

Victorian Floods 2011: Frequently Asked Questions

- Prepared by DSE with contribution from relevant agencies.

PLANNING FOR FLOODS

Why did this flood happen?

Floods are often seen as unexpected natural disasters, yet they are a part of the natural water cycle and will occur from time to time. This flood occurred as the result of prolonged heavy rainfall in Victoria. BOM report January rainfall totals across the state are the largest in history. Some locations haven't seen these totals since records began 130 years ago.

How bad were these floods?

The floods were the biggest on record for catchments in the west and north-west of the State and were the largest in decades in other areas such as the south-west. They affected 75 towns, 1770 properties and over 4,500 people.

What is a one in a 100-year flood?

A one in 100-year flood is a flood that has a 1 in 100 or 1% chance of occurring in each and every year. In a 70 year lifetime there is a 50/50 chance of a 1 in 100 flood being exceeded at any location.

Can you have two 100-year floods in one year?

Yes, two 100-year floods can occur one after the other.

Who is in charge of responding to the floods?

The Victoria State Emergency Service (VICSES) is the control agency for flood response works in partnership with support agencies such as DSE to manage responses to flooding.

What is DSEs role?

The Department of Sustainability and Environment's Floodplain Management Unit has various responsibilities in managing floodplains across the state. This includes developing legislation, statewide policy and standards for flood management and providing input to national flood management policy. They also coordinate and maintain the state-wide flood database and contribute to the collection of flood data for major floods of State significance. In addition they provide oversight and support to CMAs and Melbourne Water.

DSE supports community education and knowledge and assists local government to implement flood mitigation works to reduce the risk of flooding to existing development, where the works are cost effective and address a significant flood risk.

Other tasks include: facilitating management arrangements for levee systems across the state, encouraging and facilitating the implementation of flood warning systems and providing real time access to stream flow data collection networks for flood warning purposes, providing timely flood advice to emergency management agencies and assisting in the assessment of natural disaster relief claims for the restoration of flood damage to public assets.

What is the role of CMAs and Melbourne Water?

As well as advising SES on the movement of floods during an emergency, the role of CMAs and Melbourne Water is to develop, oversee and, implement regional floodplain management strategies. These integrate local floodplain management issues and prioritise the development of urban and rural floodplain management plans within the region. This includes supporting and facilitating the implementation of regional land use planning measures to reduce flood risk and flood damages; and to provide input to planning schemes, respond to planning referrals, provide flood advice to the community and help resolve planning issues.

CMAAs also support and facilitate the implementation of regional flood warning systems, maintain and enhance regional flood information and coordinate monitoring of significant flood events, monitor and report on regional flood management issues, and advise Government on regional flood management priorities. The CMAAs also have major functions with regard to waterway management and regional rural drainage management.

How does Victoria's flood warning system work?

Flood warning information is acquired through the Victorian streamflow gauging network. The network has 750 gauging sites that serve a range of purposes, including 283 that are used as primary flood warnings sites. Other sites are used to provide further back up information and flash flooding information. Data collected is immediately made available to those organisations that require it.

Who develops flood maps?

Melbourne Water and Catchment Management Authorities develop flood maps for areas at risk. These maps are used for both land planning and by the SES to provide flood information during flood emergencies. Flood maps have been completed across the state for the 1 in 100-year flood. In a number of key areas across the state, this is supplemented by additional information on flood extent and height for a range of flood sizes.

LEVEES

What is a levee?

A levee is a natural or man-made mound or wall to confine floodwaters. Levees can reduce the risk of flooding for adjacent properties, but no levee can eliminate all flood risk. Levees can also increase the risk of flooding downstream through the loss of natural floodplain storage or increase flooding to unprotected areas.

Overtopping: Overtopping occurs when water rises above the levee.

Breached or burst levee: When part of the levee breaks away and creates an opening for water to flood the land protected by the levee. A breach or burst can be develop gradually or occur suddenly.

Levee failure: Levee failure refers to both levee breaches and overtopping

How does a levee work?

Levees can help to protect communities from the effects of flooding. A levee often runs parallel the natural course of a river and is built to keep a river from overflowing its banks or to prevent ocean waves from washing into undesired areas. Levees are most effective when protecting urban communities where the consequences of flooding are very high.

Who is responsible for maintaining levees?

- Private landowners are responsible for maintaining levees on their land. They may be required to obtain a planning permit to undertake works from their local Council.
- Local councils and/or Melbourne Water are responsible for maintaining levees which protect urban communities.
- There are a smaller number of levees on public land built many decades ago which have no clear ownership responsibility.

Why did some levees fail in the January floods?

The Bureau of Meteorology has reported the January rainfall totals across the state as the largest in recorded history. Some locations haven't seen these totals since records began 130 years ago. Due to the magnitude of rainwater and flow-on waters from the flooding in northern states, many rural levees were overtopped as they had not been designed to withstand such a volume of water.

Are individuals allowed to create their own levees?

