

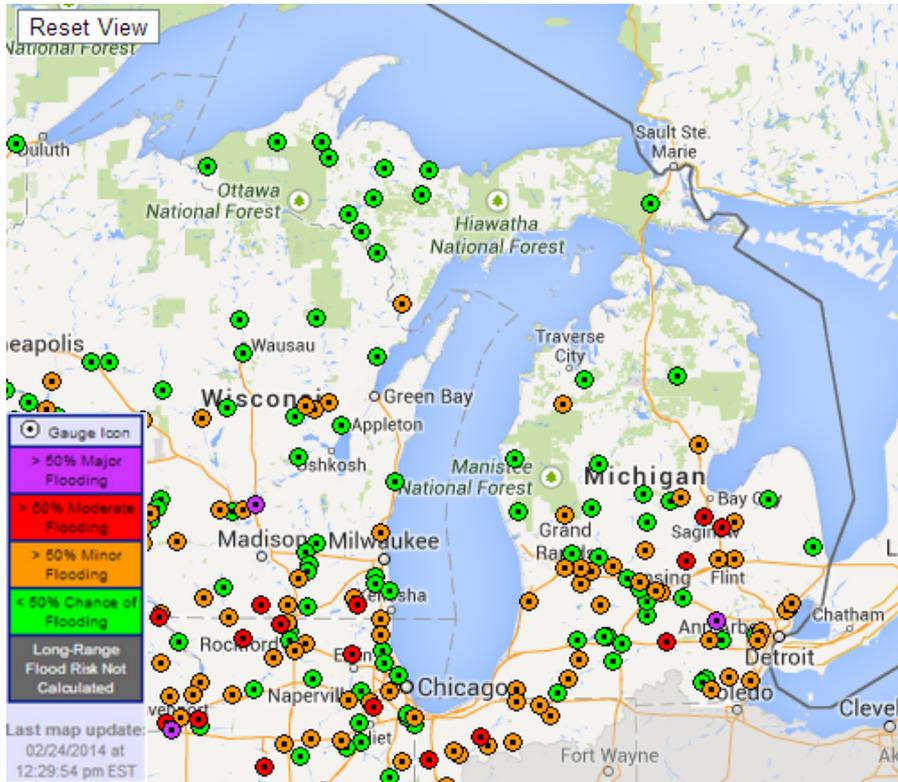


Michigan Spring Flood Outlook

February 26, 2014 - 1000 AM



Bookmark this map at - <http://go.usa.gov/BFT4>



- Latest on Current Conditions
- River Forecast Model Projections
- Forecast Outlook for Spring
- Updates from Around the State
- Best and Worst Case Scenarios

A PDF Version of these slides with Clickable Links to shown information can be found at the following page

www.weather.gov/grr/webinars

**Next NWS Michigan
Spring Flood Outlook Webinar
March 17, 2014
10:00 AM EDT**



Thank You for Joining Today

Current Risk for River Flooding is Much Higher Than Usual

We are primed for an active flood season and wanted to provide some info on where we are and some things to keep an eye out for as we move into spring

**Typical Year we run a 5-20% Risk for River Flooding
This year we are currently sitting at a general 40%-90% Risk**

A higher risk for flooding does not mean we are predicting record flooding

Some flooding is likely, we are not here to say widespread significant flooding is certain

**The longer we go into spring with snow and ice the more our
Risk for River Flooding Increases**



Ice Jam Potential

- Uncertainty of Ice Jams is one of our greatest concerns
- Some concern about ice on the Great Lakes preventing the escape of any flowing river ice
- Ice breakup on rivers can occur whenever the river stage rises 1.5 to 3 times the river ice thickness
- Breakup or movement of ice means jamming and flooding could develop quickly... ice jams on rivers can result in unpredictable rapid rises in rivers
- Please Share with the NWS immediately if you see any ice breakup or movement of ice
- Fast moving water combined with ice poses a very serious threat to rescue operations and first responders

