

Nevada Floodplain Management News

FALL 2023

VOLUME 13, ISSUE 2

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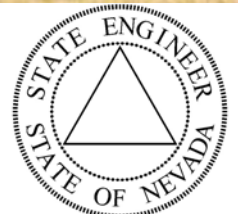
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STATE OF NEVADA

DEPARTMENT OF CONSERVATION OF NATURAL RESOURCES

DIVISION OF WATER RESOURCES



Update from the State Floodplain Manager

By Erin Warnock

The Nevada Floodplain Management Program supports in-person outreach throughout the year by attending events as requested, and by selecting appropriate events to participate in with community, federal, and tribal partners. Our summer in-person outreach efforts included the WaterPalooza event at Katherine Dunn Elementary School in Northern Nevada.

Many of our outreach efforts are part of Nevada Silver Jackets projects. Nevada Silver Jackets projects are state led, and U.S. Army Corps of Engineers (USACE) supported, inter-agency efforts by local, state, and federal floodplain management partners to reduce the risk of flooding. The Nevada Silver Jackets Team is beginning to wrap up some ongoing projects and preparing to begin new projects. Ongoing Nevada Silver Jackets projects include the development of an informational pamphlet for teachers that summarizes all of the standard classroom curriculum we created to go hand in hand with our virtual outreach materials. This pamphlet, and all other materials, are accessible on our website; Nevadafloods.org.

The Nevada Silver Jackets Team prepared a draft Floodplain Management Plan for the South Fork dam in Elko County. The goal is to provide this Floodplain Management Plan as a template for applicants applying for funding from the Federal Emergency Management Agency's (FEMA) rehabilitation of High Hazard Potential Dams (HHPD) grant program. This draft Floodplain Management Plan is awaiting final comment from FEMA Headquarters.

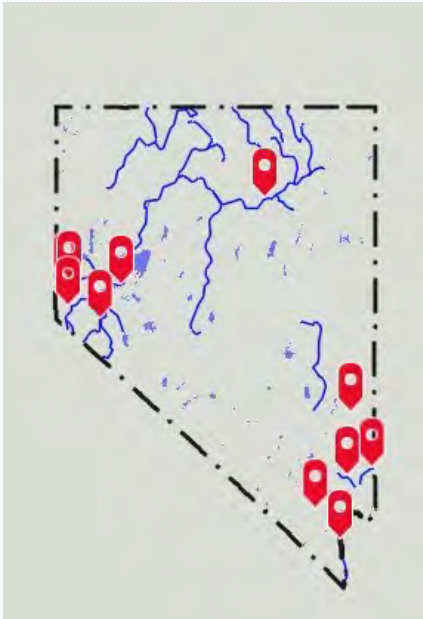
We are wrapping up our Comprehensive High Watermark Campaign which involves producing customized High Water Mark (HWM) signs for Douglas County, Carson City, City of Mesquite and three signs to be put up in Nevada State Parks: Lahontan, Kershaw-Ryan and Washoe. The High Watermark Campaign signage will include a QR Code that links to more in-depth information on our website (Nevadafloods.org) featuring an interactive map that will continue to grow with high watermark locations and information.

All projects and project proposals will be shared at our next semi-annual Nevada Silver Jackets meeting this fall where all interested stakeholders are welcomed.

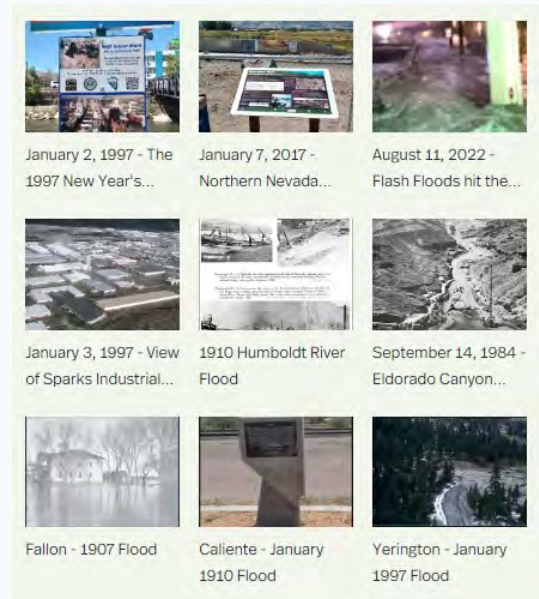


The River Fork Ranch Preserve HWM Sign portrays the significant contributions open space floodplains make towards flood risk reduction and groundwater recharge.

