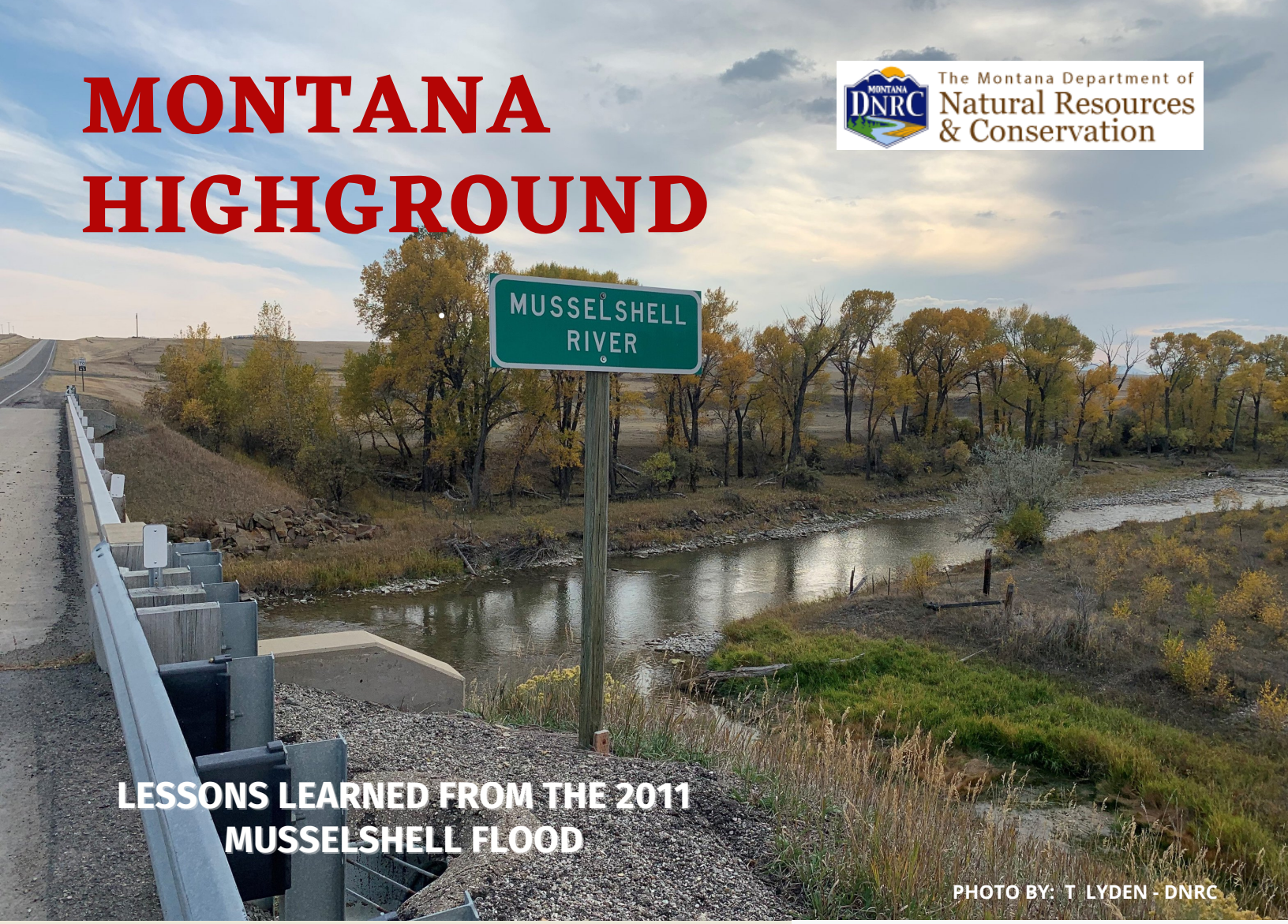
MONTANA HIGHGROUND

The Montana Department of Natural Resources & Conservation



LESSONS LEARNED FROM THE 2011 MUSSELSHELL FLOOD

PHOTO BY: T LYDEN - DNRC

How could one Montana river cause so much damage and destruction?

Multiple communities and counties located along the banks of the Musselshell River were flooded in May of 2011. The impacts of this life changing event will never be forgotten. People, businesses, ranches, counties and municipalities are still dealing with the aftermath of the flood events ten years later. On September 9th, 2021 the City of Roundup hosted the "Musselshell Flood Awareness Day" to discuss "lessons learned from the Musselshell" and the continued need for on-going mitigation, planning, preparedness and communication.

Members of the public, DNRC, Musselshell Watershed Coalition, Department of Emergency Services, City of Roundup, Musselshell County, and local volunteer groups met and recalled the flooding. Participants discussed the economic losses to homes, businesses, and ranches, including washed out roads, irrigation systems, and new river channels. They praised state, county, and volunteer groups who worked together to provide emergency services and recovery efforts. The groups discussed repair and mitigation efforts and focused on learning from the past, improving communication, and preparing for the future.

NEWSLETTER HIGHLIGHTS

Learning from Natural Disasters
- History of the Musselshell River
- Resilient Musselshell Communities
- New Maps for the Musselshell
- Lessons Learned from 2011 Floods

Montana Silver Jackets Update

Why Risk Rating 2.0 Now?

Grant - Funding Opportunities

NOAA Winter Outlook

Resources and Training

Around the Floodplain

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DECEMBER 2021 VOLUME 2

History of the Musselshell River

Submitted by: Wendy Beye

Musselshell Watershed Coalition | wbeye@bitterroot.net

ABOVE: The City of Roundup, Montana inundated with flood waters, including the local fairgrounds, shown in lower left.

Newcomers to the Musselshell River watershed are unaware that the innocuous trickle that one can wade across without getting pants wet periodically becomes a churning monster. No doubt the indigenous people who hunted buffalo along the river knew not to expect easy passage when conditions were ripe for a flood. Railroad surveyors apparently did not ask their advice.

In 1907, eager to bring settlers to the lands the federal government had given the company, the Milwaukee Road punched a rail line from Wisconsin to the west coast. At Melstone, east of Roundup, Montana, the engineering crews met up with the Musselshell River, which was no doubt a trickle at the time. They designed and built over 200 channel crossings, and laid track on top of a railbed that became a very long dike. The first flood hit in 1908, washing out a rail bridge just east of Roundup. Passengers had to walk or ride in wagons in order to continue their journey until the bridge was repaired. The next 60 years brought multiple floods that washed away bridges and punched holes in the railbed dike.

When the Milwaukee Road closed its operations in the 1970s, it left behind the river problems for the small communities that remained in the watershed. The river became further restricted by Highway 12, and each decade, the floods became more violent and destructive.