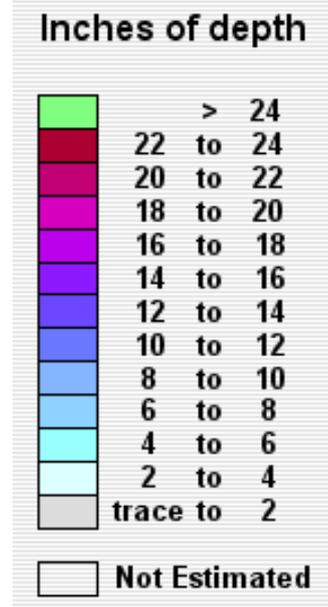
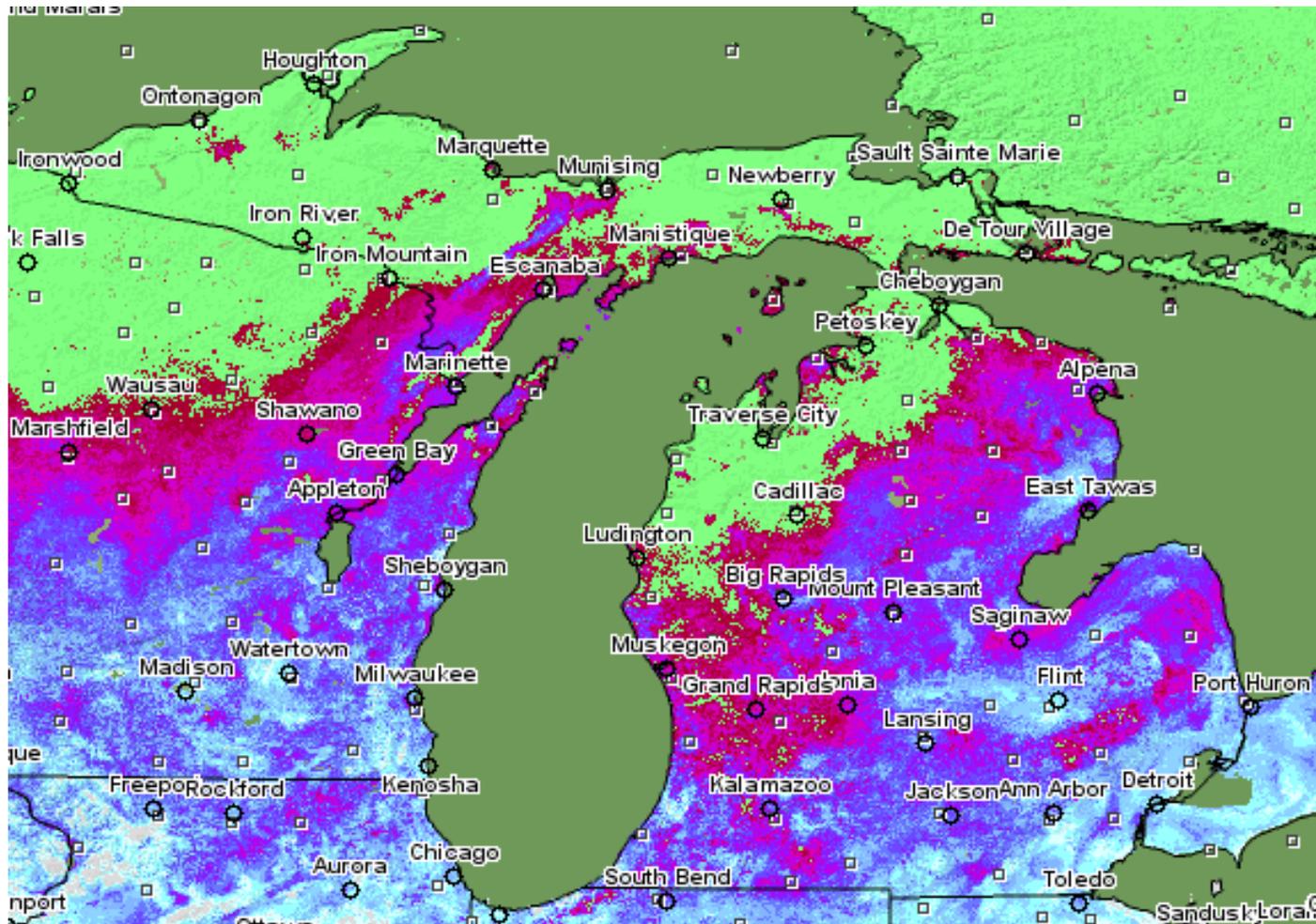


