



# Top 2018 Weather Events

Written by: Jon Voss

## June 15-17 Father's Day Weekend Flash Flooding

A very moist and unstable air mass and the presence of a nearly stationary frontal boundary produced several rounds of severe storms and flash flooding across portions of west and central Upper Michigan from the 16th into the 17th. The hardest hit was Houghton County where three to nearly seven inches of rainfall in the early morning hours of the 17th caused widespread and catastrophic flash flooding from Chassell through Houghton/Hancock to Dollar Bay, Hubbell and Lake Linden. The Houghton County emergency manager reported that nearly all roads were impassable for a time in central and southern Houghton County in the wake of the flooding. Many homes and businesses were flooded throughout the area, particularly in Houghton/Hancock where one fatality occurred when a basement collapsed at a home on Canal Road. The Administration Building at Michigan Tech University also sustained flood damage. Governor Rick Snyder declared

a state of disaster for Houghton County a day after the flooding occurred and damage estimates from flooding are currently over \$100 million. Recovery efforts continued over Houghton County through the rest of 2018.



Courtesy of Michigan State Police

Many permanent road fixes will not occur until the 2019 construction season. Significant flash flooding also caused damage in Ironwood on the morning of the 15<sup>th</sup> and the evening of the 17<sup>th</sup> and across sections of Marquette and Menominee counties from the 16<sup>th</sup> into the 17<sup>th</sup>.

### Inside this issue:

Top 2018 Weather Events	1-3
Lake Superior Water Levels	4-8
New Satellite Technology	9
WFO Marquette Leverages Partnerships	10-12
Community Giving	13
Meet our Newest Meteorologists!	14-15
Weather Safety	16-19

**Interested in becoming a Weather-Ready Nation Ambassador?**



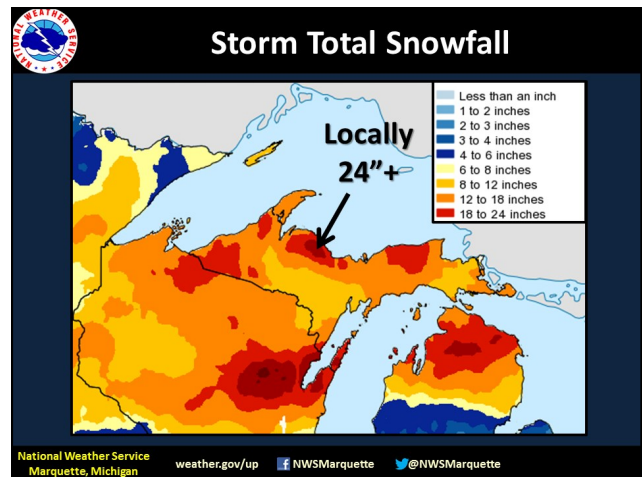
**See Page 22 for details!**

# Top 2018 Weather Events Continued...

## April 14-17th Snowstorm

A potent winter storm moving into the Great Lakes/Ohio Valley region dumped wet heavy snow across much of Upper Michigan from the 14th into the 15<sup>th</sup>, and lake enhanced snow added to totals over Marquette and Alger counties from the 16<sup>th</sup> into the 17<sup>th</sup>. Schools were closed across the U.P. on the 16<sup>th</sup> and many over north central Upper MI remained closed on the 17<sup>th</sup> as residences were still digging out from the storm. Even Northern Michigan University closed its doors on both the 16<sup>th</sup> and 17<sup>th</sup>. Several locations recorded more than two feet of total snow accumulation during the multi-day event. Some of the more

significant storm total snowfall included 31.8 inches at Ishpeming Hoist Basin, 25.9 inches at NWS Marquette, 25.6 inches at Painesdale and 24.5 inches in Menominee, nearly half of their winter snowfall total.



## June 30th Large Hail at Muskallongue Lake State Park

A cold front moving through a very moist and unstable air mass produced severe thunderstorms and very large hail at Muskallongue Lake State Park. Rangers at the park reported tennis ball to softball sized hail with numerous camper roofs destroyed on 6/30. All 159 campsites at the park sustained hail damage to campers, cars and other property. Seven park vehicles were significantly damaged, and the roofs of several buildings in the park, including the park headquarters building, required replacement after the storms.



