Government of Canada | Gouvernement du Canada

Self-Help Advice

Floods

What to do before and after

Canada

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Floods

BEYOND THE HUMAN TOLL TAKEN IN LIVES AND SUFFERING, FLOOD DAMAGE COSTS CANADIAN TAXPAYERS MILLIONS OF DOLLARS ANNUALLY.

Though governments at every level work to reduce the risk of floods, the first line of defence always rests with the individual. Each of us has a responsibility to protect our homes and families to the greatest extent possible. By planning ahead and taking sensible precautions, you can do your part to minimize flood damage.

Flood threats to particular areas can usually be forecast in a number of ways, including:

- constant evaluation of rising water tables that result from heavy rain;
- surveys of snow conditions in river drainage basins; and
- meteorological observations and forecasts.

Flash or sudden flooding, in which warning time is extremely limited, can result from other causes such as earthquakes, tsunamis or tidal waves, hurricanes, violent storms or bursting of dams.

In all cases, local government authorities try to keep residents informed of developments in areas most likely to be affected by flooding. Regular media advisories will recommend actions people should take to limit or prevent disaster. As the need arises, more detailed instructions by municipal or provincial authorities will be given.

Before the flood

ELECTRICITY
When there is immediate danger of flooding, shut off all power in your home.

HEATING EQUIPMENT
Special precautions should be taken to safeguard, or minimize damage to, electrical, natural gas or propane heating equipment. If there is enough warning time, consult your supplier for instructions on how to proceed.

GENERAL PRECAUTIONS
Ensure that you have a battery-powered radio in working order, with spare batteries, to listen to instructions from your local station.

Prepare an emergency survival kit that includes food, water and medical supplies in an easy-to-carry container. In addition to the battery-powered radio and spare batteries, it should contain at least the following items:

- flashlight with spare batteries;
- warm clothing, including waterproof outer garments and footwear;
- blankets;
- all necessary medication;
- infant care items;
- personal toiletries;
- identification for each member of your household; and
- any important personal and family documents.

Move furniture, electrical appliances and other belongings to floors above ground level.

Remove such toxic substances as pesticides and insecticides from the immediate area to prevent pollution.

Remove toilet bowls, and plug basement sewer drains and toilet connections with a wooden plug.

Disconnect eavestroughs if they are connected to the house sewer.

In some cases, homes may be protected by using sandbags or polyethylene barriers. But this approach requires specific instructions that must be obtained from your local emergency officials.

EVACUATION

Vacate your home when you are advised to do so by local emergency authorities. Ignoring such a warning could jeopardize the safety of your family or those people who might eventually have to come to your rescue.

When you leave, take your emergency survival kit with you.

Follow the routes specified by officials. Don't take shortcuts. They could lead you to a blocked or dangerous area.

Make arrangements for pets.

Should time allow, leave a note informing others when you left and where you went. If you have a mailbox, leave the note there.

If you are evacuated, register with the reception centre so that you can be contacted and reunited with your family and loved ones.

If you are using your car, try not to drive through flood waters. Fast water can sweep your car away. However, should you be caught in fast-rising waters, and your car stalls, leave it behind. Always consider your safety and the safety of others first.

After the flood

FOLLOWING A FLOOD, IT IS IMPORTANT TO RESTORE YOUR HOME TO GOOD ORDER AS SOON AS POSSIBLE TO PROTECT YOUR HEALTH AND PREVENT FURTHER DAMAGE TO YOUR HOUSE AND ITS CONTENTS.

The Canada Mortgage and Housing Corporation has prepared the following information to help you organize your clean-up. However, this information is provided as self-help advice only.

Before you begin

Exercise caution when re-entering your home. Avoid electrical shock by wearing rubber boots in an area flooded with more than five centimetres (two inches) of standing water.

ELECTRICITY

Keep extension cords out of the water. If the power is on in the flooded area, shut it off immediately at the breaker box.

If conditions are wet around the breaker box, stand on a dry board and use a dry stick to turn off the switch.

Consult with your local electrical utility if you require assistance.

THE BUILDING

Make sure the building is structurally safe. Look for buckled walls or floors. Watch for holes in the floor, broken glass and other potentially dangerous debris.

WATER

Flood water can be heavily contaminated with sewage and other pollutants, and pose a serious health hazard. If through taste, colour or odour, you suspect that your drinking water has been contaminated, purify it before drinking, either by boiling it for at least 10 minutes or adding purification tablets. If you choose to chlorinate your water with a non-perfumed bleaching compound, add one drop per litre of water, or three drops per litre of cloudy water, stir and allow it to stand for at least 30 minutes before consuming.

Household items that have been flood-damaged will have to be bagged, tagged and discarded according to local regulations.

