Yavapai County Flood Control District

Newsletter

July 2012

Volume 2, Issue 1

WWW.YCFLOOD.COM

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Websites for other related organizations:

AZ Dept of Water Resources
www.azwater.gov

AZ Dept of Environmental Quality
www.azdeq.gov

AZ Division of Emergency Management
www.dem.azdema.gov

CORPS of Engineers
www.usace.army.mil

Federal Emergency Management Agency
www.fema.gov
www.floodsmart.gov

National Weather Service
www.weather.gov

National Resource Conservation Service
www.nrcs.usda.gov

US Environmental Protection Agency Region IX
www.epa.gov/aboutepa/region9

After the Fire

Fires and floods, what is up in Crown King? Although it seems at times that a community is suffering a string of unrelated, unfortunate events, in actuality they are often tied together. Summer rains are brought by convection storms and a burn area significantly alters the solar characteristics of the landscape. The removal of most of the vegetation and the darkening of the soil and rocks provides for greatly accelerated solar absorption and resultant heating. This heating, which is significantly greater than the surrounding forested areas, creates a very strong rising column of air over the burn area. This rising column of air creates an area of lowered air pressure near its base which draws surrounding moisture and thunder cells into the burn area.

It is common to see the burn areas experience rainfall rates and quantities that reach 1 1/2 times that of the surrounding areas. Additionally, due to the strength and intensity of convection cells over the burn areas we often see very intense storms with exceedingly high rainfall rates over the damaged watersheds.

The other part of the picture is that the watersheds themselves are more susceptible to damage after a fire. There are a few obvious reasons, such as the loss of the vegetation which both absorbs the moisture and provides stability, but there are also a few less obvious impacts. A fire in a pine forest tends to coat the ground with a resinous ash that works like a waterproofing compound. The scientific description is hydrophilic soils, which means the water tends to run off rather than be absorbed.

Higher rainfall rates and quantities, coupled with a watershed with significantly lower absorption, leads large and repeated runoff events.

Debris flows fill the sediment traps upstream of Crown King Road, above. Boulders are washed into the roadway after the stabilizing vegetation is burned away, below.

Natural channels tend to evolve toward a stable configuration, wherein the slope and channel characteristics tend to change slowly over time. In a fire area, the greatly increased stream flows and loss of stabilizing vegetation can lead to rapid and catastrophic changes. Stream channels will see significantly more erosion and sediment transport and may experience large scale debris flows.

The storm of July 14 produced one major debris flow and a significant amount of erosion and road damage over a large area.

Little can be done to break the cycle of storms until the area sees some recovery. Fortunately, oak and other brush species are not significantly damaged by a fire and will quickly begin to provide some cover and stability to the area.

In the meantime, the County Flood Control District is working with the Public Works Department and the Natural Resource Conservation Service (NRCS) to accomplish some key road repairs and improvements. District sponsored road improvements will address modifications to the roadway at the watercourse crossings to help mitigate future damage due to the increased flows and sediment transport. This work will consist of removal of in-place culverts, where appropriate, changes in road grade and profile, pavement of a few dip sections and erosion protection in key areas. Through these improvements, the roadway should be better able to survive the increased flow and sediment load the burn area will produce.

See page 3 for additional photos.

Arizona's Waters: The Legacy of the Clean Water Act

When the Cuyahoga River caught fire in 1969, a result of years of industrial pollution, Americans were dismayed that a river could burn. In 1972, Congress responded with the Federal Water Pollution Control Act, or the Clean Water Act as we know it now. Discharges would be regulated through permits, standards for water quality would be established and wastewater treatment would be required.

In the 1970s, Arizona had no burning rivers, and no oil-slicked beaches as visible reminders of poor water quality. We didn't really know much about the quality of our rivers and lakes because we had not looked. Our known water pollution was less dramatic than the Cuyahoga, but it could still make you sick; bacteria from wastewater plants discharging directly into rivers and streams; and failing septic systems polluting our groundwater and springs that feed our rivers.

Thirty years of permits and water quality standards , improved treatment technology, federal and state money to build new wastewater treatment plants and compliance and enforcement framework have cleaned up most of the water of the water quality problems associated with wastewater treatment facilities and direct industrial discharges in Arizona. In 2012, bacteria are at much greater reduced levels than in 1976 when we first examined our waters. We have not closed a beach or recreation area because of bacteria in the water since 1999.

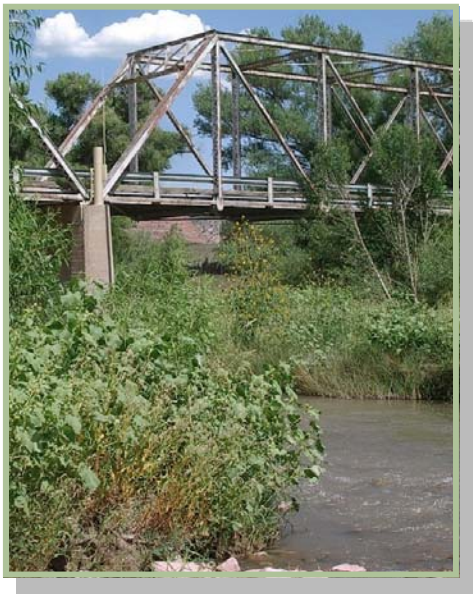
Our largest problem today? Metals and sediment. Arizona is a big ore producing state. Ore bodies can naturally contribute metals to streams and they can be leached from rock or soil exposed through road cuts, mining or land development activities.