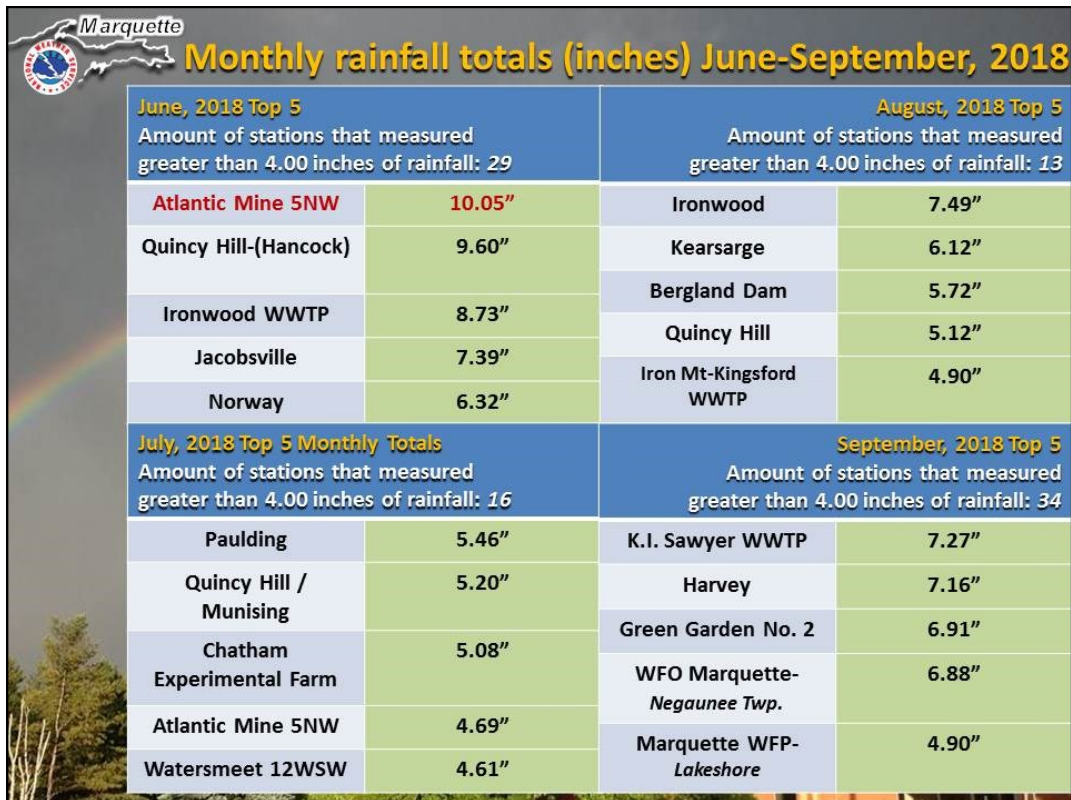
*Courtesy of Betsy Lewis*

## Flooding across Marquette and Alger Counties

Flooding in Marquette and Alger County September 4th through the 6th. Heavy rainfall of 3 to 5 inches from late on the 4th into the morning of the 5th caused flooding over portions of Marquette and Alger counties which continued into the 6th. The Anna River flooded portions of Munising and flooding was observed along the Chocolay River in Marquette County.

# Wet 2018 - COOPs Corner

Written by: James Salzwedel



**Marquette Record Setting October Rainfall**

October, 2018 Top 10 (inches)  
Amount of stations that measured greater than 4.00 inches of rainfall: 29

Munising	8.85"
Baraga 5W	8.83"
Halfway Lake	8.67"
Newberry City	8.61"
Chatham Experimental Farm	8.02"
Newberry Correctional Facility	7.83"
Hoist Basin	7.47"
Arnold 2N	6.82"
Garden Corners	6.76"
Big Bay 9SW / Iron Mt.-Kingsford WWTP	6.73"

**Thanks for your continued time and dedication to the NWS Marquette COOP Program!**

**COOP Corner Takeaways**

June:  
Father's Day Weekend Flooding: Houghton, Gogebic and Menominee Counties 6/15-6/17/2018

September:  
Marquette and Alger County Flooding: Chocolate and Anna Rivers

October:  
\*Six counties in the Central U.P. recorded their wettest October on record\*

**\*Great Lakes Region Quarterly Climate Impacts and Outlook/December 2018**  
[https://mrcc.illinois.edu/pubs/docs/GL-201812Fall\\_Final.pdf](https://mrcc.illinois.edu/pubs/docs/GL-201812Fall_Final.pdf)

# Water Levels on Lake Superior

Written by: Don Rolfson



Since 2013, there has been a dramatic change in water levels in the Upper Great Lakes. A lengthy period of below average water levels was observed on Lake Superior and Lake Michigan-Huron, beginning in 1999 and lasting until 2012. In 2013, significant precipitation fell across the basins of these Great Lakes, starting a dramatic rebound of water levels. In fact, of the 119 years of weather records available up to 2013, 2013 was ranked as the wettest year on record for the state

of Michigan as a whole. Since 2013, yearly precipitation has been above or significantly above normal in the basins of Lake Superior and Lake Michigan-Huron (see figures 4 through 9). The only exception was 2015 which was a near normal precipitation year. In addition, 2017 beat out 2013 to become the new wettest year on record for the state of Michigan. Given several years of above normal precipitation, the water levels of Lake Superior and Lake Michigan-Huron have consistently been above average in recent years. The change from the low water years is impressive. The water level of Lake Superior has been as much as around 3 feet higher than the low point observed in early 2007. On Lake Michigan, the water level has been as much as around 4 feet higher than the low point observed in early 2013. The graph below (Figure 1) from the U.S. Army Corps of Engineers, illustrates this change from the low water level years beginning 1999 to the high water level years since 2013.

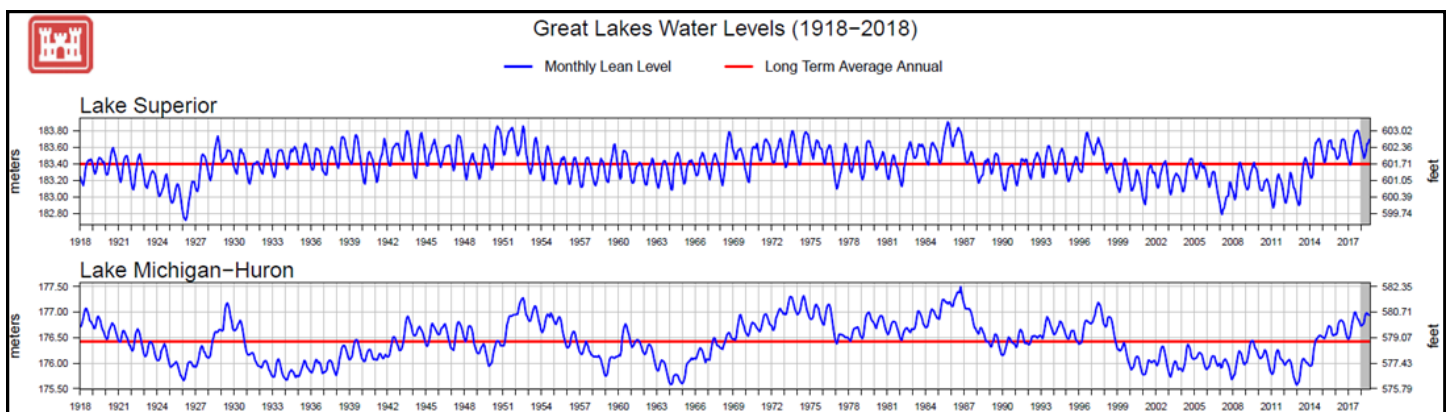


Figure 1. Historical water levels of Lake Superior and Lakes Michigan-Huron from the U.S. Army Corps of Engineers

# Water Levels on Lake Superior Continued...

Keep in mind that there is a yearly cycle of water levels on the Great Lakes. Water levels fall to the annual minimum in late winter or early spring due to the loss of water through evaporation during fall and especially winter as cold, dry air masses pass over the relatively warmer lake waters. Precipitation falling more frequently as snow rather than rain, resulting in decreased runoff, also plays a role. Water levels then peak in the July to early September time frame due to significantly diminished evaporation as humid, warmer air passes over relatively cooler lake waters. The runoff from the winter snow pack and summertime showers and thunderstorms also contributes to the rise. The yearly fluctuation of water levels can be seen in figures 2 and 3.

