



# Health hazards following a cyclone or flooding

**There will be hazards that you may come across in and around your property and the local community following a cyclone or flooding.**

**The immediate risks to be aware of include:**

- damaged downed power lines / electrical wires
- damaged gas supplies and fuel leaks
- unstable structures.

**Hazards to be aware of when returning to and cleaning-up your property over the coming days or weeks include:**

- damaged asbestos cement material
- decomposing food in your fridge following extended power outages
- damaged on-site wastewater systems such as septic tanks or leach drains causing sewage problems
- contaminated swimming pools or rainwater tanks with debris and bacteria
- dead animals, particularly on farms, that need to be appropriately buried
- displaced or damaged chemicals, poisons or pesticides
- increase in activity of snakes, rodents, spiders and flies
- increase in mosquito activity due to excessive rainfall providing perfect conditions for mosquito breeding
- potential mould and dampness problems in homes impacted by rainfall
- contaminated recreational waterways such as beaches or rivers from sewage, chemicals and excessive nutrient and other pollutants making it unsafe for swimming, fishing or eating shellfish.

## Cleaning-up your property

It is extremely important that you take care when cleaning-up any damage on your property.

**Key reminders when cleaning-up:**

- Be careful with any electrical, fuel or gas equipment or lines. Do not switch on electrical or gas equipment until it has been checked by a licensed electrician or gas fitter.
- Do not light matches or lighters in case of gas and fuel leaks.
- Only use a generator in a well-ventilated area. Make sure you follow the manufacturers' guidelines and advice of emergency services personnel in the area.
- Avoid contact with any floodwater or stagnant water (they may be contaminated and/or fast flowing and deep).
- Use protective clothing and sturdy shoes including:
  - rubber boots or steel cap boots
  - gloves
  - goggles
  - facemask if you are scrubbing, hosing or pressure-washing.
- If there is asbestos on the property it is critical you follow specific asbestos clean-up procedures which includes wearing a P2 or N95 face mask and disposable coveralls, and **not** using a pressure cleaner or power tools.
- Store rotting and perishable waste in sealed bags for collection.
- Do not leave hazardous waste on the kerbside (e.g. chemicals, medicine, gas tanks, asbestos).



- Keep children and pets away from the building until it has been cleaned and made safe.
- Remember to wash your hands thoroughly after each clean-up session and always before eating or making food.
- Take your time. Do not overdo it when cleaning up. You will be under enough stress and strain – your health is critical. Take frequent breaks. Stay warm when it is cold and be careful not to overheat when it is hot.
- Do not wait until you are thirsty to drink. Make sure you drink plenty of fluids.
- As you clean up, take photographs or make a list as you go for your insurance claim.

### Asbestos cement material

- **Broken or cracked asbestos sheets and material containing asbestos presents a hazard, but exposure to airborne asbestos fibres will be extremely low because they are still strongly bound in a cement matrix.**
- **Nevertheless, owners must take precautions to protect themselves and not to break-up and spread asbestos material on their property.**
- **If in doubt, treat corrugated cement material from buildings built prior to 1990, as asbestos.**
- **Any asbestos debris should be assessed and removed by a licensed asbestos removalist rather than the owner, except for limited amounts of material.**
- **If you see any damaged asbestos on roadways, do not drive over it. Report the contamination to local government to ensure safe removal.**

You may have damaged asbestos on your property. This will mostly be broken panels, pieces or fragments of asbestos sheeting (fences, walls, eaves).

Since the asbestos is still strongly bonded it

poses a **very low risk**, but that material must be carefully handled to minimise possible fibre release and properly removed as soon as practicable to avoid an increase in risk over time.

In general, emergency management authorities or the local government will organise specialised asbestos removalists for asbestos clean-up (for large scale damage), so you don't have to touch it.

If you decide to clean-up and remove the bonded asbestos sheets and fragments on your property you can do this if you follow the precautions below.

