Department of Health

Bureau of Environmental Health & Radiation Protection

Post-Fire Runoff
Answers to Frequently Asked Questions

What is post-fire runoff?
Post-fire runoff refers to the mix of water, chemicals and particulate matter (very tiny particles) that drain away from the site of a fire once the fire has been extinguished (put out). This runoff can seep into soil, drain into storm drains and culverts, or flow directly into surface water like ponds, rivers and lakes.

Post-fire runoff may be created when firefighters spray water or chemicals on a fire to extinguish it, or from rain or melting snow in the area where a fire took place.

Can post-fire runoff cause health problems?
Depending on what chemicals are present in the smoke released by the fire and in the substances used by firefighters, post-fire runoff can be toxic and may be harmful to your health.

Burned houses and other buildings that are wet from firefighting water spray may grow mold, especially if they are not aired out. Mold can cause health problems including skin irritation, coughing and wheezing. People with mold allergies may have more severe reactions.

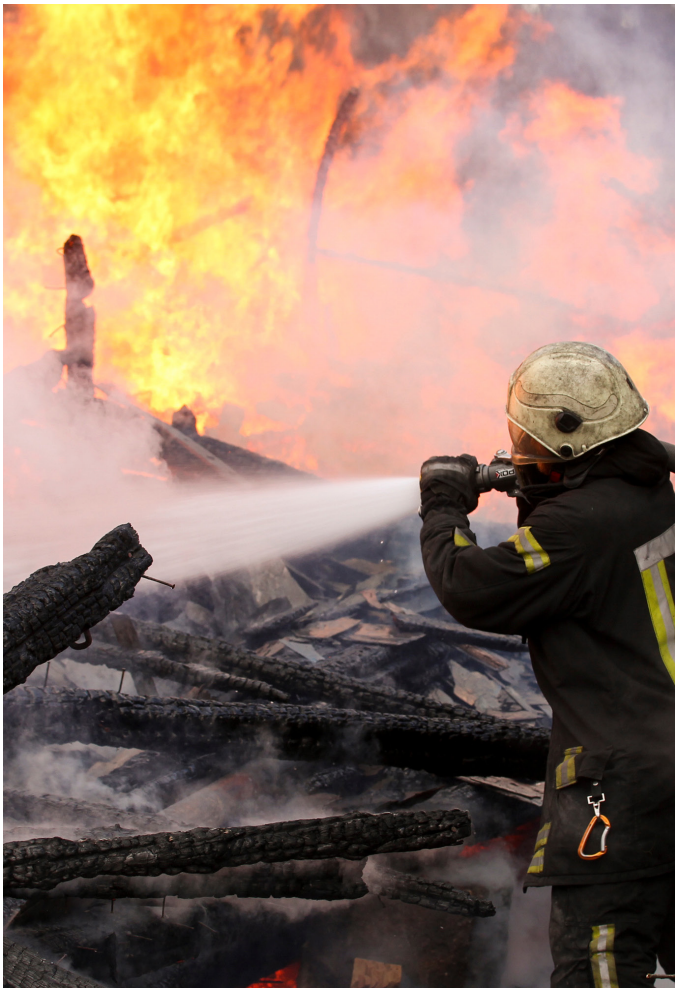
Post-fire runoff can cause many problems for the environment. Wildfires destroy plants that hold soil in place. Areas that were burned in a wildfire or forest fire may experience landslides and flooding if there is post-fire runoff from a heavy rain or snow. Runoff that enters a body of surface water like a lake or stream can kill fish.

What chemicals are in post-fire runoff?
The chemicals in post-fire runoff may depend on what was burning during the fire. For example, a forest fire may produce different chemicals than a fire in a warehouse where electronics were being stored. All fires produce particulate matter (soot). Some may contain heavy metals, volatile organic compounds (VOCs) and hydrocarbons.

What firefighters used to put out the fire can also change what chemicals are in the runoff. Although water is used most often, certain fires can only be extinguished through firefighting foams (FFFs) or other chemical mixtures.