Figure 2. Lake Superior water level since December 2016, including a forecast into spring 2019 from the U.S. Army Corps of Engineers

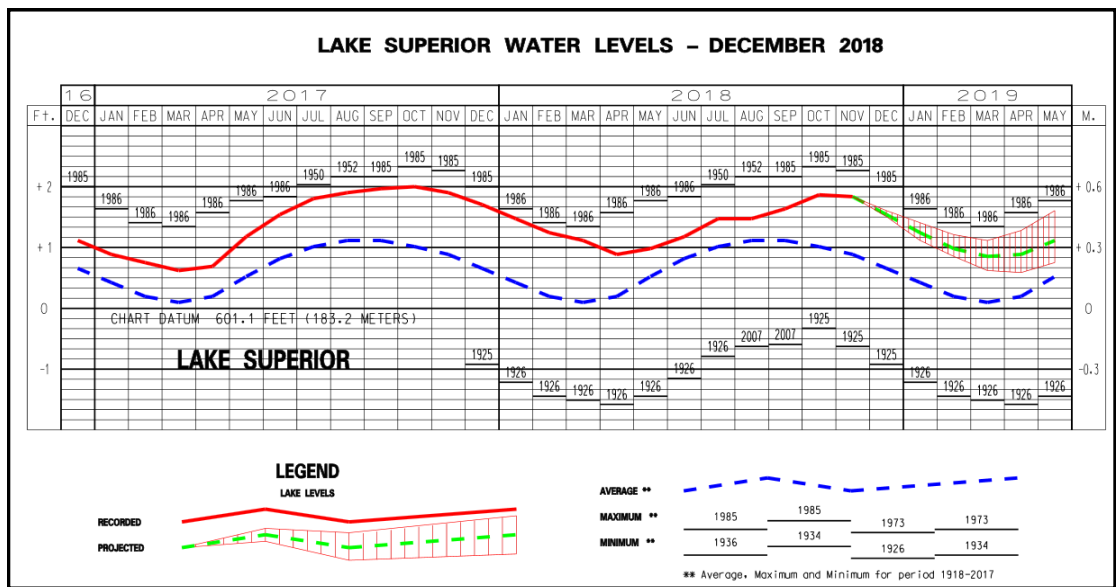
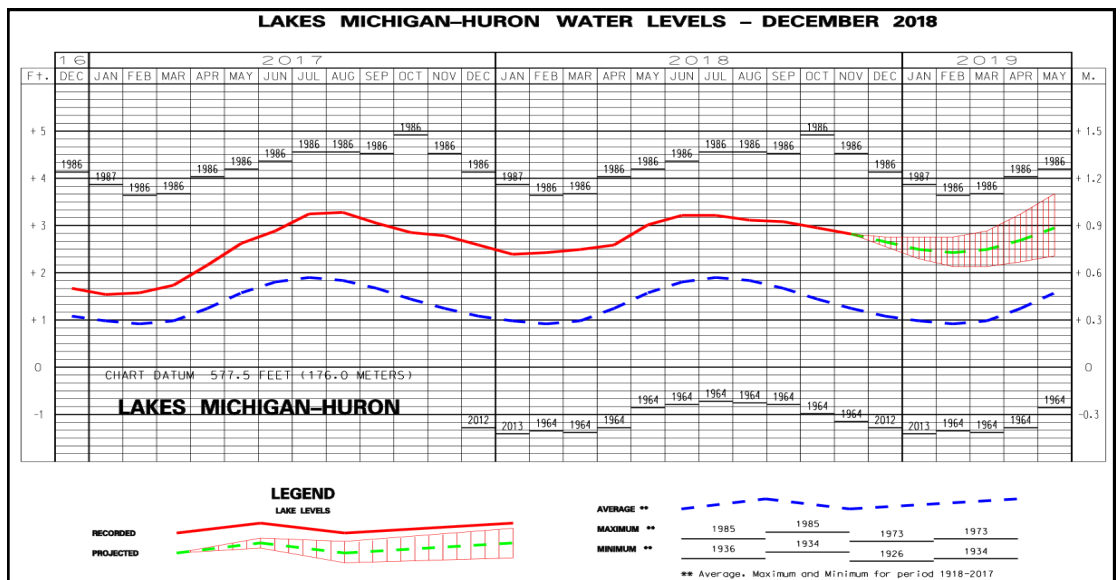
