

Focus on: Dams and Wildfires



More information

[Dam Safety Office webpages](https://ecology.wa.gov/Damsafety)

<https://ecology.wa.gov/Damsafety>

Contact information

Water Resources Program

360-407-6872

Dam Safety Office [contact list](#)

[https://ecology.wa.gov/Water-](https://ecology.wa.gov/Water-Shorelines/Water-supply/Dams/Emergency-planning-response#dscontact)

[Shorelines/Water-](https://ecology.wa.gov/Water-Shorelines/Water-supply/Dams/Emergency-planning-response#dscontact)

[supply/Dams/Emergency-](https://ecology.wa.gov/Water-Shorelines/Water-supply/Dams/Emergency-planning-response#dscontact)

[planning-response#dscontact](https://ecology.wa.gov/Water-Shorelines/Water-supply/Dams/Emergency-planning-response#dscontact)

ADA Accessibility

To request an ADA accommodation, contact Ecology by phone at 360-407-6872 or email at damsafety@ecy.wa.gov or visit

<https://ecology.wa.gov/accessibility>.

For Relay Service or TTY call 711 or 877-833-6341.

Wildfire impacts on dams:

What dam owners need to know

Dam owners are responsible for the proper care and management of their dam. This includes being prepared for wildfires that can lead to loss of power and access, increased runoff, and damage to the dam itself. Rising temperatures, more and longer lasting heat waves, and drier summers are expected to contribute to larger, more severe and more frequent wildfires in the future.

For the safety of the dam and the lives and property around it, it is important that dam owners understand the potential impacts of wildfires, especially if heavy rains follow.

Impacts of wildfires and heavy rains

Although only owners of dams classified as high hazard and significant hazard are legally required to have Emergency Action Plans (EAPs) in place, all dam owners should prepare for emergency situations. Being aware of the potential impacts of wildfires is an important part of that preparation. Here are some basics.

Wildfires can damage:

- The surface of dams and spillways, especially vegetation on embankment slopes or grass lining in spillway channel. Grass or soil surfaces will be more vulnerable to erosion.
- Associated facilities, especially wood structures, plastic liners and plastic pipes.
- Power supplies, communication equipment, and access roads.

Wildfires change the conditions of a watershed, such as how fast water can move, and how vulnerable the land surface is to erosion.

Wenner Lakes Dam Breaches

After the 2014 Carlton Complex Fire, heavy rains created flash flooding and mudslides in the Benson Creek Watershed, causing two dams to overtop, and leaving one dam with severe spillway erosion.



Heavy rains in a burned area can create:

- More and faster runoff from rainfall events, especially high-intensity storms.
- Large amounts of sediment, which may reduce storage capacity in the reservoir.
- Debris flows (mudslides) or downed timber, which may obstruct access to the dam.
- Debris flows from hill slopes near spillways, which may obstruct spillways.
- More floating debris (dead trees, branches, sticks) in the reservoir, which may obstruct spillways and damage the face of the dam.

Emergencies can happen

The Dam Safety Office uses three levels to describe emergency situations.

Emergency Level 1:	Non-emergency, unusual event, slowly developing.
Emergency Level 2:	Potential dam failure situation, rapidly developing.
Emergency Level 3:	Urgent; failure appears imminent or is in progress.

Water moves differently through a burned watershed than it does through an undamaged one. This is true even for rainfall events that previously would have been considered rather minor. Therefore, *wildfire at or near a dam or within the watershed where the dam is located is a Level 1 incident.*

Level 1 incidents need an owner’s attention or response to reduce the risk or likelihood of a more serious problem (Level 2 or 3 incident).

Pay attention

If rain is forecast, especially heavy rain or flash flooding, owners must closely monitor actual rainfall near the dam and in the watershed.

If rain actually occurs, especially heavy rain or thunderstorms, owners must closely monitor actual runoff and spillway performance. They must be prepared to implement emergency procedures in case spillway capacity is exceeded.

Assess

If a reservoir’s watershed has been burned, the watershed should be assessed by a qualified engineer or engineering hydrologist to assess the increased hydrologic risk. This is especially important when a dam is classified as high hazard or significant hazard. We have prepared Burned Watershed Guidance as a starting point for engineering consultants to assess dam safety in the event a forest fire occurs at or near the site of a specific dam. Find the guidance and other information on our [risk analysis and planning webpage](#).¹

¹ <https://ecology.wa.gov/Water-Shorelines/Water-supply/Dams/Emergency-planning-response/Risk-analysis-planning>