butter and sunflower seeds.



Snakes

In the South, there are many more species of nonpoisonous snakes than poisonous snakes.

It's important to realize both poisonous and nonpoisonous snakes are beneficial to people by keeping rodent populations down. Since rodents are also displaced by storms, this is especially important.

Learn to identify nonpoisonous and poisonous snakes. Information on snake identification can be obtained from books such as field guides on amphibians and reptiles from the state wildlife department or from your local LSU AgCenter Office.

If you encounter a snake outdoors, step back and allow it to proceed on its way. Snakes usually move slowly, and a person can easily retreat from a snake's path. If you find a snake in your house, try to isolate the snake within a small area of the house.

Nonpoisonous snakes can be captured by pinning them down with a long stick or pole, preferably forked at one end, and then scooping them up with a flat-blade shovel. If you are uncomfortable removing the snake yourself, seek someone within the community who has experience handling snakes to do it for you. A good starting point is your local animal control shelter or sheriff's department.

As a last resort, you may need to kill a poisonous snake. Club it with a long stick, rod or other tool such as a garden hoe. Never try to kill a poisonous snake with an instrument that brings you within the snake's striking range (usually estimated at less than one-half the total length of the snake).

No legal toxicants or fumigants are registered to kill snakes. Repellents are available, but they have limited success.

Avoiding Mold Hazards

A flood-damaged building requires special attention to avoid or correct a mold population explosion. Molds produce spores that float and spread easily through the air, forming new mold growths (colonies) when they find the right conditions – moisture, nutrients (nearly anything organic) and a place to grow.

Mold problems can result in damage to materials and health. The longer mold is allowed to grow, the greater the risk and the harder it is to remedy. So as soon as the floodwaters recede and it is safe to return, **don't delay** cleanup and dry out.

People are mainly exposed to mold by breathing spores or fragments, and can also be exposed through skin contact. Wearing gloves and a mask or respirator that can filter mold spores (N-95 or better) is recommended.

Although there is wide variation in how people are affected by mold, long-term or high exposure is unhealthy for anyone. Exposure to mold can trigger allergic reactions and asthma attacks, may suppress the immune system or have other effects. Some types of mold can produce mycotoxins in certain conditions, which can be present in live and dead spores and fragments in the air. "Black mold" is a misleading term since many types are black.

Mold testing is not usually needed and is rarely useful to answer questions about health concerns. Some insurance companies and legal services may require sampling as a form of documentation. Professional mold remediation contractors may test before and after cleanup to provide evidence of the cleanup's effectiveness.

To clean up mold, follow these steps and refer to the EPA guidelines: *A Brief Guide To Mold, Moisture, and Your Home or Mold Remediation In Schools and Commercial Buildings* available online at www.epa.gov/iaq:

- **Isolate Work Area and Ventilate to Outdoors:** Disturbing mold colonies can cause a massive release of spores, so seal off the contaminated area from the rest of the house. If power is on, use a fan to exhaust air to the outdoors.
- **Remove And Discard Moldy Materials:** Porous moldy or sewage-contaminated materials should be removed, bagged and thrown away — including gypsum wallboard, insulation, plaster, carpet/carpet pad, ceiling tiles, processed wood products and paper. To minimize the spread of spores, cover moldy material with plastic to contain spores before removing and discard it.
- **Clean Surfaces:** Surface mold on non-porous materials such as hard plastic, concrete, glass, metal and solid wood can usually be cleaned. Cleaning must remove, not just kill, the mold because dead spores can still cause health problems.

After cleaning, you may choose to use a disinfectant to kill any mold missed by the cleaning. In the case of sewage contamination, disinfection must be performed. Contact your local health department for appropriate advice.

On color-fast, non-metal surfaces, you may disinfect with a solution of 1/4 to 1/2 cup bleach per gallon of water. Do not use in the air system. Milder, less corrosive disinfectants include alcohols, disinfecting cleaners and hydrogen peroxide. Always handle with caution, never mix bleach with ammonia and test on a small area before treatment.

- **Speed Dry:** Dry all wet materials as quickly as possible. Use air conditioning or heat with fans and dehumidifiers, if possible. New mold colonies can form in as little as three days if materials stay wet. Wood and other materials that may look dry can still be wet enough to support regrowth.
- **Remain on Mold Alert:** Continue looking for signs of moisture or new mold growth. If mold returns, repeat cleaning and consider using speed drying equipment and moisture meters. Regrowth may signal that the material was not dry enough or should be removed. Rebuilding and refurnishing should wait until all affected materials have dried completely.

These are Trying Times

A natural disaster leaves more than a trail of property destruction in its wake. Many times it leaves thousands of victims with a destroyed sense of balance. In addition to avoiding physical hazards, restoring buildings and replacing material possessions during the recovery period, you need to be aware of stress and how to reduce it. During the recovery period, devote some time to getting your stress level under control.

Start by being patient with yourself and others. Don't expect things to restore themselves instantly. Focus on the big picture instead of the little details. Determine what's really important, and keep in mind that different people, even in your own household, will have different priorities. Be tolerant of mood swings and expressions of disbelief, anger, sadness, anxiety and depression. Don't overlook the feelings of children.

Tips for Handling Stress

- Try to keep your body healthy and strong. Keep your family's diet as nourishing as possible.
- Talk with friends, family, ministers. In crisis situations, a supportive network is essential. Provide help to other families when possible; it will make both of you feel better.
- Resist the temptation to resort to bad habits. Alcohol, blaming, denial, smoking, overeating and revenge eventually cause more problems than they solve.
- Think positive. Develop a sense that things will work out.
- Make time for rest and relaxation.

Helping Your Child Cope

Children cope with stress every day. One of their biggest stressors is fear. Children's four major fears are **death, darkness, animals** and **being abandoned**.



Children have a variety of fears: being afraid of the dark or the doctor or the vacuum cleaner, for instance. Disasters are somewhat different for children because they affect entire communities. Disaster is highly publicized and children sense that adults, too, seem to be afraid. So, it is normal for children to remain stressed and have a hard time coping for a long time after a disaster.

Even children who have not been in the disaster may be afraid and worried that it will happen to them. Young children are usually worried because they don't understand what is happening. They can't always tell the difference between what is real and what is pretend. Schoolchildren are worried for a different reason. They can tell the difference, but don't yet fully understand the laws of probability. They understand what causes a storm but may expect disasters or storms to reappear soon and often.

It's hard to predict which children will be most affected and how. Research indicates children's fears vary according to age, maturation and previous learning experiences. In a disaster, children may have encountered three of the four major fears. Undoubtedly, this will have an impact on their ability to cope for quite some time.

Another important aspect about children's fears indicated in research is that fears may be intensified when adults back away from discussing painful topics with children. Many families ban all painful topics from

family conversation. Such strategies reap high costs in terms of intensified despair and negativity among children. Talk to the children about the disaster and their fears.

After a disaster, some children may:

- be upset at the loss of a favorite toy, blanket, teddy bear, etc.
- be angry. They may hit, throw, kick or act out in other ways.
- become more active and restless. They may wander about and not be able to settle down.
- be afraid of the disaster recurring. This is especially true if there is another storm or heavy rain soon. They may ask repeatedly, “Will it come again?”
- be afraid to be left alone or afraid to sleep alone. Children may want to sleep with a parent or another person. They may have nightmares.
- behave as they did when younger (sucking the thumb, wetting the bed, asking for a bottle, wanting to be held).
- have symptoms of illness such as nausea, vomiting, headaches, not wanting to eat, running a fever.
- be quiet and withdrawn, not wanting to talk about what happened to them.
- become upset easily - crying and whining.
- feel guilty that they caused the disaster because of something they did.
- feel neglected by parents who are busy trying to clean up and rebuild their lives and homes.
- refuse to go to school or to child care. The child may not want to be out of the parent’s sight.
- become afraid of loud noises, rain, storms.
- not show any outward sign of being upset. Some children may never show distress because they do not feel upset. Other children may not give any evidence of being upset until several weeks or months later.

What parents and other adults can do to help children cope with feelings:

Talk openly about what is going on. Give simple, direct answers to questions. Children have radar. They know when adults are afraid or worried and not telling them the truth. They hear other adults talk. It doesn’t help to tell a child “not to worry” yet show all the signs

of worrying yourself. Take time to talk openly, honestly and often.

Listen to your child. Watch your child at play. Often children express fear and anger when playing with dolls, trucks or friends after a major disaster. Acknowledge the child’s feelings, and encourage conversation.

Reassure your child, “We are together. We care about you. We will take care of you.”

Hold your child. Provide comfort. Touching is important for children during this period. Close contact helps assure children that you are there for them and will not abandon them

Spend extra time putting your child to bed. Talk and offer assurance. Leave a nightlight on if that makes the child feel more secure.

Help “act out” with books, art, toys and drama. Work with claydough, paint, water play. If children need something to kick or hit, give them something safe like a pillow, ball or balloon.

If your child lost a special toy or blanket, allow him to mourn and grieve (by crying, perhaps). It is all part of helping the young child cope with feelings about disaster. In time, it may be helpful to replace the lost object.

For more information, contact your local LSU AgCenter Office listed under local government in the telephone directory.

“This material is based upon work supported by the Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture, under special project numbers 92-ESNP-1-5184 and 96-ESNP-1-5219.”

Contributors:

Patricia M. Skinner, Extension Associate, Disaster Education

Beth Reames, Ph.D., Professor, Nutrition & Food Safety

Claudette Reichel, Ph.D., Professor, Housing Specialist

James F. Fowler, Ph.D. (retired)

Fred E. (Gene) Baker, Ph.D. (retired)

Surviving and Recovering From a Power Outage

Natural Hazards Series: Recovery - Part 2



One of the first things to go in a natural disaster is electrical service. You may suffer an outage even if you escape all other aspects of a storm, but it doesn't take a disaster to disrupt your service. An automobile accident or fallen tree may take out your power. The power company itself may suffer an equipment failure. Generally, these localized problems can be corrected before you need to take any action.

It is generally a good idea to turn off air conditioners, heaters and other appliances while the power is off. Otherwise, they will try to come on together when power is restored, and your circuits breakers or fuses may blow. Unplugging appliances will also protect them from power cycles and surges which may accompany restoration of electrical service.

