

# Floods & Rain



## Phone Information

- **Flood Information Line** – 1-800-232-9077, Mon–Fri, 8:30 a.m.–1:30 p.m. Voice mail after hours. Calls returned the next business day. Email anytime: [fil@umn.edu](mailto:fil@umn.edu). — University of Minnesota Extension — Answers about water, crops, horticulture and climatology issues.
- **AnswerLine** – 1-800-854-1678, Mon–Fri, 9 a.m.–noon and 1 p.m.–4 p.m. —University of Minnesota Extension — Clean stains and mildew; cook, can and freeze food safely.
- **ECHO Health Alert** – 1-888-883-8831 — Emergency & Community Health Outreach (ECHO) Minnesota Collaborative —Minnesota/North Dakota flood information in 10 languages.
- **511 Traffic and Road Conditions** — Minnesota Department of Transportation —Weather, construction, delays and more, online or by phone at 5-1-1.

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## Climatology

### Climate Data

- **Minnesota Climatology Working Group** — State Climatology Office, DNR Waters and University of Minnesota — Latest weather conditions, current and historical climate data, and agricultural information.

### Rivers

- **Multimedia Weather Briefing** (Video) National Weather Service Weather Forecast Office —Experimental briefing for the media.
- **North Central River Forecast Center** — National Weather Service Weather Forecast Office —Daily updated maps of observed and forecast conditions and precipitation.
- **Advanced Hydrologic Prediction Service** — National Weather Service — Warnings and forecasts, precipitation, river observations, satellite images and more.
- **North Central River Forecast Center’s Quantified Precipitation Forecasts** — National Weather Service Weather Forecast Office — Access areal-averaged and gridded graphical QPF products.

### Streams

- **Stream Flow Reports** — Minnesota Department of Natural Resources — Weekly reports on stream flow

conditions.

- **WaterWatch (U.S.)** — *U.S. Geological Service* — Map of real-time U.S. streamflow compared to historical streamflow.
- **WaterWatch (Minnesota)** — *U.S. Geological Service* — Map of real-time Minnesota streamflow compared to historical streamflow.

## Watershed and Floodplain Management

- **Minnesota Association of Watershed Districts** — 45 watershed districts partner in water protection and management.
- **Association of State Floodplain Managers** — Floodplain management, flood insurance, and flood preparedness, warning and recovery.

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## Family

**After a Natural Disaster** (four-part series), compiled by the *Federal Emergency Management Agency, Minnesota Department of Human Services-Mental Health Division, CLIMB Theatre and University of Minnesota Extension*.

- **Coping with Loss** — The five stages of grieving.
- **Managing Anger** — Change how you see things, say how you feel and calm down.
- **Talking with Children** — Accept kids' feelings, be honest and reassuring, and let them help.
- **Ending Isolation** — Talk, ask for help and be with people.

## Disaster plan

- **'Red File'— your grab and go case for emergency situations** — *University of Minnesota Extension* — Include papers, prescriptions, phone numbers, passwords and cash.
- **Family Disaster Plan** (215K PDF) *University of Missouri Extension* — All your important information in one booklet.

## Helping children cope

- **It's Important to Talk with Children about Flooding** — *University of Minnesota Extension* — Make time to ask questions and listen; be available.
- **Children and the Flood: From Fear to Hope** — *University of Minnesota Extension* — Limit exposure to flood news, provide structure and help others.
- **After the Flood: A Guide for Parents** — *University of Minnesota Extension* — Signs of stress in kids of varying ages.
- **Helping Your Child Cope with Disaster** — *University of Minnesota Extension* — Treat fears with kindness and understanding.

## Stress and grief

- **Communicating Under Pressure** — *University of Minnesota Extension* — Speak carefully and listen attentively.
- **Controlling Stress** — *University of Minnesota Extension* — How to take care of yourself; know when to seek help.
- **Grief and Crisis Decisions** — *University of Minnesota Extension* — How each stage of grief affects decision-making.