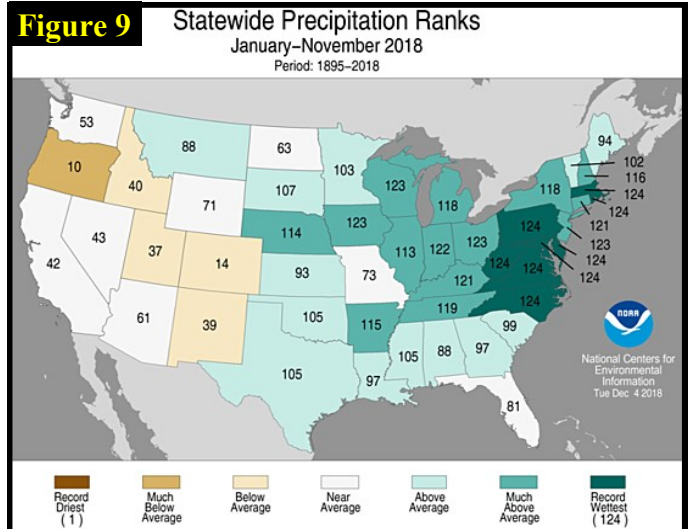
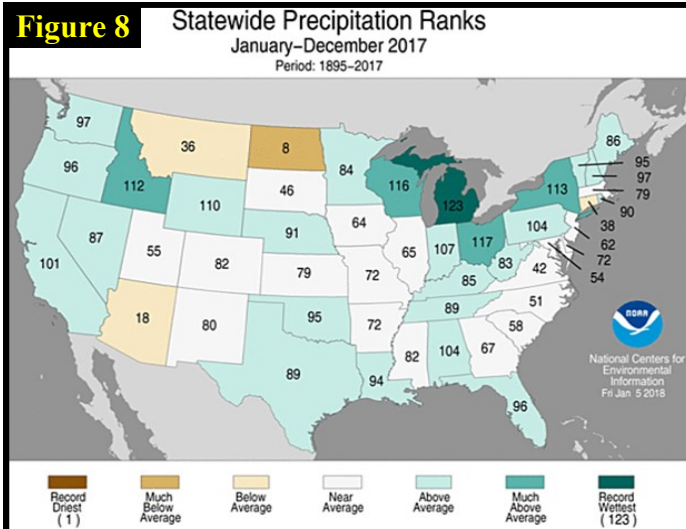
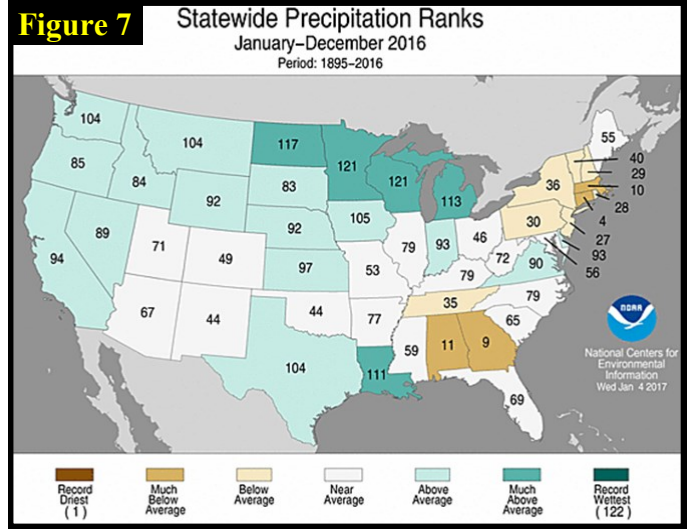
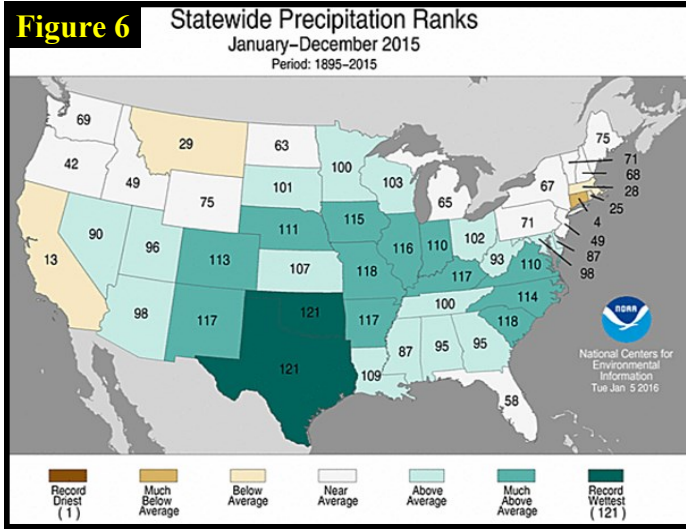
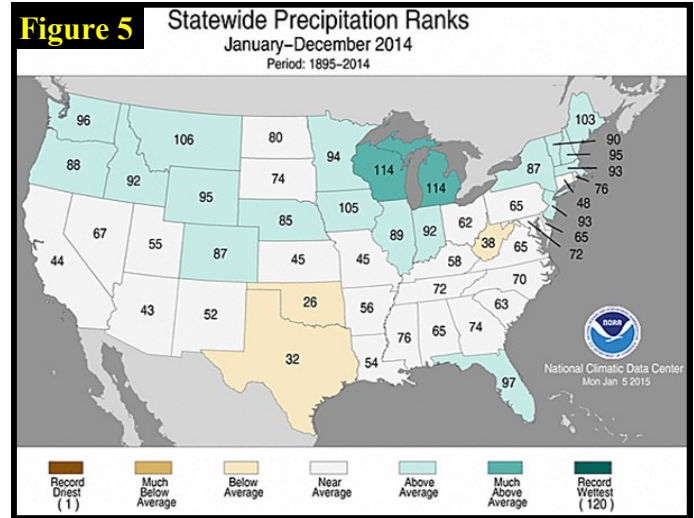
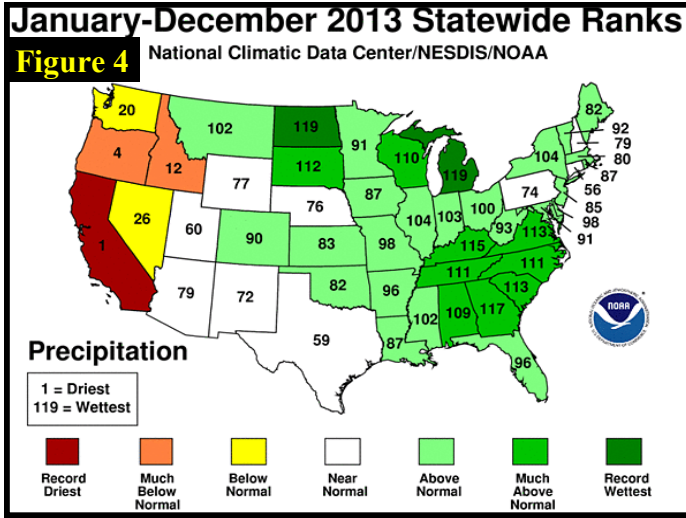