Your primary concern with a prolonged power outage during the summer is usually knowing whether the food stored in refrigerators and freezers is safe. In severely hot weather, the loss of electric fans may also be life threatening. In severely cold weather, trying to stay warm and prevent freeze damage will be of concern.

If the power is off or will be off for an extended period, the information on these pages may help.

Using Generators for Electrical Power

Emergency generators become popular after disasters. They can help save food in freezers and refrigerators, but they also may be dangerous if not used properly.

The capacity of a generator is usually stated in watts. For example, you may have a 2,000-watt generator. This is the same as a 2-kilowatt (K.W.) generator, because 1,000 watts is equal to 1 K.W.

Watts is an electrical term determined by multiplying volts times amps. For example, if an appliance requires 120 volts and uses 10 amps, this appliance requires 1,200 watts. This information is on the nameplate of the appliance. By this formula, you can determine what you can run on your generator. For example, an appliance that requires 1,200 watts and one requiring 600 watts could be run on a 2,000-watt generator. However, appliances with motors require more current to start than they do after they are running. A suggestion is to start a refrigerator, allow it to begin running and then plug in another appliance.

Generator Tips

- Gasoline engines produce carbon monoxide. Don't run them in an enclosed area.
- Check the oil level in the engine before using and on a regular basis (for example when refueling).
- Let the engine cool off before refueling.
- The generator should be kept a safe distance from structures because of engine heat.
- Place the generator on a level surface to keep oil at proper level in engine.
- Water will damage generators as well as produce an electrical hazard, so keep the generator dry.
- A voltage drop may occur if too long an extension cord is connected to the appliance or if one with too small a wire size is used. If the extension cord becomes very warm, it is inadequate.
- Connect the generator directly to the appliance.
- You should not try to hook generators to your electrical supply box.
- Ground the generator as stated in the instructions. If you use an extension cord, use one with a ground plug.
- Have the generator running before the A.C. circuit on the generator is turned on or before you plug in the appliance.
- An appliance that has a heating element, such as a toaster or hair dryer, consumes a large amount of current. It's best to avoid using these types of items.
- If an appliance has gotten wet or damaged, it may not be in good working order. Using the appliance may damage the generator.
- Some generators have the ability to produce 115/120 volts or 220 volts. Select the outlet that corresponds to the voltage requirement of the appliance.

Play it Safe With Food

Preparing for a Power Outage

After a disaster, electrical power may be disrupted for hours, sometimes days. There are things you can do to prepare for an outage which may extend the life of foods in your refrigerator or freezer.

- Keep an appliance thermometer in the refrigerator and freezer. An appliance thermometer will indicate the temperature in the refrigerator and freezer in case of a power outage and help determine the safety of the food.
- Make sure the freezer is at or below 0° F and the refrigerator is at or below 40° F.
- Freeze containers (such as milk cartons) of water for ice to help keep food cold in the freezer, refrigerator or coolers after the power is out.
- Freeze refrigerated items such as leftovers, milk and fresh meat and poultry that you may not need immediately. This helps keep them at a safe temperature longer.
- Plan ahead and know where dry ice and block ice can be purchased.
- Have coolers on hand to keep refrigerator food cold if the power will be out for more than four hours. Purchase or make ice cubes and store in the freezer for use in the refrigerator or in a cooler. Freeze gel packs ahead of time for use in coolers.
- Group food together in the freezer. This helps the food stay cold longer.
- Separate raw meat and poultry items from other foods. Place them on the bottom shelf. If raw meat and poultry begin to thaw, this will prevent their juices from getting onto other foods.

During Power Outage

Following these steps will help keep food safe during power outages or when the freezer or refrigerator is not working:

- Keep the refrigerator and freezer doors closed as much as possible to maintain the low temperature.
- The refrigerator will keep food safely cold for about four hours if it is unopened. A full freezer will hold the temperature for approximately 48 hours (24 hours if it is half-full and the door remains closed.)
- Obtain dry or block ice to keep your refrigerator and freezer as cold as possible if the power is going to be out for a prolonged period of time. Fifty pounds of dry ice should hold an 18-cubic-foot full freezer for two days. CAUTION: Never touch dry ice with your bare hands or breathe the fumes. Place the dry ice on cardboard or on empty shelves in the freezer around the items to be kept frozen.

- Cook and eat any raw meat, fish or poultry products stored in the refrigerator by the second day of the power failure on an outdoor charcoal or gas grill.

After a Power Outage

There are certain precautions you should take before you begin using food from refrigerators and freezers that have been off for more than a few hours.

- Never taste a food to determine its safety!
- Food may be safely refrozen if it still contains ice crystals or is at 40° F or below. Check the temperature of the freezer with an appliance thermometer or food thermometer. If the food still contains ice crystals or is at 40° F or below, the food is safe.
- If a thermometer has not been kept in the freezer, check each package of food to determine its safety. If the food still contains ice crystals, the food is safe.
- Raw meats and poultry, cheese, juices, breads and pastries can be refrozen without losing a lot of quality. Prepared foods, fish, vegetables and fruits can be refrozen safely, but quality may suffer. Mark these to be used as soon as possible.
- Food that contains ice crystals or is at 40° F or below may also be cooked and served or frozen after cooking.
- Remember that seafood will be among the first to thaw and will need attention first. Also, ground meat is likely to spoil before other meats.
- Food that was held above 40° F for more than two hours generally should be discarded because bacteria may multiply to unsafe levels under these conditions. The only foods that can be refrozen under these conditions are well-wrapped hard and processed cheeses, butter and margarine, breads and pastries without custard fillings, fruits and fruit juices that look and smell acceptable.
- Vegetables held above 40° F for less than six hours may be refrozen, but with quality loss. Pecans and other nuts may be refrozen safely but may suffer quality loss.

When the refrigerator is operating again, use these guidelines to decide what to do with foods that were stored in the refrigerator:

- Discard refrigerated perishable food such as meat, poultry, fish, soft cheeses, milk, eggs, leftovers and deli items after four hours without power.
- Condiments such as ketchup, mustard, pickles, relishes, picante sauce, vinegar-based salad dressings, Worcestershire sauce and steak sauces should be fine. Discard opened mayonnaise, tartar sauce, and horseradish if above 50° F for over eight hours. Jams, jellies, preserves and syrups are all right because sugar serves as a preservative. Check for mold growth.

- Hard cheese will be OK, and if the temperature hasn't gotten too warm inside the refrigerator, blocks or slices of processed cheese can also be used. Well-wrapped butter and margarine can usually be kept as long as they do not melt, but should be discarded if rancid odors develop. Keep unopened packages of cream cheese, but discard if they are moldy when opened.
- Fresh fruits and vegetables are safe as long as they're still firm and there's no evidence of mold, a yeasty smell or sliminess. Juices are safe as long as there's no evidence of mold growth and they look and smell acceptable. Cut fruit should be discarded if above 40° F for more than 2 hours.
- Pecans, other nuts, peanuts and peanut butter also are safe.

How to Cook When the Power Goes Off

After a disaster has knocked out electricity or gas lines, cooking meals can be a problem and can be hazardous if a few basic rules are not followed.



Charcoal or gas grills are the most obvious alternative sources of heat for cooking. Never use them indoors. In doing so, you risk both asphyxiation from carbon monoxide and the chance of starting a fire that could destroy your home.

- Camp stoves that use liquid or solid fuel should always be used outdoors.
- Use small electrical appliances to prepare meals if you have access to an electrical generator and the generator has sufficient capacity. Do not use an appliance that has been flooded until it has been checked for shorted circuitry.
- You can use wood for cooking in many situations. You can cook in a fireplace if the chimney is sound.
- If you have to build a fire outside, build it away from buildings, never in a carport. Sparks can easily get into the ceiling and start a house fire.
- Never use gasoline to get a wood or charcoal fire started.
- Do not use "treated" wood as fuel for a cooking fire.
- Make sure any fire is well contained. A metal drum or stones around the fire bed are good precautions. A charcoal grill is a good place in which to build a wood fire. Be sure to put out any fire when you are through with it.
- When cooking is not possible, some canned food can be eaten cold. Or it can be warmed over canned heat or candles.
- Never leave any open fire, canned heat or candle unattended. Keep children away at all times.

Removing Odors from Refrigerator and Freezer

If food has thawed in your refrigerator or freezer, you are probably facing an odor problem that hangs on even after the spoiled food is gone. Getting rid of this odor is likely to take time, patience and a combination of techniques.

If the refrigerator has been flooded it should be replaced.

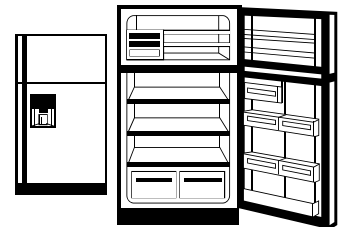
Empty, Clean and Disinfect

- Remove all food, unplug appliance and take out all removable parts. Empty the defrost water disposal pan (if it has one).
- Wash each part thoroughly with hot water and detergent. Rinse with a disinfectant solution (1 teaspoon chlorine bleach for each gallon of water).
- Wash the inside, including doors and gaskets, with a solution of hot water and baking soda. Rinse with disinfectant solution.
- Do not mix ammonia and chlorine solutions! This combination gives off toxic fumes.

Note: If garbage pickup is not expected soon, bury spoiled foods to help avoid attracting animals, insects and to reduce odors.

Air it Out

Leave the door open for at least 15 minutes to air out. If you had a long power outage, this probably won't be enough.



If odor remains, repeatedly heat and ventilate the inside walls. Warm the inside walls with a portable convection heater (one that blows warm air), hair dryer or hot air popcorn popper. Do not use a heat source that can damage, and do not leave the heater unattended.

Then turn off the heat and ventilate with a portable fan until the inside walls are cool.

Repeat this process for several hours or until the odor is almost gone.

If some odor remains, activated charcoal filters or a tray of loose activated carbon will absorb persistent odors. Look for it at drugstores, appliance service companies and hardware stores.

If you can't find activated carbon, you can use crushed charcoal (the kind used for barbecue grills), but it will not be as effective. Large servicing companies may recommend chemical deodorizers that are stronger than charcoal and last several months. Foods should be covered if such chemicals are used.

Spread about 3 ounces of the fine powered charcoal on a sheet of aluminum foil or in a shallow pan, and place on the refrigerator or freezer shelf.

If possible, run your freezer with nothing but the carbon in it for a couple of days.