- **Trying to Understand and Cope with Disasters** – *University of Minnesota Extension* – Symptoms of stress and how to ease it; when to seek help.
- **Change: Loss, Opportunity, and Resilience** (Presentation, 8:45) *University of Minnesota Extension* – When change is loss, people grieve.

## Getting help

- **Community Agencies That Can Help** – *University of Minnesota Extension* – Jobs, finances, fuel, housing, clothing, health and social services.
- **Identifying Sources of Support and Friendship** – *University of Minnesota Extension* – Build your personal network.
- **Adjusting to Suddenly Reduced Income** – *University of Minnesota Extension* – Worksheets for managing emotions and finances.

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## Farm

### Livestock

- **Livestock Disaster Planning** – *University of Minnesota Extension* – Power outages, blocked roads, feed, injuries and farm records.
- **Be aware of post-flooding health concerns in livestock** (News release) *University of Minnesota Extension* – Water, feed, vaccinations, illness and more.
- **Flood-damaged feeds, forages pose risks for livestock** (News release) *University of Minnesota Extension* – Assess for mold and contaminated silt.
- **Maintaining Livestock Health after a Flood: Issues of Disease Control and Sanitation** – *National Ag Safety Database* – Give animals extra care; clear fields of debris.



### Crops

- **Impact of Flooding on Organic Food and Fields** (PDF, 55K) *University of Minnesota Extension* – Certification requirements, residue analysis, variances and more.
- **Managing Flooded Grain Bins** – *University of Minnesota Extension* – Unload dry grain; try to salvage wet grain.
- **Upper Midwest Haylist** – *Extension Services of Minnesota, Illinois, South Dakota and Wisconsin* – Connecting hay buyers and sellers.
- **Don't Ignore Flood-Damaged Hay** – *Iowa State University Extension* – Move wet hay; watch drying hay for signs of heating.

### Equipment, debris

- **Be Aware of Special Flood-Related Farm Safety Hazards!** – *University of Minnesota Extension* – Electrical equipment, carbon dioxide, towing chains and more.
- **Flooded Farm Vehicles and Equipment** – *North Dakota State University Extension Service* – Cleaning and reconditioning.
- **How to handle debris and sedimentation on flooded areas** (PDF, 68K) *Iowa State University Extension* – Recover, recycle or burn debris; evaluate silt deposits or scouring.

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## Food/Water

### Food

- **Power Outages—Keep Food Safe** — *University of Minnesota Extension* — Keep refrigerator closed; add dry ice to freezer.
- **Food Safety During a Flood** — *Minnesota Department of Health* — Wash hands and surfaces, and much more.
- **Safety of Frozen Foods After A Power Failure** — *North Dakota State University* — Move food to locker plant, if possible.
- **Safe Handling Of Food And Utensils After A Disaster** — *North Dakota State University* — What to throw out; what can be saved.
- **Safety of Produce from Flooded Gardens** (PDF, 108K) *University of Wisconsin Extension* — Discard leafy veggies or soft fruits; salvage produce to be cooked.
- **Emergency Preparedness: Keeping Food Safe During an Emergency** — *U.S. Department of Agriculture* — Charts of what to save, refreeze or toss.
- **Safe Food Handling: A Consumer’s Guide to Food Safety: Severe Storms and Hurricanes** — *U.S. Department of Agriculture* — Power outages, floods, odors and more.

### Water

- **Safe Drinking Water from Wells in Flooded Areas** — *University of Minnesota Extension* — Steps for disinfecting water.
- **Why Well Water Smells Bad** — *University of Minnesota Extension* — Sulfur or “rotten egg” smell may be bacteria.
- **Water Safety During a Disaster** — *Minnesota Department of Health* — Help with wells and drinking water.
- **In Emergency, Disinfect Drinking Water by Boiling or Chemical Treatment** (News release) *Iowa State University Extension* — Boil or disinfect with chlorine or iodine.

### Cooking

- **Preparing Food Without Power** — *University of Minnesota Extension* — Try fireplace, camp stove, grill or fondue pot.
- **Preparing Food During A Power Failure** — *North Dakota State University* — Conserve fuel and water; avoid health risks.