Update from the State Floodplain Manager cont.



The Nevada Silver Jackets Comprehensive High Water Mark Project includes a virtual component. All signs will be marked on a base map (left). High Water Mark signs are pinned and the images are available for the viewer to explore (right).



The Nevada Floodplain Management Program hosted our second Nevada Local Floodplain Managers Quarterly Meeting on July 13th. This meeting featured a presentation from guest speaker Antoinette Stein, FEMA Region IX CRS Coordinator, along with Floodplain Management updates, outreach opportunities, and general Flood Awareness.

FEMA updates included new revisions to the Elevations Certificate form and Dry Floodproofing Certificate form (the new expiration date of these revised forms is 06/30/2026). The revised forms should be used going forward. You can find the forms on the FEMA website at [National Flood Insurance Program - Underwriting Forms | FEMA.gov](https://www.fema.gov/national-flood-insurance-program-underwriting-forms).

Highlights of the revisions to the Elevation Certificate include the following:

- A new Section H is available for use in all flood zones to determine the building's first floor height for National Flood Insurance Program (NFIP) insurance purposes. Photos must be submitted with all Elevation Certificates.
- Instructions for other sections have been revised and clarified to ensure greater consistency and accuracy in the information provided to FEMA on these elevation certificate forms.
- Highlights of the revisions to the Dry Floodproofing Certificate include the following:
 - A revised format that requires separate certification of building design, elevation, and construction.
 - A new Required Documentation page.

Attachment A is updated under writing guidance on how to use the revised EC form for first floor height. The updated guidance will appear in the next Flood Insurance Manual update.

Water Year 2023 - Snowmageddon and Drought Buster

By Tim Bardsley, National Weather Service, Reno

After three dry water years, drought had a strong grip on most of Nevada, but the winter and spring of 2023 exceeded all expectations, and brought enough snow and rain to fill most reservoirs and eliminate drought conditions in most of the state (Figure 1). While many thought we might not see another winter like the 2017 in our careers, 2023 matched or exceeded 2017 in many areas, especially in terms of snowfall and snow depth in the central and southern Sierra, and most notably the generally colder storms and conditions built and maintained lower elevation snowpacks.

December got our mountain snowpack off to the races with a series of atmospheric river storms, but not without raising flooding concerns late in the month, especially on New Year's Eve, where heavy rain brought many rivers and creeks to their banks, but a Tonopah low provided a quick...