Figure 3. Lake Michigan-Huron water level since November 2016, including a forecast into spring 2019 from the U.S. Army Corps of Engineers



# Water Levels on Lake Superior Continued...



Figures 4 through 9. Statewide precipitation ranks for each year from 2013 to 2018. With the exception of 2015, note the persistent, abnormally wet years over the western Great Lakes region.

## Water Levels on Lake Superior Continued...

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*Lake Superior water level comparison at Little Presque Isle, Marquette County, between late 2006 and 2017. The water level difference is around 3 feet.*

## Water Levels on Lake Superior Continued...

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Due to the above average water levels, strong winds and the resulting large waves generated by storm systems in the fall and winter lead to beach erosion and beach flooding. The pictures above, taken on November 11, 2014, are representative of beach flooding and beach erosion issues that have been occurring in recent years. Upper left: Lakeshore Boulevard in Marquette flooded. Upper right: Rocks and debris thrown onto the Picnic Rocks parking area in Marquette by large waves. Bottom four pictures: Beach flooding and erosion along the lakeshore in Marquette.

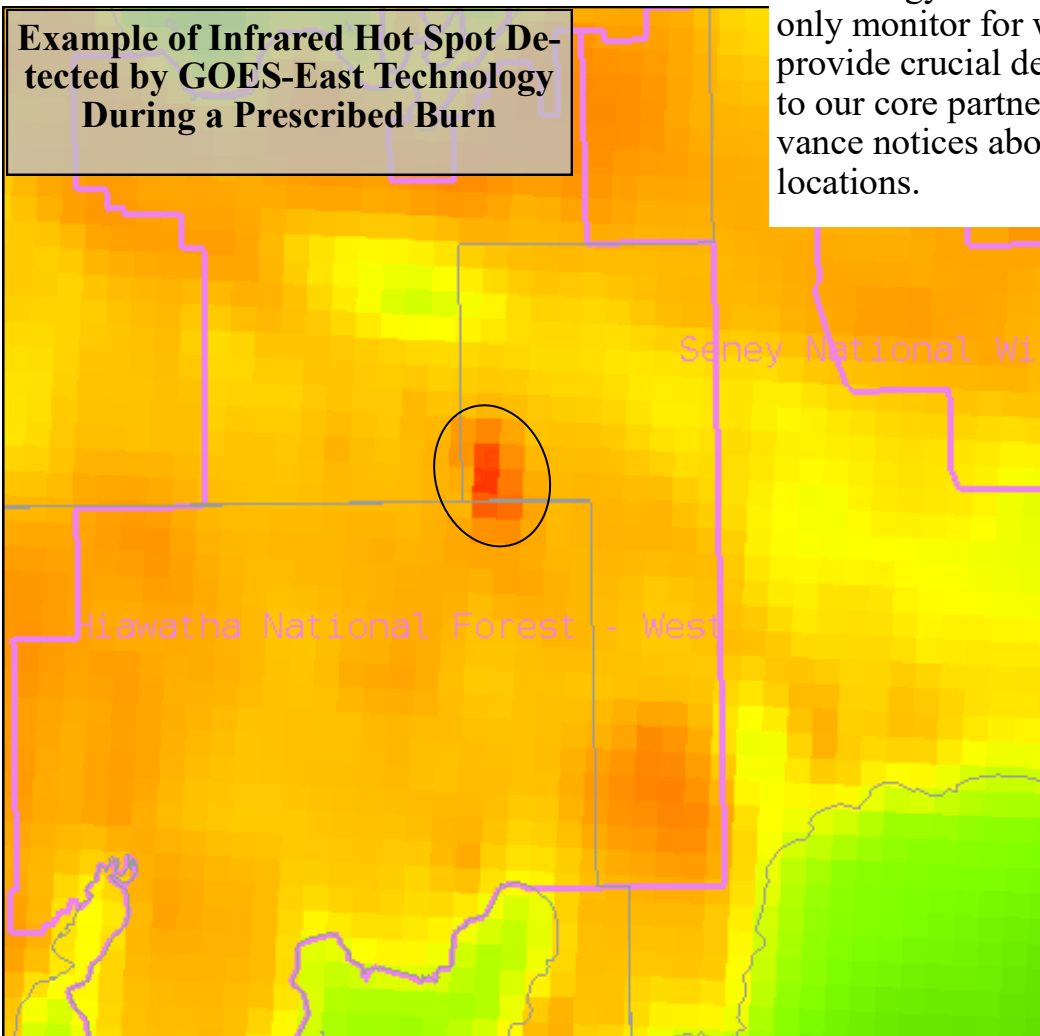


# New Technology Helps Detect Wildfires Earlier

Written by: Jaclyn Ritzman

There are two main types of satellites that are used for weather surveillance across the world, Polar Orbiting (POES) and Geostationary Orbiting (GOES) Environmental Satellites. The POES continuously orbits the earth poleward covering our atmosphere from the north to south pole, sampling only a narrow swatch of the atmosphere as the Earth continues to rotate beneath. This means, that at different times of the day the POES is sampling different parts of our Earth's atmosphere. GOES on the other hand, remains stationary allowing for constant weather surveillance over the United States, and elsewhere across the western Hemisphere.

The current GOES-East satellite, formally known as GOES-16 or GOES-R, was launched back in November 2016 and now provides meteorologists with up to 15x better temporal resolution and 8x better spatial resolution. Data that use to take 15 minutes to update, now takes anywhere from 1 to 5 minutes! Spatially speaking, by using infrared imaging, we're now able to detect wildfires as small as 15 acres from outer space. Our previous satellite technology would only detect larger fires closer to 100 acres or larger in size. These advances in satellite technology enhance our ability to not only monitor for wildfires, but also to provide crucial decision support services to our core partners in providing an advance notices about wildfires in remote locations.



## NWS Marquette Leverages Partnerships to Best Serve the Upper Peninsula *Written by: Keith White*

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The National Weather Service office in Marquette, Michigan is responsible for weather forecasting, observations, and warning services across 13 counties, a small portion of Lake Michigan, and all of the U.S. waters of Lake Superior. Regular duties are spread across a number of program areas including hydrology, aviation, fire weather, marine, and more. And while all 20 NWS Marquette employees contribute to the success of these programs, we couldn't successfully serve the NWS mission of "providing weather, water, and climate data, forecasts and warnings for the protection of life and property and enhancement of the national economy" without fostering strong relationships with our partners in other federal, state, and local government agencies as well as private industry.

No program is a better example of the success of this approach than fire weather. The NWS Marquette Fire Weather Program Leader meets annually with fire weather partners from the Michigan Department of Natural Resources (DNR), U.S. Forest Service, National Park Service, Seney National Wildlife Refuge, Bureau of Indian Affairs, and Eastern Area Coordination Center to set expectations and discuss any changes in store for the upcoming fire weather season. During the winter months, the NWS also teams up with the fire weather partners to help provide weather training directly to wildland firefighters. During the spring green-up, and throughout the warm season as needed, weekly conference calls are held to brief our fire weather partners of any upcoming fire weather concerns, and in turn foresters keep NWS Meteorologists abreast of the susceptibility of fuels to fire starts. During exceptionally dry periods, this information can also be used to provide input to the United States Drought Monitor in the production of their weekly maps.

If NWS Meteorologists see critical fire weather conditions on the horizon, we hold event-driven conference calls to keep our fire weather partners ahead of the weather. When requested, the NWS also supports prescribed burns and wildfires with site-specific forecasts known as a Spot Forecast. Along those same lines, we pay close attention to satellite data in search for hot spots that show up due to wildfires. With new and improved satellite technology, we can now detect wildfires on a much finer scale, increasing our ability to alert our fire weather partners of a potential back-country wildfire in a timely manner.

While fire weather is a big concern during dry weather, the NWS Marquette hydrology program takes on a higher workload during wet periods. Area rivers, streams, and reservoirs in the Upper Peninsula have nearly three dozen gaging stations, the majority of which are owned and operated by the United States Geological Survey (USGS). The NWS Marquette Hydrology Program Manager (HPM) is typically a meteorologist by trade, but works closely with the local USGS office and takes occasional trips with them to gaging sites to gain a working knowledge of the unique hydrologic response at each site to changing weather conditions, and the equipment used to measure these changes.