Latest on Current Snow Pack

<http://go.usa.gov/BFwC>



Modeled Snow Depth - February 25, 2014





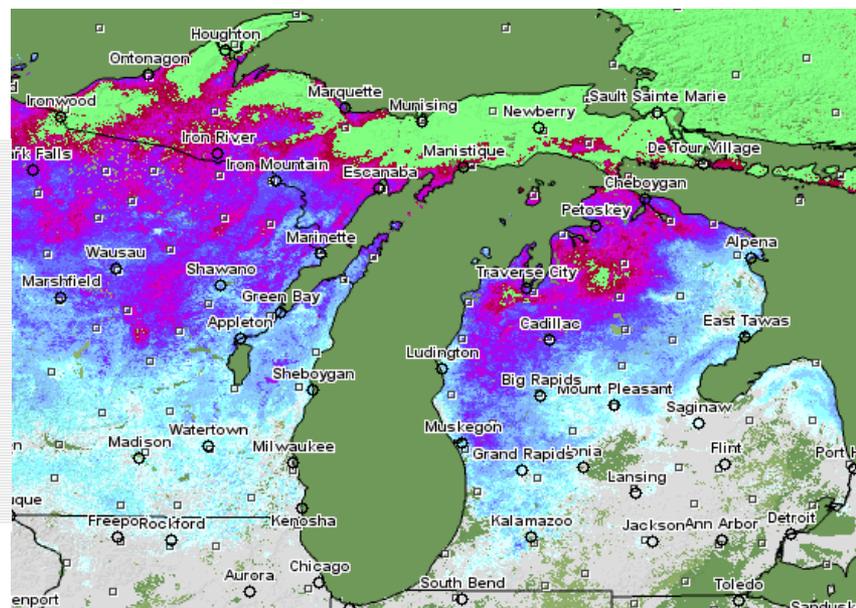
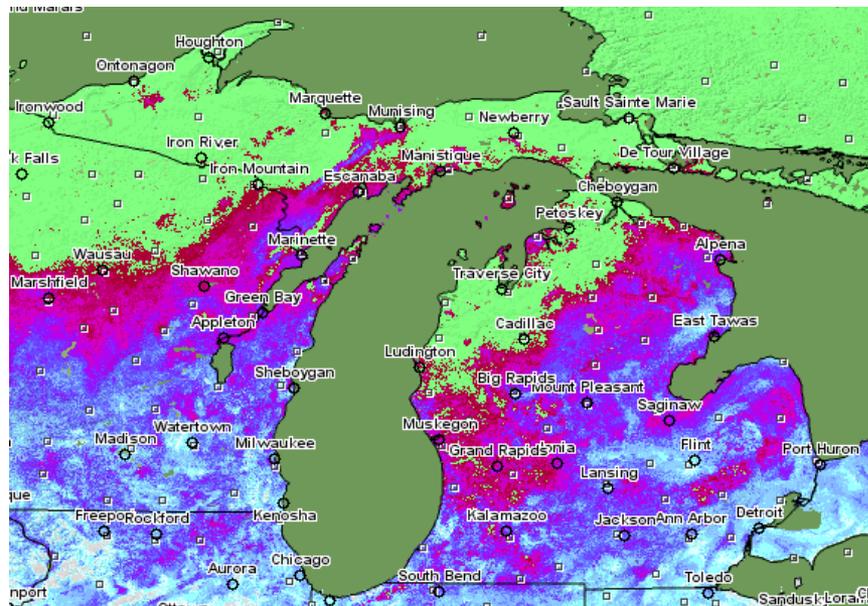
Snow Pack