Nevada Percent Area in U.S. Drought Monitor Categories

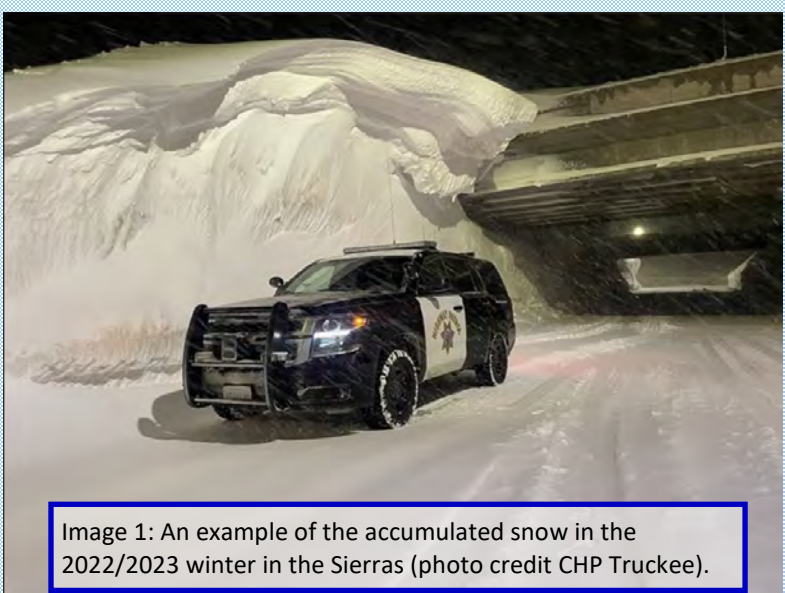
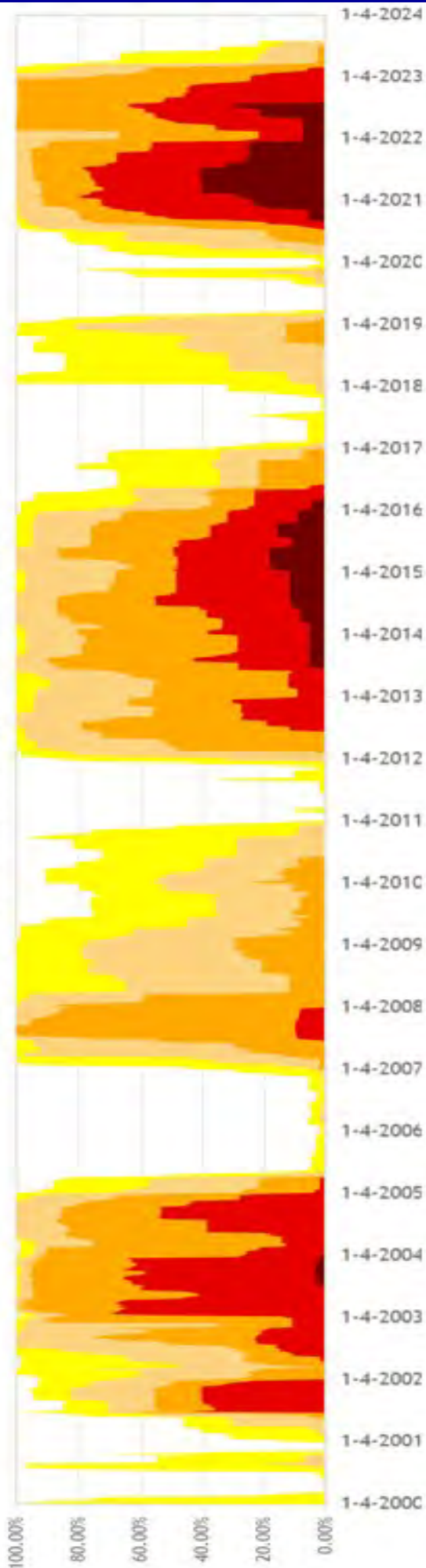


Image 1: An example of the accumulated snow in the 2022/2023 winter in the Sierras (photo credit CHP Truckee).

Figure 1. Changes in Nevada's drought status from 2000-2023 by percent area., Note the dramatic reduction of drought area since October of 2022. Now less than 6% of the state is classified as abnormally dry (D0) or moderate drought (D1).

Water Year 2023 - Snowmageddon and Drought Buster (Cont)

infusion of colder air and a morning transition to heavy snowfall. This rapid transition to snow helped relieve concerns for major flooding, but the low-elevation snowfall also had significant impacts and was a challenge for our roads and public safety partners pivoting on a dime from flood fighting to snow removal.

Late February and early March continued to build massive snowpacks with persistent cold storms. In mid-March a series of warm inland penetrating atmospheric river (AR) storms rapidly warmed and melted large areas of lower elevation snowpack. While the rain alone from these AR storms can lead to rapid runoff if the ground is saturated or frozen, additional snowmelt, driven primarily by strong warm winds and high humidity can exacerbate flooding concerns. The rapid melt of the massive and poorly measured lower elevation valley snowpack resulted in some of the most impactful flooding of the water year including, but not limited to the Upper Reese River, portions of Diamond Valley, the East Walker River, Washoe Valley, and areas draining the Pine Nut mountains in Douglas County.



Image 2: Buried lift chairs at Mammoth Ski Resort (photo credit: Mammoth Ski Resort).