FFFs are most often used when the burning substance is a flammable liquid, like gasoline, diesel, jet fuel and alcohol. Different types of FFFs are made of different chemical mixtures.

How do I protect myself from post-fire runoff?
Immediately after a fire, limit your contact with soil, water and other surfaces that were impacted by soot and firefighting chemicals. Do not swim or wade in water that contains ash or visible FFF. Wash with soap and water any skin and clothes that come into contact with ashy or dirty runoff.



Where can I get more information?

Ohio Department of Health
Bureau of Environmental Health and Radiation Protection
Health Assessment Section
246 N. High Street
Columbus, Ohio 43215
Phone: (614) 728-9452

If you notice many dead fish in a lake, stream, river or pond that was near a fire, report it to the Ohio Department of Natural Resources Division of Wildlife at 1-800-WILDLIFE (945-3543).

If you notice that a body of water that looks black, brown or ashy after a fire, contact the Ohio Environmental Protection Agency's Emergency Response branch at 1-800-282-9378.

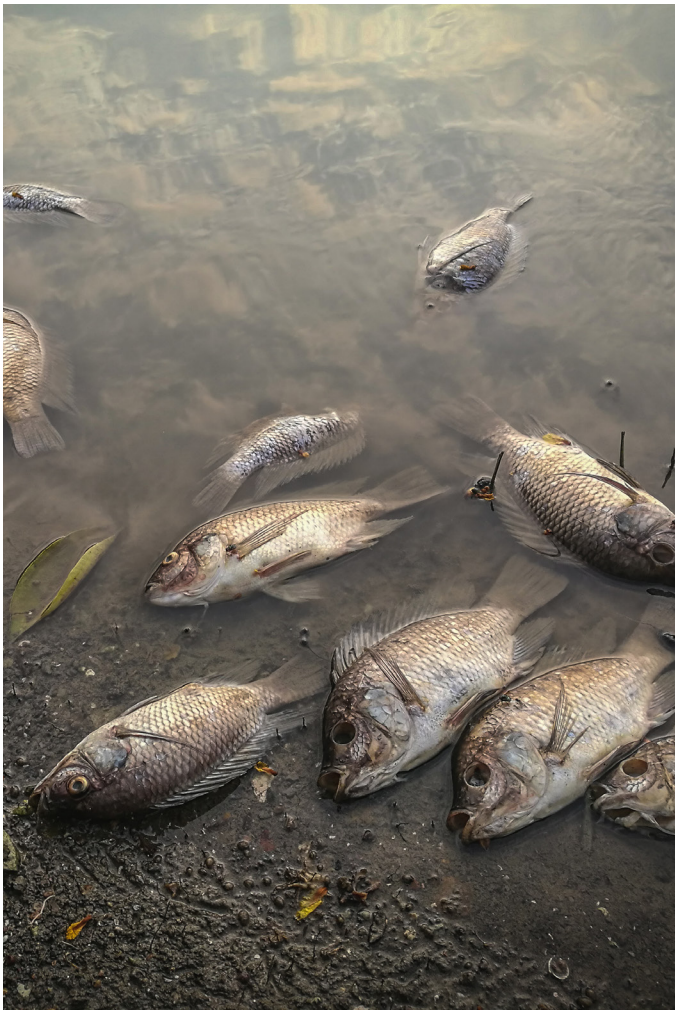
If you believe your private water well may have been impacted by post-fire runoff, contact your local health department to find out if water sampling is needed. For more information about mold in your home, contact the Ohio Department of Health Healthy Homes Program at 1-877-LEADSAFE (532-3723).

Resources

Surface Water Quality Bureau. 2013. Wildfire Impacts on Surface Water Quality: Frequently Asked Questions. New Mexico Environment Department.

Chemguard. 2005. General Foam Information.

Southern California Coastal Water Research Project. 2009. Effects of Post-Fire Runoff on Surface Water Quality: Development of a Southern California Regional Monitoring Program With Management Questions and Implementation Recommendations (Technical Report 598).



Post-fire runoff can cause many problems for the environment. Runoff can decrease the amount of oxygen in surface water and raise the water temperature, causing fish to die.