After 6 or 8 hours, heat the pan of loose charcoal in a moderate (350 degrees F) oven to reactivate the carbon so it can be reused. Put the charcoal back in the refrigerator and freezer. Repeat the process until the odor disappears.

Store Food in Sealed Containers or Wrappings

Keep boxes or bowls of baking soda in the refrigerator. Even if traces of the odor remain, sealed food will not be affected.

Refrigerate and freeze all food in sealed containers or secured freezer wrappings. When you take out a package, remove wrappings as soon as possible, and dispose of them immediately.

If Nothing Works

If all these efforts don't seem to help much, there may have been seepage into the walls of the freezer or refrigerator. If the insulation has gotten wet, the appliance may have to be discarded eventually because it may not only have persistent bad odors, but may also run continuously or frost up on the outside because of the ruined insulation. In some cases, it may be feasible to replace the wet insulation, but for most, a new energy-efficient refrigerator or freezer may be more cost effective.

Power Outage in Winter

With so many people accustomed to heating with electrical energy, the loss of power in winter presents problems of staying warm and keeping the household plumbing from freezing. The principal alternative heat source is fire, which must be used safely and with caution, or it, too, becomes a hazard.

If you have suffered a power outage in severely cold weather, your alternative heat probably will not be adequate to heat the entire dwelling. If the temperature will be very low for an extended period, it may be advisable to drain interior water pipes that would have been kept from freezing by the household heat.

Keeping Yourself Warm

- Dress in layers of loose, light-weight, warm clothing.
- Eat and drink adequately. Food provides the body with energy and heat. Fluids prevent dehydration.

- Avoid alcoholic drinks. Although they make you feel warmer, they actually make you more susceptible to hypothermia.
- Don't ignore the signs of hypothermia. If you're shivering uncontrollably, stumbling around, having trouble talking, and feeling drowsy and exhausted, get help.

Heating the Living Space

- Heat only the area you are staying in; close off rooms you're not using. If you're using a fuel-burning space heater that isn't vented to the outdoors through a pipe or chimney, provide proper ventilation. Open a window slightly, and leave the door to the room open. Be sure to use the proper fuel for the heater.
- Use only seasoned (dry) hardwoods in the fireplace. Make sure the damper is open as long as any embers are smoldering; close it when the fireplace is not in use to keep hot air from escaping up the chimney.
- Never use stoves, crawfish boilers, ovens or other cooking appliances for home heating. These can produce a lot of carbon monoxide. Since they're not designed for continuous operation, using them for heating may also create a fire hazard.
- Use window drapes to insulate windows at night and open to let sunshine in in the daytime.
- Don't let children play around heaters. They may get burned or topple the heater.
- Keep flammable materials at least 3 feet from heaters.
- Keep a fire extinguisher handy.

For more information, contact your local LSU AgCenter office listed under local government in the telephone directory.

"This material is based upon work supported by the Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture, under special project number 92-ESNP-1-5184 and 96-ESNP-1-5219."

Contributors:

Lynn Hannaman, Ph.D., Professor, Engineering
Claudette Reichel, Ed.D., Professor, Housing Specialist
Patricia M. Skinner, Extension Associate, Disaster Education
Evva Z. Wilson, Ph.D. (retired)
Ruth Patrick, Ph.D. (retired)
Donna Montgomery (retired)



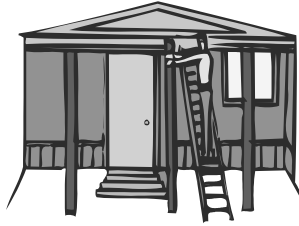
Restoring Storm-Damaged Buildings

Natural Hazards Series: Recovery - Part 3



Determining Structural Damage

Once calm has returned after a storm or flood, it's time to assess the damage and begin repairs. A number of factors should be considered, and the following information may be helpful.



Damage to Structures

Damage to structures in many cases is obvious, but damage that is not clearly seen may cause problems also.

Look for wood structural members that are cracked, and remember these can be hard to detect. Structural bracing may not be secured as tightly as originally. If doors or windows do not open as they did before the storm, this may indicate the structure has shifted. In case of severe shifting, water lines, gas lines and electrical circuits may have been damaged.

If wetness occurred because of leaking roofs, look for wet electrical circuits, wet insulation and other water damage to the interior of the structure. Once insulation becomes wet in a wall or attic, it must be replaced. Wall insulation that is sealed within the structure will not dry out.

Structures that use a roof truss system should be carefully inspected. In many cases, truss systems are constructed of 2 x 4s and metal fasteners. Any crack or break in the truss will greatly affect the strength of the truss system.

Repair or Replace?

Damaged structures can be our homes, equipment storage buildings, barns and other outbuildings. Care and consideration should be given to their restoration. Appropriate measures vary with the type, age and condition of the structure. Often, the structure should be removed rather than rebuilt. The structural integrity of the building should be assessed, and if the decision is made to repair, additional bracing may be required before repairs begin.

In some communities, repair of damaged buildings may require a building permit. Even in communities without general permitting, permits may be required in special flood hazard areas. Check with your local building official or permit office before beginning or contracting for repairs.

There are a number of ways to repair homes so they will be less susceptible to flood and wind damage. These include elevation of utility systems and appliances, as well as the use of flood-resistant materials at levels in the structure which are likely to flood. There are flood-resistant materials for flooring, walls, wall covering and insulation. There are also materials for sealing the building itself, when floodwaters do not exceed 30 inches. The American Red Cross publication "Against the Wind" details simple methods of adding extra bracing in key areas to strengthen buildings so they'll withstand high winds.

Checking Outside for Structural Damage

- Make sure the building is not in danger of collapsing. Look for bulges, sways, leaning walls and sagging roof lines.
- Check the roof. The roof is a very good indicator of the presence of structural damage. Look at the ridge of the roof, and assess whether it is straight. This can be viewed from a distance better than close up. If the ridge sags either on the end or in the middle, the load-bearing walls have shifted.
- Check the walls to verify that they are vertical and straight. This normally can be done by eye or with a carpenter's level.
- Check where the structure meets its foundation. If the house is on piers, look at the individual piers and see that they remain in plane and level. Whether it is on a slab or on piers, check to see that the building has not shifted on its foundation. Flooded wooden floors, if they do not buckle, will sometimes push walls outward at the base.
- Check for cracks in masonry exteriors of the building. Look near the corners of the structures and under and around doors and windows.

If any of these indicators of structural damage are observed, it is advisable to call a licensed building contractor, inspector or engineer. A professional needs to further assess the building for its safety and determine the required repairs. These indicators also should be pointed out to the insurance adjusters.

Entering the Building

- Turn off any outside gas lines at the meter or tank, and let the house air for several minutes to remove foul odors or escaping gas.
- Turn off the main electrical breaker until safe conditions are established. If the main disconnect is inside the house, it would be wise to call your utility company for assistance. Even if power is out in your neighborhood, disconnect the main switch, fuse or circuit breaker at your home, and disconnect all circuits. Unplug all appliances that have been flooded.
- Enter cautiously. Do not smoke. Don't use a flame as a light source.
- Check for sagging ceilings; wet insulation and pocketed water can cause ceilings to fall.

Turning off the Electricity

- Stand on a dry spot when working with electrical boxes and panels.
- If you have to step in water to get to the circuit or fuse box, call an electrician; do not try to turn off the power yourself.
- Use a dry stick to open panel doors and throw switches whenever possible. Use caution when removing fuses (can't be done with a stick).

Preliminary Repairs

Any temporary structural repairs that can be made will require some creativity since there's likely to be a shortage of materials. The most common repairs will involve nailing plywood or taping heavy plastic to broken windows, ceiling and walls.

If the building has shifted or the floors have settled badly, it may be necessary to install temporary bracing until extensive work can be done. To prevent flooded wooden floors from buckling and warping further, remove a board every few feet.

Cover damaged roof sections with heavy plastic or roofing felt anchored in place with wooden boards to help prevent leaks until permanent repairs can be made. Be especially cautious; damaged roofing can be loose or slippery.

Inside, remove any mud and debris while it is still moist.

Where freshwater flooding has occurred, remove covers from all outlets and fuses or multibreaker boxes after determining that power is not on. Flush with clean water to remove any buildup of sediment. Let dry, and spray with contact cleaner/ lubricant. Saltwater flooding will require replacement of outlets, breakers and controls. The wiring possibly can be reused after being checked by an electrician.

Dry Well to Prevent Decay

If your home was flooded, it must be cleaned and dried thoroughly to prevent mildew and future damage by wood rot. Areas wetted by clean rainwater, for instance from a leaking roof, do not need to be cleaned or disinfected. All wet areas must be allowed to dry thoroughly.

Safety

- See "Be Safe" section on avoiding mold hazards.
- For safety, wear a dust mask and protective clothing on legs, arms, feet and hands while cleaning up debris. When handling moldy or contaminated material, wear a respirator.
- Wear rubber gloves while scrubbing flood-damaged interiors and furniture.
- Buildings constructed in the '70s and earlier may have lead-based paint. Sanding or scraping this paint creates a serious health hazard. Before working with suspected lead-based paint, get more information from LSU AgCenter or visit www.epa.gov/lead.

Remove wet carpets, carpet pads and rugs within 48 hours. Disinfect the slab. You may be able to restore valuable carpets and rugs, but you should always replace carpet pads.

Remove vinyl flooring over wood subfloors if there appear to be water bubbles between the vinyl and subfloor immediately after the flood has receded. Disinfect the subfloor. Drying without a dehumidifier may take weeks. A buckled subfloor may flatten out on drying; be patient.

For wood floors, carefully remove a board every few feet to reduce buckling. Leave open until the flooring is dry.

Wet fibrous insulation will not dry out. The structure can be damaged by wood decay as a result. In addition, the moisture held in a wall cavity can create health problems with the growth of molds and mildew.

- Check inside exterior walls and attic for wet insulation. Remove all wet insulation, even if it means cutting into walls. Fibrous insulation should be replaced with new material - either the same type or foam sheets. Using foam sheets will eliminate the need to replace insulation in the next flood.
- Wash the insides of walls with mild soap, and rinse with clean water. Spray on disinfecting solution. Allow wetted areas to dry thoroughly before installing the new insulation. This may take four to six weeks without a dehumidifier.
- Paneled walls may be repaired by prying the paneling loose at the bottom. Remove any wet insulation; wash and disinfect the wall cavity. Hold the bottom of the paneling away from the sill until the sill, studs and paneling have dried - about four to six weeks.

