



Montana Department of Natural Resources and Conservation

FLOODPLAIN MANAGEMENT PROGRAM

Serving Montana's Communities Since 1974

HIGHGROUND

June 2014

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1964 Montana Flood Disaster

U.S. Geological Survey

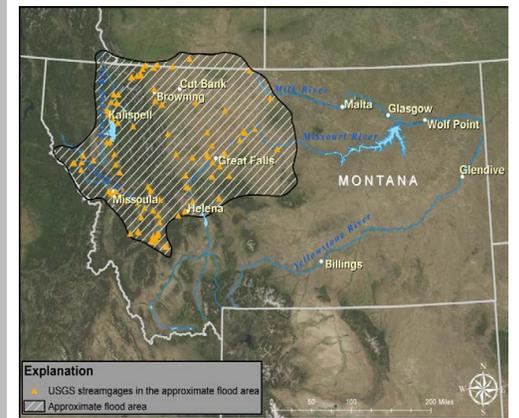
1964 Northwestern Montana Floods – 50-Year Anniversary

What happened?

Heavy rain began falling on snow and saturated soils throughout northwestern Montana on the morning of June 7, 1964. Twenty-four hours of rain added water to streams that were already running high from seasonal snowmelt. The storm resulted in one of the most devastating floods in Montana's recent history on both sides of the Continental Divide.

The Flathead River west of the Divide and the Dearborn, Sun, Teton, and Marias Rivers east of the Divide carried record-breaking flows causing wide-spread flooding. Local areas near rivers in Glacier National Park and Waterton Lakes National Park that flow north to Hudson Bay also experienced flooding.

Gibson Dam, on the Sun River remained intact despite overtopping. However, on the Blackfoot Reservation, Swift Dam on Birch Creek and a dam on Two Medicine River both were breached, quickly releasing large amounts of water. People in the narrow valleys downstream from these structures had very little time to escape the walls of flood water.

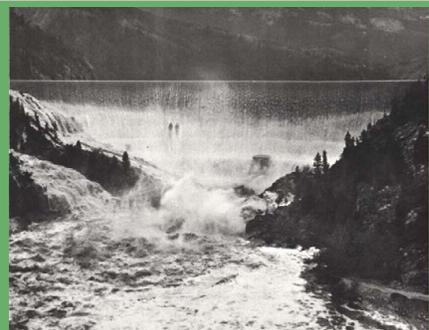


How bad was it?

Twenty-eight people perished as a result of the flood waters in Birch and Two Medicine Creeks; ultimately 30 people lost their lives in the floods. Nearly 350 were injured, and about 8,700 received shelter and food from the Red Cross. Total damage in Montana was estimated at \$55 million, and damages totaled more than \$1 million in Canada (1964 dollars).



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Sun River overtopped Gibson Dam when flood waters poured into the reservoir upstream. The dam was designed to overtop, and remained standing during the duration of the high flows.



Badger Creek washes out U.S. Highway 89 Bridge.

Sun River – photo by Mark Boesch

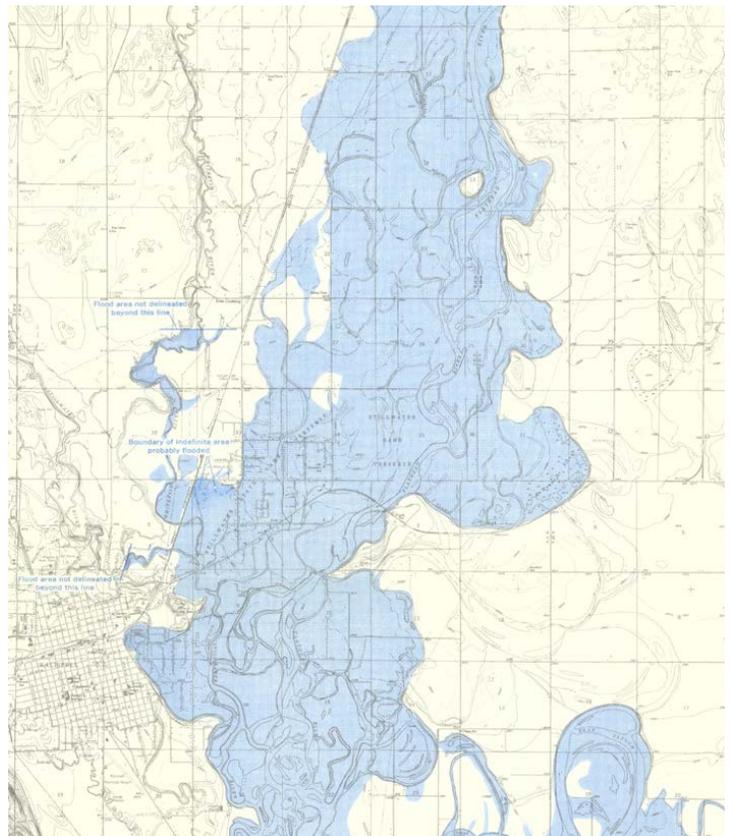
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Will these rivers flood again?

