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Flooding: Planning and Preparation

E. Kim Cassel
South Dakota State University

Donna Bittiker

Sharon Guthmiller

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FLOODING: PLANNING AND PREPARATION

Information and Resources for Individuals and Families

E. Kim Cassel, Extension Specialist
 Donna Bittiker, Family and Consumer Sciences Extension Educator
 Sharon Guthmiller, Family and Consumer Sciences Extension Educator

PLANNING FOR FLOODING

Floods are the most common natural disaster, but not all floods are alike. Regardless of the cause of flooding, disaster planning and preparation will reduce the impact of flooding and enhance response and recovery. There are some very simple steps an individual or family can take to plan and prepare for flooding:

Get a kit. Regardless of the disaster, every individual and every family should have a disaster kit. In the case of flood, the kit should be portable and waterproof should evacuation be necessary. See **Ready America—Get a Kit**¹ to learn how to prepare a kit. Be sure that all legal documents kept at home are secured in a waterproof container and are easily accessible should evacuation be necessary. Have cash on hand and plan for financial needs as well as for the physical needs of food and water. For more information on water needs and use in an emergency: **ExEx1048, Water for Emergency Use**².

Make a plan. Where will you and your family be when a disaster strikes? How will you contact each other, or if separated, where will you reunite? Take time to make a plan. The best way to do this is to hold a family meeting (see **ExEx13002, Hold Family Meetings**³) and complete a communication plan. See **Ready America—Make a Plan**⁴ to download a communication-plan form.

Be informed. Preparing an emergency kit and developing a communication plan are nearly the same for natural and man-made disasters. The exception is the need to be prepared to shelter in place, such as with pandemic influenza, versus evacuating, such as in the event of a tornado or flood. There are important preparation and response techniques that depend on the disaster type as well as on how individuals, families and/or communities respond and recover. Learn about the differences in disasters and appropriate responses for South Dakota by going to **Ready America—Be Informed**⁵.

FOR MORE INFORMATION OR PRINTING OF ANY PUBLICATION:

OFFICE:
 <<OFFICE>>

ADDRESS:
 <<STREET>>
 <<CITY>>

PHONE:
 <<PHONE>>

¹ **Ready America—Get a Kit** <http://www.ready.gov/america/getakit/index.html>

² **ExEx1048 Water for Emergency Use** <http://agbiopubs.sdstate.edu/articles/ExEx1048.pdf>

³ **ExEx13002 Hold Family Meetings** <http://agbiopubs.sdstate.edu/articles/ExEx13002.pdf>

⁴ **Ready America—Make a Plan** <http://www.ready.gov/america/makeaplan/index.html>

⁵ **Ready America—Be Informed** <http://www.ready.gov/america/beinformed/index.html>

More disaster preparedness information:

ExEx13002, Hold Family Meetings⁶

ExEx13003, Food and Water Supplies and Storage⁷

ExEx13004, If We Don't Have Utilities, How Do We Cook and Clean?⁸

ExEx13005, Saving Up for an Emergency⁹

ExEx13006, The Workplace and Community¹⁰

FLOOD PREPARATION

There are key steps one can take to reduce the risk of flood damage. In some instances, flooding may be sudden or so severe that substantial property damage cannot be avoided despite steps taken to plan and prepare.

Steps to Reduce Your Risks:

Know your flood risk. Call your local emergency management office, local government officials, or the National Weather Office for your region to obtain flooding information for your area. Ask to see a flood map of your community. There may be a projected flood elevation for your neighborhood. This information may be found on a community website. This information will help you determine required preparation.

Check your sump pump. Clean the sump pump and pit, and test the pump by pouring water into the pit. Consider having a spare submersible portable sump pump. Be sure the discharge hose delivers the water several feet away from the house and to a well-drained area that slopes away from the house. If the hose outlet is too close to the house foundation or on flat ground, the water may simply recycle down through the house drain tile. Do not run sump pump water into a rural septic system, because the water may saturate the drain field. In cities, discharging sump-pump water into the sanitary system may be illegal, may overload the system, and may cause sewage backup. For more information, see **ExEx1037, Sump Pump Questions¹¹**.

Move valuables to higher locations. Move items such as irreplaceable family photo albums, high school yearbooks, personal videotapes, tax records, insurance policies, and household inventories to high shelves or to an attic. Make copies of items as appropriate, and store them in another location not likely to flood.

Preventing sewer backup. Sewer backup often occurs when storm water enters the sanitary sewer and causes an overload of water in the system. The overloaded system begins to backflow into household lines, causing sewer water to enter basements. One way to prevent sewer backup in your home is to plug or cap all sewer openings in the basement. This includes floor drains, toilets, sinks, showers, and so on. After lifting toilets and removing sink traps, openings can be capped with wooden plugs, expandable plugs, screwed caps, or by other methods.