This Year Versus Last Year

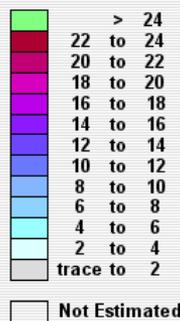
Modeled Snow Depth

February 25, 2014

February 25, 2013



Inches of depth



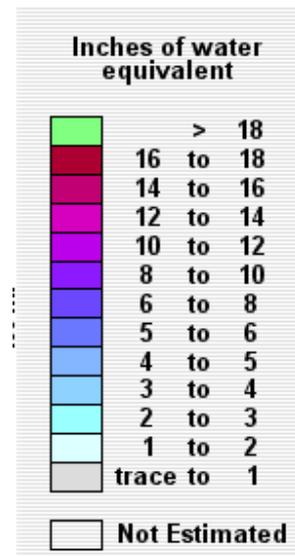
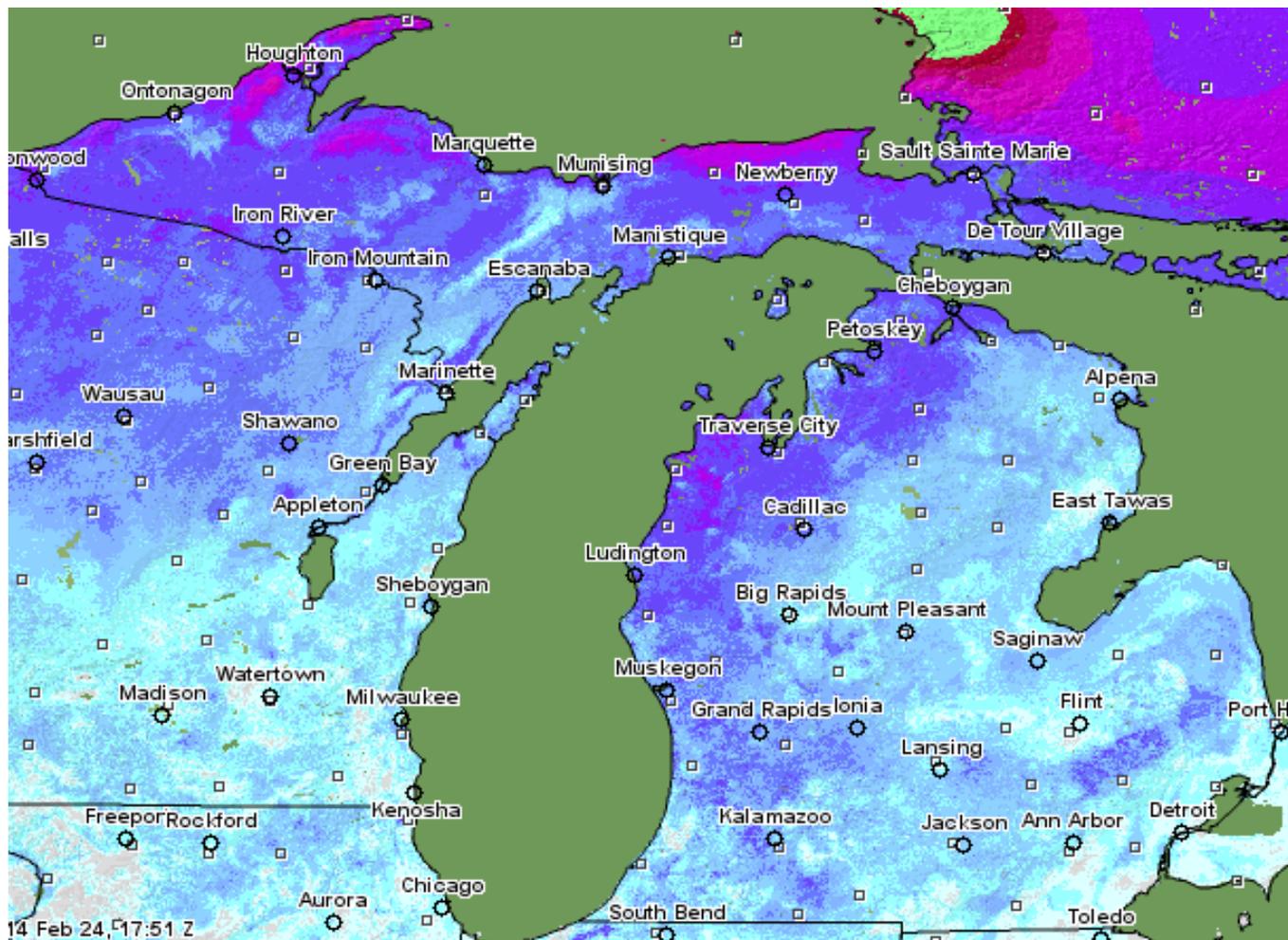


Latest on Water in the Snow Pack

<http://go.usa.gov/BFvP>



Modeled Snow Water Equivalent - February 25, 2014



14 Feb 24, 17:51 Z



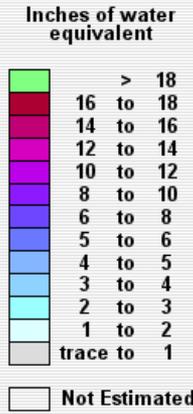
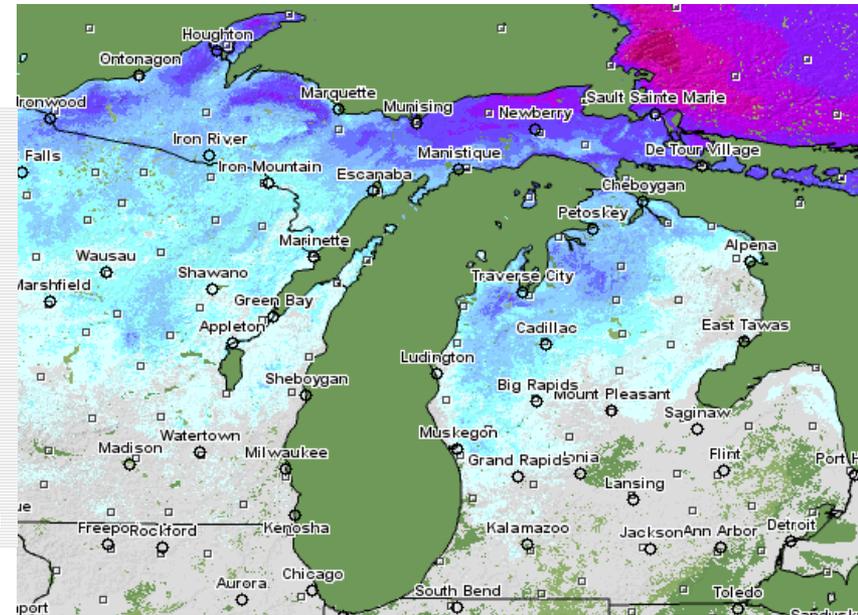
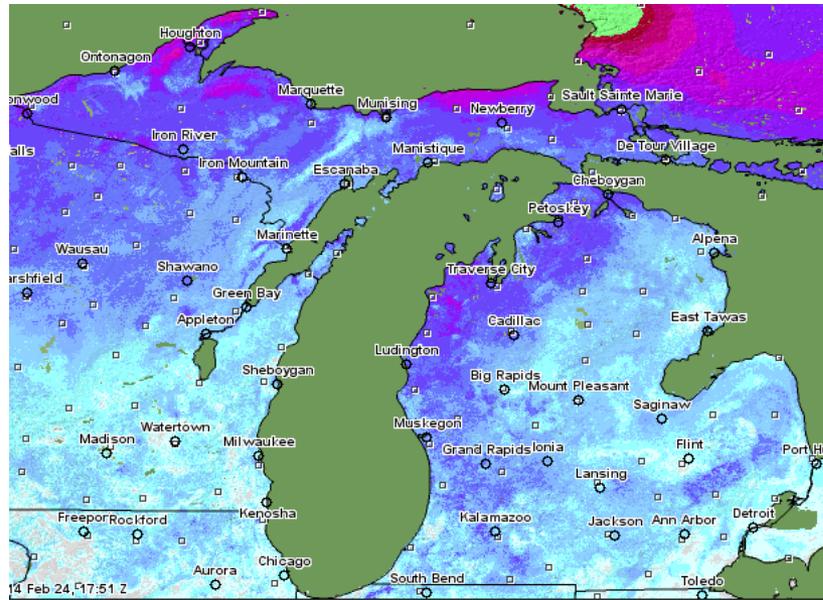
Water in the Snow Pack