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## Horticulture

### Trees

- **Flooded Trees - Minimize Injury** — *University of Minnesota Extension* — Types of damage and what to do after the flood.
- **Hiring a Tree Care Professional** — *University of Minnesota Extension* — Look for certified, insured and reputable.
- **Flood Damage Effects On Trees** — *University of Minnesota Extension Yard & Garden Line* — Urban trees can be susceptible to stress and diseases.
- **Trees and Shrubs for the Drainage-Challenged Landscape** — *University of Minnesota Extension Yard & Garden Line* — A list for southeastern Minnesota.



## Lawns

- **Repairing Spring Flooded Lawns** – *University of Minnesota Extension* – Lawn grasses can withstand cold floodwaters.
- **Seeding and Sodding Home Lawns** – *University of Minnesota Extension* –When most of the lawn has been damaged severely or killed.
- **Lawn Renovation** – *University of Minnesota Extension* – Chart summarizes nine steps.

## Plants

- **April Showers Bring May Pathogens** – *University of Minnesota Extension Yard & Garden Line* – Pseudofungi, or “water molds,” threaten plants suffering flood stress.
- **Waterlogged Plants** – *University of Minnesota Extension Yard & Garden Line* –Species and soil determine survival.

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## Housing

### Clean-Up

- **Recovering from a Disaster: Picking Up the Pieces** ( PDF, 472K) *University of Minnesota Extension* – Safely clean and dry belongings, food safety, pets, and more.
- **Priorities for Clean-Up and Repair After a Flood** – *University of Minnesota Extension* –Safety first: shut off gas and power, wear boots and gloves.
- **Flood Safety and Cleanup** – *Minnesota Department of Natural Resources* –Repairing, evacuating, returning to clean up, and more.
- **Cleaning Flooded Floors and Woodwork** – *University of Minnesota Extension* –Scrub floors and woodwork within 48 hours (but no ammonia).
- **Flooded Walls - Drying and Cleaning** – *University of Minnesota Extension* –Quickly dry surfaces; remove all wet insulation, and more.
- **Cleaning Up After A Flood** – *University of Minnesota Extension* –Clean, then disinfect, with suitable products.
  - **La limpieza después de una inundación** (*Spanish*)
- **Portable Heater and Generator Safety** – *University of Minnesota Extension* –How to use these potentially dangerous units correctly.
- **Home Insurance Claims** – *University of Minnesota Extension* –Keep careful records of damage and losses.



### Water, moisture

- **Moisture in Basements: Causes and Solutions** – *University of Minnesota Extension* –Five approaches to fixing the problem.
- **Excess Moisture in the Home** – *University of Minnesota Extension* –Keep humidity level at 30% to 45%.
- **Testing Housing Materials for Moisture** – *University of Minnesota Extension* –Concrete, drywall, wood, furniture do best when moisture is less than 10%.
- **Managing Water Infiltration into Buildings** – *Department of Environmental Health & Safety, University of Minnesota* –A checklist for water damage, and more.

## Fungi, mold, mildew

- **Molds—Your Safe Home** — *University of Minnesota Extension*— Detect, disinfect and prevent mold to avoid health problems.
- **Mold Internet References Available to the Public** — *University of Minnesota Extension* —Facts, Q&As, checklist, and more.
- **Mold in Homes** — *Minnesota Department of Health* —Investigate for mold; six steps to removal.
- **Mold** — *U.S. Environmental Protection Agency* —A Web-only course, publications, and more.
- **Removing Mildew** — *University of Minnesota Extension* —From textiles, paper, painted surfaces.
- **Fungi in Buildings** — *Department of Environmental Health & Safety, University of Minnesota* —Glossary and references.
- **Fungal Abatement Safe Operating Instruction** — *Department of Environmental Health & Safety, University of Minnesota* —12 steps for Facilities Management personnel tasked with mold removal.