At the end of May, 2011, a bountiful winter snowpack packed with over three feet of water content, and spread over thousands of acres, still remained in the mountains in the upper reaches of the Musselshell River watershed. A heavy rain moved in from the east, dumping warm water into the watershed "bowl." Water began to roar down ephemeral creeks and into the river. A 157-year flood event had begun. An alert irrigation water manager noticed that readings on streamflow gauges upriver from Roundup were showing record amounts of water heading downstream.

She called all the ranchers on her list of irrigators, as well as the Sheriff in Roundup, to warn them to get people, livestock, and equipment to high ground. People living in the low area southwest of town scrambled to get out with only the clothes on their backs. Within hours all highway access into Roundup was submerged in up to 17 feet of water. Floodwaters remained at high levels for 45 days, leaving homes and businesses ruined. Volunteers stepped up, offering their homes to displaced families, preparing meals three times a day for anyone in need and filling recovery coffers with generous donations.

Floodwaters remained at high levels for 45 days, leaving homes and businesses ruined.

Though the Musselshell River will never stop flooding at unexpected times - winter, spring, summer, and fall - the people who live along it are more prepared than they were in the past. Mitigation projects have removed many of the houses that were located within the floodplain near Roundup, the highway department is working with a geomorphologist to make roadbed repairs that are less intrusive into the natural floodplain, and communities have flood disaster plans in place that can be quickly activated. The hope is that preparation and awareness can limit the damage caused by future floods.

Above: Old Milwaukee Railroad Bridge twisted by flood.

Above: A flooded café on Highway 12 in Roundup, Montana

Resiliency Along the Musselshell

Submitted by: Laura Nowlin, MWC Coordinator

Musselshell Watershed Coalition | musselshellwc@gmail.com

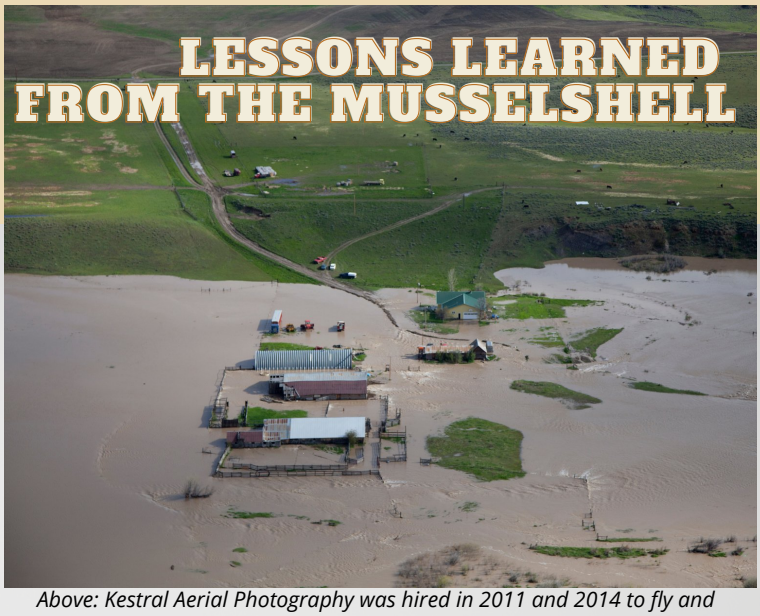
Flowing 342 miles, through the heart of Montana from Martinsdale to the Missouri River, the Musselshell River irrigates nearly 85,000 acres on 250 farms and ranches. Communities throughout the watershed might not be large in population but have demonstrated time and again that resiliency comes from overcoming challenges and sharing concerns.

The people of the Musselshell are no strangers to natural disasters. Over the past 10 years, there were five significant flood events in 2011, 2013, and 2014, while 2018 and 2019 sustained 5-year flood water averages for over a month. Not to mention destructive wildland fires in 2012, 2017, 2020, and 2021. Only two years, 2015 and 2016, didn't create natural disaster headlines.

The 2011 flood was arguably the most devasting. The river crested four feet over flood stage, leaving over 300 people stranded when roads were washed out or under water. For two weeks, those stranded relied on their neighbors for necessities like medicine, food, and drinking water, much of which was transferred by boat, volunteers or emergency service providers. The Musselshell River shortened itself by 10 percent or 37 miles. In the years since, the river continues to move and re-channel itself to reclaim its length. This constant changing brings on-going challenges to the landowners and communities trying to live on its banks.

The Musselshell Watershed Coalition (MWC), along with many partners, helped to organize emergency repair projects, formed a technical advisory team to evaluate the damage (RATT), and learned of ways to lessen the economic, social, and ecological impacts of future flooding events.

Above: A farm and access road flooded in 2011 west of Roundup.



Above: Kestral Aerial Photography was hired in 2011 and 2014 to fly and document flood damage by the Musselshell River.

The MWC worked with the City of Roundup and the State of Montana Department of Natural Resources and Conservation (DNRC) to implement streambank stabilization projects and update irrigation infrastructure. Shared work projects continue to be on-going, all of which lessens Musselshell communities' susceptibility to flood damage.

One thing is for sure: flood, fire, and drought will come, and they will come again, but the Musselshell communities, neighbors, and partners continually refine their preparedness and demonstrate their ability to respond. Additionally they share their knowledge with communities and agencies around the state to help them prepare for natural disasters.

Recently, the City of Roundup hosted a 10-year Anniversary Event of the 2011 floods. Much has been learned in the last ten years, the most of which is the importance to work together, communicate, and seek resources. City of Roundup Mayor, Sandra Jones shared:

Seven Steps for Building a Resilient Community:

1. Assess the need
2. Assess available resources
3. Open lines of communication with one another
4. Identify what each partner contributes to the whole
5. Celebrate the partners
6. Present a unified force
7. Evaluate the results (and then start over again

Mary Brown, a landowner along the Musselshell River, said it best: *"Ranches can be rebuilt but knowing who will be there for you when things get tough, that is irreplaceable."*

New Maps for the Musselshell

By: Tiffany Lyden - DNRC Outreach Specialist

The 2011 floods on the Musselshell River highlighted a need for updated floodplain maps as it became clear the existing maps did not accurately reflect flood risk. At the time, many areas of the Musselshell River only had approximate floodplain maps dating back to the 70s or 80s, and some sections of the river had no floodplain maps at all.