This Year Versus Last Year

Modeled Snow Water Equivalent

February 25, 2014

February 25, 2013





Outlook for the Next Two Weeks



Cold Weather Will Continue for the Next Two Weeks

Average Temperature Below 20 degrees typically grows ice
Above Freezing Temperatures possible 2nd week of March

Currently no rain in the forecast for at least the next week

Even with periods of sun our snow pack may shrink

Water content in the snow will remain High

When we do eventually get rain...

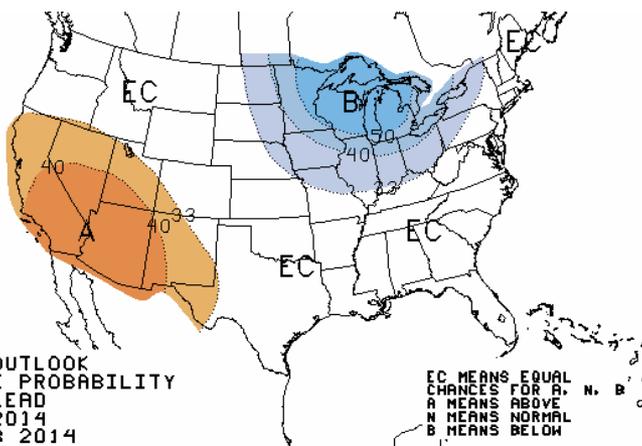
The Snowpack will struggle to absorb much water at all
Especially in locations that received rain last week