## Septic Systems

- **Septic System Operation after a Flood** — *University of Minnesota Extension Water Resources Center* — Pump the tank as soon as possible and more.
- **Preventing and Solving Sewage Treatment Problems During a Flood** — *Minnesota Department of Health* —Stop using the system if it becomes flooded and more.

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## For Kids

**Educational information for children about floods**, compiled by Extension’s **Environmental Science Education** Regional Educators.

## Internet Resources

- **Floods** — *FEMA for Kids (Federal Emergency Management Agency)*— Flood terms, games and flood math.
- **Flood Information for Children** — *North Dakota State University Extension Service* —Helping kids deal with stress, anger and disaster.
- **PBS In Focus: Floods** — *Public Broadcasting Service* —Flood stories, science, pet rescues, and more.
- **Iowa kids are helping kids affected by 2008 floods** — (News release) *University of Iowa News Services* — “Kids Helping Kids in the Flood” donations.

## Curriculum and lesson plans

- **Minnesota Project WET (Water Education for Teachers) K–12** — *Minnesota Department of Natural Resources* —Wetlands, seasons, topography, and more; the journey of a droplet in a flood.
- **WeatherEye: Flash Flood! KGAN-TV** — *Central Iowa Power Cooperative and KGAN-TV* — Flood types, safety, quiz and teacher’s guide.
- **Flood!** — *Public Broadcasting Service: Nova Online* —The Great Flood of 1993 and more; lesson plans.

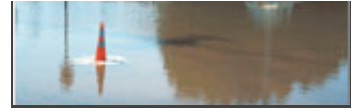
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## General Resources

### Minnesota



- **Flooding in Minnesota** — *Minnesota Department of Natural Resources* — Stream flow, government sources, past and future floods, and more.
- **Flood Preparedness and Response for NW Minnesota** (PDF, 1.9MB) *John Shutske, University of Minnesota Extension* — Families, communities, pets and more.



## Flood Information

- **Disaster Education – Flood Information** — *North Dakota State University Extension* —Comprehensive links for homes, families and farms.
- **Building a Sandbag Dike** (Video, 3:39) *North Dakota State University Extension* — How to fill and stack sandbags.
- **Disaster Handbook** — *University of Wisconsin Extension Service* —The complete Extension resource.
  - **Disaster Handbook Flood Chapter** (653K PDF, 52 pages) *University of Wisconsin Extension Service*
- **Floods and Flooding** — *Extension Disaster Education Network (EDEN)*— Multistate effort to help citizens affected by disasters.
- **Extension Responds - Flood** — *University of Wisconsin Extension* —For homes and farms: flooding, safety, archives, and more.
- **Flood** —*Federal Emergency Management Agency* —Facts, solutions, online tools.

## Hazards and Cleanup

- **Floods: Minimizing Pollution and Health Risks** — *Minnesota Pollution Control Agency* — Household and industrial hazards, heating oil, drinking water, asbestos, manure, and more.
- **Hazards of Flood Cleanup Work** — *National Institute for Occupational Safety and Health* —Electricity, carbon monoxide, cold, fire, hazardous materials, and more.
- **Protect Yourself from Mold** — *Centers for Disease Control and Prevention* —Recognizing and preventing mold.
- **Reentering Your Flooded Home** — *Centers for Disease Control and Prevention* —Never turn power on or off yourself; drying out your house.
- **After the Flood – A Homeowner’s Checklist** — *Canada Mortgage and Housing Corporation* —Start by drying house, furnishings within 48 hours.
- **Flood Cleanup Alerts** — *United States Department of Labor, Occupational Safety & Health Administration (OSHA)* —Health hazards, fungi, asbestos and lead poisoning.
- **Flood Cleanup** — *Environmental Protection Agency* —Publications and links on mold, bacteria and viruses (English and Spanish.)

## Flood Awareness

- **NOAA’s National Weather Service and FEMA Offer Tips for Flood Safety Awareness Week** (News release) *National Oceanic and Atmospheric Administration* — Observing the fifth annual in 2009.

## Building a Sandbag Dike

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