Flood Follows Fire
Communicating the Heightened Risk After a Fire

Lynn Whitman, Yavapai County Flood Control District
Bruce Bender, Bender Consulting Services, Inc.
# Arizona Fire and Monsoon Seasons

<table>
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<tr>
<th>Event</th>
<th>Fire Start Date</th>
<th>Containment Date</th>
<th>Monsoon Start Date</th>
<th>Days Between Fire Start and Rain</th>
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<td>Doce</td>
<td>June 18, 2013</td>
<td>June 27, 2013</td>
<td>June 30, 2013</td>
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<td>Yarnell Hill</td>
<td>June 28, 2013</td>
<td>July 10, 2013</td>
<td>June 30, 2013</td>
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<td>Tenderfoot</td>
<td>June 8, 2016</td>
<td>June 17, 2016</td>
<td>July 19, 2016</td>
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<td>Goodwin</td>
<td>June 24, 2017</td>
<td>July 10, 2017</td>
<td>July 13, 2017</td>
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Photo: [www.dcourier.com](http://www.dcourier.com)
Flood Prep Activities During the Fire

- Watershed Identification
- Infrastructure Recovery Plan
- Rain and Stream Gauge Plan
- Identify Communities at Risk of post-fire flooding
Post-Fire Activities

- Evacuated Residents Move Home
- Infrastructure Recovery Plan Implemented
- BAER Team Analyzes burn intensity
- Risk assessment for increased flooding potential
- Install rain gauges and set weather alert parameters
- Educate the public and encourage them to buy flood insurance
The Goodwin Fire

- Start date: June 24, 2017, ~4:00 pm
- Containment: July 10, 2017
- Over 28,500 acres burned (primarily PNF)
- Big Bug Mesa near Mayer, Arizona
- Five structures lost

Photo: www.WildfireToday.com
Post-Fire Actions
Post-Fire Flood Outreach: Goodwin
Re-Entry Packet
Yavapai County
Emergency Management

www.regionalinfo-alert.org
www.facebook.com/ycoem
928-771-3321

Tuesday, June 12, 2018
For Immediate Release
Contact Information: Marce Slay YCEM Public Information Officer – (928)771-3321

For Immediate Release 6/12/2018 6:30 PM UPDATE

Community Meeting

There will be a community meeting at the Mayer High School on July 5th at 6:00 PM. The address is 17300 E Mule Deer Dr. Mayer, AZ 86333. Topics discussed will be how to prepare for after fire flooding as well as “Turn Around Don’t Drown”.

Goodwin Fire - SANDBAGS AVAILABLE

Sandbags and sand are available at the following locations. Bring your shovel to fill your own bags.

Poland Junction - At Junction Christian Fellowship, 6555 AZ-69, Mayer, AZ 86333
Mayer - At the Fire Station located at 10001 Miami St, Mayer, AZ 86333
Spring Valley - 12802 E Burton Rd, Spring Valley

For additional information please watch the Yavapai County Emergency Management Facebook page at www.facebook.com/ycoem

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July 5, 2017

Re: Goodwin Fire, Yavapai County, Arizona

Dear Parcel Owner:

The Goodwin Fire recently burned nearly 29,000 acres near Bug Big Mesa in Yavapai County, AZ. Fire damage to the upper watershed areas will most likely result in increased runoff from the affected watersheds during rainstorms and will be most pronounced during the upcoming monsoon season. There is a reasonable risk that areas down stream of the burned areas will see increased flows and mudflows as the debris and ash from the fire is washed downstream. Soils in recently burned areas tend to accept less rainfall, thereby increasing the amount of runoff and shorten warning time for runoff events.

The County is accessing and performing drainage work to increase drainage capacity and help alleviate potential flooding in and around the burned area. To increase stormwater capacity and to help reduce flooding risks, property owners are encouraged to proactively be cleaning out the ditches, washes, and/or water courses on their own private property. For those that would like to secure sandbags to help protect their property from flooding, sandbags and sand can be obtained and filled for private use at the following locations:

Poland Junction: At Junction Christian Fellowship, 6555 AZ-69, Mayer, AZ 86333
Mayer: At the Fire Station located at 10001 Miami St, Mayer, AZ 86333

Yavapai County is currently in the process of installing new flood warning gauges within the recently burned watershed. Please visit our website, www.ycflood.com for information on our new ALERT gauges. Monsoon storms tend to have characteristics that result in prime conditions for flash flooding. Property owners are encouraged to pay attention to the National Weather Service, www.weather.gov, and be prepared to evacuate.

Yavapai County participates in the National Flood Insurance Program (NFIP). Any residential structure in Yavapai County is insurable under the NFIP regardless of flood risk zone. This includes structures included in the Special Flood Hazard Area as mapped by FEMA. The 30-day waiting period for flood insurance may be waived for properties affected by flooding caused or exacerbated by wildfire that started on adjacent Federal Lands. The monsoon season starts around July 1, so it is critical for you to quickly talk to an insurance agent if you intend to purchase flood insurance.