In 2013 the City of Roundup requested a flood study, citing inadequacies with the approximate maps and the challenge of regulating new construction in flooded areas that weren't identified on the original floodplain maps. Fortunately, LIDAR topography had been collected for the river corridor in 2012 by the US Army Corps of Engineers, providing the required first step and leverage to implement a watershed-wide, cost effective project. The mapping project was funded by a FEMA grant along with financial contributions from counties and towns along the Musselshell. The multi-year project to produce new floodplain maps for 227 miles of the Musselshell River mainstem started in 2014. It was a massive coordination effort between the Musselshell Watershed Coalition, DNRC, FEMA, and the counties and towns located along the river.

The five-county project included survey, hydrology, and hydraulic engineering work, resulting in draft maps and study information, lots of public review and outreach, and eventually the adoption of new FEMA Flood Insurance Rate Maps for the Musselshell River mainstem. New maps for Musselshell, Rosebud, and Petroleum Counties went into effect in 2019. Golden Valley County's new maps recently went into effect on November 5, 2021. Wheatland County's new maps, include mapping updates for Antelope Creek, and are still going through public review. They are anticipated to go into effect sometime in 2022.

The updated maps provide more accurate flood hazard and flood elevation information along the Musselshell River. The new maps are digital and accessible through FEMA's Map Service Center and National Flood Hazard Layer. This makes them easier to understand and more accurate to determine the risk of being flooded in a 100 year flood event (aka: a 1% annual chance flood event).

Musselshell Watershed Aerial Photo Documentation Of the 2011 Flood Event

Capturing the event and resulting impacts — planning for the long-term response

On June 3rd, 2011, Bill Milton, a local rancher and MWC Coordinator, penned a request to find cooperative funding and assistance for an aerial photo project to document valuable real time data and record observations of the Musselshell Watershed flooding. The effort leveraged local, state, and federal partnerships, who recognized the immediate need to use resources and technology to accurately document the historical watershed-wide natural event.

He asked a cooperative partnership to use resources that:

1. Created a best possible sustained response for communities and businesses impacted by the flood;
2. Cooperatively implement new learning tools and an understanding by observing the river and community infrastructure as an interdependent whole system;
3. Explored more adaptive and resilient irrigation infrastructure to improve response to major flood events, while enhancing the river's natural capacity to moderate the energy of major flood events.

What Bill wrote profoundly applies today:

"For those residents living and experiencing this historic event there will likely be a profound and lasting implication on how local rancher-farmer irrigators, local governments and federal and state agencies approach future management of the Musselshell River. It is the economic and ecological foundation for many individual farm and ranches, businesses, and communities residing along the Musselshell. The present and future impacts and consequences will not be fully understood, realized, and appreciated for some time... Yet, there is always something to be learned from crises that can be applied to future responses."

Floodplain Program Lessons from 2011

Submitted by: Traci Sears, Coordinator | tsears@mt.gov
National Flood Insurance Program ((NFIP) / Community Assistance Program (CAP) | State of Montana DNRC

Floodplain management plays a critical role to reduce and mitigate flood losses and economic damages. In Montana most large flood events typically result from rain on snow. In 2011, flooding started with ice jams in January and progressed to heavy snowmelt floods starting April through June.

The DNRC Floodplain Community Assistance Program carefully monitored snowpack reports and recognized the need to start outreach campaigns and training events in February and March. The goal was to prepare communities and coordinate recovery efforts prior to the anticipated flood events. As many FPA and DES coordinators with first-hand experience know, planning and training can only take you so far. Once that flood event starts - it's chaotic, all hands-on deck, and many mitigation plans go out the window when disasters don't go as anticipated.

In 2011, the state dealt with major flooding events and the impacts of erosion, oil spills, riprap breaches, washed away roads and bridges, damaged and destroyed structures and the issue of standing water. Plus, the difficulties and intricate dynamics of coordinating with local, state, and federal partners during large-scale disaster events. It is essential for county, state, and local officials to learn and understand the details of recovery and mitigation programs to help communities and property owners navigate the bumpy road of rebuilding their lives and their businesses, which can often seem downright impassible at times. Not to be overlooked is the emotional toll on emergency responders, volunteers, and property owners.

The events of 2011 showed Montana its cracks in its recovery foundations and helped improve and guide the recovery front for floodplain management. As the MT NFIP Coordinator, I gained valuable, hands-on knowledge about the importance of having proper safety equipment for inspections, how to conduct inspections after a disaster, the proper channels to request assistance and funding, and the role that floodplain management and mangers play before, during, and after disasters. Now I share this experience and knowledge with the Montana communities and FPA's who participate in the NFIP program. I advise floodplain managers to develop a good working relationship and communication channel with their emergency coordinators.

Above: In 2011 the Musselshell River impacted counties and communities located along its watershed corridor.

I recommend they provide property and flood risk information to assist stakeholders and help with damage inspections. It is important for floodplain managers to understand this process as they are the only community representatives that can sign off that a structure is substantially damaged for insurance reimbursements.

Additional lessons learned in 2011 include: 1) riprap is expensive, 2) don't drive through flood waters along the Yellowstone River (or any river for that matter), 3) oil spills can derail a mitigation project in a millisecond, and 4) watch where you step when doing flood damage inspections – snakes and other critters will find refuge anywhere.

Most importantly:

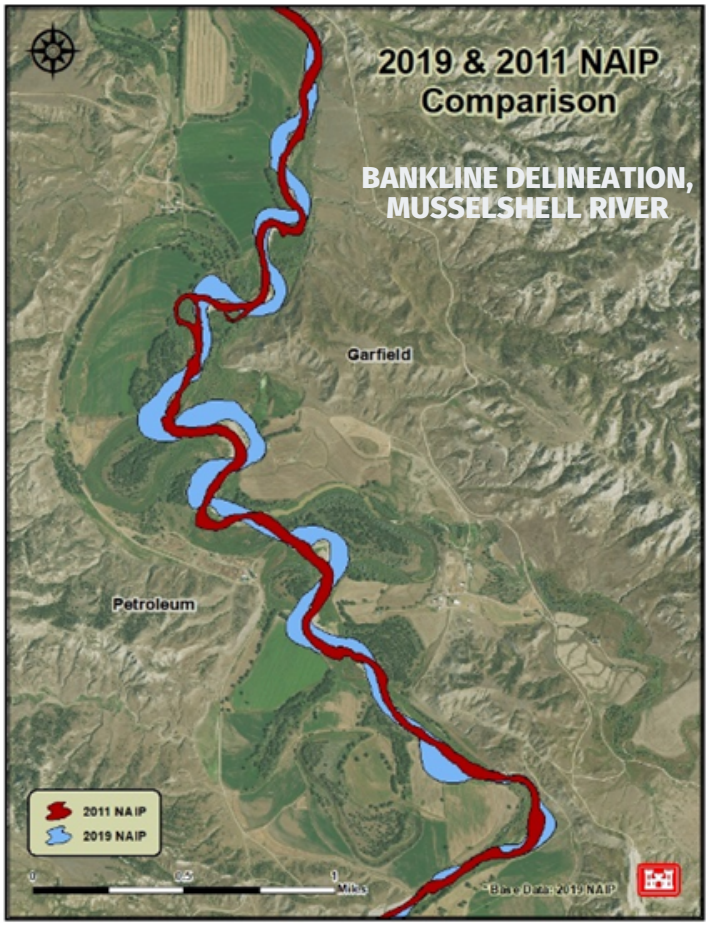
- Don't underestimate the importance of staging coordination and training events.
- It is critical to have an inventory of the people, resources and equipment available, including cell numbers.
- TAKE LOTS OF PHOTOS and document everything.
- Have a recovery plan in place for the community.
- Update information in real time (at minimum annually)
- Maintain open lines of communication with recovery teams and stakeholders.