The combination of these winter storms (Figure 2) built a record to near record breaking snowpack to much of the state (Figure 3) and concerns grew for both snow loading in the Sierra and snowmelt...

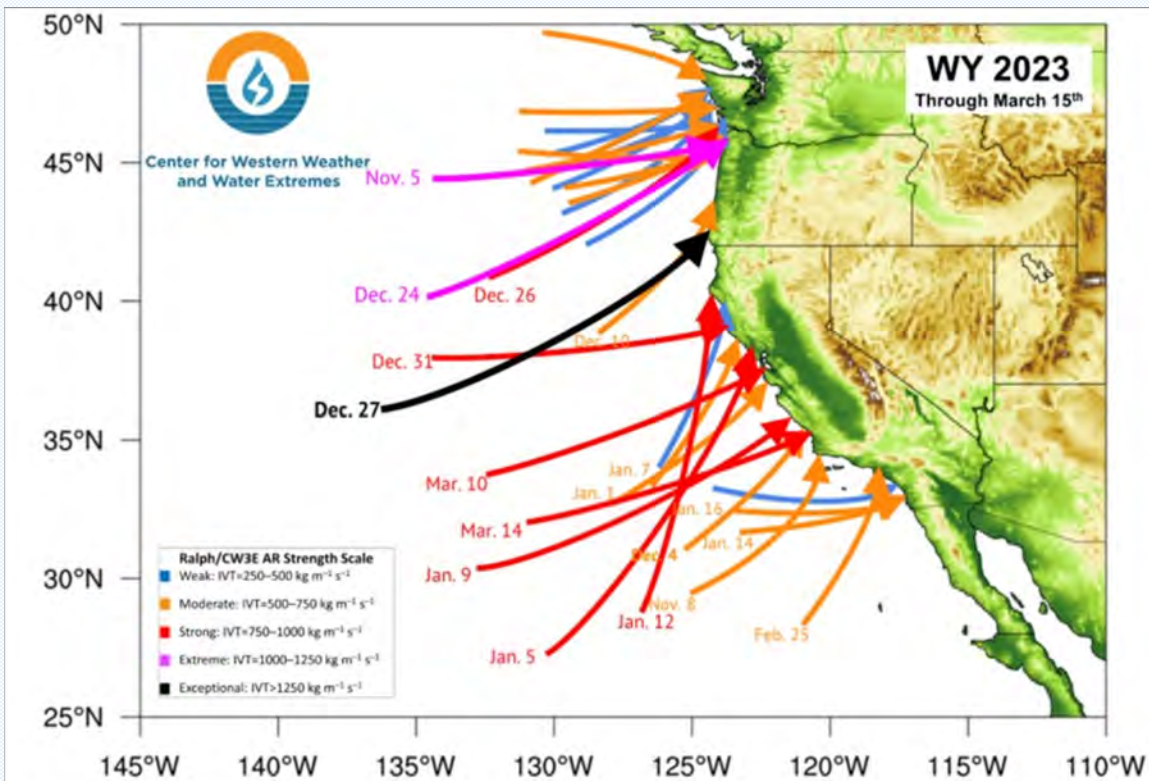


Figure 2. Dates and strength of atmospheric river storms impacting the west coast through mid-March.

Water Year 2023 - Snowmageddon and Drought Buster (Cont)