Mercury, once found in every thermometer in every medicine cabinet, is rarely used today. But its impact is still felt as Arizona now has several lakes where certain fish are not safe to eat because they have accumulated mercury in their tissue from contaminated sediments. Is the mercury in our lakes natural? Or, from human sources? We don't yet know, but will be exploring this water quality problem in the years to come.

We are seeing new problems in 2012 that our counterparts in 1976 could never have imagined, such as the effect on fish and wildlife of pharmaceuticals discharged into our water through wastewater plant discharges, and the continuing effects of pesticides banned from use decades ago.

Thirty years after passage of the Clean Water Act, Arizona's water is much cleaner, and our citizens more aware of the importance of protecting, maintaining and restoring the quality of our rivers and lakes. Challenges remain however, and difficult problems exist. Working together, we can accomplish much toward making the goals of the Clean Water Act a reality in Arizona.

Gauge of the Month



VERDE RIVER AT PERKINSVILLE

Gauge Type: Precipitation/Stage

Watershed: Verde River

Location: Perkinsville

Gladiator Fire Continued from Page 1...

The difference three days can make during monsoon season is shown in this before-and-after shot taken near the road to Pecks Mine near Crown King. The pictures received significant interest on the Arizona Geological Survey Facebook page.

National Flood Insurance Program Reform Bill

On July 6, President Obama signed the NFIP Reform Bill into law. The bill extends the NFIP until September 30, 2017, and also makes some significant changes to the program.

Under the National Flood Insurance Act, new flood insurance contracts had a waiting period of 30 days from the time that all obligations for coverage were met, with a few exceptions. Under the new bill, the exception has been extended to include properties that have been affected by flooding on Federal land that is a result of, or exacerbated by, post-wildfire conditions. The fire must be confirmed by the Federal agency with jurisdiction over the Federal land and the insurance must be purchased within 60 days of the containment of the fire, as confirmed by said Federal agency.

The Reform Bill also brings to an end the pre-FIRM subsidy for several classes of structures, including severe repetitive loss, properties, for which sum of insured losses exceed market value of the property, business properties, substantially damaged/improved properties, and properties that are new or lapsed. This means properties that were "grandfathered" may be subject to current insurance premium rates.

The bill also, for the first time, authorizes the National Flood Mapping Program. While mapping has always been an important part of the NFIP, this is the first time it will be an authorized program, as opposed to requiring to go to Congress for funding.

The bill establishes a Technical Mapping Advisory Council (TMAC) to, among other things, recommend to FEMA how to improve the accuracy, quality, use, distribution and dissemination of flood maps and flood risk data. The TMAC will also recommend any new/updated mapping standards and guidelines, recommend procedures for delegating mapping activities, recommend methods for improving interagency coordination, and develop recommendations on how to ensure that FIRMs incorporate the best available climate science to assess flood risk.

The bill also introduces a plan to realign the Flood Mitigation Programs, including the Flood Mitigation Assistance, Severe Repetitive Loss, and the Repetitive Flood Claims Programs.

While it will be several months before we know the full affect of the new bill, floodplain managers are preparing for the public's reaction to changes, perceived as good and bad, in their flood insurance policies.

Yavapai County Flood Control District

500 S. Marina St. *Phone: 928.771.3197*
Prescott, AZ 86303 *Fax: 928.771.3427*

10 S. Sixth St. *Phone: 928.639.8151*
Cottonwood, AZ 86326 *Fax: 928.639.8118*

Please visit the County website for more information:

- Applications, Forms and Instructions
- Building Codes
- Community Plans
- Drainage Criteria Manual
- Fees/Impact Fees
- Flood Hazard Status Reports
- Flood Protection Information
- General Plan
- Ordinances
- Regulations
- Storm Water Management Program
- Related Links & More

http:\\www.yavapai.us

COUNTY TOLL FREE TELEPHONE NUMBERS

Ash Fork, Bagdad, Seligman, Yarnell	***800.771.2797***
Black Canyon City and Phoenix Area	***602.495.8800***

COUNTY SWITCHBOARD NUMBERS

Prescott 928.771.3100 - Verde Valley 928.639.8100

The Yavapai County Board of Supervisors also serve as The Board of Directors for the District.

The initial floodplain ordinance was adopted December 1981, and has been revised over the years.

The Drainage Criteria Manual, was first adopted November 1998, and revised August 2005. The current Ordinance and Drainage Criteria Manual are available on line at the County website or may be purchased at the Prescott and Cottonwood District offices.

Services Performed

The District is available for assistance or technical advice on the following topics:

- National Flood Insurance Program
- District ALERT System
- Flood Insurance Rate Maps
- Flood Status Information on a Parcel of Land
- Flood Protection & Safety
- Local Flood Hazard
- Development & Permitting within the 100 year floodplain
- Construction in or adjacent to a significant watercourse
- Storm Water Quality and Pollution Control

Flood protection information and links to other agencies are available on the County website. Go to www.ycflood.com for archived issues of this newsletter.