Lastly, be vigilant and try not to be the reason a community or property owner has missed out on funding opportunities or available programs. Floodplain management doesn't stop a disaster from occurring, but it can mitigate both economical and physical impacts from flooding.

For more information on Disaster and Recovery Assistance, see DNRC floodplain website at www.floodplain.mt.gov.

THE BUZZ ON MONTANA SILVER JACKETS

Submitted By: Laurel Hamilton, USACE



ABOVE: THE CMZ MAP SHOWS THE MUSSELSHELL RIVER CHANNEL IN 2011 (RED) COMPARED TO 2019 (BLUE) NEAR GARFIELD AND PETROLEUM COUNTIES.

MUSSELSHELL

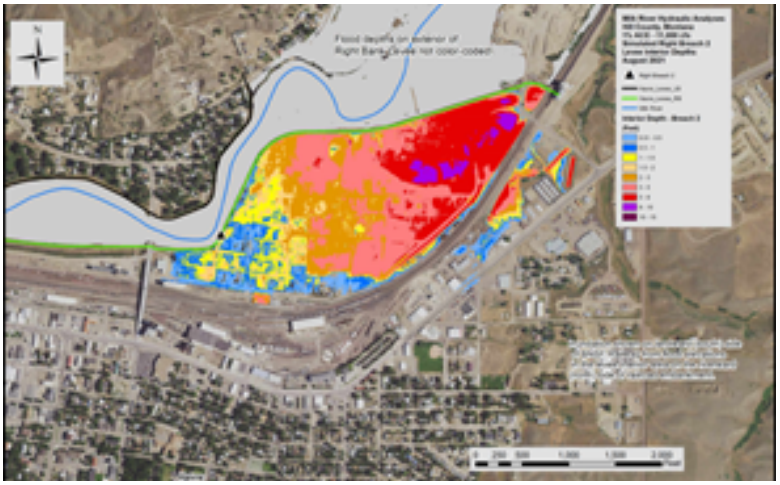
Floodplain mapping for the Musselshell River was on-going the Spring of 2021 when **the Montana Silver Jackets** initiated a Channel Migration Zone (CMZ) Mapping project for the Musselshell River. The project kicked off with a Musselshell Watershed Coalition meeting to determine project goals and methodology.

The CMZ Mapping project consists of digitizing bank lines for approximately 340-river miles for conditions depicted in 2019, 2011, 1996, 1977, and 1950s aerials and determining the rate at which channel migration occurs and identification of erosion prone areas. Results will be used to inform landowners and communities of avulsion risk and help mitigate erosion.

MILK RIVER LEVEE

Over the summer, **the Montana Silver Jackets** completed hydraulic modeling for portions of the Milk River at Havre and Glasgow. The project used a 2D HEC-RAS model to route flows in the Milk River through hypothetical breaches in the levees.

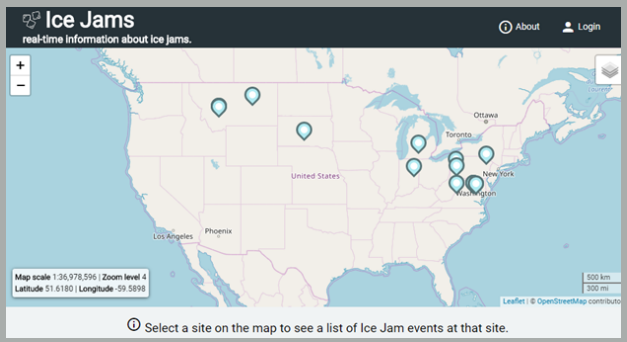
The evaluation of the flood wave progression though the breach and levee-protected area informs the communities of the flood risk due to levee breaching. Results help identify high risk areas, affected critical infrastructure, time until flooding, and preferred evacuation routes.



ABOVE: Model of Havre, Right Levee Breach, 11,800 cfs Milk River Flow

ICE JAM APPLICATION

Spring of 2022 **the Montana Silver Jackets** will support the USGS Ice Jam Application and website. The Ice Jam App is a comprehensive tool developed by USGS that improves sharing of critical ice-related information with local, state, and Federal emergency management partners. This platform will aid in the documentation of river ice conditions and locations and in the identification of sites that are becoming vulnerable to ice jam flooding and posing a risk to life and property. Efforts include the completion of tools within the website and launching of the site with outreach and training guides.



FOR MORE INFORMATION ON MONTANA SILVER JACKET PROJECTS SEE HTTP://WWW.FLOODRISK.MT.GOV

Why Risk Rating 2.0 now?

INFORMATION BY:
DIANA HERRERA, CFM | FEMA REGION 8 FLOOD INSURANCE LIAISON | DIANA.HERRERA@FEMA.DHS.GOV

FEMA NATIONAL FLOOD INSURANCE PROGRAM https://www.fema.gov/flood-insurance/risk-rating

This new approach to the National Flood Insurance Program (NFIP), called Risk Rating 2.0 - Equity in Action, will allow us to set actuarially sound rates and identify flood risk more comprehensively than ever before. This change will also address an inequity in the program that has built up over time and must be corrected. Specifically, policyholders with lower-value homes have been paying more than they should, and policyholders with higher-value homes are paying less than they should.

The new pricing plan enables FEMA to set rates that are fairer and ensures both rate increases and decreases are both equitable. We've learned, for example, that two-thirds of older pre-FIRM homes, which have some of the highest rates in the NFIP today, will see a decrease in their cost of insurance.

Our new rating methodology has revealed these inequities, and as a Federally mandated program following Congress' direction, we cannot turn a blind eye to policyholders who have been unjustly subsidizing other properties.

