

Environment Agency Groundwater Flooding – Q & A

22 March 2013

What is groundwater flooding?

Groundwater is water contained in spaces within rock and soils and is an integral part of the hydrological cycle and the environment. Flooding from groundwater happens when the level of groundwater, known as the water table, rises. When the water table reaches ground level, water starts to emerge on the surface and flooding can occur. The level of the water table will change with the seasons, in response to variations in rainfall and water abstraction.

How does groundwater flooding differ from other types of flooding?

Flooding from groundwater will usually occur days or even weeks after heavy or prolonged rainfall. Flooding may occur for several weeks and water may rise up through floors, rather than coming in through doors.

Flooding from groundwater predominantly occurs in areas where the underlying bedrock is chalk, though it can also occur in river valleys which are underlain with sand and gravels.

Why is groundwater flooding a problem at the moment?

Current groundwater flooding is a result of persistent rainfall over the last 6 months, which has been double the average usually recorded. This has left the ground heavily saturated.

Consequently groundwater levels at a number of locations across the South East are very high and will react to each rainfall event. As a result groundwater levels in many locations may remain high for several weeks to come. If the situation is to improve we will need a number of weeks of consistently dry weather.

What problems can high groundwater cause?

One of the major problems with high groundwater levels is infiltration into the sewerage network. Groundwater can enter sewerage systems through leaks and joints and can cause them to be overwhelmed. This may result in sewer manhole covers popping up and toilets backing up, potentially causing sewage to be released.

What is the Environment Agency doing?

We are monitoring the groundwater levels at several locations across the area. We use this information to provide a warning service to communities at risk from groundwater flooding. Where sewage incidents occur we are checking water quality. In addition we are working with our professional partners to put in place long term solutions where possible.

What can be done to alleviate the sewerage issues?

Water companies over pump to prevent the sewerage network becoming overwhelmed. Over pumping is the transfer of sewage flows from the sewerage system into rivers and other water courses. Water companies only over pump as a last resort to prevent the health risks associated with the backing up of waste water into people's properties.

Who is responsible for sewerage issues?

Water companies (Southern Water and Thames Water in the South East) lead on providing drainage facilities. We are responsible for regulating their activities and the impact they have on the environment. This role is particularly relevant if a water company decides to over pump flooded sewers into local rivers and streams to control an emergency situation.

Does the Environment Agency recommend over pumping?

We never recommend over pumping as the first option for controlling a sewerage system that has reached its full capacity. This is because flood waters contain sewage, however dilute, and there is always some risk to the local environment.

Water companies can use road tankers to take waste water away. However the capacity provided by these tankers is not always sufficient to counter the impact of groundwater infiltration into the sewerage network.

We do not support over pumping as a long term solution. Ultimately we expect water companies to invest in the sewerage system to reduce infiltration as much as possible.

We recognise though that a balance is sometimes necessary between protecting water quality and preventing unreasonable impact on communities e.g. so they can use their toilets and prevent risks to health from sewage flooding.

We will follow our Regulatory Position Statement on Discharges made from groundwater surcharged sewers. This can be found on our website: <http://www.environment-agency.gov.uk/research/library/position/144036.aspx>.

As part of our regulatory role we will attend significant pollution incidents and carry out a full investigation. We will continue to check water quality if sewage discharges occur.

What is the long term solution?

We are working with Southern Water and Thames Water to tackle high groundwater and sewerage issues. County councils and unitary authorities, as the lead local flood authorities, are ultimately responsible for addressing surface and groundwater flooding problems. We recognise though that a resolution to groundwater flooding is only possible through a true partnership approach.

What can the public do if they spot groundwater flooding?

If members of the public see signs of groundwater flooding they should call our Incident Hotline on 0800 807060. Those in flood risk areas should sign up to our free flood warning system – the most immediate and localised source of information on flooding – by calling 0845 988 1188 or visiting www.environment-agency.gov.uk/flood.