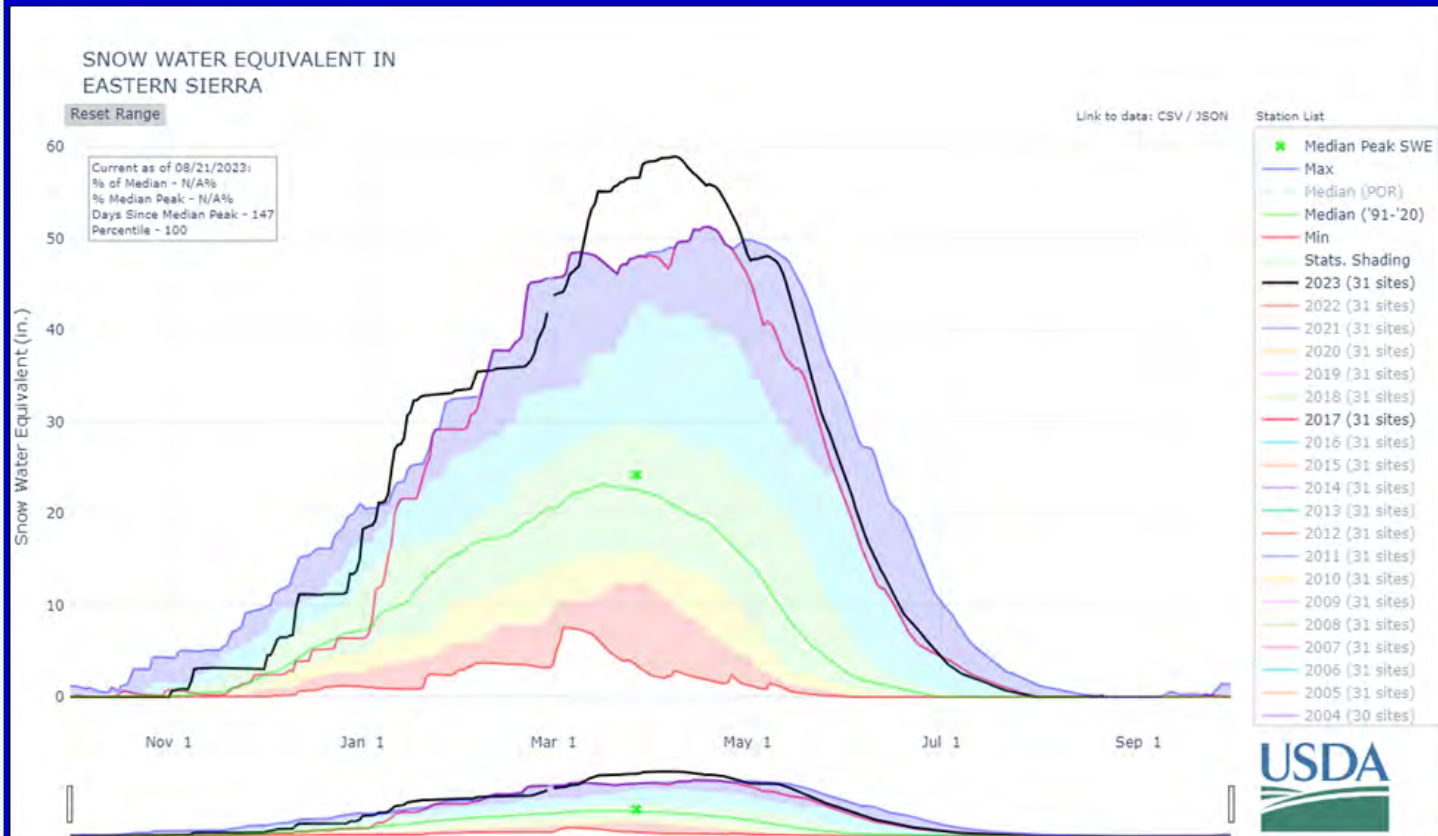


Figure 3: Graph illustrating the amount of water in the snow pack from 2004 to the present. 2023 is represented by the black line.

flooding. As of April 1st many SNOTEL and manual snow courses reported record to near record snow water equivalent (SWE), most notably in the Carson and Walker basins as well as sites in the Ruby mountains and other portions of northeastern and eastern Nevada. Some of these record snow courses had records in excess of 80 years. It became difficult to imagine late spring and summer weather scenarios that would not result in impactful flooding, especially along the Walker River. While late May and early June provided additional precipitation and some flash flooding problems due to high intensity thunderstorms, cooler than normal conditions punctuated by brief warm periods helped to reduce the snow covered area and moderate flows. Still prolonged minor to moderate flooding occurred on the Walker River into early July, but other areas including the Carson river and the Humboldt experienced only minor flooding.