Rating methodology hasn't been updated in over 40 years

Lastly, because our rating methodology hasn't been updated in over 40 years, it is not fiscally sustainable in its present form to withstand the frequency and intensity of recent events and the storms we know will strike in the months and years ahead. With the use of FEMA Flood Hazard Data, datasets from sister Federal agencies, like USACE, USGS and NOAA, along with catastrophe datasets that are used universally in the insurance industry, we are able to provide risk information on a unique property. Under the Legacy Pricing methodology, we could only look at binary flood risk, 1 percent riverine, and 1 percent coastal risk.

FLOOD INSURANCE CHANGES

On October 1st, 2021, FEMA rolled out Risk Rating 2.0 (RR 2.0): Equity in Action, a new pricing methodology for the National Flood Insurance Program (NFIP). FEMA is pleased to share finalized RR 2.0 guidance documents on its website

We now are able to look at replacement cost value, distance to the flooding source, pluvial as well as riverine floods, more frequent flood events, watershed, metropolitan statistical areas among other variables to accurately communicate flood risk.

Equity in Action will help put the NFIP on a financially sound path toward a more resilient program that is accountable to taxpayers, more accurately communicates flood risk to policyholders, non-policyholders and communities, and will help flood disaster survivors recover.

Yes, change is hard. None of us like change. Especially when we have been doing it the same way for decades. Just like the advent of computers, cell phones, Xboxes, and the way we now develop and produce our flood maps, technology has taken giant leaps forward. The NFIP must follow the trends and bring the Program into the 21st century. While difficult, now is the time.

Grant Funding Opportunities

Visit FEMA.gov
To learn more download the
Hazard Mitigation Grant Program Post Fire Fact Sheet

Grants Portal

CONTACT: FEMA-R8-HMHELP@FEMA.DHS.GOV

Montana Silver Jackets Proposals Due in January

Every year, USACE selects flood risk management project proposals from a national pool. USACE Districts are funded through its Floodplain and Management Services program to perform technical services at no cost to state agencies, communities, and tribes.

Contact Traci Sears - tsears@mt.gov for more information on submitting a proposal by January 14, 2022.

The Haystack Fire Looms South of Boulder, MT

The lightning caused fire burned over 23,000 acres. First reported July 31st, it became more active in September while consuming dead and downed lodgepole pines south of I-15. Southwest Montana dealt with air quality impacts from its considerable smoke. At one point over 450 firefighters were assigned to the blaze before it was contained in October.

More than $2.8 million in FEMA Hazard Mitigation Grant Program Post-Fire Funding Available

Submitted by: Joan Huston | Senior Tribal Mitigation Specialist | FEMA Mitigation Region 8 | FIMA | Joan.huston@fema.dhs.gov

Montana applicants are eligible for more than $2.8 million in FEMA funding to help implement hazard mitigation measures after wildfire disasters. The due date for applications is March 31, 2022.

Post Fire Funds

The FEMA Hazard Mitigation Grant Program (HMGP) supports both planning and projects from funds available after a Presidential disaster declaration. Specific funds, called HMGP Post Fire, support wildfire recovery. As many Montanans know, wildfires can destroy homes, businesses, infrastructure, natural resources, and agriculture. They can also increase secondary hazards and leave areas prone to floods, erosion, and mudflows for many years.

The FEMA HMGP Post Fire assistance is specifically available to help communities implement hazard mitigation measures after wildfire disasters. The FEMA HMGP has a cost share of up to 75 percent federal and 25 percent non-federal. States, federally recognized tribes and territories affected by fires resulting in an Fire Management Assistance Grant (FMAG) declaration on or after October 5, 2018, are eligible to apply. Funding may be available State or Tribal wide for any eligible project type if the funding is not used in the fire affected area.

FEMA Funding

Grants are the principal funding mechanism FEMA uses to commit and award federal funding to eligible state, local, tribal, territorial, certain private non-profits, individuals, and institutions of higher learning. FEMA's Hazard Mitigation Assistance Grants support sustainable actions that reduce or eliminate long-term risk to people and property from future disasters.

Other FEMA funding programs

Building Resilient Infrastructure and Communities (BRIC) and Flood Mitigation Assistance (FMA), are also available. BRIC is a pre-disaster program that supports states, local communities, tribes and territories as they undertake hazard mitigation projects, reducing the risks they face from disasters and natural hazards. The program's guiding principles are supporting communities through capability- and capacity-building; encouraging and enabling innovation; promoting partnerships; enabling large projects; maintaining flexibility; and providing consistency. The annual application period for BRIC opened September 30, 2021 and has a deadline of January 28, 2022.

FMA is an annual flood-hazard-only grant program that provides funding to states, local communities, federally recognized tribes, and territories be used for projects that reduce or eliminate the risk of repetitive flood damage to buildings insured by the National Flood Insurance Program (NFIP). For more information, see www.FEMA.gov

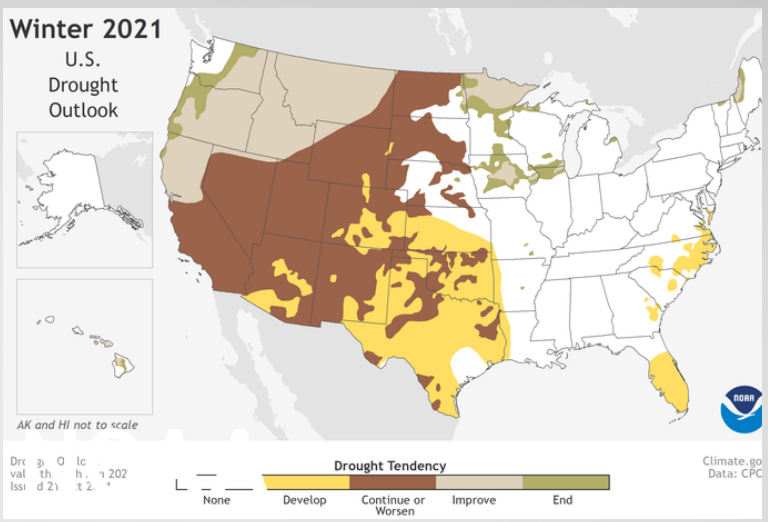
Winter Outlook from NOAA Double La Niña Brings Optimism

Officials with Montana's Drought and Water Supply Advisory Committee say the state's drought conditions have persisted this fall and, overall, the state is in worse shape than this time last year. The Agricultural sector is especially feeling the economic impacts. Ranchers are faced with herd reductions or liquidations due to expensive and low stocks of forage while farmers are seeing their 2022 winter wheat crops struggle to germinate following a 2021 crop that almost totally failed due to lack of moisture.