Authorities are advising rural land owners against raising existing levees or constructing new levees. Any raising of levees can lead to significant unintended consequences downstream such as major breaching of levees and diverting floodwaters. This can also affect the ability of authorities to predict flood behaviour.

DAMS

Would more dams have prevented these floods?

Dams are primarily built for water supply, industry and irrigation. To meet demand, they are operated to collect as much water as possible during the wetter months. Dams have never been built in Victoria solely to mitigate floods and consequently dams would only provide opportunistic flood mitigation benefits at best.

Why don't water corporations hold back more water during flooding events to protect downstream communities?

Most water corporation dams were built to capture sufficient water to meet the supply needs of the community. They have very little additional capacity to mitigate the impacts of flood events on developments located on flood plains.

In extreme flood events, dams simply cannot hold back the massive volumes of water that flow into a reservoir over a short period of time. Dams must spill water once the capacity of the reservoir is reached and allow the water to continue its passage through the water courses and across the floodplains. Dam spillways are designed, however, to allow extreme floods to pass through the reservoir without compromising the dam structure itself, thereby reducing the impact on downstream communities.

Have many dams been damaged in the floods?

It is too early to get a full picture of the damage to water infrastructure from these floods. Once water recedes assets will be inspected and assessed for damage.

We do know that these floods were the highest recorded for Laanacoorie, Eppalock, Cairn Curren and Tullaroop dams.

There are currently no reported dam safety issues of concern from Victorian Water corporations, however, there is erosion downstream of secondary spillways at Laanacoorie and Eppalock dams.

Water corporations are undertaking regular and extensive inspections of dams, weirs and channels and undertaking work to stabilise where necessary.

Some local government dams that were impacted in the floods are being investigated at present.

Who is responsible for dam safety?

Under Victorian legislation dam operators and owners are responsible for dam safety. The Minister for Water maintains sufficient oversight of dam safety to ensure responsibilities are being met and to intervene where required.

What would cause a dam to fail?

Dams can fail if water flow over the dam wall during high rainfall events or floods. This is because the capacity of the spillway is not able to pass the flows safely. Also, where construction and materials are inadequate dams can fail due to piping and erosion and subsequent water flow through the embankment or foundation of the dam.

ENVIRONMENTAL MANAGEMENT

Did the release of environmental water contribute to the severity of the floods?

Environmental watering has not contributed to the recent major floods in Victoria. As high rainfall events were forecasted, by the Bureau of Meteorology, environmental flows were reduced so that they did not contribute to major flood peaks.

Environmental watering has only recommenced after major peaks have passed.

Delivery of any environmental water is undertaken by water corporations in consultation with the CMAs and DSE. Water corporations operate the system within their operating rules, which includes provision for flooding. During delivery, if high rainfall events are forecast, water corporations ensure flows, including environmental flows, are reduced, so as to not exacerbate flooding.

Does vegetation in and around streams have an impact on flooding?

In major floods, such as the January 2011 event, flood height is controlled primarily by the intensity and amount of rainfall, not vegetation.

Vegetation along riverbanks can have a beneficial effect on flooding in lowland areas as it slows the rate of water movement.

However, in large floods, the main control on local flood level will be through constrictions that choke the flow down. These are usually road embankments, or bridge openings. Such constrictions are much more important than the local effect of vegetation.

Has the CMA's program of removing willows from riparian zones increased the impact of floods and erosion?

The CMA willow removal programs are decreasing flood risk and also improving waterway health across Victoria.

Willows invade the bed and banks of streams, reducing the size of the stream. This reduces the capacity of the stream to carry flood waters. The result is that willows increase the height of flood waters in small and moderate sized floods.

The Victorian Government invests into willow removal programs through the catchment management authorities (CMAs).

Would removing logs from rivers have lessened the impact of floods?

Adding or removing large wood (snags) in streams has little effect on the height and duration of large floods.

RECOVERY

Who will lead the recovery efforts once the floods have past?

DHS will lead recovery coordination at the municipal, regional and State level. This will include provision of advice, information and assistance to affected individuals and communities; and detailed loss and damage assessments.

How has wildlife been affected by the floods?

We expect that some wildlife will be affected by floods, DSE is working to assess the impact on threatened species and communities, to monitor their recovery and help in the rehabilitation of species and their habitat.

During the floods, DSE has been working closely with experienced wildlife rescuers to help with the recovery and treatment of flood-affected wildlife.

How can I help injured or homeless animals after the floods?

People are likely to see wildlife, such as snakes, lizards and kangaroos, isolated or trapped by floodwaters and we would urge members of the public who don't have the necessary experience and permits to leave them be.

Most Victorian wildlife is well adapted to dealing with floods and will bounce back fast as the floodwaters recede.

It is not safe to enter floodwaters and a trapped animal may also defend itself if it is handled by an inexperienced person.