**Note: If the asbestos can be easily broken when you touch it you need to leave it alone. This means it is becoming friable and will need to be removed by specialist removalists.**

Reasonable measures for cleaning-up bonded asbestos sheets and fragments:

1. Make sure you are wearing adequate personal protective clothing. This includes:
2. P2 or N95 mask / respirator
  - a. Disposable coveralls – if available or old clothes that can be disposed of later
  - b. Disposable gloves or rubber ones that can be promptly washed
  - c. Disposable shoe covers – if available or hard cover shoes that can be cleaned
3. Do not break or crush the asbestos when you are moving it or slide sheets over each other.
4. If the material is drying out, keep it wet by lightly hosing with water before moving it.
5. Carefully place the asbestos material in 200um plastic bags (heavy duty) or wrap using rolls of 200um thick plastic.
6. If you are placing the asbestos in plastic bags they should NOT be more than half full. Tightly twist the bag opening and fold



over to form a goose neck and secure with heavy duty duct tape. Finally place that bag inside another one (double bag), seal and label 'DANGER ASBESTOS WASTE'.

7. If you are using rolls of plastic make sure you only wrap the equivalent of a single fence sheet for each wrapping. Double wrap, seal with duct tape and label 'DANGER ASBESTOS WASTE'.
8. Promptly dispose of wrapped asbestos according to the requirements of your local government or emergency advice provided by response agencies.

### Utilities and services

Electricity networks may be damaged and may not be energised, leaving you without power.

The top priority will be to make hazards safe, then restoration work will commence as quickly as possible. You may also need to have repairs done to the power lines and poles on your property.

Be safe – if you see a downed powerline or damaged electrical assets stay at least 8 metres clear and call 13 13 51 to report the hazard to Western Power.

Remember:

- Mains water and sewerage services may not be functioning due to damaged pipes and/or lack of power to pump water
- Mains gas supplies may be damaged or turned off
- Mobile phone towers may be damaged or not supplied with power to operate (these towers only have limited back up battery power).
- You may not have access to internet services
- Local Government Services may be affected.

### Damaged chemicals, poisons or pesticides

Buried, moved or dangerous damaged goods may include:

- gas cylinders
- containers of corrosives
- oils
- pesticides
- pool chemicals or industrial chemicals.

Extreme care must be taken when handling any spills or containers of suspected poisons, chemicals or pesticides, especially if containers are damaged.

Spills or containers of these goods should be isolated until safe management has been arranged.

#### **If there is damage to containers resulting in a leak or spill:**

- Contact the local fire services branch and any relevant authority for expert assistance
- Cordon off the area
- Do not wash spillage down drains
- If safe to do so, prevent spread of spilled material by using sand, soil or other commercial spill-containing products
- Minimise the potential for presence of an ignition point or flame in case the chemical is flammable.

#### **General tips for dealing with poisons, chemicals and pesticides**

When handling chemicals wear personal protective equipment such as chemical resistant gloves, protective eyewear, enclosed footwear, long-sleeved shirts and trousers.

Ensure that if you are handling drums, you work up-wind and if there is a chemical odour present, wear a respirator with the correct chemically rated filter. Be aware that some chemicals are odourless and can pose a risk when working in an enclosed space.

Try to identify chemicals and their hazards



using labels and markings.

If the label has been removed ensure the container is leak proof and tightly seal the contents. Dispose at a landfill facility that takes chemicals. For large quantities a chemical waste management company may need to be contacted to arrange safe disposal.

Separate chemicals from general waste, while identifying whether the container is damaged or not and if there is the risk of any chemical reactions. For example, oils and dry pool chlorine may cause a fire if brought together.

Generators and other fuel-powered equipment should stay outdoors, or be placed in a well-ventilated area to prevent the build-up of contaminant exhaust gases such as carbon monoxide.

Use an air monitoring device, such as a gas detector, to monitor the air in enclosed spaces where plant and equipment exhaust is generated.

Take precautions to protect the area from further damage during the clean-up.