Check floor drains for a float plug. A floating floor-drain plug (a ball in the drain pipe) will rise and plug the drain.

Plug basement floor drains with removable grids. Remove the grid. Some hardware stores sell a plug that has a rubber center that expands to fill the pipe when the top and bottom metal plates are squeezed. (The plates are drawn together by a bolt, so you will need a wrench.)

A flexible rubber ball about 1¼ times larger than the inside diameter of the pipe can be wedged into the drain to create a tight seal. The pressure might be quite high, so brace the ball securely with a wood 2x4 against the ceiling. Hold a board or piece of plywood on the ceiling and slide the 2x4 against the bottom of the board to avoid damage to plaster ceilings. For a suspended tile ceiling, remove ceiling tiles to get access to the ceiling joists. Span a 2x4 across the two joists and wedge the vertical 2x4 between it and the ball.

Cover basement floor drains with permanent grids. Place a partially inflated inner tube around the drain, and top it with one or two squares of plywood (not particle board). The plywood must be larger across than the inner tube to cover it. Brace this in place just as with the ball on the drain. Be prepared for some seepage.

Reduce flooding from other drains. Unbolt toilets from the floor and plug the outlet pipe using the same procedure as for floor drains. Shower drains may also be plugged in this manner. Most washing machines and basement sinks have drain connections about 3 feet above the floor, so they may not overflow if the water doesn't get that high. If necessary, these drains can be disconnected and capped or plugged with expandable plugs or braced rubber balls.

⁶ **ExEx13002 Hold Family Meetings** <http://agbiopubs.sdstate.edu/articles/ExEx13002.pdf>

⁷ **ExEx13003 Food and Water Supplies and Storage** <http://agbiopubs.sdstate.edu/articles/ExEx13003.pdf>

⁸ **ExEx13004 If We Don't Have Utilities, How Do We Cook and Clean?** <http://agbiopubs.sdstate.edu/articles/ExEx13004.pdf>

⁹ **ExEx13005 Saving Up for an Emergency** <http://agbiopubs.sdstate.edu/articles/ExEx13005.pdf>

¹⁰ **ExEx13006 The Workplace and Community** <http://agbiopubs.sdstate.edu/articles/ExEx13006.pdf>

¹¹ **ExEx1037 Sump Pump Questions** <http://agbiopubs.sdstate.edu/articles/ExEx1037.pdf>

Prepare appliances for flooding. For protection against shallow floodwaters, the washer and dryer can sometimes be elevated on masonry or lumber at least 12 inches above the projected flood elevation (to keep the motors above the water level). Other options to protect the washer and dryer include moving them to a higher floor or building a floodwall around the appliances. Shut off appliances at the fuse box or breaker panel. If high water is imminent and large appliances can't be moved, wrap the appliances in polyethylene film, tying the film in place with cord or rope. The water will still get in, but most of the silt won't, so cleanup will be easier. For gas-fired clothes dryers and water heaters, it is best to shut off the gas and disconnect the appliances from the gas lines. Rapidly rising waters can "float" the dryer. Floating debris can displace appliances, break the gas lines, and create a fire hazard.

Shut off electricity to areas of the home that might flood. Even if floodwaters do not reach electrical outlets, the risk of electrical shock to someone working in a flooded basement is high (because of electric motors housed in the furnace, freezer, washer, dryer, and other appliances). Shut off electrical breakers or unscrew fuses. Do not stand in water while turning off electrical switches. If one must turn off electrical switches in a flooded situation, use a dry piece of wood or a plastic or rubber pole to do the switching, and stand on a block of wood or a plastic crate that doesn't conduct electricity. If floodwaters are getting close to the electrical entrance box, call the power supplier and have the electrical supply to the house disconnected. If the floor is damp but not flooded, ground fault circuit interrupters reduce the risk of using electricity. In newer homes, interrupters can be identified by the buttons they have between the upper and lower outlets. Interrupters can be added to any outlet or in an extension cord to reduce the hazards associated with working around water.

Move hazardous materials to higher locations.

This includes paint, oil, cleaning supplies, and other dangerous materials.

Anchor fuel tank securely. A fuel tank can tip over or float in a flood, causing fuel to spill or catch fire. Cleaning up a house that has been inundated with floodwaters containing fuel oil can be extremely difficult and costly. Fuel tanks should be securely anchored to the floor. Make sure vents and fill-line openings are above projected flood levels. Propane tanks are the property of the propane company. You'll need written permission to anchor them. Ask whether the company can do it first. Be sure all work conforms to state and local building codes.