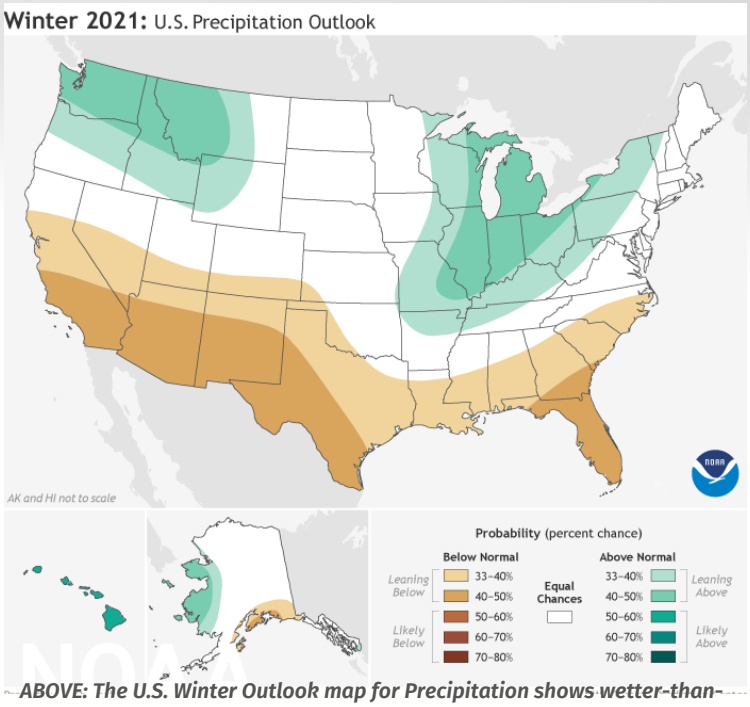
Eyes are on the U.S. Drought Monitor hoping Montana will see improvement in drought categories at locations around the state. For now, most areas are one to three classes worse than they were last summer. Normally, even following a dry summer, Montana experiences fall precipitation to regenerate soil moisture and improve drought conditions going into the new water year. That just has not happened for much of the state this year.

La Niña conditions have emerged for the second winter in a row according to NOAA's Climate Prediction Center — a division of the National Weather Service. In NOAA's 2021 Winter Outlook — which extends from December 2021 through February 2022 — cooler-and-wetter-than-average conditions are anticipated across portions of the Pacific Northwest and Northern Rockies, including the western half of Montana.

According to Arin Peters, a hydrologist with the National Weather Service, Montana experienced a La Niña pattern last winter that did not pan out as we would normally expect: the snowpack in the mountains ended up below average which, combined with very low spring rainfall, led to much below normal runoff and streamflow. Peters says that may be different this year. "The official three-month outlook for November, December, January does favor above-normal precipitation for pretty much the entire state, and there is some evidence to suggest that back to back La Niña events have a stronger precipitation signal."

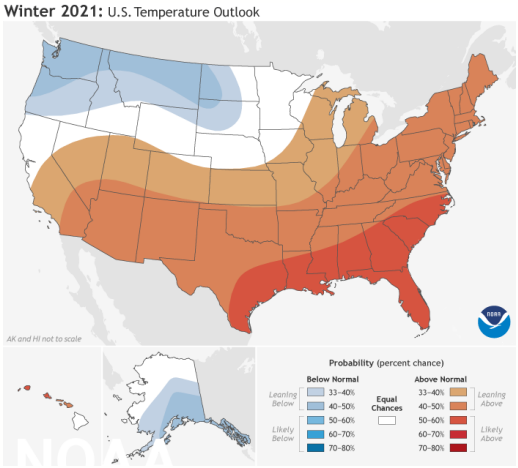


ABOVE: The U.S. Winter Outlook for Drought for 2021 - 2022 shows drought conditions improving for most areas of Montana.



ABOVE: The U.S. Winter Outlook map for Precipitation shows wetter-than-average conditions is likely for most of Montana.

As shown on the map (right), the U.S Winter Outlook map for Temperature Outlook favors colder-than-average temperatures for most of Montana.



NOAA's 2021-2022 Winter Outlook provides seasonal predictions for temperature, precipitation and drought. These map images (based on NWS CPC data) can also be accessed online at

www.climate.gov/WinterOutlook2021. (NOAA Climate.gov)

Students blending science & civics for real-world resilience in their communities!

Arlee MIddle School 6th Grade students received funding for their Flood Risk sign project to erect on the highway through town. They hope it will raise awareness of flood risk in their community.

The RISE Challenge is a national program that has expanded to Western Montana as the RISE Challenge Big Sky. It's a game-changer for formal & informal educators serving secondary students.

Part inquiry-based learning, part competition, and part Summit, RISE Challenge Big Sky engages middle and high school students to explore and identify real-world natural hazard issues, conduct research, and develop solutions and action plans for making their communities more resilient.

All project proposals are eligible for implementation supply funding. They will also be judged by panels of experts. Groups with the top 10 proposals will be invited to present at a spring Summit for the chance to win prize money up to $1,000!

Educators — Join the Challenge!

- No cost to participate
- PD & custom support from the Big Sky team
- High-quality resources provided
- Real-world experiences & skills for students
- In-school, after-school, or other groups

Who is leading the RISE Challenge Big Sky?
Missoula-based educational nonprofits Brightways Learning and the Watershed Education Network.

National Partners/Sponsors

FEMA, ASFPM Foundation, Earth Force

Big Sky Coordinators

Brightways Learning, watershed education network

Professional Experts — Volunteer!

Volunteers are the driving force behind the RISE Challenge Big Sky! There are a variety of flexible ways for you to help your Montana community RISE, such as:

- helping students guide their research
- serving as a Summit judge
- co-leading training opportunities

Most of these opportunities are one-time commitments. Exceptions could be "expert" volunteers or community stakeholders who may work with educators and students on their RISE Challenge project proposals.

If you are involved with...

- floodplain management
- environmental issues
- emergency management
- natural hazard mitigation
- state and federal policies
- or a similar area of expertise,

...then please view our volunteer flyer for more information. Your community – and the environment – will thank you!