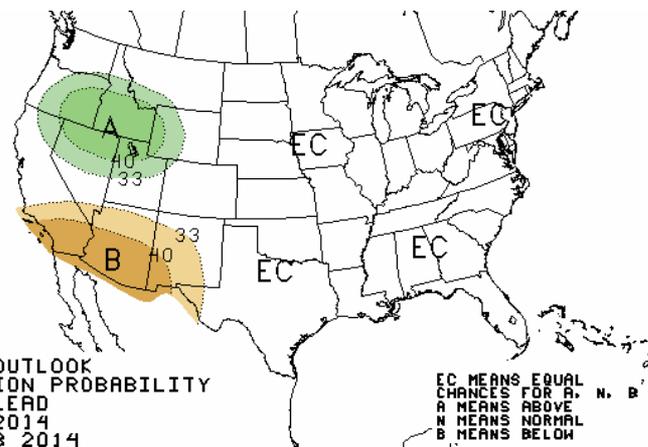
Outlook for March

From the Climate Prediction Center

Temperature



Precipitation



Colder than Normal Likely in March

Especially During the first half of the month

Equal Chances for Above Normal, Normal or Below Normal Precipitation

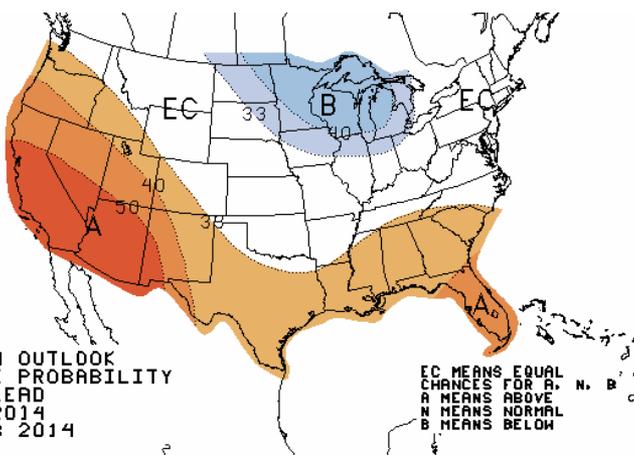


Outlook for March, April, May

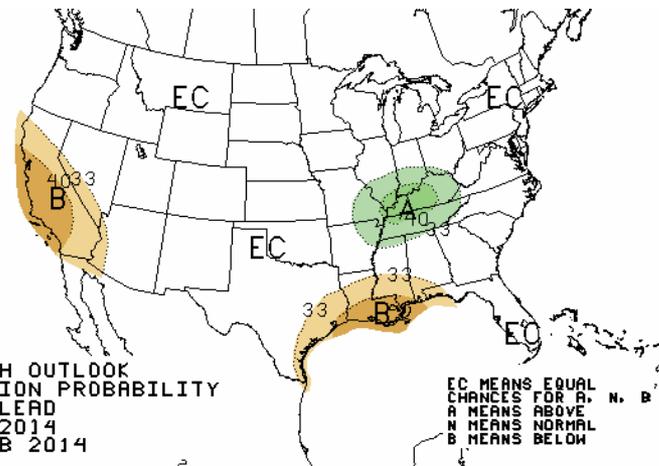
From the Climate Prediction Center



Temperature



Precipitation



Good Chance for a Cooler Spring Than Normal

May Help to Result in More Gradual Snow Melt

Warm-Up in Southern U.S. during late Spring Could bring warm April/May

Equal Chances for Above Normal, Normal or Below Normal Precipitation



Flood Terminology

Major Flooding

Extensive Inundation - Road, Structure, Communities
Evacuations
Movement of Property to Higher Elevations

Moderate Flooding

Some Inundation - Road, Structure, Communities
Possible Evacuations
Movement of Property to Higher Elevations