Just when we thought water year 2023 was nearly done setting records and breaking things, Tropical storm Hillary came rumbling through Nevada and Southern California in August. Heavy rain and flooding caused significant damage to roads, homes and infrastructure mostly in Clark and Nye Counties with rainfall totals just shy of 10" at the Lee Canyon SNOTEL in the Spring Mountains. ~△△△~

Featured Floodplain Manager:

Courtney Walker

Douglas County Stormwater Manager



Time in floodplain management position:

- 7.5 years as the Stormwater Program Manager

Previous occupation:

- Carson Water Subconservancy District—Watershed management
- Tahoe Regional Planning Agency & Tahoe Resource Conservation District—Water quality

Current flood projects:

- Drainage Master Planning for Pinenut Creek and Buckeye Creek;
Johnson Lane Area Drainage Master Plan Implementation of four detention basins
- Creating a County-wide Stormwater Master Plan

- Working to create a sustainable funding source for capital improvement projects.

Successful completed project:

- Successfully navigated the National Environmental Policy Act (NEPA) process to obtain a right-of-way on BLM land to construct four flood control basins in the Johnson Lane area (photo on page 8)

Hobbies:

- Hiking
- Camping
- Skiing
- Traveling with my family



Image showing the inside of one of four flood control basins in the Johnson Lane area in Gardnerville, Nevada. Construction of the basins was completed by Douglas County in August 2023.

SAVE THE DATE

**NGIS
2023**

MAPPING TOGETHER

October 11–12, 2023
Reno-Sparks Convention Center
Visit ngis.org for more information

Floodplain Managers, do you want to:

- Earn CRS credit?
- Improve your points for FMA Grant applications?
- Educate your community's youth about flooding in Nevada?

Yes? YES!! NDWR and Nevada Silver Jackets have a great resource for you!



**FREE
Classroom Curricula!**

Available for download at
NevadaFloods.org
or follow the links for:

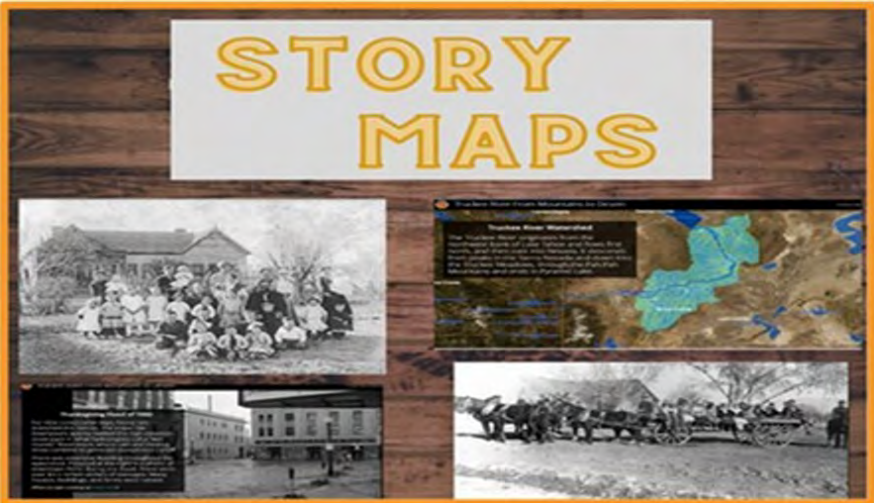
[Nevada Rivers](#)
&
[Flood Fighter; Nevada](#)

*Flood Fighter:
Nevada Curriculum
based Materials and
Android/iOS
Platform*



Story Maps for
Each Major River in
Nevada:

- Truckee River
- Carson River
- Walker River
- Humboldt River
- Virgin River
- Muddy River





State of Nevada Division of Water Resources

Upcoming Trainings and Conferences

October 25 - 9:30 am | **Nevada Local Floodplain Managers Virtual Meeting***

Oct. 11-12 | **Nevada Geographic Information Society (NGIS) Conference**

Nov. 12-18 | **Nevada Flood Awareness Week**

*Virtual

Nevada Floodplain Management News is a Publication of the Nevada Floodplain Management Program

If you want to:

- **Attend one of our meetings or webinars**
- **Submit content for Nevada Floodplain Management News**
- **Share comments or questions**

Please contact Floodplain Mapping Coordinator, Sarah Fichtner:

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