To learn more & sign-up to participate:

Visit brightwayslearning.org/rise
or contact Tina Hamilton
thamilton@brightwayslearning.org

Flood After Fire

What You Need to Know

This handout is provided by the FEMA Region 8 FAF Team
For more information, contact:
Tracie Harrison | tracie.harrison@fema.dhs.gov

The Risk:

Floods are the most common and costly natural hazard in the nation. Whether caused by heavy rain, thunderstorms, or tropical storms, the results of flooding can be devastating. While some floods develop over time, flash floods—particularly common after wildfires—can occur within minutes after the beginning of a rainstorm. Even areas that are not traditionally flood-prone are at risk because of changes to the landscape caused by wildfires. Residents need to protect their homes and assets with flood insurance now—before a weather event occurs and it's too late.

You may be at an even greater risk of flooding due to recent 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 ideal for flash flooding and mudflows. Flood risk remains significantly higher until vegetation is restored—up to five years after a wildfire. Flooding after fire is often more severe than other flood events because 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. These mudflows can cause significant damage.

Flash Floods

A flash flood is a rapid flooding of a low-lying area in less than six hours, which can be caused by intense rainfall. Flash floods are known to roll boulders, tear out trees, and destroy buildings and bridges.

Mudflows

Mudflows are rivers of liquid and flowing mud on the surface of normally dry land, often caused by a combination of brush loss and subsequent heavy rains. Mudflows can develop when water saturates the ground, such as from rapid snowmelt or heavy or long periods of rainfall, causing a thick, liquid, downhill flow of earth. Mudflows are covered by flood insurance but are different from other non- covered earth movements where there is not a flowing characteristic—such as landslides or slope failures.

BE FLOODSMART

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. Around twenty percent of flood insurance claims occur in moderate-to-low risk areas. Property owners should remember:

- **The Time to Prepare is Now.** Gather supplies in case of a storm, strengthen your home against damage, and review your insurance coverages. No flood insurance? Remember: it typically takes 30 days for a new flood insurance policy to go into effect, so get your policy now.
- **Only Flood Insurance Covers Flood Damage.** Most standard homeowner's policies do not cover flood damage. Flood insurance is affordable. An average flood policy costs around $600 a year, rates start at just $129 a year for homes in moderate- to low-risk areas.
- **Plan Ahead**. Plan evacuation routes. Keep important papers in a safe, waterproof place. Conduct a home inventory; itemize and take pictures of possessions.

Resources

Visit **FloodSmart.gov** (or call 1-800-427-2419) to learn more about individual flood risk, and to find an agent in your area.

Montana DNRC: http://dnrc.mt.gov/flood-and-fire

Montana Insurance Commission: https://csimt.gov/your-insurance/flood/ (or call 800-332-6148)

RESOURCES AND TRAINING

VISIT www.floodplain.mt.gov/training

13th Annual Montana Floodplain Resource Seminar - Online

Request the Recording

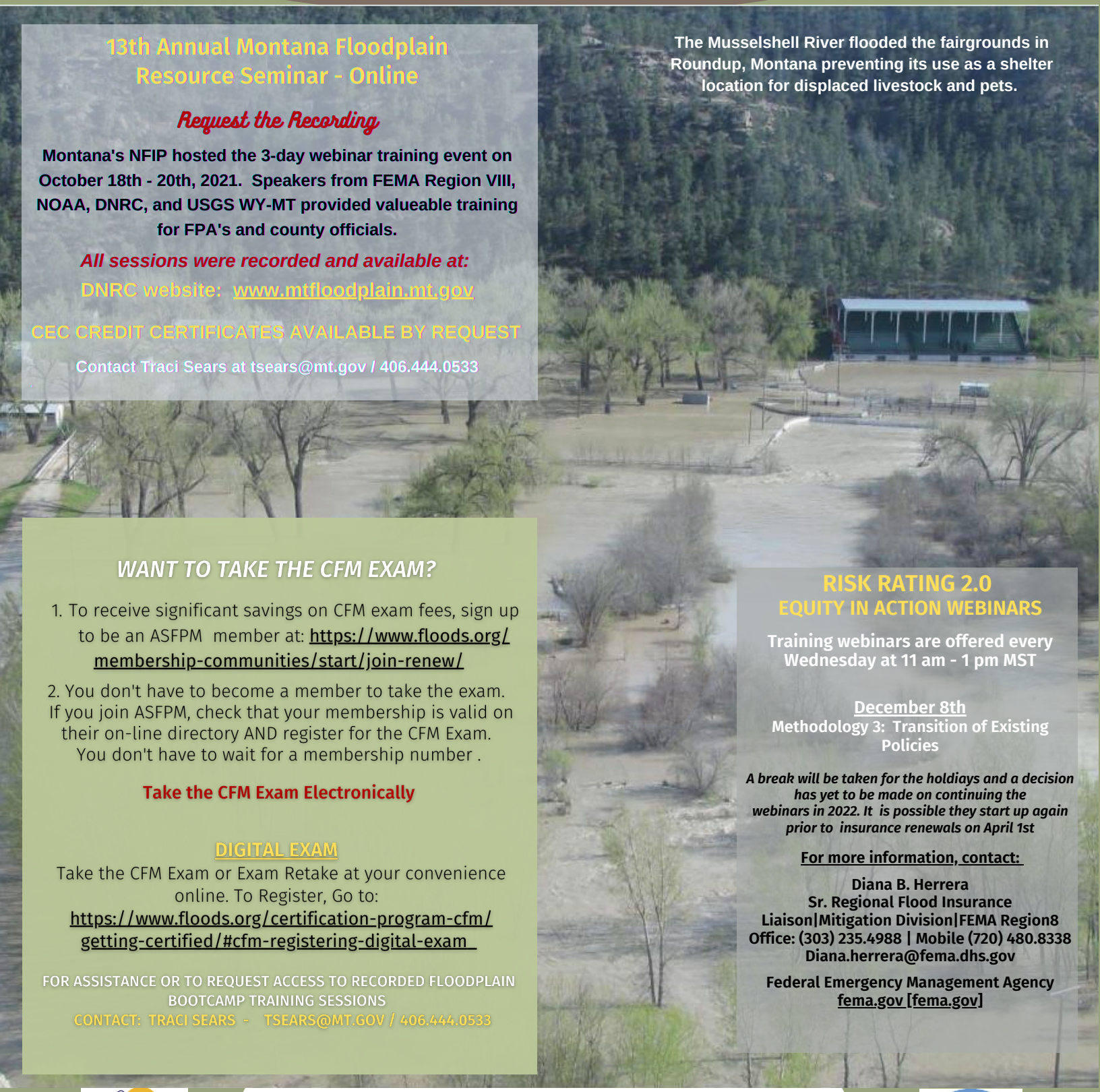
Montana's NFIP hosted the 3-day webinar training event on October 18th - 20th, 2021. Speakers from FEMA Region VIII, NOAA, DNRC, and USGS WY-MT provided valueable training for FPA's and county officials.

