

# Bushfires and recreational water quality



Environment  
Protection  
Authority Victoria



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Fact sheet

## Bushfires and water quality

Bushfires can impact water quality and pollute waterways. This can prevent our usual enjoyment and use of Victoria's waterways. This may also lead to the death of fish and aquatic life.

Water quality in affected waterways could vary during the months after a bushfire.

It may be unsafe to use affected water for recreational activities or to consume fish. If you're camping or hiking, be aware that boiling water may not be enough to make it safe to drink.

## What's in waterways after a bushfire?

When it rains after a bushfire, water run-off into a waterway will often carry ash, soil, debris and other retardants or chemicals used in firefighting or on affected properties. Ash and soil can lower the dissolved oxygen in the water. This may cause fish deaths. More nutrients entering a waterway can lead to algal blooms.

The factors which can affect water quality after a bushfire include:

- topography and waterway size and catchment
- the type, size and extent of the fire
- how long between the last fire and rainfall
- the type of surrounding vegetation, soil and erosion risk.

## Bushfire-water run-off

The volume and composition of firewater will be different depending on

- the circumstances of the fire
- whether any fire retardants were used, and
- what has been burnt.

During a fire, large volumes of water, either on its own or mixed with foams or fire retardants, can be used to put out the fire. Often, this firewater can find its way to local waterways and impact the water quality.

In bushfires where only plants have been burnt, firewater will contain mostly nutrients and sediments. When buildings, farming equipment, fencing and other structures are burnt, the run-off from firewater may also contain other materials that can pollute the waterways.

## Blackwater and fish deaths

You may notice a darker water colour in local waterways during the weeks after a bushfire. Heavy rains wash large amounts of organic matter, such as leaves and wood, from the forest floor and floodplain into waterways. This can cause water to turn a dark colour. This is often referred to as blackwater.

Blackwater usually causes short-term harm such as fish deaths. As organic matter decays, it can result in lowering dissolved oxygen levels which may in turn cause fish to die. River users may notice dead or distressed fish as a result. Large numbers of dead fish should be reported to EPA.

## Further information

Contact EPA  
**1300 372 842** (24 hours)  
(1300 EPA VIC)  
[epa.vic.gov.au](http://epa.vic.gov.au)

Incident information and updates: VicEmergency  
hotline 1800 226 226  
[emergency.vic.gov.au](http://emergency.vic.gov.au)

Information about firewater run-off:  
[\*Firewater runoff\*](#) (EPA publication 1722)

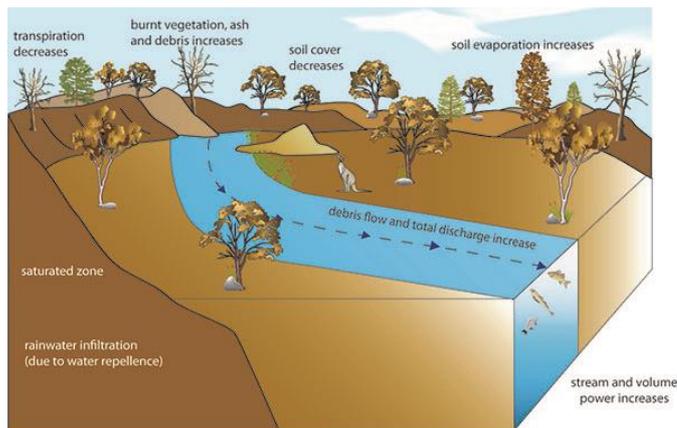
Information about fire retardants:  
[\*Fire retardants and health\*](#) (EPA publication 1721)

Guidance on the use of private drinking water supplies is available on the Better Health Channel:  
[www.betterhealth.vic.gov.au/health/HealthyLiving/Water-quality-in-tanks-bores-and-dams](http://www.betterhealth.vic.gov.au/health/HealthyLiving/Water-quality-in-tanks-bores-and-dams)



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## Possible changes to a water catchment after a fire



Source: [www.waterquality.gov.au/issues/bushfires](http://www.waterquality.gov.au/issues/bushfires)

## What are the health risks?

- Drinking untreated river water can lead to illnesses including gastroenteritis.
- Consuming contaminated fish or plants could cause illness.

Risks to human health are generally low if direct contact with blackwater occurs, however EPA recommends precautionary cleansing after any contact with affected water.

### Can stock or pets drink blackwater?

No. EPA recommends you prevent stock or pets from drinking or swimming in blackwater.

### Is it safe to eat the fish killed by a blackwater event?

No. Fish killed as a result of blackwater events should not be eaten because of possible health risks. This is not due to the cause of the fish deaths, but because of likely bacterial contamination and decomposition after death. EPA does not recommend fishing in blackwater-affected water.

### How long after a blackwater event is it safe to eat the fish in the water body?

Conditions can improve quickly after the blackwater event has passed. If fish have returned to the area and are behaving normally, they should not be affected by the blackwater event and will be safe to eat.

## What should I do if I see dead fish?

- Don't eat fish (alive or dead) from the affected waterway.
- Avoid contact with the water.
- Don't allow your pets to swim in or drink the water. Ensure your pets don't eat the fish.
- Avoid water sports such as skiing and kayaking.
- Avoid the area if there is odour that is making you feel unwell.
- Seek medical help if you continue to feel unwell.

## How should I report fish deaths?

Community members are often the first to see fish deaths. People and agencies should report these to EPA by calling 1300 EPA VIC (1300 372 842), 24 hours a day. Please do not call EPA regional offices directly.

### Please have the following information ready

This will help EPA to determine appropriate response actions.

- Specify that this is a 'fish death event'.
- Give your name and return phone number.
- Give the location and extent of the incident.
- Note the time the incident occurred/was noticed, and the extent of the event (single or multiple locations).
- Give the approximate number, size, species and condition of dead fish and say whether fish are dead or merely affected.
- Note whether other animals are affected or appear to be healthy.
- Specify flow conditions of the waterway, or any unusual conditions.
- Note any other likely cause besides bushfire, such as an algal bloom, disease, low dissolved oxygen or water levels.
- If calling from an agency, specify what action, if any, is currently being undertaken.

## What happens next?

If a water quality event leads to fish deaths, this is reported to the EPA and managed in line with EPA's [Interim response guide – fish death events](#) (publication 1793).

While these events can be devastating, fish and aquatic life can and do often recover. EPA works with agencies that have management, investigation and/or enforcement responsibilities relating to the incident or its cause. These agencies may include:

- Victorian Fisheries Authority (VFA)
- Agriculture Victoria
- catchment management authority
- water corporations
- local government or another asset manager.