The map to the right shows that flood waters inundated areas far beyond the Flathead River channel near Kalispell. Similar broad swaths of flood waters also inundated parts of the Blackfeet Indian Reservation, Great Falls, Choteau, and St. Mary. The 1964 floods on the Flathead, Sun, Teton, and Marias Rivers are the largest in recorded history.

Floods bigger than the “100-year” event have occurred, and likely will occur again. In an effort to better understand how frequently large floods occur, USGS hydrologists are studying recorded streamflow data from streamgages in and near the flooded areas as well as searching for clues about ancient floods in tree rings, tree scars, boulders, and sediments along river channels. Contact your local floodplain manager or call the Montana Department of Natural Resources National Floodplain Insurance Program Coordinator at (406) 444-6654 for more information to learn more about what you can do to minimize damage and loss of life in case of a flood.



Areal extent of floodwaters from the Flathead River during the 1964 flood. (Excerpt from Boner and Stremitz, 1964)

References:

- Boner, F.C., and Stremitz, Frank, 1964, Floods of June 1964 in Northwestern Montana: U.S. Geological Survey Water-Supply Paper 1840-B, 242 p. (<http://pubs.usgs.gov/wsp/1840b/report.pdf>)
- Parrett, Aaron, 2004, Natural Disaster, The 1964 Flood on the Blackfeet Indian Reservation: Montana Historical Society. (http://dnrc.mt.gov/wrd/water_op/floodplain/1964_flood/article_montana's_worst_natural_disaster.pdf)

Where to get more information:

National Weather Service broadcasts flood alerts which can be found at:

<http://www.wrh.noaa.gov/wrh/whv/?wfo=tx/main>

U.S. Geological Survey Real-time data web site provides near real-time streamflow and stream stage data for all USGS gaging stations in Montana: <http://waterdata.usgs.gov/mt/nwis/rt/>

U.S. Geological Survey Water Alert is a service that sends e-mail or text messages when user-selected parameters measured at real-time streamgages are exceeded: <http://water.usgs.gov/wateralert>

Montana Local Floodplain Administrators for Counties, Municipalities, and Tribes listed at http://dnrc.mt.gov/wrd/water_op/floodplain/contacts/communities_floodplain_administrators.pdf

Montana Department of Natural Resources & Conservation Floodplain Management Program, on the web at http://dnrc.mt.gov/wrd/water_op/floodplain/

Association of Montana Floodplain Managers (AMFM)

By Bri Shipman,
Floodplain Training Coordinator



The Association of Montana Floodplain Managers (AMFM) held their 15th annual conference this year at the Billings Hotel and Convention Center, March 24-27, 2014. The AMFM Conference is the leading floodplain management session in Montana. The venue was well-attended throughout the week with over 120 participants from a variety of professional backgrounds, and offered attendees a diverse agenda of presentations, technical workshops, training sessions, and exhibits.

This year's theme was "Floodplain Fundamentals", in reference to the framework and foundation components necessary to achieving and maintaining successful management of local floodplain management programs. Pre-workshop sessions included Floodplain 101, a basics of floodplain course intended for floodplain managers or professionals new to floodplain management, and a technical session developed for individuals who have experience in the floodplain field, with an emphasis for professionals in the engineering, hydrology, and hydraulics fields as they relate to floodplain management. The technical sessions included comprehensive presentations specific to floodplain permitting at the former ASARCO East Helena facility, fish barrier removal and channel reconstruction on the Clearwater River, and the complexities of floodplains, permitting, and water intake systems in Laurel, Montana.