EQUIPMENT

Assemble equipment and supplies, which should include:

- gloves, masks and other protective gear;
- pails, mops, squeegees and plastic garbage bags;
- chlorine bleach and non-ammonia dishwashing detergent (Note: Never mix bleach with ammonia, since the fumes produced when they're combined are toxic.); and
- large containers for soaking bedding and clothing, and lines to hang them until they are dry.

You may also need to rent extension cords, submersible pumps, wet/dry shop vacuums, a carbon-monoxide sensor, and dehumidifiers, fans or heaters.

Remember to store all valuable papers that have been damaged in a freezer until they are needed.

Record details of flood damage, by photograph or video, if possible. Register the amount of damage to your home with both your insurance agent and local municipality immediately.

First steps in clean-up

WATER DAMAGE

Immediately add about two litres of chlorine bleach to standing water. Do not occupy a house that still contains standing water.

Remove water from your flooded home slowly. Drain it in stages — about a third of the volume daily. If the ground is still saturated and water is removed too quickly, it could cause the walls or the floor to buckle. Use pumps or pails to remove standing water, then a wet/dry shop vacuum to mop up the rest. For instructions on how to disinfect and restore wells and cisterns, contact your local or provincial health authorities or emergency management organization.

HEATING

Do not heat your home to more than four degrees Celsius (about 40 degrees Fahrenheit) until all water is removed.

If you use pumps or heaters powered by gasoline, kerosene or propane, buy and install a carbon-monoxide sensor. Combustion devices can produce large amounts of lethal carbon monoxide when they're not tuned-up or are improperly ventilated.

DIRT AND DEBRIS

Remove all soaked and dirty materials, and debris. Break out walls and remove drywall, wood panelling and insulation at least 500 millimetres (20 inches) above the high-water line. Remove residual mud and soil, furniture, appliances, clothing and bedding.

Hose down any dirt sticking to walls and solid-wood furniture. Then rinse several times.

Wash and wipe down all surfaces and structures with chlorine bleach, ensuring there is adequate cross-ventilation to remove fumes. Then rinse again. Wear a charcoal respirator (which can be obtained at major safety-supply or hardware stores) when using bleach in any closed space.

Wipe down surfaces that have not been directly affected by the flood, using a solution of one part chlorine bleach to four parts cold or tepid water, mixed with a small amount of non-ammonia dishwashing detergent. Then rinse.

STRUCTURES

Ventilate or dehumidify the house until it is completely dry. Tape clear food wrap to sections of material. If these sections are still damp inside, they will turn darker than the surrounding material. Dry until this does not occur.

Rinse, then clean all floors as quickly as possible. Replace flooring that has been deeply penetrated by flood water or sewage.

Clean all interior wall and floor cavities with a solution of water, chlorine bleach and non-ammonia dishwashing detergent, and dry thoroughly.

If regular checks reveal mould, kill it with chlorine bleach. Mould can lead to serious health problems.

FLOOR COVERINGS

Carpets must be dried within the first two days. For large areas, hire a qualified professional to do the job. Carpets soaked with sewage must be discarded immediately.

Water-damaged heirlooms and antiques

GENERAL RECOMMENDATIONS: ACT QUICKLY TO PREVENT FURTHER DAMAGE. WET ITEMS WILL BE HEAVY AND FRAGILE, SO KEEP THEM WELL-SUPPORTED WHEN HANDLING, DRYING OR FREEZING. RELOCATE ITEMS TO A COOL, DRY LOCATION. BOOKS, DOCUMENTS AND TEXTILES CAN BE PLACED IN A FREEZER UNTIL THEY CAN BE PROPERLY TREATED. CONSULT A CONSERVATOR BEFORE ATTEMPTING REPAIRS. IF ITEMS ARE CONTAMINATED WITH SEWAGE, TAKE PROPER HEALTH PRECAUTIONS.

DIRT

Dirty items that are saturated can be rinsed with clean water if they are strong enough to withstand it; exceptions are paper, fragile items, and items with loose parts or soluble paints and adhesives. If items are just damp, let mud dry and then brush it off.

MOULD

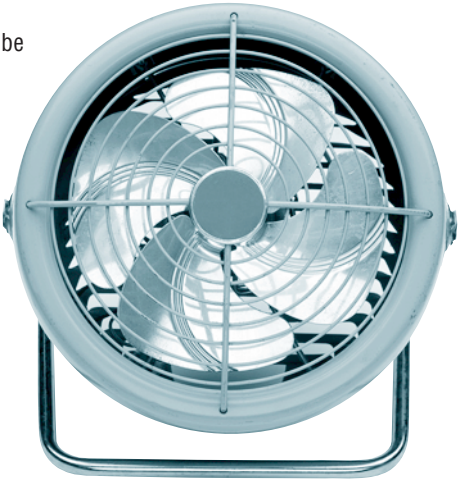
Mould is a health hazard; if mould is present, wear a face mask and disposable gloves. To minimize mould growth, move items to a cool, dry area within 48 hours and set up fans. Alternatively, textiles, furs, paper and books can be frozen. Wet mould will smear if wiped; let it dry and then brush it off outdoors. Materials not affected by alcohol can be lightly misted with isopropanol (rubbing alcohol) to kill mould spores.