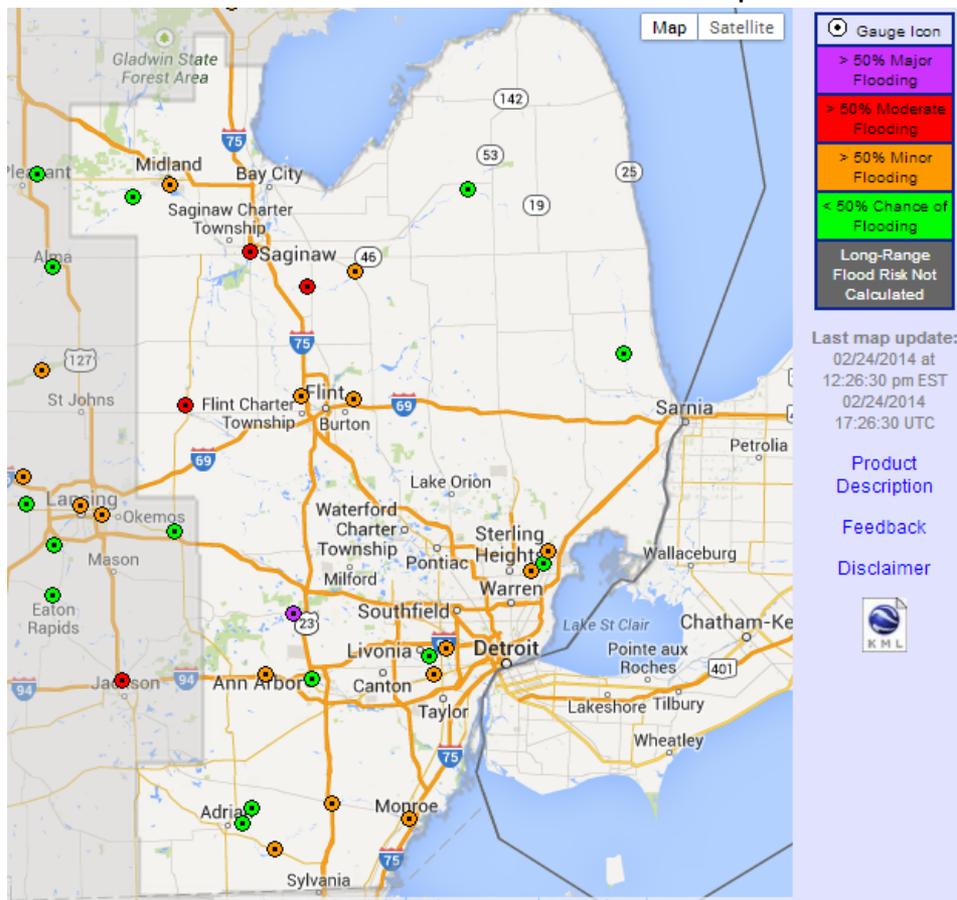
Minor Flooding

Minimal Property Damage,
Public Inconvenience



Southeast Lower

Map Showing 50% Chance or Greater of Exceeding River Flood Levels in Feb-Mar-Apr



Amount of Snow On the Ground Above Normal

Current Water Available in the Snow on the Ground Much Above Normal

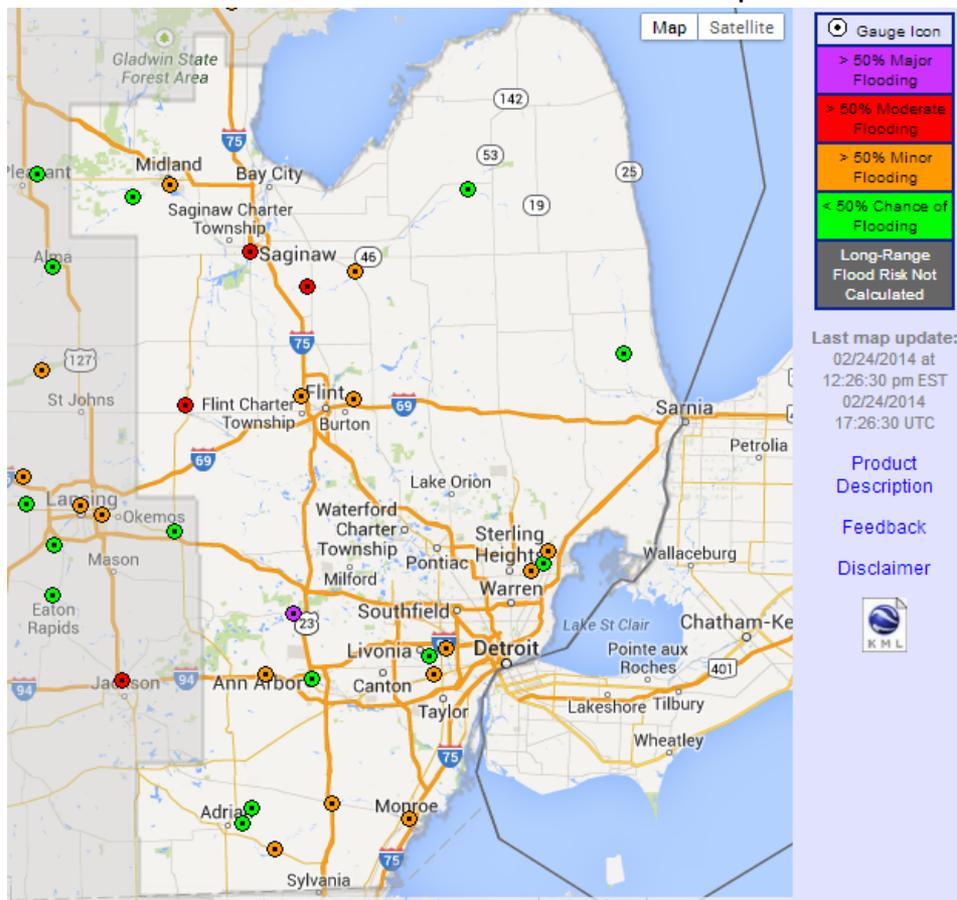
Depth of Ground Frost Above Normal

Amount of Soil Moisture in Ground Above Normal



Southeast Lower

Map Showing 50% Chance or Greater of Exceeding River Flood Levels in Feb-Mar-Apr



Locations Most Vulnerable for Spring 2014 to..

Major Flooding

Huron River Basin
Black River Basin

Moderate Flooding

Saginaw River Drainage
(Tittabawassee, Cass, Shiawassee,
Flint and Saginaw Rivers)
River Raisin Basin