What you can do to help is:

- Keep wildlife in mind when driving, particularly around dawn and dusk. Wildlife may be concentrated near roads following flooding.
- Keep your dogs and cats under control. Wildlife may be on your property following flooding and will be vulnerable to attack by pets.
- Keep wildlife in mind when you are cleaning up. Rocks and dead logs provide homes and places to search for food for many animals. They will continue to be significant habitat for many species as they recover.

More information is available at www.dse.vic.gov.au (then click on *Plants and Animals* then *Native Plants and Animals*, then *Caring for Wildlife*).

People who see a distressed animal can contact DSE Customer Service on 136 186 or RACV Wildlife Connect on 13 11 11.

What is DSE doing long-term for wildlife recovery

DSE will explore a range of options to help Victoria's flora and fauna impacted by the floods to recover over time.

Most Victorian wildlife is well adapted to dealing with floods and will bounce back fast as the floodwaters recede.

During the floods, DSE has been working closely with experienced wildlife rescuers to help with the recovery and treatment of flood-affected wildlife. This work will continue as the floodwaters recede and the overall impact can be fully assessed.

PUBLIC SAFETY

Have state parks and forests been closed off?

Many parks and forests across the state are closed due to widespread damage. Some popular areas have suffered extensive damage, including the Grampians National Park, and we would urge anyone considering a trip anywhere in regional Victoria to make sure they check the conditions before they leave. Up to date information can be found on the Parks Victoria website www.parkweb.vic.gov.au and on DSE's website www.dse.vic.gov.au.

How safe is the floodwater?

Floodwater can contain contaminants like animal waste, agricultural chemicals and petrol. Swimming in floodwaters, swollen creeks, rivers and other tributaries should be avoided at all times.

If you are unsure whether it is safe to swim in a river that has been affected by floodwaters, seek advice from the local council.

Who is monitoring water quality?

Local catchment management authorities water authorities and the Murray-Darling Basin Authority are regularly monitoring water quality to determine the impact on consumptive supplies and the environment.

Is my water ok to drink?

Floodwater can contain contaminants like animal waste, agricultural chemicals and petrol.

For those members of the community who are on a town supply of drinking water, the relevant water authority will advise its customers if the tap water is unsafe to drink, use for cooking, cleaning or bathing via local media and their websites.

For those members of the community on private water supplies (tanks, bore water), advice on managing these supplies post flood is contained in the Department of Health's flood recovery packs which are available at relief and recovery centres and on the DHS website.

What about water for stock?

Floodwater can contain contaminants like animal waste, agricultural chemicals and petrol and may be dangerous to stock.

Advice on managing these supplies post flood is contained in the Department of Health's flood recovery packs which are available at relief and recovery centres and on the DHS website.

What about blackwater – is it safe?

Blackwater is currently affecting a number of systems across Victoria. Blackwater occurs when accumulations of organic matter, such as eucalypt leaves and twigs, decay in wetlands or waterways, drawing oxygen from the water.

While the low dissolved oxygen levels associated with blackwater has resulted in a large number of fish deaths, blackwater is a natural occurrence and is generally not toxic to humans or stock.

However, as the blackwater has been created by floodwaters, which can contain contaminants, such as animal waste, agricultural chemicals and dead fish, it is not advised that people drink from or swim in blackwater affected systems.

For those members of the community who are on a town supply of drinking water, the relevant water authority will advise its customers if the tap water is unsafe to drink, use for cooking, cleaning or bathing via local media and their websites.

For those members of the community on private water supplies (tanks, bore water), advice on managing these supplies post flood is contained in the Department of Health's flood recovery packs which are available at relief and recovery centres and on the DHS website.

Who is responsible for responding to fish deaths?

There have been a large number of fish deaths associated with the floodwaters reported across a number of systems.

Responding to fish deaths in the first instance is managed by EPA Victoria. If the incident is determined to be natural causes i.e blackwater, EPA will generally hand the management issue back to the relevant authority i.e DSE, CMA or local council.

EPA encourages people to report fish deaths to its Pollution Watch Line 1800 444 004 for regional callers.

Who is responsible for removing dead stock?

EPA Victoria is working with local councils and DPI in affected communities on designating landfill facilities for the disposal of dead stock. Landholders should contact EPA for advice on locating on farm livestock disposal pits.

What about other hazardous waste?

EPA Victoria is working with local councils, farmers and landowners on disposal of waste related to the flood event.

Regional landfills will be under increased pressure in the days and weeks ahead. Advice on the correct way to dispose of hazardous waste should be sought from the EPA North-West Regional Office on 5438 1000.

How are oil/petrol/scum spills being dealt with?

If it is a small amount (less than 10 litres) and you are able to safely remove or contain the waste, this should be placed in a container for disposal at a licensed landfill.

If this is not possible, aim to keep the area contained (for instance by building a barrier out of soil to contain the spill) and contact EPA's North-West regional office on 5438 1000 for assistance.

Larger spills should be reported to the EPA's Pollution Watch Line 1800 444 004 for regional callers.