

RESERVOIR FLOODING

Reservoirs are places where large volumes of water can be stored. Uncontrolled releases from these water bodies can cause flooding and this can be catastrophic and cause extensive damage to land and properties both in the immediate and neighbouring areas.

Some of the causes of reservoir flooding include:

- Prolonged periods of heavy and intense rainfall.
- Improper maintenance
- Water flowing over the top of the dam.
- A leak in the dam or embankment structure.
- Slope instability.
- Cracks in the dam or embankment structure.
- A landslip down an embankment of a dam.

Possible impacts of reservoir structure failure:

- Unexpected widespread flooding.
- Homes and businesses can be destroyed.
- Loss of life.
- Severe damage to infrastructure
- Habitats destroyed or relocated

How to prepare for reservoir flooding

If you live in close proximity to a reservoir, it is important to be aware of your flood risk and how you can prepare. It is not only the areas immediately adjacent to the reservoir that can be affected, but those several miles away too. There are a number of ways you can prepare for the unlikely but possible event of reservoir flooding:

- ✓ Check your flood risk on the Environment Agency's long term flood risk map.
- ✓ Prepare a flood kit which contains items that you may need in an emergency.
- ✓ Get together a list of useful contact details you may need in the event of a flood, such as your insurance company, utility suppliers, your local council, family, friends and relatives.
- ✓ Keep important documents in waterproof storage or saved on a memory stick and stored upstairs. Those you may need in the aftermath of a flood should be taken with you.
- ✓ Install some resistance and resilience measures.
- ✓ Plan ahead and think about alternative accommodation if there was a breach.

Case study: Toddbrook Reservoir, Whaley Bridge

On the 1st August 2019, thousands of residents and business owners had to be evacuated from the town of Whaley Bridge due to a section of the spillway wall collapsing in the Toddbrook reservoir. The emergency services, Environment Agency and reservoir operators began pumping water from the reservoir which held around 300 million gallons of water, due to fears that the reservoir could burst and cause huge volumes of water to inundate the town.

An emergency evacuation centre was set up at a local school where 1500 residents gathered with their pets and essential medication. A severe flood warning was issued by the Environment Agency which signals that there is a threat to life. The neighbouring villages of Furness Vale and New Mills were also evacuated and an RAF chinook helicopter was deployed to drop hundreds of one tonne bags filled with aggregate to try and stabilise the spillway.

By Tuesday 6th August, the emergency services and numerous agency workers were able to reduce the depth of water in the reservoir by over nine metres which is 17% of its current holding capacity. Some residents were able to return home on the 6th with the rest returning on the 7th. The effect this dam failure could have potentially had would have been catastrophic, lives could have been lost and homes and businesses destroyed.



Bob Prophet / Toddbrook Reservoir from the southerly slope of Hawkhurst Head / CC BY-SA 2.0