The conference workshop sessions were coordinated to cover elements such as organizations working together to leverage resources for navigating floodplain management, the learning curve for new floodplain administrators, and effective outreach and risk assessment strategies for rural communities. Additional presentations highlighted fostering professional coordination between AMFM and the Montana Association of Planners (MAP), information on the Department of Natural Resources and Conservation's Grants and Low Interest loans programs, and a case study on a successful floodplain mitigation case involving removal of a structure from the floodplain in Missoula County.

The venue culminated with additional sessions specific to floodplain construction requirements, floodplain development construction costs, and FEMA's Community Rating System. Regulatory and programmatic items covered included presentations on the National Flood Insurance Program (NFIP) Reform, the significance of Elevation Certificates to floodplain management, new Risk MAP and Map products, DEQ/ FWP regulatory programs, USGS Flood Inundation Mapping, and a case study on the City of Miles City's ongoing Floodplain Assessment Study.

Next year's AMFM conference will be held in Helena, MT. For information about AMFM, visit their website: www.mtfloods.org

Montana DNRC Lewis and Clark Floodplain Program Floodplain Manager Award, 2014



The Montana DNRC was pleased and honored to award Kelly Smith, the local Floodplain Administrator for the City of Three Forks the Lewis and Clark Local Floodplain Manager Award at the 2014 AMFM Conference in Billings. The award recognizes outstanding individual efforts and contributions to floodplain management at the local level. The Lewis and Clark Local Floodplain Manager Award honors an individual responsible for the development of a successful and proactive local program or activity or one who has faced challenges to implement flood hazard reduction at the local level, often in the absence of sophisticated programs and support. The City of Three Forks local floodplain management program has overcome extreme obstacles, and Kelly's efforts as the local floodplain administrator have yielded positive results for the community and serve as an example of effective floodplain administration for Montana communities participating in the National Flood Insurance Program (NFIP).

A second component of this award is that Kelly was formally nominated for the Association of State Floodplain Managers (ASFPM) national Larry R. Johnston Local Floodplain Manager Award for 2015. We're proud of you Kelly! Thanks for facing the challenges of local floodplain management with strength and for providing clear communications with local residents.

Lisa Oedewaldt, AMFM Chairperson (right) poses with Bri Shipman, Montana Floodplain Training Coordinator during a conference break.



Kelly Smith from Three Forks is recognized with the Lewis and Clark Floodplain Manager Award by Traci Sears, State NFIP Coordinator.



Marv Cross, Engineering Specialist for Montana DNRC Water Resources Division along the Hi-Line was recognized for his 33 years of service at the AMFM Conference. Marv retired in late May. Left is Tiffany Lyden and right is Traci Sears.





AMFM Conference Photos



Floodplain Digital Mapping Update

By Tiffany Lyden, Floodplain Outreach Specialist (Regulations)

Several FEMA Risk Map and Map Modernization projects are nearing completion in the coming months.

Almost Completed

After several years of technical work, meetings and public review, county-wide Digital Flood Insurance Rate Map (DFIRM) Conversion projects in Broadwater and Ravalli Counties are nearly complete. Broadwater County's new DFIRM maps will go into effect on August 3, 2014, and Ravalli County's are currently being finalized and are scheduled to go into effect in early 2015. Both counties, along with the Town of Darby and the Cities of Hamilton and Townsend, will be updating their floodplain regulations to incorporate the new maps.

Missoula County has completed the public review phase for their preliminary DFIRM maps. The County is awaiting issuance of revised maps based on review of submitted comments and appeals. Final DFIRM maps are anticipated to go into effect in mid-2015, with the City and County anticipating updates to their floodplain regulations to coincide with the new maps.

Preliminary Maps Being Reviewed

Preliminary DFIRM maps have been issued for Sweet Grass, Stillwater, and Flathead Counties. Public meetings were held for Sweet Grass County and the City of Big Timber in January. The official comment and appeal period for Sweet Grass County and Big Timber will end on August 20th. Stillwater and Flathead Counties held public meetings in May to kick off public review periods for their preliminary maps. The official comment and appeal periods for both Counties, along with the communities of Columbus, Kalispell, and Whitefish, will close sometime in late fall. Revisions will be made based on review of submitted appeals and

comments before final maps and studies will be generated.

Getting Ready for Preliminary Maps

Granite County is awaiting issuance of preliminary DFIRM maps this fall. Public meetings will be planned to initiate and encourage public review and input, in cooperation with the Towns of Drummond and Philipsburg.

Project Underway

The hydrology portion of an updated floodplain study has been completed in Gallatin County for Bozeman Creek and some of its tributaries. The project is awaiting continued funding to complete the study.