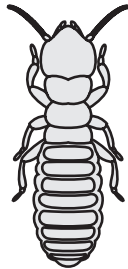
- Remove loose plaster, wallboard and wet ceiling tiles. Badly damaged plaster walls can be resurfaced with drywall. Repair damaged walls and ceilings only after the house is completely dry.
- Remove all vinyl wallpaper and do not replace it. In a warm climate, walls should be able to dry to the inside. New drywall should be finished with latex paint or porous paper.
- Open closet and cabinet doors. Remove drawers for drying and to let air circulate. With care in drying, these may be reused, depending on the materials.
- Continuously air-condition or heat the space during dry-out. Use fans to circulate the air. A dehumidifier will speed the drying process.

Flooding and Damage-causing Pests

The severity of a pest problem following a storm or flood depends on the time of year and where, in the seasonal cycle of the pest, the disaster occurs.

Termites

Flooding may leach some termiticides from treated soil or materials. If soil is deposited along the foundation of a house, it will provide a bridge for termites to go around the treated soil. Eliminate all sources of water and wood-to-soil contact. These conditions are conducive to termite infestations. Any damage to foundations or footing can result in termite infestations. Termites can enter buildings through cracks only 1/32-inch wide.



Wood debris of any kind will eventually attract termites. Termites are extremely important in recycling wood. Wood is composed of cellulose, and few organisms can break it down. We want termites to recycle wood, but we **don't** want them recycling our homes.

Get the house inspected within six months after a major flood. Contact your pest control company before disturbing the soil around the foundation or installing a drainage system around a home. Your actions may void your termite contract.

Don't be pressured into getting ANY pest control treatments done quickly if you are unsure of what you are being told. When in doubt, contact the Louisiana Department of Agriculture and Forestry - Structural Pest Control Commission.

Boring Insects and Fungi

Moisture problems in a crawlspace can lead to other problems, such as wood-boring beetles and wood-decaying fungi in floor joists. Wood-decaying fungi will not grow below 20% wood moisture content, however, and the likelihood of problems with powderpost beetles and old house borers decreases as the wood moisture decreases to 14% or less.

Repairing the Roof After a Storm



Under the multiple pressures of shortages of time and finding skilled or reputable workers, materials, etc., it may be tempting to take short cuts on roof repairs, but remember that a depreciated home and future expensive trouble can come with such a decision. Repairs now, while the damage is clearly linked to the storm, may be covered by insurance or other assistance. Later, when problems reappear, you may bear those repair costs alone.

When considering roof repair, assess the condition of the roofing materials. If your shingles are nearing the end of the warranty period, you may want to replace the roof rather than patch it, and make it more resistant to damage in further events.

A Word of Caution

Before getting on the roof to do repairs, inspect the rafters for breaks and sags.

- Remember that electrical wiring is run through the attic; be sure the power is off before entering the attic space for the first time.
- Even without a disaster, the attic can be a dangerous place. Nail tips are left exposed and there can be numerous rough edges which could cause injury.
- When you do get on the roof, be very careful. The slope of the roof presents a hazard; in addition, a damaged roof may have loose shingles, exposed nails or other features which could lead to injury. When working on steep inclines, use a safety harness.

A common roof consists of three layers of materials: sheathing, roofing felt and an outer layer of shingles, metal panels or non-metallic panels. Sheathing is nailed to rafters before the felt and shingles or panels are applied. The felt is the layer which waterproofs the roof; it is important to overlap the layers properly so water runs over a lower course, not under it. Shingles or panels protect the felt from physical damage but don't really seal the structure against rain.

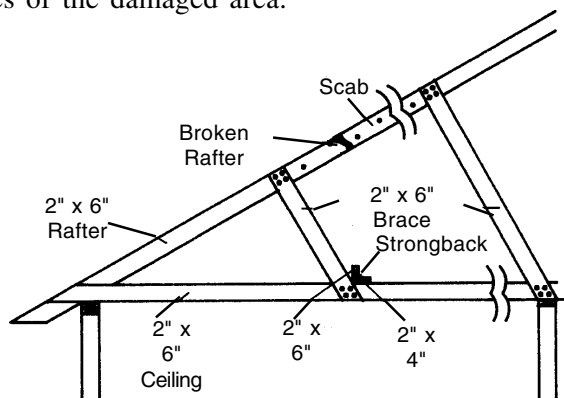
Rafters

If you have broken rafters or ridge beams, they must be repaired first. The size of the area damaged dictates proper procedures. One or two broken rafters can be repaired by using a scab-and-prop method. If three or more adjacent rafters are broken, it may be advisable to replace them. Replacing rafters may require removal of undamaged shingles, felt and sheathing along the length of the rafter to be replaced.

Check with the local permit office to find out what inspection or permitting requirements or building codes must be met.

To repair a broken rafter using a scab method, place a new rafter alongside the broken one and nail them together at several points. A scab should run approximately 4 ft. on each side of the break. A scab can be used to repair a truss rafter. In a truss, the scab must cover the broken rafter element and the points where that element is attached to other elements. The size of wood used for repairs should be the same size as the wood broken or larger (but never smaller).

Broken or severely damaged rafters are seldom as strong after repairs. Further strengthening may be achieved by adding support braces between the rafter(s) and the ceiling joist(s) below. Run two braces from each repaired rafter: one from the rafter scab to the point on the joist where it crosses a load-bearing wall and one to the joist below (see diagram). If the attachment point for a brace is not over a load-bearing wall, the joist should be reinforced with a "strongback." The strongback is constructed of one 2x4 and one 2x6 plank nailed together at right angles; it is nailed to the ceiling joist and extends across several joists on both sides of the damaged area.



Sheathing

If you have limited damage to the roof decking that can be repaired without total removal, replace damaged sheathing with panels of the same thickness as that used on the rest of the roof. Attach the new sheathing and re-nail the existing sheathing to all rafters or trusses with 8d ring shank nails spaced every 6 inches.

If you replace all the sheathing, strengthen your roof by using 40/20 rated roof deck sheathing (plywood or OSB) with a minimum thickness of 19/32 inches and a nailing pattern of 8d ring shank nails every 4 inches on all panels along a gable end, and 6 inches apart everywhere else. Make sure joints are placed over rafters and nails don't miss the rafters.



Roof Underlayment and Coverings

Consider sealing roof-sheathing joints with a self-adhered asphalt/rubber tape (modified bitumen) at least 4 inches wide to provide a secondary moisture barrier. An alternative that offers even greater protection is to apply a peel-and-stick roof membrane over the entire roof deck in place of joint tape and roofing felt.

Otherwise, roofing underlayment may consist of either a single layer of #30 felt with a minimum 2-inch overlap, or two layers of 15# felt installed in accordance with manufacturer's instructions. Both methods require a minimum 6-inch lap at ends. Flashings must be installed to maintain a shingle-type layering with the underlayment so water flows over and not under them.

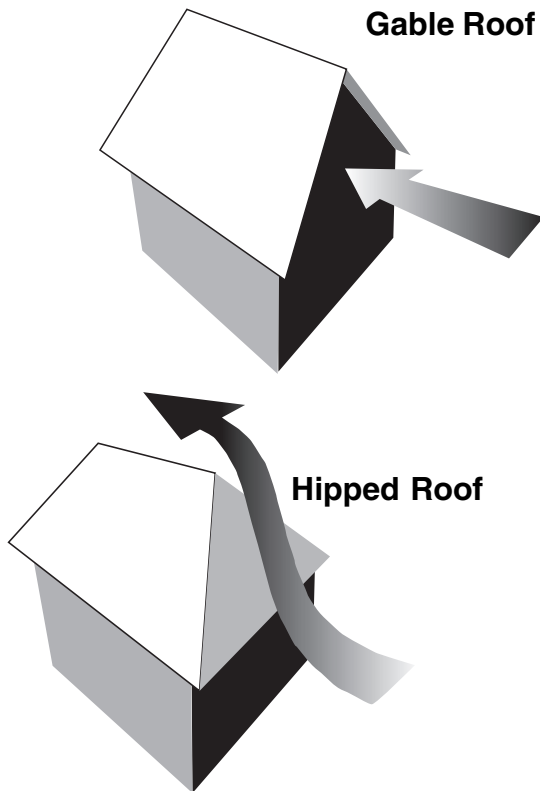
Select a high wind rated roof covering (shingles, metal, etc.) and, regardless of type, ensure that it is installed in accordance with the manufacturer's recommendations for high wind regions. Look for roofing that meets the standards: ASTM D 3161 enhanced, or UL 2390 for wind resistance and UL 2218 for impact resistance.

Strengthen Weak Points

Soffits and Gable Ends

Soffits in hurricane-affected areas tend to fail, often due to improper installation. At a minimum, make sure that the contractor installs soffit materials according to the approved installation requirements. Alternatives include using plywood or fiber cement soffits with slots for ventilation securely anchored to wood framing members.

Hip roofs are more wind resistant than gable roofs. For homes with gable roofs, bracing should be installed in the attic to resist the damaging force of strong winds on gable end walls. For more details on bracing gable walls and other protections, visit www.ibhs.org



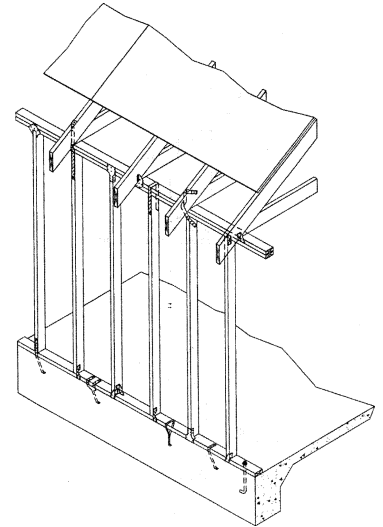
Opening Protections

When wind-borne debris breaks windows or doors, the inside air pressure buildup can cause major structural damage. To avoid the rush to board up during each storm warning, consider installing impact-resistant shutters or replacement windows, doors, garage doors and attachment hardware. Standard double-wide garage doors are especially vulnerable to wind damage. Look for products that have met recognized product approval systems such as SBCCI SSTD 12, ASTM E 1186 and ASTM E 1996, or Miami-Dade Protocols PA 201, PA 202 and PA 203.