Discuss safe emergency procedures. Teach adults and older children where electric fuse boxes, water service mains, and natural gas mains are and how to turn them off.

Assemble supplies in case the electricity goes off. Gather water and food that requires no refrigeration or cooking, a non-electric can opener, a battery-powered radio and flashlight, and extra batteries.

Keep the car fueled. Stations may not be able to operate because of lack of electricity.

Plan and practice an evacuation route. Contact your local emergency government office or local American Red Cross chapter for a copy of the community flood evacuation plan. This plan should include information on the safest routes to shelters. Individuals living in flash flood areas should have several alternate routes to higher ground. Where would you go if your home flooded? A local shelter? A family member's house? A friend's house?

Assemble supplies for a possible evacuation. Gather water, nonperishable food, paper plates/cups and plastic utensils, extra clothing and shoes, blankets or sleeping bags, a first aid kit and prescription medications, cash and credit cards, important phone numbers, and special items for babies and the elderly.

Plan for pets.

Pets aren't allowed in human shelters due to health regulations. Plan ahead for a safe, higher location for your pet, and arrange for the pet's care. If left behind, stressed pets can damage your house, and their safety is at stake too.

Develop an emergency communication plan.

In case family members are separated (because of work or school) during a disaster, choose a long-distance relative or friend who can serve as the "family contact." After a disaster, it is often easier to call long distance than to place a local call. Make sure everyone in the family knows the name, address, and phone number of the contact person.

Discuss the situation with children honestly and openly. Hiding the situation from them will probably be even more stressful. For more information, see **Helping Children Through the Flood**¹².

¹² **Helping Children Through the Flood** <http://www.ag.ndsu.edu/flood/family/helping-children-through-the-flood>

In addition the information in this publication, there is also more specific flood preparation information on the SDCES web page related to:

Sandbagging for Flood Protection¹²

Preventing Snowmelt Water Problems¹³

Avoiding Groundwater Damage to Homes¹⁴

Sump Pump Questions¹⁵

If you are renting a residence, visit with your landlord (as a renter, you do have rights and responsibilities): Renter's insurance will not cover flood damage. In the event of flood damage, immediately notify the landlord of any damage to the property and make reasonable efforts to help protect the property from any additional damage. Your landlord is responsible for having the residence repaired and returned to livable condition.

One caution as you prepare your family and property for flooding:

Beware of con artists and scams for products and services that will not mitigate damage or enhance recovery. If you have any questions about a product or service being offered, check with the

Better Business Bureau or the South Dakota Attorney General's office.

As you plan and prepare, beware of identification theft either from people selling products and services or from telephone solicitations. Identity thieves may pose as government officials or representatives of government agencies. Always ask for identification. You may also ask for a number or Web site to verify the product or service.

Your local emergency management office will be able to verify what government or reputable non-profit agencies are working as part of flood preparation, response, and recovery.

The South Dakota Cooperative Extension Service is a land-grant member of the Extension Disaster Education Network and online Extension Service, eXtension. If you have a question related to flooding, you may check **eXtension Flood FAQs**¹⁶ to see if there is an answer that may help you. In addition, you may go to **eXtension Ask an Expert**¹⁷ and submit a question to be answered by flood experts from South Dakota or other land-grant universities across the country.

¹³ **Sandbagging for Flood Protection** <http://www.ag.ndsu.edu/pubs/ageng/safety/ae626w.htm>

¹⁴ **Preventing Snowmelt Water Problems** <http://www.ag.ndsu.edu/flood/home/preventing-snow-melt-water-problems>

¹⁵ **Avoiding Groundwater Damage to Homes** <http://www.ag.ndsu.edu/flood/home/avoiding-groundwater-damage-to-homes>

¹⁶ **Sump Pump Questions** <http://www.ag.ndsu.edu/flood/home/sump-pump-questions>

¹⁷ **eXtension Flood FAQs** <http://www.extension.org/flood/faqs>

¹⁸ **eXtension Ask an Expert** <http://www.extension.org/ask>

RESOURCES

SDCES National Preparedness Resources, EDEN Flood and Mold Topic Pages, EDEN eXtension Flooding COP, NSDU Flood Resources, UMN Flood Resources, South Dakota Department of Health, Centers for Disease Control and Prevention, American Red Cross, and the United States Environmental Protection Agency.

SDCES Flood – <http://sdces.edu/flood/>



South Dakota
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Available electronically on the Internet at <http://agbiopubs.sdstate.edu/articles/ESS1520.pdf>

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