You can find out more about flood insurance from your insurance agent or the website www.floodsmart.gov. For flood risk or insurance information specific to your property, please feel free to contact the Flood Control District at (928) 771-3197.

Sincerely,

Dan Cherry, P.E., CFM, Director
Yavapai County Flood Control District
Public Meeting
Social Media

The Yavapai County Board of Supervisors would like to encourage everyone to stay safe and register for CODE RED Emergency Updates at: www.YCSOAZ.gov
Post-Goodwin Fire Flooding
Grapevine Canyon:
2.01” in 26 min.
(4:35p-5:01p)

Big Bug Mesa
1.26” in 21 min.
(4:49p – 5:10p)
With post-storm analysis, we have determined that the runoff was seven times what it would have been if the fire had not occurred.
July 19, 2017 Flood

A total of 120 properties impacted

37 homes damaged or destroyed
So did the outreach help?
Fire Ants vs Flood
Flood Insurance and Wildfires
Floods Follow Fire

Mudflow

Flash Flood

Flood Insurance Provides Coverage
Insurance Rates

Standard Rates

- High-risk Areas (e.g., Zone A & V)
- Risks not eligible for Preferred Risk Rates
- Flexible limits

Preferred Risk Rates

- Moderate-Low Risk Areas (Zone B, C, or X)
- AR and A99 now eligible
- Limited loss history
- Fixed premiums; fixed limits

<$200 A YEAR>
Waiting Periods

- 30 days
- 1 day
- 0 days
30-day Waiting Period Does Not Apply If:

- Flood originated on Federal land
- Post-wildfire conditions on Federal lands caused/worsened the flooding
- Policy bought either before fire containment date* or within 60 days after

*Containment date determined by federal agency responsible for land
FEMA Region monitors wildfire and flooding; consults with Federal Agency; reports to FEMA HQ

Claims adjuster determines policyholder meets 30-day exception

WYO/NFIP Direct change effective date to date of flood loss; pays claim
Waiting Period exception **ONLY** applies related to Federal lands

Otherwise there is a 30-day waiting period. So, **DON’T WAIT!**

The Risk Continues. Wildfire impact can exist for several years.
RESOURCES
Wildfires: You Need Flood Insurance

Floods are the most common and costly natural hazard in the nation. After a wildfire, the flood risk increases significantly. The time to buy flood insurance is now. Homeowners, renters and business owners need to protect themselves financially from the devastating losses flooding can bring—including after a wildfire—before the next weather event occurs.

Wildfires Increase Flood Risk

Large-scale wildfires dramatically alter the terrain and ground conditions. Normally, vegetation absorbs rainfall, reducing runoff. However, wildfires leave the ground charred, barren, and unable to absorb water, creating conditions ripe for flash flooding and mudflow. Flood risk remains significantly higher until vegetation is restored—up to 5 years after a wildfire. Flooding after a fire is often more severe, as debris and ash left from the fire can form mudflows. As rainwater moves across charred and denuded ground, it can also pick up soil and sediment and carry it in a stream of floodwaters. This can cause more significant damage.

Homeowners And Renters Insurance Don't Cover Flood Damage

A flood does not have to be a catastrophic event to bring high out-of-pocket costs, and you do not have to live in a high-risk flood area to suffer flood damage. Around twenty percent of flood insurance claims occur in moderate-to-low risk areas. And, do you know you are five times more likely to experience a flood than a fire during the next 30 years? Property owners should remember to:

Buy Flood Insurance. Most standard homeowners’ and renters’ policies do not cover flood damage. Flood insurance for
FLOOD AFTER FIRE

Did you know that wildfires dramatically alter the terrain and increase the risk of floods?

Reduce your risk. The time to buy flood insurance is now.

Contact your local insurance agent for more information or visit the National Flood Insurance Program at www.fema.gov/national-flood-insurance-program.

Degree of Land Slope
Higher degrees of land slope speed up water flow and increase flood risk.

Flash Floods
Intense rainfall can flood low-lying areas in less than six hours. Flash floods null household, tear out homes and destiny buildings and bridges.

Mudflows
Waters of liquid and flowing mud are caused by a combination of brush loss and subsequent heavy rain. Rapid snowmelt can also trigger mudflows.

Floods are the most common and costly natural hazard in the nation. After a wildfire, the flood risk increases significantly. The time to buy flood insurance is now. Residents and business owners need to protect their homes and assets from the devastating financial losses from a flood, especially after a wildfire, before the next weather event occurs.

WILDFIRES

Large-scale wildfires dramatically alter the terrain and ground conditions. Normally, vegetation absorbs rainfall, reducing runoff. However, wildfires leave the ground charred, barren, and unable to absorb water, creating conditions ripe for flash flooding and mudflow. Flood risk remains significantly higher until vegetation is restored—up to 5 years after a wildfire. Flooding after a fire is often more severe, as debris and ash left from the fire can form mudflows. As rainwater moves across charred and denuded ground, it can also pick up soil and sediment and carry it in a stream of floodwaters.