Roof to Wall to Foundation Connections

Your home is as strong as its weakest link. To make sure the roof stays in place during a severe storm, anchor the roof to the wall with hurricane straps over each rafter (if sheathing is removed), or if that's not feasible, with hurricane clips at every wall-to-rafter connection. If the walls are opened for repair, consider also adding metal hurricane connectors that tie the studs to the bottom plate, and the bottom plate to the foundation (such as epoxy-set anchor bolts into the slab).

Typical Wall Connections: Stud spacing different from truss/rafter spacing.



For more information on disaster-resistant building techniques and systems, get the La. Extension publication, *Building Your Louisiana Home: Homeowners Guide* through your parish LSU AgCenter office or from www.LouisianaHouse.org, and visit www.flash.org, www.ibhs.org or www.blueprintforsafety.org

If you have experienced structural damage, it is likely you'll need to engage one or more contractors to make repairs. Information on selecting a contractor, what should be in a contract and consumer protection is given in Part 6 of this series, "Financial Recovery and Risk Management."

Contact your local LSU AgCenter office listed under local government in the telephone directory or www.lsuagcenter.com

"This material is based upon work supported by the Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture, under special project numbers 92-ESNP-1-5184 and 96-ESNP-1-5219."

Contributors:

Claudette Reichel, Ed.D., Professor, Housing Specialist
Pat Skinner, Extension Associate, Disaster Education
Dennis Ring, Ph.D., Associate Professor, Entomology
Fred E. (Gene) Baker, Ph.D. (retired)

Salvaging Water-damaged Belongings

Natural Hazards Series: Recovery - Part 4



Caring for Large Electrical Appliances

Appliances wet by flood water or by rainwater after roofs were damaged will need extreme care before reuse. This care will be important if the life of the appliance is to be extended and for the safety of the user.



Appliances submerged by floodwaters, particularly saltwater, are often not repairable. Appliances that have been wet by rainwater and not flooded are often repairable. It is always desirable to have these repairs made by a reputable service person. Following disasters, however, individuals who have these skills often are very busy, and the owner of the appliance may find it necessary to make repairs.

Remember that an appliance damaged by water can sometimes be made functional, but will probably have a shortened life expectancy. Depending on the age and condition of the appliance before it was damaged by water, and considering the danger of personal injury from improper repairs, it may be advisable to replace the appliance rather than repair it.

Many small appliances, including television sets, microwave ovens and radios, are more electronic than electrical. The tips offered in this fact sheet do not apply to electronic repairs. Most small appliances or electronic devices are not economical to repair.

Safety

- Approach a flooded or wetted appliance with caution. Water can short-circuit an electrical appliance so that parts which don't normally conduct electricity can shock you.
- Disconnect power to the building or to the circuit which feeds the suspected appliance. Then unplug the appliance. If the power to the building or neighborhood has been shut off, be sure all appliances suspected to have water damage have been unplugged before power is restored.
- If you are uncertain whether an appliance has been damaged by water, do not test it by plugging it in and/or turning it on. Either treat it as damaged or have a knowledgeable individual check for electrical shorts to assure that it is safe to use.

Motor and Circuit Repairs

- Disconnect all switches, contactors, motors and electrical wiring. Make a diagram of the connections, or list the steps you took to disconnect these items; this will help you remember how to reassemble the parts.
- Flush all parts of the system with clean water, and allow the parts to dry for several days before reconnecting.
- Use spray-on drying agents to help in the displacement of moisture in contacts, motors and so forth.
- Re-assemble the disconnected parts referring to your diagram or list of steps.
- Be sure the appliance is dry and properly grounded before reconnecting.

Insulation and Mechanical Components

Appliances that are insulated such as ranges, ovens, freezers, refrigerators and water heaters may need to have wet insulation removed and dried or replaced.

- Remove insulation by opening the frame of the appliance; consult your owner's manual for construction details. Use gloves when removing the insulation. Clean the cavity before installing new insulating material. Duct insulation can be used to replace the old fiberglass insulation.
- On appliances where fiberglass insulation cannot be removed, replace the appliance.
- Newer freezers and refrigerators include foam insulation that will not require removal.
- Remember to check the mechanical parts of the electric appliance. Such things as the bearings, hinges on doors and other moving parts should be dried and lubricated to prevent rust.

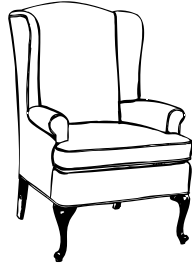
Preventing Damage from Future Floods

If the appliance was damaged by floodwaters which were less than 2-feet deep, you can help prevent future damage by installing the repaired or replacement appliance on a platform.

- Consider elevating the electrical system itself. Install all electrical switches and outlets 12 inches above either the 100-year flood level or the level of the highest known flood at your location - whichever is higher.
- Check with the local permit office to see if permits are required for any physical alteration of the location of your appliances or for modification of the electrical wiring in your building. Permit and inspection requirements vary greatly throughout the state.

Salvaging and Cleaning Furniture

Before starting to salvage damaged furniture, decide which pieces are worth restoring. Such decisions should be based on: extent of damage, cost of the article, sentimental value, cost of restoration and quality of the wood or fabric. Consider each piece individually.



Restore or Replace?

Antiques

Antiques are probably worth the time, effort and expense of restoration. Unless damage is severe, you can probably clean, reglue and refinish antiques at home. Extensive repair or re-veneering work should be done at a reliable furniture repair shop.

Solid wood furniture

Solid wood furniture can usually be restored unless damage is severe. You will probably need to clean, dry and reglue it. Do not throw away solid wood furniture until it has dried and repair efforts can be assessed. Slightly warped boards may be removed and straightened or replaced.

Wood veneered furniture

Wood veneered furniture is usually not worth the cost and effort of repair, unless it is very valuable monetarily or sentimentally. If veneer is loose in just a few places, you may be able to repair it. Veneered furniture repairs are usually best done by a reliable refinisher.

Upholstered furniture

Upholstered furniture may be salvageable, depending on its general condition. Flooded pieces will need to be cleaned and dried, and mildew should be removed. If damage is extensive, you may have to replace padding and upholstery. Since this is an expensive process, it might be wiser to apply the money toward a new piece of furniture.

You will not need to repair all pieces immediately. Any furniture worthy of repair should be completely cleaned, dried and stored in a dry, shady, well-ventilated place until you have time to repair it. Wooden furniture damaged by floods can best be salvaged through slow drying and proper repair.

First Steps to Restoration

Submerged or wet wooden furniture

Take furniture outdoors, and remove as many drawers, slides and removable parts as possible. Drawers and doors will probably be stuck tight. Do not try to force them out from the front. With a screwdriver or chisel, remove the back and push out the drawer from behind.

After you have removed movable parts, clean off mud and dirt, using a hose if necessary.

Take all furniture indoors and store it where it will dry slowly. Furniture left in the sunlight to dry will warp and twist out of shape.

When furniture is dry, reglue it if necessary. You will need equipment and clamps to reglue some pieces. Before you start, decide whether you have the time, equipment and ability to do the work. Consult an experienced carpenter if necessary. Many books are available on the subject.

To reglue loose joints or rungs, cut or scrape off old glue so the area will be as clean and free of glue as possible. Use a white all-purpose glue, following directions on container. Hold parts together with rubber rope tourniquets or C-clamps. To prevent damage from ropes or clamps, pad these areas with cloth.

Damp furniture - removing white spots

White spots or a cloudy film may develop on damp furniture that has not been submerged.

If the entire surface is affected, rub with a damp cloth dipped in (a) turpentine or camphorated oil or (b) in a solution of 1/2 cup household ammonia and 1/2 cup water. Wipe dry at once and polish with wax or furniture polish.

If color is not restored, dip 3/0 steel wool in oil (boiled linseed, olive, mineral or lemon). Rub lightly with the wood grain. Wipe with a soft cloth and re-wax.

For deep spots, use a drop or two of ammonia on a damp cloth. Rub at once with a dry cloth. Polish. Rubbing cigarette ashes, powdered pumice or a piece of walnut into spots may also help remove them. Be sure to wear rubber gloves when using these solutions.

If spots remain after all efforts to remove them, the piece should be refinished.



Cleaning Tips

- Always wear rubber gloves when using cleaning solutions or working with flood-damaged or moldy furniture. Take furniture outdoors to clean.
- If mildew has developed, vacuum (preferably with an HEPA filter) surface or brush off with a broom.
- Read fiber content labels of upholstery. Test a hidden area using a solution of lukewarm soapy water (1 tablespoon soap to 1 quart water), or dilute denatured alcohol (1/2 alcohol and 1/2 water) or bleach solution (1 tablespoon bleach to a pint of water) to see if color is removed or fabric shrinks. Allow to dry, then decide if the fabric can be cleaned. Sponge fabric to remove dirt, and use bleach or alcohol solution to remove mildew. Fabric may be removed from frame to clean, depending on the damage.
- Remove tacks, nails, braid, other fasteners.
- Although wet synthetic foam padding can be restored, the risk of contamination and costs usually make replacement a better option. Wet cotton or other organic padding should always be replaced.
- Wipe down wooden frames with a wood cleaner or alcohol solution remove mold or mildew. Wipe dry and allow to air dry in an open shady place (never dry furniture in direct sunlight).
- Dry springs and other metal parts. If rust has formed, you may need to replace or clean. Use steel wool and coat with paint. A light oil could be wiped on metal parts to help prevent later rusting. Many major manufacturers keep records of fabric or metal parts which can be ordered from the dealer for replacement.
- Be sure all parts are dry before reassembling.
- A reliable furniture repair shop will give estimates on cost of redoing furniture. Also, consider replacement cost and value of each piece. If insurance allows part value on flood-damaged furniture, it may be financially worthwhile to apply the money to new articles, rather than pay for extensive repairs.



Cleaning Carpets and Floors

Cleaning water-soaked carpets and floors is difficult in itself, but in the aftermath of a storm or flood, contamination by mud, silt, sewage and mildew can compound the problem.



It's best to replace carpets and get professional cleaners to work on floors, but this may not be possible. In any case, begin cleanup as soon as possible.