Keith Cooley and Jaclyn Ritzman present at the Annual Stakeholders Meeting

## NWS Marquette Leverages Partnerships to Best Serve the Upper Peninsula Continued...

Although dam breaks are very unlikely, we must be prepared for the potential problems that can arise with aging infrastructure. To that end, the HPM and Warning Coordination Meteorologist (WCM) often attend multi-agency tabletop and functional exercises hosted by the dam owners and overseen by the Federal Energy Regulatory Commission (FERC). These exercises serve the dual purpose of practicing the response function of each agency or organization in a dam break scenario, and getting to know those we would be working with in the aftermath, including first responders, search and rescue, local industry, and County Emergency Managers (EMs).

Emergency Managers play an active role in preparation for potential hazardous events, help us spread the word of impending hazardous weather to the public, and keep us informed about the weather and water conditions in their area. For instance, one location that experiences minor flooding nearly once per year does not have automated gaging information, so the county EM will take a manual staff gage reading multiple times per day during periods of high flow and describe the extent of the flooding for our advisory and warning products.

Local media are another important liaison to the public. Area television stations increase the distribution of many NWS Watch, Warning, and Advisory products to the general public by an order of magnitude or more. We also stay in touch with local broadcast meteorologists on a regular basis in an effort to share data and have a consistent weather message. In fact, you may see or hear NWS Meteorologists on-air on local TV and radio stations and in newspapers as we are often interviewed to spread the word about weather preparedness, impending or recent significant weather, or other special interest weather or water related stories.

Marine interests in the NWS Marquette service area range from kayakers at Pictured Rocks National Lakeshore, to fishing charters on the Bay of Green Bay, to one-thousand-foot freighters on the open waters of Lake Superior, and everything in between. In addition, Lake Superior consistently experiences the most extreme weather conditions of any of the Great Lakes and is historically known for a high number of shipwrecks. In order to best serve this wide range of end users and prevent further loss of life and property, NWS Marquette regularly coordinates with the Coast Guard, the National Parks Service at Isle Royale and Pictured Rocks, the Great Lakes Port Meteorological Officer (PMO) and Environment Canada, with whom we share an international marine border.



Jason Alumbaugh speaks with local broadcast media.

## NWS Marquette Leverages Partnerships to Best Serve the Upper Peninsula Continued...

These partners communicate important thresholds to the NWS that affect each type of craft out on the water, but the other critical information we receive is ground truth of the conditions they are experiencing in real time. There are a limited number of buoy observations supported by NOAA, Environment Canada, the Superior Watershed Partnership, Michigan Technological University and Northern Michigan University. But more than half of the lake's 31,700 square miles fall within US territory and the buoys are pulled for the winter two months before the Soo Locks close and the shipping season officially ends, so every observation we can get is important to verify that our wind and wave forecasts are accurate.

Recently, NWS Marquette has ramped up our efforts to provide Impact-based Decision Support Services (IDSS) to groups that need to make operational decisions based upon weather conditions. This year we focused on meeting with school districts and road commissions across the area, in an effort to learn about the individual operational thresholds of each group, describe the products and services we can offer them, and to open up lines of communication. Area superintendents are often out early in the morning to get an idea of road conditions in their area, and as is the case with our marine users, they provide very useful information to us. In return, we can provide them with a localized forecast of when conditions will improve or deteriorate so they can make decisions that will ensure the safety of their students and staff.

The success of our office is not just greatly affected by the strength of our relationships with our core partners, it is measured by it. All sides can greatly benefit from the symbiotic relationships we strive for with our partners. Here, I have just scratched the surface of our efforts locally. As the NWS nationwide continues to work towards building a Weather Ready Nation, we will further emphasize expanding our reach and strengthening our partnerships.

*Please help us fill up this board!*



# National Weather Service Marquette Gets Involved in the Local Community!

*Written by: Linda Gilbert*

The National Weather Service (NWS) office in Negaunee Township, MI has a long-standing history of supporting the local community in a variety of ways. This past year, the office partook in well-established local community-based programs such as the Room at the Inn and the highway cleanup through Michigan's Department of Transportation. Additionally, donations were gathered from employees for the National Weather Service's annual Week of Service food drive as well as for students attending Lake Linden-Hubbell Elementary School in the Keweenaw Peninsula.

In both the spring and fall of 2018, employees coordinated to contribute food and volunteer for the Marquette area Room at the Inn initiative, which is a collaboration of local churches opening up their facilities to provide meals for the homeless. Another bi-annual activity that employees donate their time and efforts to is cleaning up a mile-long stretch of highway along M-28 just east of Harvey. As for the aforementioned annual Week of Service, it's an event that calls on NWS offices around the country to participate in and/or donate to area charities and other community organizations. For 2018, the Marquette office collected food and other donations for St. Vincent de Paul's food pantry in Ishpeming and the Upper Peninsula Animal Welfare Shelter in Negaunee Township (pictured to the right and below). Last but certainly not least, a need was identified to help families in the Keweenaw Peninsula following the devastating flooding that occurred there in June of 2018. School supplies for the start of the new school year (September) were collected and donated for children who may have been directly impacted by the flooding.



*Staff at the NWS filled the hallway with donated non-perishable foods.*



*Two member of the NWS Marquette staff deliver pet food to the Upper Peninsula Animal Welfare Shelter.*

There is no doubt that this NWS office serving the U.P. will continue to find ways to contribute to the community in 2019. Even if the events, charities. activities change, the giving-nature of the office won't!

## Our Newest Meteorologists—Welcome!

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### Ryan

I'm originally from the Philadelphia area, and like most of us, became interested in weather at a young age. In my case it was Hurricane Floyd in 1999 and the freshwater flooding that came with it. I completed my B.S. in Meteorology at Valparaiso University with minors in Mathematics and Geographic Information Systems (GIS) in May of 2015. I then joined the Coastal Meteorology and Atmospheric Prediction (COMAP) research group at Stony Brook University in the Fall of 2015 and graduated with my M.S. in Atmospheric Science in May of 2018. My weather interests include synoptic-scale and mesoscale weather of all types, from severe convection to lake-effect snow, as well as local terrain interactions and microclimates. When I'm not counting the minutes until winter, you can probably catch me watching a hockey game or enjoying some local craft brew!