All sessions were recorded and available at:

DNRC website: www.mtfloodplain.mt.gov

CEC CREDIT CERTIFICATES AVAILABLE BY REQUEST

Contact Traci Sears at tsears@mt.gov / 406.444.0533



The Musselshell River flooded the fairgrounds in Roundup, Montana preventing its use as a shelter location for displaced livestock and pets.

WANT TO TAKE THE CFM EXAM?

1. To receive significant savings on CFM exam fees, sign up to be an ASFPM member at: https://www.floods.org/membership-communities/start/join-renew/
2. You don't have to become a member to take the exam. If you join ASFPM, check that your membership is valid on their on-line directory AND register for the CFM Exam. You don't have to wait for a membership number .

Take the CFM Exam Electronically

DIGITAL EXAM

Take the CFM Exam or Exam Retake at your convenience online. To Register, Go to:
https://www.floods.org/certification-program-cfm/getting-certified/#cfm-registering-digital-exam

FOR ASSISTANCE OR TO REQUEST ACCESS TO RECORDED FLOODPLAIN BOOTCAMP TRAINING SESSIONS
CONTACT: TRACI SEARS - TSEARS@MT.GOV / 406.444.0533

RISK RATING 2.0
EQUITY IN ACTION WEBINARS

Training webinars are offered every Wednesday at 11 am - 1 pm MST

December 8th
Methodology 3: Transition of Existing Policies

A break will be taken for the holdiays and a decision has yet to be made on continuing the webinars in 2022. It is possible they start up again prior to insurance renewals on April 1st

For more information, contact:

Diana B. Herrera
Sr. Regional Flood Insurance Liaison|Mitigation Division|FEMA Region8
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Federal Emergency Management Agency
fema.gov [fema.gov]

Need more information? A training/resource? Community help?
CONTACT

Traci Sears - NFIP/CAP Coordinator
tsears@mt.gov / Ph. 406.444.6654

Shylea Wingard - Floodplain Specialist
shylea.wingard@mt.gov / Ph. 406.444.1343

2021 Online Training

FLOOD INSURANCE RESOURCES

FLOOD INSURANCE STATISTICS
HTTPS://NFIPSERVICES.FLOODSMART.GOV/REPORTS

FLOOD-INSURANCE-DATA
NFIPSERVICES.FLOODSMART.GOV

RISK RATING 2.0 PORTAL
HTTPS://FEMA.GOV/FLOOD-INSURANCE/WORK-WITH-NFIP/RISK-RATING [FEMA.GOV]

FLOOD INSURANCE OUTREACH MATERIALS
HTTPS://WWW.FLOODSMART.GOV [FLOODSMART.GOV]

PROPERTY OWNER INFORMATION
HTTPS://WWW.FLOODSMART.GOV [FLOODSMART.GOV]

NFIP GENERAL INFORMATION HELP CENTER:

1-877-336-2627

FLOOD INSURANCE PUBLICATIONS & TECHNICAL INFO:

HTTPS://WWW.FEMA.GOV/FLOOD-INSURANCE [FEMA.GOV]

FLOODPLAIN ADMINISTRATOR UPDATES

Goodbye / Best wishes

Marc Mussman - Flathead County FPA
Alex Hogle - Madison County Planning Director/FPA
Scott Hazelton - Powell County FPA
Joah Juarez - Stillwater County FPA

Happy Retirement

Charlie Sheets - Cascade County

Welcome

Erik Mack - Flathead County Planning / FPA
Ph. 406.751.8200 / Email: emack@flathead.mt.gov

Nick Raines - Lincoln County Planning & Env. Health
Ph. 406.283.2444 / Email: nraines@libby.org

Rob Macioroski - TEMP Madison County FPA
Ph. 406.843.5250 / planning@madisoncountymt.gov

Bill Cassell - Petroleum County FPA
Ph. 406.429.6551 / bcassell@petroleumcountymt.org

Amanda Cooley - Powell County FPA
Ph. 406.846.9711 / acooley@powellcountymt.gov

Stephanie Ray - Stillwater County
Ph. 406.322.8055 / Email: sray@stillwatercountymt.gov

FEMA Region 8 Updates

Stephanie DiBetitto, NFIP Specialist

Federal Emergency Management Agency
Formerly: Mitigation Divison | FEMA Region 8
Desk (303) 202-8996 | Cell (720) 366-7800
Stephanie.dibetitto@fema.dhs.gov

Stephanie was awarded the Lewis & Clark Award for 2021 for her service to the State of Montana. Stephanie has been a NFIP Specialist for FEMA Region 8 for 2.5 years.

Stephanie is leaving to take a position as FEMA's NFIP Specialist in Region I (New England). Stephanie wants everyone to know "I've covered gorgeous terrain driving the floodplains (of Montana) from lake communities to the Canadian border. I will miss working with the people of your beautiful state and how hardworking Montanas are doing everything in their power to ensure sound floodplain management."

Harry Katz, CFM

Floodplain Management & Insurance
Mitigation Division | Region 8
Mobile: (720) 369-5808
harry.katz@fema.dhs.gov

Harry has also worked at FEMA Region 8 in the Floodplain Management & Insurance Branch for 2.5 years. He is a certified floodplain manager (CFM) having administered a local floodplain program in Colorado for close to 5 years.

Harry assists the State of Montana with NFIP compliance, enforcement, and technical assistance. He will assume Stephanie's role in community engagement including enrolling new communities into the NFIP, assisting with the floodplain mapping and the map adoption process, providing training, and providing programmatic and technical assistance to the State and local Montana communities.

Harry says "I enjoy working with Montana because the State and local communities demonstrate a strong commitment to floodplain management to protect resident's health, safety, and property. I also enjoy the diverse geography and landscapes I get to experience when visiting Montana.

Please report personnel updates or contacts to:

Traci Sears - NFIP/CAP Coordinator
tsears@mt.gov / Ph. 406.444.6654

Shylea Wingard - Floodplain Specialist
shylea.wingard@mt.gov / Ph. 406.444.1343

MONTANA HIGHGROUND

The Montana Highground Newsletter wants to share news about our great state and people. Your articles, ideas, and photos are always welcomed.

Please email your contributions to: shylea.wingard@mt.gov

The Highground Newsletter is a quarterly publication of the Montana DNRC Floodplain Program. This newsletter and other DNRC Floodplain program activities are funded, in part, through grants from FEMA.

Person with disabilities who need an alternative accessible format of this document should contact the DNRC Public Information Officer at 406.444.0465

The Musselshell River floods of May 2011 will long be remembered.

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