Tips

- Pull up all saturated carpets and rugs, and take them outdoors.
- If you wish to salvage valuable rugs and water was not contaminated, hose muddy carpets down. Work a low-sudsing, disinfectant carpet cleaning product deep into soiled spots with a broom.
- If only small areas of carpet got wet from leaks, pull up and prop the wet carpet to dry. Cut away wet padding.
- To discourage mildew and odors, rinse the backing with a solution of 2 tablespoons bleach to 1 gallon water. Don't use this solution on wool carpets. Also disinfect the slab or subfloor.
- Discard and replace foam pads.
- Sections of subfloors that separate must be replaced to avoid buckling. When floor coverings are removed, allow subfloors to dry thoroughly, even though it may take several months. Disinfect all wet surfaces.
- In wood floors, remove a board every few feet to reduce buckling caused by swelling. Ask a carpenter for tips on removing tongue-and-groove boards.
- Clean and dry floor thoroughly before attempting repairs. Using a dehumidifier will speed the drying process.
- In vinyl floors with wood subflooring, the floor covering should be removed so the subflooring can be replaced. With concrete floors, removal isn't necessary except to hasten drying of the slab.
- Loose tiles may be replaced if the floor has not been soaked. If water has seeped under sheet flooring, remove the entire sheet.
- While cleaning, wash exposed skin frequently in purified water. Wear rubber gloves.

Cleaning Storm-soaked Clothing

When cleaning clothes soaked during storm flooding, remember that the flood water may have been contaminated with sewage waste. Simply drying these clothes is not enough. For safety, they must be disinfected to kill harmful bacteria. Two tablespoons of liquid chlorine bleach per washer load will kill bacteria without substantially damaging clothes. Do not use more than 2 tablespoons per washer load unless all the clothes can be safely bleached.

Dry cleaning is also effective. Do not use bleach on wool, silk, feathers and foam.

Tips

- Separate wet items as soon as possible to keep clothing colors from running together. Sort out clothing that should be drycleaned. Do not mix flood-soiled clothes with clean clothes. Take care not to contaminate work surfaces.
- Items to be drycleaned should be air-dried and taken to a cleaner as soon as possible. (If you suspect they may have been in sewage-contaminated water, wear plastic gloves.) Do not dry the clothes near a heat source such as a stove. Once dry, shake and brush clothing outdoors to remove as much soil as possible.
- Rinse washable items several times in cold water. If badly soiled, soak overnight in cold water and an enzyme product or detergent. Wring out and air dry if you're unable to machine wash.
- Machine wash clothes as soon as possible. Use a heavy duty detergent and a disinfectant such as 2 tablespoons of chlorine bleach, pine oil or a phenolic disinfectant. Use highest water level possible, don't overcrowd washer and use hottest water temperature suitable for the garments. Select the longest wash cycle available. Dry in a dryer (if available) at the highest temperature suitable for the fabric.

- Stained or very dirty clothes may require adding an appropriate bleach to the wash. Follow directions on the bleach containers and garment tags for types and amounts to use.
- If an item is still stained after washing, rewash before drying. Drying may make some stains harder to remove.

Contact your local Cooperative Extension Service office listed under local government in the telephone directory or www.lsuagcenter.com

"This material is based upon work supported by the Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture, under special project numbers 92-ESNP-1-5184 and 96-ESNP-1-5219."

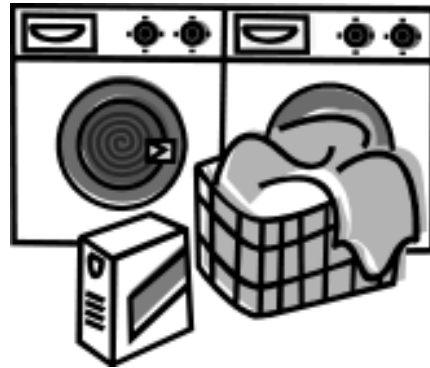
Contributors:

Claudette Reichel, Ed.D., Professor, Housing Specialist

Evva Z. Wilson, Ph.D. (retired)

Robert H. Mills, Ph.D. (retired)

Fred E. (Gene) Baker, Ph.D. (retired)



Lawn and Garden Losses

Natural Hazards Series: Recovery - Part 5



Winds, floods and winter storms can be very damaging to plants. The information in this part of the Recovery Series will help you salvage some plants, including grasses, and give you some ways to recycle plant debris. There's also some discussion for determining the value of lawn and garden losses.



Salvage Tips

When plant material has been damaged because of intense winds or flooding, prompt care should be taken to salvage all usable plants.

Resetting

Generally, it is practical and economical to reset only small, young and easy-to-manage trees. Large, weakened trees and shrubs may be dangerous, are slow to re-establish and may be susceptible to future problems and even more severe wind damage later. Fallen or partially uprooted trees and shrubs may be saved in many instances, so keep roots covered and moist before resetting.

In certain areas, where erosion and flooding have occurred, a reconditioning of soil or planting area may be necessary. Additional soil should be incorporated into the planting area for proper root coverage. Replant trees and shrubs at their original planting depth. Excess soil or exposed roots will cause further shock and damage. Firm soil around roots to eliminate air pockets and provide support. Staking the first year may be needed until roots become re-established.

Repairing and Pruning

In removing portions of a plant, use sharp tools that make a smooth, clean cut. Always make cuts next to or flush with the trunk of a tree or back to a primary limb junction. Leave no stubs. Ragged cuts and unsightly stubs are prime areas for the attack of insects or disease organisms. When removing large limbs, avoid unnecessary stripping of bark down the side of a trunk or primary limb. To eliminate stripping, make a cut halfway through from the bottom of the limb before cutting through the limb from the top, past the bottom cut.

Pruning and thinning should be done at the time of resetting so as to preserve the plant's natural form and to reduce weight. Concentrate first on broken and weakened limbs, then thin smaller branches to a limited degree. In no case should excessive amounts of pruning take place. Foliage is required to manufacture plant food. During the dormant season of December through February, additional pruning may be needed, especially for plants that aren't recovering very fast or are in decline.

Cut away only badly damaged roots. Where root damage has occurred, some upper branches and foliage may be removed to compensate for the lack of roots to reduce stress. If roots are exposed on blown over plants, immediately cover them to keep them moist until the plant can be uprighted and the roots buried.

Watering

Water all newly set plants immediately and a little more frequently than under normal circumstances. Drought may cause additional damage to plants not watered regularly. Deep soaking with a slow stream of water is most beneficial for root growth. This also will tend to eliminate air pockets around the roots.

Mulching

Mulch will conserve moisture and be helpful in re-establishing shrubs and trees. Mulch with fallen leaves, lawn clippings, pine needles or tree bark.

Staking

Trees and large shrubs that are reset should be staked until they become well re-established. Staking is also a security against stress that may come if plants experience other wind damage before re-establishment. Use metal stakes or hardwood stakes that will not decay for several months to a year. Place stakes at an angle away from the trunk for greatest support. To avoid injuring the trunk with wire or cable, thread them through short sections of old garden hose or other anchoring material, such as rope that will not cut into the trunk. A wide strap or cloth is best to prevent bark abrasion from staking. Securely anchor plants from three sides to prevent movement during normal high winds and rain.

Staking can be dangerous. Place all stakes out of the path of people so they will not trip on them or the guy wires. It would be wise to clearly mark or use bright paint on obstacles.

Fertilizing

As a general rule, fertilizer is not applied to plants which have been damaged until they overcome the shock, usually the next year. Until they become re-established, fertilizer will be of no major benefit and may injure the plant by causing excessive growth that damaged roots can't feed or water.

Fertilizer applied late in summer may also cause late growth that will be more susceptible to early freeze injury.

Treating Freeze Damage

If trees show severe damage by bark peeling, you should peel loose bark off so new bark can grow back. Fertilize the tree in the spring. Some protection for fruit trees or small, thin-barked trees can be provided by deep mulches at the base and wrapping the bottom trunk with wrap such as an old coat. Do not fertilize plants late in the year or before February to prevent active growth during cold, winter weather and to increase dormancy. Follow up on freeze-damaged plants with pruning before leafing out.

The decrease in fair market value is calculated two ways: (1) appraisals immediately before and after the casualty and (2) deduction from the before-casualty fair market value less the cost of cleanup, repair or replacement. Competent loss appraisals by real estate appraisers are the best proof of decrease in fair market value. Appraisal fees are deductible under expenses incurred to determine tax liability. Those fees are not part of the casualty loss.

Tree Debris and Renewal

Use as much tree and plant waste as possible to prevent burden on landfills.

Tips

- Cut suitable trees for firewood. Fallen trees should be cut within one year for use as firewood, and the stacked wood should be protected from rain. The thermal content of wood decreases as decay increases. Ash, oak and pecan make very good firewood. Pine and gum would be better used for other purposes. Firewood splitters may be available for rent.
- Make mulch and compost. Most tree waste will be decayed within several years, and it provides a valuable source of organic matter. Nitrogen fertilizer can be added to mulch and organic matter to break it down sooner. Chippers may be available for rent. For more information on composting and making mulch, ask for the Extension publications "Backyard Composting" and "Basic Principles of Composting." The best trees for mulch are softer species which decay faster and are easier to compost.

- Use tree sections as framing for raised beds, for temporary bridges and for erosion control on steep, eroding sites. They may be piled in rural areas for wildlife habitat or fish shelters. Fish shelters should be firmly secured in flowing waters to prevent downstream blockage of waterways.
- When cut off at or above the ground, many favorite trees will sprout from the stump and grow again. Trim neatly and make clean cuts on any trees needing pruning. Contact local nurseries or your county agent for pruning advice.
- Dead tree stumps left in the ground will decay, sometimes producing large holes. This will take several years. To speed up the process, consider using a stump grinder where large trees have been lost. The occasional addition of nitrogen fertilizer to the top of a grooved stump will also promote rapid decay.

Assessing Landscape Tree Loss



You may be able to claim a storm loss or insurance benefit as a result of storm damage. Here are ways to assess the value of damaged trees and landscaping:

- The decrease in the fair market value of the property as a result of the casualty.
- The adjusted basis in the property.
- The amount of insurance or other compensation allowed.
- The cost of replacement (when replacement is possible).

Cleanup, repair and replacement costs on the damaged landscape may be used to measure the decrease in property value if:

- The repairs are necessary to restore the property to its condition before the casualty.
- The amount spent on repairs is not excessive.
- The replacement or repairs do no more than take care of the damage sustained.
- The value of the property after the repairs does not, as a result of the repairs, exceed the value of the property before the casualty.