FREEZING

Freezing can temporarily halt further damage. Freezing is appropriate for books, paper documents, furs and textiles. Gently blot (do not wring) furs and textiles first with towelling to remove excess water; keep them well supported. Place items in individual plastic bags or separate with wax paper to keep them from sticking together when frozen.

AIR-DRYING

Most items can be air-dried. Move them to a cool, dry location and set up fans. If drying outdoors, keep items out of direct sunlight.



TIPS AND PRECAUTIONS FOR SPECIFIC ITEMS

Furs: Blot gently with towels to remove excess water. Air-dry or freeze.

Textiles: Rinse until the water runs clear. Air-dry, or bag and freeze.

Upholstered furniture: Remove cushions and dry separately. Do not remove upholstery. Raise furniture on blocks and place fans underneath.

Wooden furniture: Remove drawers and open doors. Do not dry quickly or splitting may occur.

Books: Do not squeeze. Fan open and air-dry, using fans, or freeze.

Framed items: Unframe and air-dry.

Glossy paper: Do not let dry, or pages will stick together. Freeze immediately.

Paintings: Do not remove canvas paintings from their stretchers. Do not freeze.

Contemporary photographs, negatives and slides: Remove from mounts or plastic sleeves and air-dry. If stuck together, do not force apart.

What to keep or discard

REMOVE AND REPLACE ALL INSULATION MATERIALS AND OTHER ARTICLES THAT HAVE BEEN SOAKED, INCLUDING PARTICLEBOARD FURNITURE, MATTRESSES, BOX SPRINGS, STUFFED TOYS, PILLOWS, AS WELL AS FURNITURE COVERINGS, PADDINGS AND CUSHIONS.

Frames on high-quality furniture can often be salvaged. However, they must first be cleaned, disinfected and rinsed, then dried by ventilation away from direct sunlight or heat. Drying too quickly can cause warping and cracking.

Scrape heavy dirt from washable clothes. Rinse and wash them several times in cold water treated with one cup of chlorine bleach per washer load, and dry quickly.

Consult your lawyer to determine whether flood-damaged documents or just the information in them must be retained.

The yard area should also be cleared of all debris and refuse, which can provide a breeding ground for bacteria and mould.

Keep children away from contaminated areas during clean-up operations.

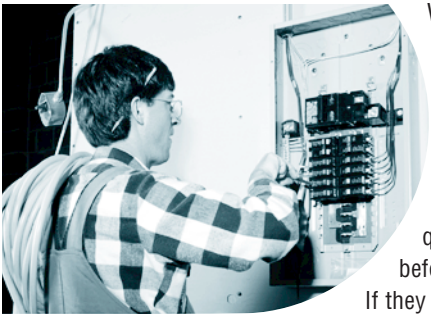
Before moving back in

ONCE THE FLOOD WATERS HAVE RECEDED, YOU MUST NOT LIVE IN YOUR HOUSE UNTIL SEVERAL STEPS HAVE BEEN FOLLOWED:

- The regular water supply has been inspected and officially declared safe for use.
- Every flood-contaminated room has been thoroughly cleaned, disinfected and surface-dried.
- All contaminated dishes and utensils have been thoroughly washed and disinfected, either by using boiling water or by using a sterilizing solution of one part chlorine bleach to four parts water; then rinse dishes and utensils thoroughly.
- Adequate toilet facilities are available. (For more information, consult your local health authority.)

HEATING SYSTEMS AND APPLIANCES

Do not use flooded appliances, electrical outlets, switch boxes or fuse-breaker panels until they have been checked by your local utility.



Whether you use a wood, gas or electrical heating system, ensure that you have it thoroughly inspected by a qualified technician before using it again. If they have been soaked, replace the furnace blower motor, switches and controls. Flooded forced-air heating ducts and return-duct pans should be either cleaned or replaced.

Replace filters and insulation inside furnaces, water heaters, refrigerators and freezers if they have been wet. However, it is often cheaper to replace this equipment.

FLOOR DRAINS

Flush and disinfect floor drains and sump pumps, using undiluted chlorine bleach. Scrub them to remove greasy dirt and grime. Clean or replace footing drains outside the foundation when they are clogged. Consult a professional for advice or service.