This includes preventing mobile plant (earth-moving equipment) coming into contact with containers, particularly gas cylinders; prior to operation check all chemical processing and handling equipment affected by the flood, and ensure a qualified electrician checks electrical installations.

Contact your supplier regarding the safe return to operation for gas supply systems.

### **Damaged on-site wastewater systems**

On-site wastewater systems may be damaged during a cyclone, flooding or excessive rainfall.

This includes:

- septic tanks
- secondary treatment systems
- aerated wastewater treatment systems (AWTS), and their land application

systems, for example plastic leach drains, sprinklers and below ground drippers and connection pipes.

Most septic tanks should not be structurally damaged by flooding as they are below ground.

However, flood water may enter your septic tank system through the toilet, other fixtures or the overflow relief gully grate.

Flooding of the septic system may wash out solids from the tank causing blockages or system damage.

Safety issues that need to be checked:

- open covers/pits
- ruptured/leaking systems (including pipes)
- damaged/exposed pipes that may need capping/sealing off.

Failed systems are not easy to identify.

However, some simple indicators may include:

- a pungent odour around the tank and land application area
- blocked fixtures, with wastewater overflowing from the relief point
- high sludge levels within the primary tank
- sewage flowing up through the toilet and sinks.
- Some onsite wastewater treatment systems may rely on mechanical and electrical equipment, such as pumps, aerators and filters.

**To prevent injury or further damage to your system contact your wastewater service agent.**

Do not use any toilets, laundry, kitchen, bathroom or clean-up equipment connected to the onsite wastewater disposal system until:

- all parts of the wastewater treatment and disposal system have been professionally inspected and repaired



- your onsite wastewater disposal system has been approved for use by the local government environmental health officer.

### Drinking water

Water pipes and storage may be damaged. Before using mains water:

- check with your local council that supplies are safe
- run the taps for a few minutes to remove any contaminated water inside the tap
- thoroughly clean taps and their parts with hot water and detergent
- if you are unsure of the quality of your tap water, use bottled water or boil water before use. However, boiling water will not remove chemical contamination.

Sometimes following a disaster, a boil water alert is issued for areas connected to mains scheme water because the mains water may be unsafe to drink or cook with.

If a boil water alert has been issued, it is essential you follow this warning to prevent illness.

Your local radio station or local government will provide updates. Check their websites for information.

### Rainwater tanks

Water in rainwater tanks can be contaminated during a flood by dirty flood waters.

If there is any risk of contamination you should not use the water from the rainwater tank for drinking water purposes until it can be confirmed to be safe.

Tanks may also become breeding areas for mosquitoes.

Action should be taken, as soon as is safe to do so, to ensure mosquitoes are prevented from breeding in these tanks.

In instances where the water is too dirty and cannot be saved, the tank should be drained.

Where the water in the tank can be saved, it needs to be properly disinfected.

Refer to water tanks on your property on the HealthyWA website for more information.

### Contaminated swimming pools

A swimming pool may contain debris following a cyclone, floods or heavy rain. This may affect the chemical balance of the water. Swimming pools should either be emptied or kept chlorinated to prevent the water quality from deteriorating.

Contaminated swimming pools can be:

- a source of odours and bacteria
- a breeding place for mosquitoes
- a health risk to people who use them.

Refer to swimming pools and spas on the HealthyWA website for information on maintaining swimming pool water quality.

### Decomposing food

When cyclones or floods cause the power to go out, it generally means the food in a fridge or freezer will go off.

Unless cold storage (below 4°C) is available within 2 hours of a power cut, all potentially hazardous foods like cheese that are typically stored in the fridge need to be placed in alternative cold storage, eaten immediately or disposed of.

#### **If in doubt, throw it out.**

When you dispose of food, place in the rubbish bin. A small volume of food may be safely buried.

Where larger quantities have to be disposed of such as for restaurants or cafes, contact the Environmental Health Services at your local government. Without correct disposal, fly breeding may result and increase the risk of the spread of diseases.