Residents and business owners are urged to purchase flood insurance now to assure financial protection from flooding. By law, there is a 30-day waiting period from the date of purchase until the flood insurance coverage takes effect. To avoid the waiting period, four exceptions to the waiting period are:

- the purchase of insurance is in connection with the extension, renewal or replacement of a loan; and
- the initial purchase is in connection with a revision or update to a Flood Insurance Rate Map; and
- FEMA determines that the property covered by the policy is affected by flooding on Federal land that is a result of, or exacerbated by, post-wildfire conditions.

"Ask your insurance agent about these exceptions.

REDUCE YOUR RISK

A flood does not have to be a catastrophic event to bring high out-of-pocket costs, and you do not have to live in a high-risk flood area to suffer flood damage. A small number of flood insurance claims occur in moderate-to-low risk areas. Property owners should remember to:

- Buy Flood Insurance. Most standard homeowners’ policies do not cover flood damage. Flood insurance is affordable, and important to protecting your investment.

FEMA

Fact Sheet

October 2017

Flood After Fire: The Increased Risk

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www.fema.gov/media-library/assets/documents/93830
FLOOD AFTER FIRE TOOLKIT

News Release

[INSERT ORG NAME] Warns: [Insert Region] at Increased Risk of Flooding Following Wildfire Season

[Insert Org Name] urges residents to protect their homes, businesses, and personal property with flood insurance as rainy season approaches.

[Cay, State] - [Insert region/city] has suffered significant losses due to recent wildfires, [insert local organization name] has been working tirelessly to help residents recover from the devastating impacts of these fires.

Wildfires result in a loss of vegetation and leave the ground charred and unable to absorb water. This creates conditions for flooding. Even areas that are not traditionally flood-prone are at risk of flooding for up to several years after a wildfire has occurred.

[Insert a quote from a local staff or community member about the risk of flood after fire.]

Floods are the most common and expensive natural disaster in the U.S. Just an inch of water in an average-sized home can cause more than $33,000 in damage. Most home owners and renters' insurance policies do not cover flood damage. Flood insurance is a separate policy that protects homes and belongings from floodwaters so residents can recover after a storm. Policies typically take 30 days to go into effect, so it is important for residents to call their insurance agents now to plan ahead.

For more information about flood risk and flood insurance, visit fema.gov/flood-after-fire.

Additional Resources

[Insert list of additional resources such as websites, phone numbers, etc.]

[Insert paragraph about your organization.]
Wildfire Safety Social Media Toolkit

How to Use this Toolkit

The Wildfire Safety Social Media Toolkit has safety and preparedness messages you can share on your social media channels. You can either copy these messages directly or customize them to reach your audience.

What you should know about Wildfire

- Know what to do before, during, and after a wildfire.
- Learn your evacuation routes and plan to evacuate if advised by local authorities.
- Have emergency supplies in place at home, at work, and in the car.
- Check your insurance policies to ensure you have enough coverage.
- Create a communications plan with your family.
- Listen to local officials.

Hashtags & Emoji's

- #WildfireSafety
- #SummerSafety
- #PrepareAtHome - use if you are conducting a preparedness exercise, tabletop discussion, or sharing a preparedness-in-action moment.
- #WildfirePrepDay - use to promote the National Wildfire Community Preparedness Day.
- Feel free to add emojis (the little pictures on your mobile phone keyboard) to your social messages.

Graphics & Outreach Materials

www.ready.gov/wildfire-toolkit

Wildfires

Wildfires can ruin homes and cause injuries or death to people and animals. A wildfire is an unplanned fire that burns in a natural area such as a forest, grassland, or prairie. Wildfires can:

- Often be caused by humans or lightning.
- Cause flooding or disrupt transportation, gas, power, and communications.
- Happen anywhere, anytime. Risk increases with in periods of little rain and high winds.
- Cost the Federal Government billions of dollars each year.

IF YOU ARE UNDER A WILDFIRE WARNING, GET TO SAFETY RIGHT AWAY

- Leave if told to do so.
- If trapped, call 9-1-1.
- Listen for emergency information and alerts.
- Use N95 masks to keep particles out of the air you breathe.

HOW TO STAY SAFE WHEN A WILDFIRE THREATENS

WHAT TO DO NOW: Prepare

- Sign up for your community's warning system. The Emergency Alert System (EAS) and National Oceanic and Atmospheric Administration (NOAA) Weather Radio also provide emergency alerts.
- Know your community's evacuation plans and find several ways to leave the area. Drive the evacuation routes and find shelter locations. Have a plan for pets and livestock.
- Gather emergency supplies, including N95 respirator masks that filter out particles in the air you breathe. Keep in mind each person's specific needs, including and updated asthma action plan and medication. Don't forget the needs of pets.
- Designate a room that can be closed off from outside air. Close all doors and windows. Set up a portable air cleaner to keep indoor pollution levels low when smoky conditions exist.
- Keep important documents in a fireproof, safe place. Create password-protected digital copies.
- Use fire-resistant materials to build, renovate, or make repairs.
- Find an outdoor water source with a hose that can reach any area of your property.
- Create a fire-resistant zone that is free of leaves, debris, or flammable materials for at least 30 feet from your home.

www.ready.gov/wildfires

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QUESTIONS?

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