FOOD

Dispose of any of the following food items that have been exposed to flood waters:

- the contents of your freezer or refrigerator including all meats and all fresh fruit and vegetables;
- all boxed foods;
- all bottled drinks and products in jars, including home preserves, since the area under the seal of jars and bottles cannot be properly disinfected; and
- cans with large dents or that reveal seepage.

All undamaged canned goods must be thoroughly washed and disinfected. Dispose of all medicines, cosmetics and other toiletries.

(REMINDER: Anything that stays wet long enough will grow mould, and mould can make people sick. Dry everything quickly to avoid future health problems.)

Additional information

For additional information on cleaning your house after a flood, home repair and renovation, contact:

Canadian Housing Information Centre
Canada Mortgage And Housing Corporation

700 Montreal Road
Ottawa, Canada K1A 0P7
Telephone: (613) 748-2367
Toll-free: 1-800-668-2642
Fax: 1-800-245-9274
E-mail: chic@cmhc-schl.gc.ca
Internet: www.cmhc-schl.gc.ca

Canadian Conservation Institute

1030 Innes Road
Ottawa, Canada K1A 0M5
Telephone: (613) 998-3721
Fax: (613) 998-4721
Internet: www.cci-icc.gc.ca

For general information or to order our self-help brochures, please contact:

Public Safety and Emergency Preparedness Canada

Communications Division
340 Laurier Ave. West, Ottawa, Canada K1A 0P8
Telephone: (613) 991-2800
Toll-free: 1-800-830-3118
Fax: (613) 998-9589
E-mail: communications@psepc.gc.ca
Internet: www.psepc.gc.ca

Please contact your provincial/territorial emergency management organization (EMO) for regional or local information on emergency preparedness.

Newfoundland and Labrador

Emergency Measures Organization
Telephone: (709) 729-3703
Fax: (709) 729-3857

Prince Edward Island

Emergency Measures Organization
Telephone: (902) 888-8050
Fax: (902) 888-8054

Nova Scotia

Emergency Measures Organization
Telephone: (902) 424-5620
Fax: (902) 424-5376

New Brunswick

Emergency Measures Organization
Telephone: (506) 453-2133
Toll-free: (800) 561-4034
Fax: (506) 453-5513

Québec

Direction générale de la sécurité civile et
de la sécurité incendie
Telephone: (418) 646-7950
Fax: (418) 646-5427
Toll-free Emergency Number: 1-866-776-8345
Emergency Number: (418) 643-3256

Or one of these regional offices:

- Bas-Saint-Laurent – Gaspésie – Îles-de-la-Madeleine: (418) 727-3589
- Saguenay – Lac-St-Jean – Côte-Nord: (418) 695-7872
- Capitale Nationale – Chaudière – Appalaches – Nunavik: (418) 643-3244
- Mauricie – Centre-du-Québec: (819) 371-6703
- Montréal – Laval – Laurentides – Lanaudière: (514) 873-1300
- Montérégie – Estrie: (514) 873-1324
- Outaouais – Abitibi – Témiscamingue – Nord-du-Québec: (819) 772-3737

Ontario

Emergency Management Ontario
Telephone: (416) 212-3468
Fax: (416) 212-3498

Manitoba

Emergency Measures Organization
Telephone: (204) 945-4772
Toll-free: 1-888-826-8298
Fax: (204) 945-4620

Saskatchewan

Saskatchewan Emergency Planning
Telephone: (306) 787-9563
Fax: (306) 787-1694

Alberta

Emergency Management Alberta
Telephone: (780) 422-9000
Toll-free in Alberta, dial 310-0000-780-422-9000
Fax: (780) 422-1549

British Columbia

Provincial Emergency Program (PEP)
Telephone: (250) 952-4913
Fax: (250) 952-4888

Northwest Territories

Emergency Measures Organization
Telephone: (867) 873-7785
Fax: (867) 873-8193

Yukon

Emergency Measures Organization
Telephone: (867) 667-5220
Fax: (867) 393-6266

Nunavut

Nunavut Emergency Management
Telephone: (867) 975-5300
Fax: (867) 979-4221

Towards a safer, more secure Canada

Public Safety and Emergency Preparedness Canada (PSEPC) leads the Government of Canada's emergency and business continuity planning.

Through its programs and information products, PSEPC enhances the capacity of individuals, communities, businesses and governments to manage risks to their physical and cyber environments.

www.safeguard.ca

SAFEGUARD

Safeguard is a national partnership that helps increase the public awareness of emergency preparedness in Canada. Other titles in this self-help series include:

- ❑ Be Prepared, Not Scared
- ❑ Prepared for the Woods
- ❑ Prepare to Survive a Major Earthquake
- ❑ Preparing for the Unexpected
- ❑ Severe Storms
- ❑ Storm Surges
- ❑ Winter Power Failures
- ❑ Winter Driving – You, your car and winter storms