## Vegetable gardens

Floodwater may have contaminated your vegetable garden with bacteria, chemicals or other dangerous substances. Some vegetables may still be all right to eat. Disinfect in hot water, peeling and cooking the produce to prevent food borne illness.

## Dead animal control

Following a cyclone or flooding, many animals, particularly farm animals may not survive.

It is important to promptly dispose of these animal carcasses to prevent fly breeding, reduce odours, and protect surviving animals from disease.

Landholders should search their property for dead animals as soon as possible after a disaster, provided it is safe to do so. Contact your animal control officer for further guidelines.

## Snakes, rodents, spiders and flies

### Snakes and spiders

Like residents, snakes, rodents and other wildlife can become displaced during a flood or cyclone. As a result, they may seek shelter and food inside houses, storage sheds and other buildings. Be cautious and remove debris from around your home as soon as practically possible.

### Rodents

To discourage rodents and the spread of disease:

- Remove food sources and items that can provide shelter for rodents
- Wash dishes and cooking utensils immediately after use
- Dispose of garbage and debris as soon as practically possible
- Lay rodent baits or traps

### Flies

To discourage flies and the spread of disease:

- Do not let food and garbage build up as this becomes a breeding ground for flies
- Clean up food wastes as soon as possible

## Increase in mosquito activity

Stagnant water left behind by floods and rain provides an excellent breeding ground for mosquitoes increasing the risk of mosquito-borne diseases such as Ross River virus and Barmah Forest virus. In the north of Western Australia there is also the potential for the rare, but potentially fatal, Murray Valley encephalitis.

Stop mosquitoes breeding around your home by:

- emptying out or discard containers and rubbish that may hold water
- cleaning roof gutters to prevent water from pooling
- emptying, cleaning and refilling bird baths, stock troughs and pet water bowls at least once a week
- keeping swimming pools properly maintained and free of debris
- emptying wading pools at the end of each day

**COVER UP. REPEL. CLEAN UP.**

Many mosquitoes are at their biting best around dusk and dawn, but some will bite day and night.

**COVER UP**  
Wear long, loose-fitting, light coloured clothing to cover exposed skin.

**REPEL**  
Apply insect repellent containing DEET (diethyltoluamide) or picaridin evenly to all areas of exposed skin.

**CLEAN UP**  
Stop mosquitoes breeding around your home by removing, emptying or covering water holding containers.



- stocking backyard ponds with fish to eat mosquito larvae
- covering rainwater and septic tank openings, wells or other large water containers with mosquito-proof mesh.
- keep edges of ponds clear of vegetation.

### Mould and dampness problems

Floods and excessive rain may increase mould and dampness problems in homes that will need to be managed to prevent health problems.

Indoor mould and dampness can also cause unpleasant odours and damage to building materials, contents and structures, which can lead to expensive maintenance or management costs.

The [Guidelines for Managing Mould and Dampness Related Public Health Risks in Buildings](#) available on the Healthy WA website provides detailed information on mould identification and removal.

### Recreational waters, shellfish and fishing

After a flood, recreational waters including lakes, rivers, estuaries and beaches are likely to be contaminated with sewage and chemicals. There may also be unpredictable currents, fast flowing water and submerged hazards that are very dangerous. Never swim in or attempt to drive through floodwaters.

**Shellfish** includes oysters, mussels, clams, pipis, scallops, cockles, and razorclams. Do not eat shellfish from flood affected waters as they can make you sick. **Fish** caught during flood periods should be rinsed prior to scaling and filleting and cooked thoroughly.

### Further information

Refer to the HealthyWA website:

[healthywa.wa.gov.au/Articles/F\\_I/Hazards-after-cyclones-and-floods](http://healthywa.wa.gov.au/Articles/F_I/Hazards-after-cyclones-and-floods)

To discuss further:

- Contact your local government Environmental Health Officer
- Call the Environmental Health Directorate, Department of Health WA on (08) 9222 2000 or email [ehinfo@health.wa.gov.au](mailto:ehinfo@health.wa.gov.au) with any queries.