Homeowners who sustain significant damage to landscape trees may wish to contact the IRS to determine what other methods are used to evaluate tree value. If homeowners decide to pursue insurance claims or tax deductions, they must prove that casualty loss was sustained because of the storm or flood and

that amounts claimed as loss are deductible. Such record-keeping also is important in substantiating any claims for loss recovery.

Specifically, homeowners must be prepared to show:

1. The nature of the casualty and when it occurred.
2. That the loss was the direct result of a sudden and unusual event such as storm, lighting or wind.
3. That the claimant is the owner of the property.

The costs of the property can be proved by purchase contracts, deed, etc.; value before and after the casualty; or the amount of insurance or other compensation received or recoverable.

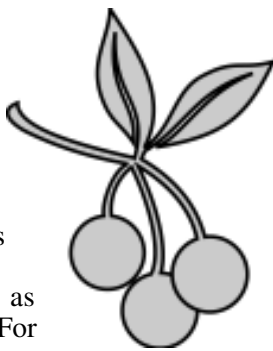
Tips

- Photographs of the property before and after the damage help show the condition and value of the property before the casualty.
- Local newspaper articles, complete with dates and the newspaper's name, serve as evidence of the casualty and its time and location.
- Appraisals are the most desirable tools for establishing values before and after the casualties.
- Keep receipts for repair and replacement for claims as well as names of witnesses who can help substantiate claims.
- A CPA, IRS agent or other knowledgeable tax person should be promptly contacted for guidance.

Small Fruit Strategies After a Storm

Storm damage to small fruits shows itself in different ways, depending on crop growth habit as well as proximity to the storm. For instance, wind is the most destructive element for most fruit trees and vine crops, while too much water, in some instances saltwater, adversely affects other crops.

Here are suggestions to help fruit growers evaluate their damage and take whatever corrective action is possible.



Where wind damage is significant, pruning should be as light as possible. However, if large areas of cambium are exposed, the plant probably will not survive without attention. Make clean cuts to minimize the exposed cambium area. If the plant can be saved, several growing seasons may be needed to retrain.

Many plants that are leaning or uprooted can be reset if the root ball is intact. Once they are reset, use stakes to immobilize them.

Dikes, terraces or raised planting beds that were altered need to be reshaped to protect the area, cover exposed roots or provide a medium for new root growth. Use the smallest equipment possible to accomplish the job. This minimizes compaction and reduces further root damage.

Premature defoliation caused by very high wind speeds will weaken fruits. Defoliation coupled with root damage will cause additional stress because the root system serves as a tremendous storage reservoir for carbohydrates manufactured by the leaves. Without this reservoir of carbohydrates to call on for energy during the winter, the plants may be saved in the short run only to die during the winter. Once the top damage has been pruned out and after the first freeze, apply nitrogen in a complete fertilizer at the rate of 30 pounds actual N per acre. This will help the plant start new root growth, which will continue during the winter as long as the soil temperature is above 45 degrees F.

Soil concentrations of 3,000 ppm soluble salt will make fruit culture very difficult. However, some fruits are much more salt tolerant than others. Grapes, figs, pomegranates and pecans are examples of fruits that will not be hurt by increased salt concentrations as readily as blueberries, strawberries and blackberries. If soil salt concentration is high, irrigate frequently to help reduce the buildup of salt after evaporation. Test all irrigation water for salinity. If irrigation ponds have been contaminated, pump them out and fill with clean river or well water. Rainfall, while complicating other cleanup activities, helps to flush the soil.

If the sodium content is 250 ppm or more, internal drainage problems will occur. They can be corrected somewhat by using gypsum (calcium sulfate, 18 percent sulphur, 20 percent calcium) as a soil additive. Apply at the rate of 2 ounces of gypsum per square foot of area (2 3/4 tons per acre), and immediately irrigate to move the material into the soil profile.

Salinity and Turfgrasses After a Hurricane

The surge of saltwater brought inland by a hurricane can cause a lot of damage to turfgrasses on lawns, golf courses, sod farms, parks, playgrounds, sports fields and leisure-recreation sites. Here are suggestions to help turf managers overcome saltwater damage to turf.

Irrigation with clean, sodium-free, fresh water is probably the most important practice to follow when rinsing accumulated salts from turf leaf surfaces and leaching salts from root zones of soils. Test all irrigation water sources for salinity. If the irrigation lake has been flooded with saltwater, pump it out and fill with clean river or well water. Or, irrigate from the well or river if not contaminated with salt.

- Bermuda, zoysia, creeping bent and St. Augustine turfgrasses have good relative salinity tolerance (1500 ppm total soluble salts).
- Tall fescue and perennial ryegrass have medium salinity tolerance (800-1000 ppm total soluble salts).
- Red fescue, Kentucky bluegrass and centipedegrass have poor relative salinity tolerance (600-800 ppm total soluble salts).

Repeated irrigation with water containing 1200 ppm total soluble salts will be harmful to the turf unless followed by sufficient rainfall or fresh irrigation water. Even irrigation water containing 500 to 600 ppm total soluble salts, when used repeatedly without being flushed with fresh water from rainfall or irrigation, can create a problem by allowing salts to accumulate in the root zone of the soil, especially in soils with poor internal drainage.

If it is overseeding time, remember that turf-type perennial ryegrasses have only medium tolerance to salinity. To avoid a loss in stand of winter cover, test the soils for salinity before overseeding. High salt levels are more damaging when the plants are young and the soil is dry. Try to keep the soil moist at least when the plants are small.

Gypsum (calcium sulfate, 18% sulfur, 20% calcium) can be used to help leach salt from the soil. Gypsum works best when incorporated into the soil, but it can be broadcast on the turf. Try 45-50 pounds of gypsum per 1,000 square feet. Gypsum is not very soluble in water, but it is more soluble than limestone. Irrigate after gypsum application to move it into the soil surface and root zone of the turf. Allow time for the chemical reaction, then test soil salinity in four to six months. Continue irrigation to leach the salts into soil below the root zone. Poorly drained soils will be difficult to leach.

Water logging the soil for extended periods can be as harmful to the turf as excess soluble salts. Core aeration or deep tine aeration, preferably with coring tines, can help improve infiltration and percolation of water and salts through the soil and below the root zone.

Contact your local LSU AgCenter office listed under local government in the telephone directory or www.lsuagcenter.com.

“This material is based upon work supported by the Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture, under special project numbers 92-ESNP-1-5184 and 96-ESNP-1-5219.”

Contributors:

Tom Koske, Ph.D., Professor

Tom Pope, Ph.D. (retired)

Earl Puls, Ph.D. (retired)

Robert Mills, Ph.D. (retired)



Financial Recovery and Risk Management

Natural Hazards Series: Recovery - Part 6

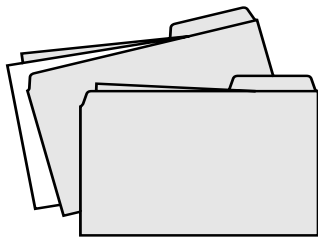


As you attempt to restore your life and home after a storm or flood, you will face many decisions. In many cases, the decisions will involve considerable investments. Naturally, you'll want to recover as much as possible through your homeowner's and flood insurance policies. Where insurance falls short of your needs, other types of assistance may be available, especially after a presidentially declared disaster. Part of your financial recovery involves making good business decisions when contracting for repairs.

These pages give advice on documenting losses, insurance, financial assistance, contracting and consumer protection.

Documenting Losses and Claims

Whether you're filing for insurance, seeking assistance or claiming a casualty tax deduction, you will need proof of your losses. Before you start cleanup, take pictures. If you can't take pictures, describe the situation accurately, listing the specific items which have been lost or damaged. Keep damaged materials for proof of loss unless your adjuster authorizes their disposal. It's okay to remove the damaged articles from their original location to prevent further damage to the building, but do not discard.



Remember to document the losses in your landscape and garden. Also, document the amount of debris you will have to remove, and whether it came from your property or elsewhere. The flood insurance policy, and some homeowner's insurance policies, cover debris removal.

- Save all receipts relating to your temporary lodging and food if your home is uninhabitable. Some policies pay the difference between normal living expenses and the cost of living elsewhere, although the flood insurance policy does not.
- Save receipts for temporary repairs you made to protect your property from further damage.
- Save receipts for materials you purchased and other items related to protecting your building or contents from flood damage. You may be able to claim these on your flood insurance policy.
- Keep a copy of all letters and receipts that are sent to insurance companies or relief agencies.

- Keep a record of all phone calls made in attempts to receive reimbursements or aid.
- Save receipts for materials you purchased and other items related to protecting your building or contents from flood damage. You may be able to claim these on your flood insurance policy.
- Keep a copy of all letters and receipts that are sent to insurance companies or relief agencies.
- Keep a record of all phone calls made in attempts to receive reimbursements or aid. Be sure to include date and time of call and name of person spoken to.

Filing for Insurance

These tips are offered to guide you in filing insurance claims for damage to your home and loss of personal property:

- Call your insurance adjuster immediately, and provide a phone number where you can be reached.
- After carefully documenting losses, begin cleanup and salvage as soon as possible. Don't wait for an adjuster. Keep damaged materials in an isolated spot as far from the building as possible.
- Follow up on your insurance call with a letter detailing the problem. Keep a copy of the letter.
- Leave phone numbers where you can be reached when the adjuster arrives.
- Ask the adjuster to assess damages. Sign the proof of loss statement. Report additional damage as it is found.
- Provide any other information the adjuster requests.

Be sure to file your insurance claim within the policy's imposed time limits. For the National Flood Insurance Program policy, this time limit is 60 days; for homeowner's policies, it varies. Review the settlement steps outlined in your policy. If you're dissatisfied with the proposed settlement offer, explain your position in writing.

If there's a significant difference between what you are offered and what you believe you are entitled to, you may wish to submit the dispute to arbitration. The arbitration process for a National Flood Insurance Program claim is described in the policy under "Appraisal" in Article 9.

Homeowner's Insurance

Many people are surprised about the extent of protection a homeowner's insurance policy offers. Although your homeowner's policy does not cover damage caused by rising floodwaters, it does offer some protection from loss caused by wind, rain, hail, snow, lightning and freezing temperatures. If you have experienced a loss or damage to property, review your policy's provisions and contact your insurance agent to file a claim and/or to update your policy to include the coverage needed for the future. Be sure your coverage amount is always at least 80% of the current replacement cost of your home. Otherwise, you will not be paid the full cost of replacing a partial loss.