### Jordan

I grew up in Duluth, Minnesota so snow, cold, and Lake Superior are three things I am quite familiar with. More recently, I was in graduate school in Missouri and then worked for the USGS in Tulsa, Oklahoma for 9 months before making my way back north to Marquette. Three years in the heat and humidity was enough for me and I am happy to be back in the snow. If I am not working, you can usually find me in the woods somewhere or chasing Brook Trout in a local stream. During the winter months, I am usually trying to stay outdoors playing hockey or going snowboarding. While at the National Weather Service here in Marquette, I hope I am able to help each and every one of you plan your numerous weather-based activities that the U.P. has to offer. See you around!

## Our Newest Meteorologists—Welcome!

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### Joe

I've had a passion for weather since I was a child and it began with afternoon thunderstorms. It quickly evolved into a strong interest for the extremes (heat, snow, rain, etc), experiencing and being out in the weather, and now, communicating weather impacts. I graduated from the University of North Carolina with my B.S. in Atmospheric Sciences in 2009. After that, I served almost 9 years in the NOAA Corps and had assignments in a variety of capacities throughout NOAA including oil spill response, hydrographic surveying, instrument technician, climate and weather research and project management. During this time, I also piloted ships and gained enough sea time and completed 800+ hours of training to get my 1600 ton Mates license. When I'm not working, I'm usually outside hiking with my wife and dog, taking photos or kayaking, or inside building with Legos or planning my next international adventure.



### Linda

Having a passion in weather for as long as I can remember, I have found myself in the current position of Lead Meteorologist here in the beautiful Upper Peninsula of Michigan. Prior to my arrival here in the Marquette area, I worked in three other offices around the country, although I've remained east of the Rockies. I thoroughly enjoy the wide variety of weather to forecast, with humble appreciation to Lake Superior's impacts to the local weather, and utilize the experiences I've gathered over the years into attempting to provide the best possible service to Upper Michiganders. In my off time, you may find me hiking, reading, enjoying time with friends and family, or enjoying music.

# Winter Weather Reminders

## Winter Weather Driving

Allow for extra travel time.

Drive at appropriate speeds for conditions.

Reduced traction means you will need additional time stopping and acceleration.

Never use cruise control when roads are snow covered, slippery and/or wet.

Leave extra spacing between vehicles.

*Remember that your driving decisions impact others on the roadway, not just you!*

**Six Basic Steps for Properly MEASURING SNOW**

Accurate and timely snowfall measurements are extremely important to your National Weather Service office, your community, local media, and many others. Here are the six steps you need to know for measuring snow:

- 1 Supplies**  
Ruler or yard stick  
24" X 24" white board, flag
- 2 Planning**  
Find an open area away from tall objects, but sheltered from wind
- 3 Set-up**  
Set up before snow begins  
Put your board out and mark it with the flag
- 4 Measuring Snow**  
Record your total to the nearest tenth of an inch  
Wipe the board off after measuring  
Measure once daily at the same time, after measuring place the board on top of snow
- 5 When Snow Stops**  
Measure as soon as the snow stops to avoid lower totals due to melting, settling and drifting
- 6 Reporting**  
weather.gov social media  
SEND us your report!



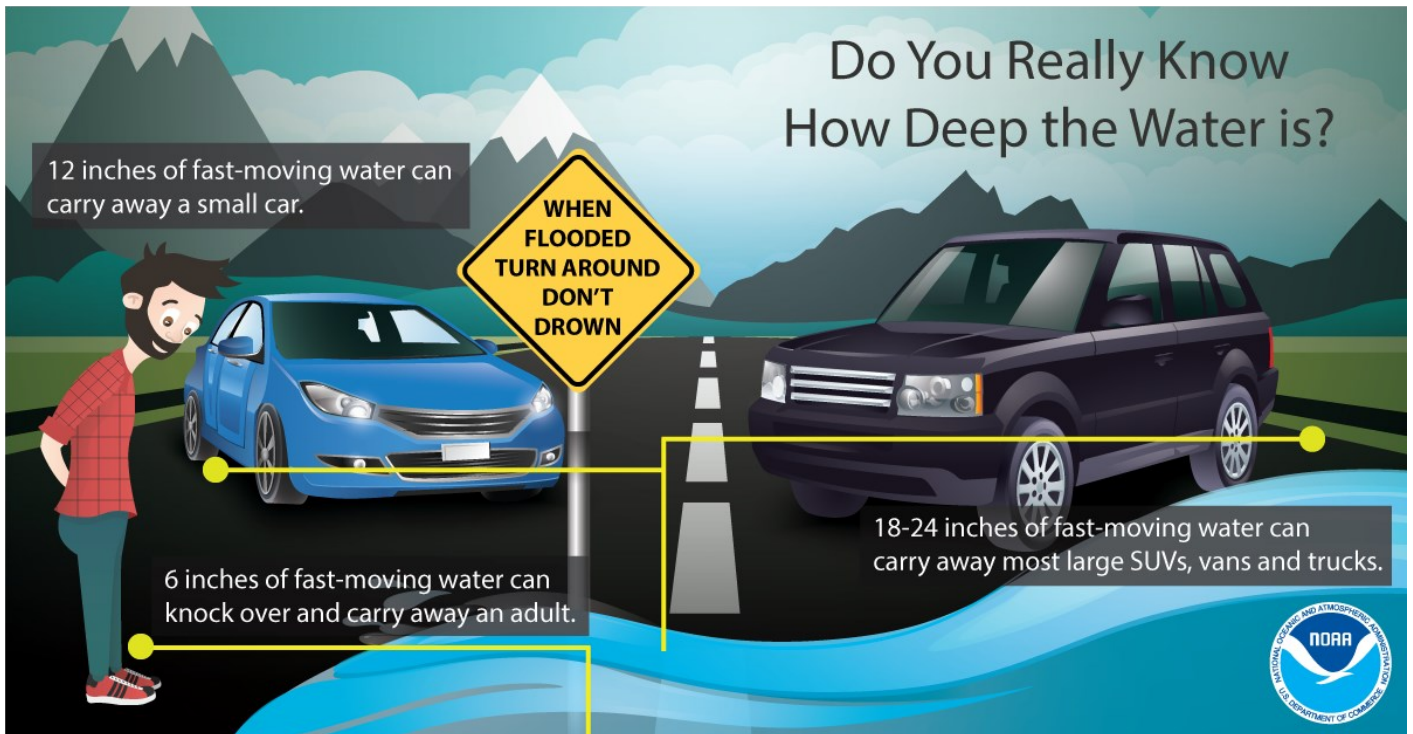
# Spring Weather Reminders

*With a lot of excess water sitting on the ground this winter, it is always good to be prepared for the spring snowmelt!*