Save the Date: 6th Annual Floodplain Resource Seminar

July 21–24, 2014 • Register Online Now



	Mon. July 21	Tues. July 22	Wed. July 23	Thurs. July 24	
AM	Floodplain Basics 8:30 – 12:00 Lect Hall - Rm 125	Lessons Learned: Flood Recovery Operations and Flood Coordination 9:00 – 4:00 Progression of Programs, Policy and Law Since 1964 Response and Recovery Progression from 1964 Table top exercise focusing on the relationship between floodplain management and DES Overview of available funding resources and grant programs - DES Lecture Hall - Rm 125	Navigation the Floodplain Model Ordinance 8:00 – 10:00 Letters of Map Change, New Mapping and Ordinance Adoption 10:30 – 12:00 Lecture Hall - Rm 125	Flood Insurance for Agents (TENTATIVE) 9:00 – 12:00 Room 120 Focusing on Flood Risk Sessions Ecological Benefits of Natural Floodplains and Channel Migration Processes 9:00 – 10:00 Montana Wetland Maps – Where to Find Them and How to Use Them 10:00 – 12:00 DEQ/FWP Regulatory Programs 1:00 – 2:00 Lecture Hall - Rm 125	CFM Prep Session 9:00 – 12:00 Rm 120
PM	Floodplain 101 for Realtors (Helena) 1:00 – 5:00 Lect Hall - Rm 125		Permitting Workshop: Focus on Structures Existing and Proposed 1:00 – 5:00 Lecture Hall - Rm 125	MT Silver Jackets Committee Meetings 2:00 – 4:00 Lecture Hall - Rm 125	CFM Exam 1:00 – 4:00 Rm 120

Highground Editor - Mary Guokas
Graphic Design - Martha Hodder

Persons with disabilities who need an alternative accessible format of this document should contact DNRC public information officer at 406-444-0465.

Montana's Floodplain Program Contact List

HELENA, State Office, 1424 Ninth Avenue, PO Box 201601, Helena, MT 59621-1601
<http://mtfloodplain.mt.gov/>

LAURENCE SIROKY,
Water Operations Bureau Chief
(406) 444-6816 lsiroky@mt.gov

STEVE STORY, State Floodplain Engineer
(406) 444-6664 sestory@mt.gov

TRACI SEARS, NFIP Coordinator
(406) 444-6654 tsears@mt.gov

BRI SHIPMAN, Floodplain Training Officer
(406) 444-1300 bshipman@mt.gov

TIFFANY LYDEN, Outreach Specialist
(406) 444-1343 tyden@mt.gov

MARY GUOKAS, Outreach Specialist
(406) 444-1343 mguokas@mt.gov

FRED ROBINSON, Legal Council
(406) 444-6703 frobinson@mt.gov

ASPEN BOWLER, Administrative Support
(406) 444-0862 abowler@mt.gov

BILLINGS Regional Office, 1371 Rimtop Drive, Billings, MT 59105-1978
SAM JOHNSON, Regional Engineer
(406) 247-4423 sam.johnson@mt.gov

HAVRE Regional Office, 210 Sixth Ave. PO Box 1828, Havre, MT 59501-1828
ASHLEY MATKIN, Engineering Specialist
(406) 265-5516 amatkin@mt.gov

HELENA Regional Office, 1424 Ninth Avenue, PO Box 201601 Helena, MT 59621-1601
JOHN CONNORS, Engineering Specialist
(406) 444-9724 jhconnors@mt.gov

LEWISTOWN Regional Office, 613 NE Main, Suite E Lewistown, MT 59457
STERLING SUNDHEIM, Regional Engineer
(406) 538-7459 ssundheim@mt.gov

MISSOULA Regional Office, 1610 S. Third St. W, Ste 103, PO Box 5004, Missoula, MT 59806-5004
LARRY SCHOCK, Regional Engineer
(406) 721-4284 lschock@mt.gov

KALISPELL Unit Office, 655 Timberwolf Parkway, Suite 4 Kalispell, MT 59901-1215
MARC PITMAN, Unit Manager
(406) 752-2288 mpitman@mt.gov

For Pre-disaster Mitigation Grant Information, contact Kent Atwood, State Hazard Mitigation Officer
Department of Military Affairs
P.O. Box 4789 - 1956 Mt. Majo St.
Fort Harrison, Montana 59636-4789
(406) 324-4782 katwood@mt.gov