Also, most homeowner's policies pay for losses to your contents (furniture, appliances, clothes, etc.) on an actual cash value basis (replacement cost minus depreciation for age or wear and tear). A better option is to buy replacement cost coverage that pays the full cost to replace your personal property at today's prices. Although the cost is higher, the extra protection is usually worth it.

Tips

These items are usually covered but **may vary according to the policy's provisions and up to the dollar amounts that you purchased:**

- Your house, including rental units that are part of the building, and any attachments to the building such as a garage.
- Any structures on your grounds that are not attached to your house such as a garage, tool shed, pool cabana, gazebo or fences.
- Vacant land that you own or rent, with the exception of farmland.
- Cemetery plots or burial vaults that you own.
- Personal possessions that you or members of your household own or use anywhere in the world. This includes the contents of your house and any structures on your grounds. It also covers any possessions that guests bring to your house, but it does not include the possessions of any tenants you may have living in your home.
- Any items friends have lent to you that you're keeping on your property.
- Your living expenses, if your house is unlivable because of damage.
- Rental payments, if you normally rent part of your house but it is unlivable because of damage.
- Legal responsibility for unauthorized use of your credit cards, checks forged under your name or counterfeit currency accepted in good faith.

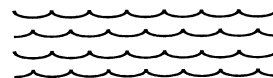
- Settlements, medical expenses, defense and court costs involved in claims brought against you for bodily injury to others or damage to the property of others.

Many policy holders may be unaware of the extent of the protection offered by their homeowner's insurance. If you have experienced a loss or damage to property, review your policy's provisions and contact your insurance agent to file a claim and/or to update your policy to include the coverage needed for the future.

A standard homeowner's policy does not cover your cars, most recreational vehicles, watercraft, animals, birds or fish. While homeowner's insurance does not cover losses from rising water, it usually does cover water damage from such things as leaking roofs, broken windows and broken pipes. Most policies do not cover sewer backup unless you purchase a sewer backup endorsement.

You should know, if you are in a designated special flood hazard area and your structure is substantially damaged by any force (wind, water, fire), you may be required by the local permit office to meet the flood damage prevention requirements for new construction; for residential structures this means elevation. A structure is substantially damaged when the cost of restoring the structure to its pre-damage condition is 50% or more of its pre-damage market value. Owners of structures in special flood hazard areas can partially insure themselves for the added expense of elevating a wind- or fire-damaged structure before repairs by purchasing a "Code Compliance" endorsement on their homeowner's policy.

Flood Insurance



Losses caused by rising floodwater are not covered under most homeowner's insurance policies. If you have purchased coverage through the National Flood Insurance Program at least 30 days before being affected by a flood, you will be protected against property damage caused by such flooding. You may also be partially reimbursed for steps you take to prevent flood damage, even if the flood never reaches your building.

Flood insurance policies written or renewed on or after June 1, 1997, include an endorsement called Increased Cost of Compliance (ICC). This coverage will pay up to \$10,000 for elevating or relocating an insured dwelling so that it is above the flood protection elevation required for new construction. For nonresidential structures, floodproofing by other methods may also be covered. The coverage may be used toward the cost of demolishing the floodprone structure and building a new structure at the required elevation.

At present, ICC coverage is available only for structures that have been substantially damaged by a current flood event for which a damage claim is being

filed. In communities with cumulative substantial damage ordinances, eligibility may include damage in prior floods.

The flood insurance adjuster may submit a damage assessment form to the flood insurance program indicating that substantial damage is suspected; however, final responsibility for determining whether a structure has been substantially damaged rests with the community. In most Louisiana communities, the determination will be made by or through the floodplain administrator who is usually the building or permit official.

Insurance doesn't protect your home, it protects your pocketbook, and makes it possible for you to restore or rebuild. There are things you can do to protect property from damage by natural hazards. It's called "mitigation." Ask about our flood protection factsheets and hurricane guide, or check the www.louisianafloods.org Web site.

Credit and Other Sources of Relief



Victims of natural hazards whose losses exceed their insurance coverages may obtain loans or other financial assistance.

- The Red Cross helps with immediate building repairs and living expenses when no other immediate assistance is available.
- Merchants and dealers may extend credit for feed, equipment and rehabilitation of buildings and land.
- The Small Business Administration (SBA) offers medium- and long-term loans for rehabilitation of non-farm homes and small businesses if overall damage in the community meets certain criteria. Borrowers may obtain 20% over the damage repair loan amount for mitigation (to protect the property from future damage by natural hazards).
- Commercial and federal land banks offer loans with moderately low interest rates for home repairs, improvements, land equipment and livestock.
- Insurance companies offer long-term loans at relatively high interest rates for home repair, improvements, land, equipment and livestock.
- Uninsured losses, and the uninsured portion of losses, should be reported as an additional itemized deduction on federal income tax form Schedule A under casualty losses.

Federal Disaster Assistance

If an event is declared as a major disaster by the president, numerous additional sources of federal assistance will become available. The Federal Emergency Management Agency will set up a disaster registration hot-line and will usually work with the

Louisiana Office of Homeland Security and Emergency Preparedness to establish local disaster recovery centers. The hot-line and recovery centers will be sources of access to the various federal assistance programs.

In addition to the SBA loans already mentioned, these types of assistance are usually available:

- Individual and family grants, for those who do not qualify for a loan
- Temporary housing assistance
- Unemployment assistance
- Assistance with recovery planning; mitigation advice
- Legal services to low-income families and individuals
- Crisis counseling for disaster-related mental health problems
- Special income tax advice and treatment

Housing rehabilitation assistance for low- and moderate-income households may also be available in some communities through the U.S. Department of Housing and Urban Development programs administered by local and state agencies.

Recipients of federal assistance for flood damage will be required to purchase and maintain flood insurance on their property. Owners of that property may not receive federal assistance in future floods unless the property is protected by flood insurance during those future floods.

Contracting for Repairs and Rebuilding

Selecting a Contractor

As you attempt to restore your life and home after a storm, the availability of local companies and individuals to perform the necessary services will be limited. It often may be advisable to do temporary repairs and wait for local contractors who will be there to guarantee their work long after the storm is over. If it is necessary to complete the repairs, however, it is important to receive good quality work, or major deterioration may appear later.

Outside contractors and companies will enter the area to offer their services. Some are honest and will do an adequate job, but be careful in working with outside contractors.

It is advisable, if possible, to check with the Better Business Bureau, either in Louisiana or in the state and city where the company or person is located. It also is advisable to check with others for whom they have worked in Louisiana. Determine if they have performed in a timely and adequate manner.

Ask for proof of insurance. The contractor must have disability and workers' compensation insurance, or you may be liable for accidents occurring on your property.

Do not pay in advance. Do not let the contractor begin work until you have a signed contract. When the job is complete to your satisfaction, pay by check or credit card, not cash.

If you cannot find a contractor willing to accept these basic terms, strengthen the patches and wait patiently until you can be sure of a good job. Even under critical emergency conditions, complete, high quality repairs must be done, or damage and deterioration will appear later.

Contract Essentials

The offer and acceptance (agreement) to do specific things in a specific manner. State clearly, simply and completely all that is to be done. If beginning and finishing dates are involved, state them in the body of the contract. A good item to include in a contract for home rebuilding is that materials and procedures used will be those provided for in minimum standards of the current building code.



Guarantees

Include what is guaranteed and for how long. Also include who is responsible for the guarantee (contractor, dealer or manufacturer).

Permits

State who is responsible for obtaining and paying for any required building permits.

Parties

Parties involved must be at least 18 years of age and mentally competent (not insane, retarded or suffering mental problems of aging). All parties must sign the contract.

For a consideration

Something of value changes hands, usually money. The amount to be paid and schedule of payments should be included in the contract. That schedule should be based on progress toward completion, not on the passage of time. Exercise your right to inspect all work or to hire someone to inspect the work for you.

Change Orders

The contract should specify procedures to be used to change the original work order. Keep a copy of the signed contract.

Withhold Full Payment Until

- The building contractor or person hired has paid for all building supplies used. Require receipts for all paid bills for all materials used.
- Everything has been completed on the job to the full satisfaction of the contract and to the satisfaction of you or your inspector.
- The contractor has provided you with releases of lien from himself/herself, from suppliers and from labor subcontractors.

Buyer Beware!

- Is the contractor offering you a special deal? Using your home as a model for his work? Shy away.
- Is the offer too good to be true? Be sure the quality is there before you agree to buy.
- Does the contractor want cash only? Find another contractor.
- Did the contractor solicit your business, rather than your calling him? Were you pressured into signing a contract? Federal law gives you three days to cancel such a contract after you sign it. Send your notice of cancellation by registered mail.
- Do you think you've been had? Have you tried to resolve your problem with the contractor, but been unsuccessful? Don't be embarrassed to call the Consumer Protection Section of the Attorney General's Office at 225/326-6465 or the 24-hour Consumer Info-line 1/800/351-4889.

For more information, contact your local LSU AgCenter office listed under local government in the telephone directory.

"This material is based upon work supported by the Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture, under special project numbers 92-ESNP-1-5184 and 96-ESNP-1-5219."

Contributors:

Patricia M. Skinner, Extension Associate, Disaster Education

Claudette Reichel, Ed.D., Professor, Housing Specialist

Jeanette Tucker, Ph.D., Associate Professor, Family Economics

Ann A. Berry, Assistant Professor (Family Resource Management)

Carolyn Carter, Ed.D. (retired)

Fred E. (Gene) Baker, Ph.D. (retired)



Louisiana State University Agricultural Center

William B. Richardson, Chancellor

Louisiana Agricultural Experiment Station

David J. Boethel, Vice Chancellor and Director

Louisiana Cooperative Extension Service

Paul Coreil, Vice Chancellor and Director

Pub. 2668A-F

9/14/05 Rev.

Issued in furtherance of Cooperative Extension work, Acts of Congress of May 8 and June 30, 1914, in cooperation with the United States Department of Agriculture. The Louisiana Cooperative Extension Service provides equal opportunities in programs and employment.

Visit our Web site:
www.lsuagcenter.com