<h2>FLOOD WARNING</h2> <p>A Flood Warning is issued when flooding is <b>happening</b> or will happen soon. Some roads will be <b>flooded</b>.</p> <p><b>Move</b> to higher ground. <b>Never drive</b> through flooded roads.</p> <p><b>take action.</b></p>	<h2>FLOOD WATCH</h2> <p>A Flood Watch is issued when flooding is possible.</p> <p>Stay tuned to radio/TV, follow <b>weather.gov</b> and be ready to seek higher ground.</p> <p>Learn more at <b>weather.gov/flood</b>.</p> <p><b>be prepared.</b></p>
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### Do You Really Know How Deep the Water is?



12 inches of fast-moving water can carry away a small car.

6 inches of fast-moving water can knock over and carry away an adult.

18-24 inches of fast-moving water can carry away most large SUVs, vans and trucks.

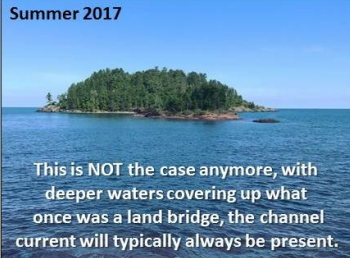
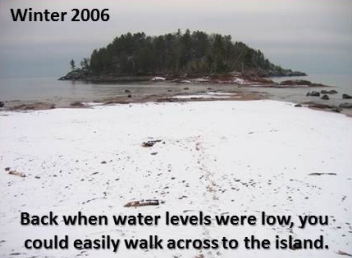


# Beach Safety Reminders

## Help Us End Drowning in the Great Lakes! Water Levels

Over the last 5-10 years we've seen a dramatic increase in water levels on Lake Superior.

- Increased water levels means:
  - Shorelines are more susceptible to lakeshore flooding and beach erosion under the right conditions.
  - Currents can become even more dangerous under the right conditions.



Back when water levels were low, you could easily walk across to the island.

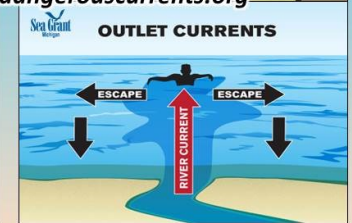
This is NOT the case anymore, with deeper waters covering up what once was a land bridge, the channel current will typically always be present.



Marquette, Michigan

For Beach Forecasts & Statements, visit:  
<https://www.weather.gov/greatlakes/beachhazards#mqt>

## Help Us End Drowning in the Great Lakes! Dangerous Currents In The Great Lakes:



More information at [dangerouscurrents.org](http://dangerouscurrents.org)



Marquette, Michigan

For Beach Forecasts & Statements, visit:  
<https://www.weather.gov/greatlakes/beachhazards#mqt>



THE AIR MAY  
BE HOT

BUT THE WATER  
IS COLD!

Mountain snow melt into creeks, rivers, and lakes will keep waters running fast and cold. Use caution to avoid hypothermia!



# Outdoor Safety Reminders

## Spending Time Outdoors?



- ⚡ Be Aware of the Forecast Before You Head Out
- ⚡ Know How You Will Receive A Warning If One Is Issued
- ⚡ Know Where The Nearest Shelter Is Located
- ⚡ When Action Needs to be Taken, **DON'T WAIT!**

## Weather Safety ON THE LAKE



- ⚡ KNOW THE FORECAST BEFORE HEADING OUT
- ⚡ HAVE A PORTABLE WEATHER RADIO OR AN AM/FM RADIO IN THE BOAT
- ⚡ IF SKIES TURN THREATENING, HEAD TO SHORE!

## Damaging Winds and Large Hail Safety



Marquette



**Remember, it does NOT take a tornado to cause significant damage!**

### Safety Tips:

- Move to an interior room away from windows and wait for the storm to pass.
- If outdoors, move to the closest shelter or vehicle.
- Watch for falling trees both at home and if in a vehicle.

### Notes:

- Damaging winds often start abruptly—do not wait for them to arrive before taking shelter
- Large hail can be deadly if caught outside with no head protection

# How to Report the Weather to us!

How to send in your  
**Weather Report**

Become a "citizen scientist" by reporting what type of precipitation or weather is occurring where you are to the National Weather Service

**IT'S FREE**  
Search and download the free mPING app via your app store

**IT'S FUN**  
Observe and report (to NWS) the type of precip at your location

**IT'S EASY**  
1) Open the mPING app  
2) Tap "Select Report Type"  
3) Choose from the list  
4) Tap "Submit Report"

More info on mPING can be found at <https://mping.nssl.noaa.gov>

NATIONAL WEATHER SERVICE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

**MPING**

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From [www.weather.gov/up](http://www.weather.gov/up)

**NWS Forecast Office Marquette, MI**  
[Weather.gov](http://Weather.gov) > Marquette, MI

Current Hazards   Current Conditions   Radar   Forecasts   Rivers and

Storm and Precipitation Reports  
Outlooks  
Submit a Storm Report

ation below for detailed forecast.

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**We need your help!**  
**Become a force multiplier**

### **Who are our Weather-Ready Nation Ambassadors:**

Local community leaders who partner with the National Weather Service to help play a vital role in promoting weather safety information so their communities can become better informed and prepared in the face of hazardous weather.

### **What do our Weather-Ready Nation Ambassadors do?**

- Promoting Weather-Ready Nation messages and themes to your stakeholders
- Engaging with NOAA personnel on potential collaboration opportunities
- Sharing their success stories of preparedness and resiliency
- Serving as an example by educating employees on workplace preparedness

More information available at:

[www.weather.gov/WRN/Ambassadors](http://www.weather.gov/WRN/Ambassadors)

Become a Weather-Ready Nation Ambassador at:

<https://www.weather.gov/wrn/amb-tou>



## **National Weather Service Marquette, Michigan**

The **National Weather Service (NWS)** provides weather, water, and climate data, forecasts and warnings for the protection of life and property and enhancement of the national economy.

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**We're on the Web!**  
[www.weather.gov/up](http://www.weather.gov/up)

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**Ideas for articles you want to see?**

*Email Jaclyn or James!*