Minor Flooding

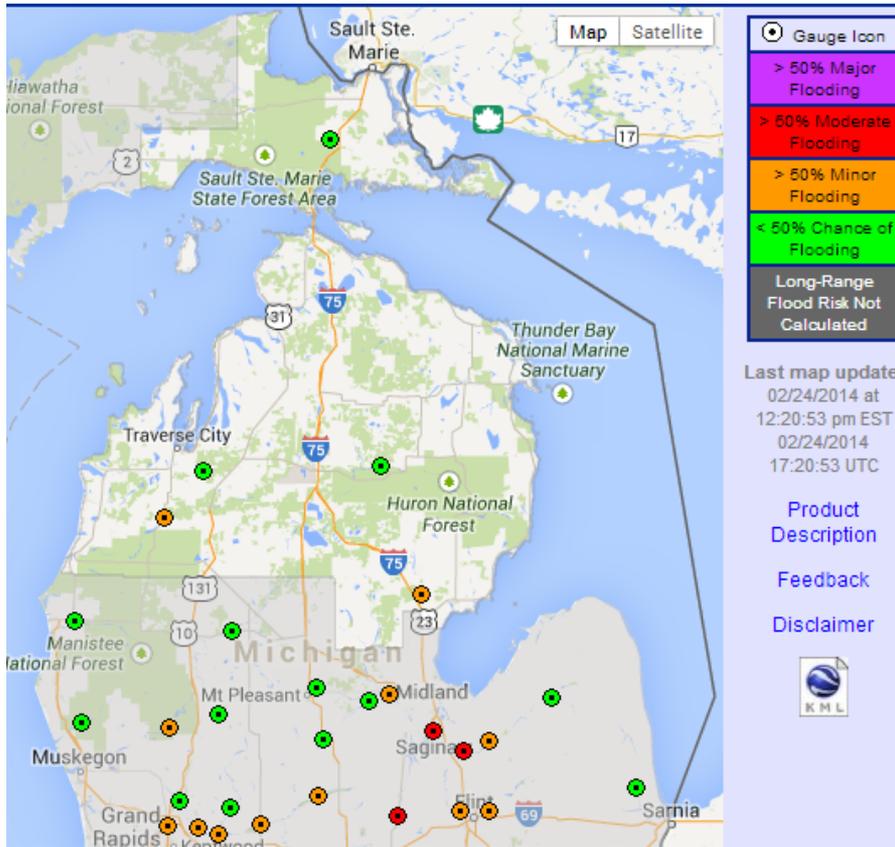
Rouge and Clinton River Basins



Northern Lower - Eastern U.P.



Map Showing 50% Chance or Greater of Exceeding River Flood Levels in Feb-Mar-Apr



Amount of Snow On the Ground

Near Normal - Eastern Upper
 Near Normal - Northeast Lower
 Above Normal - Northwest Lower

Current Water Available in the Snow on the Ground

Near to Above Normal - Eastern Upper
 Near to Above Normal - Northeast Lower
 Well Above Normal - Northwest Lower

Depth of Ground Frost

Normal

Amount of Soil Moisture in Ground

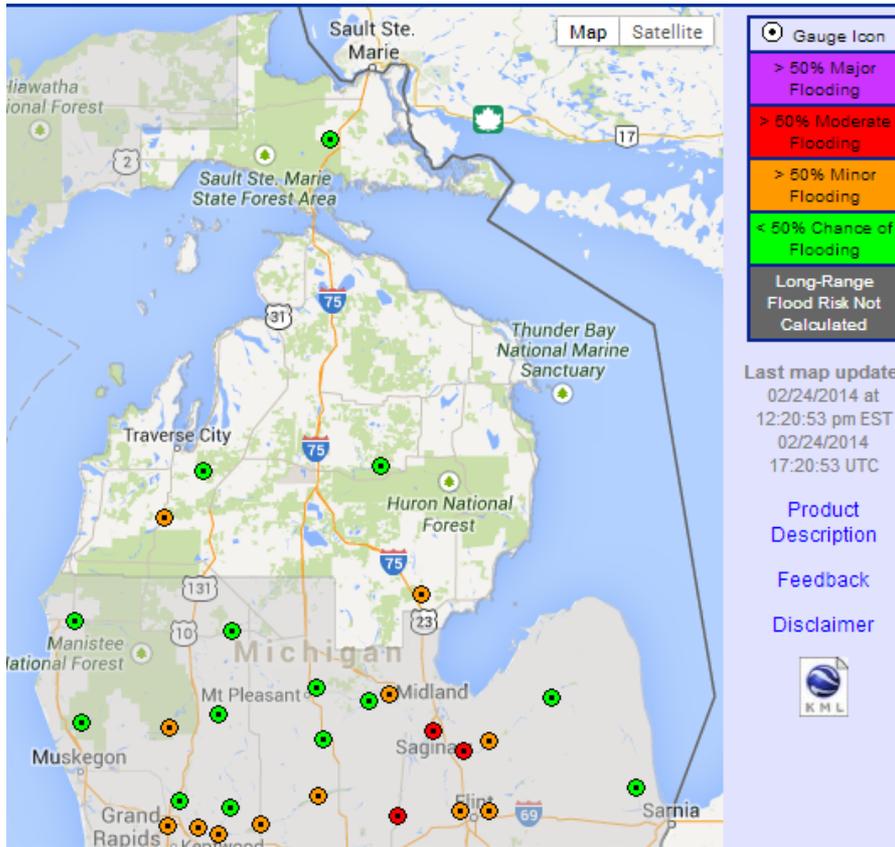
Above to Well Above Normal



Northern Lower - Eastern U.P.



Map Showing 50% Chance or Greater of Exceeding River Flood Levels in Feb-Mar-Apr



Locations Most Vulnerable for Spring 2014 to..

Major Flooding
None

Moderate Flooding
Manistee River Basin

Minor Flooding
Pine River Basin
Thunder Bay River Basin
Rifle River Basin
Boardman River Basin
Au Sable River Basin



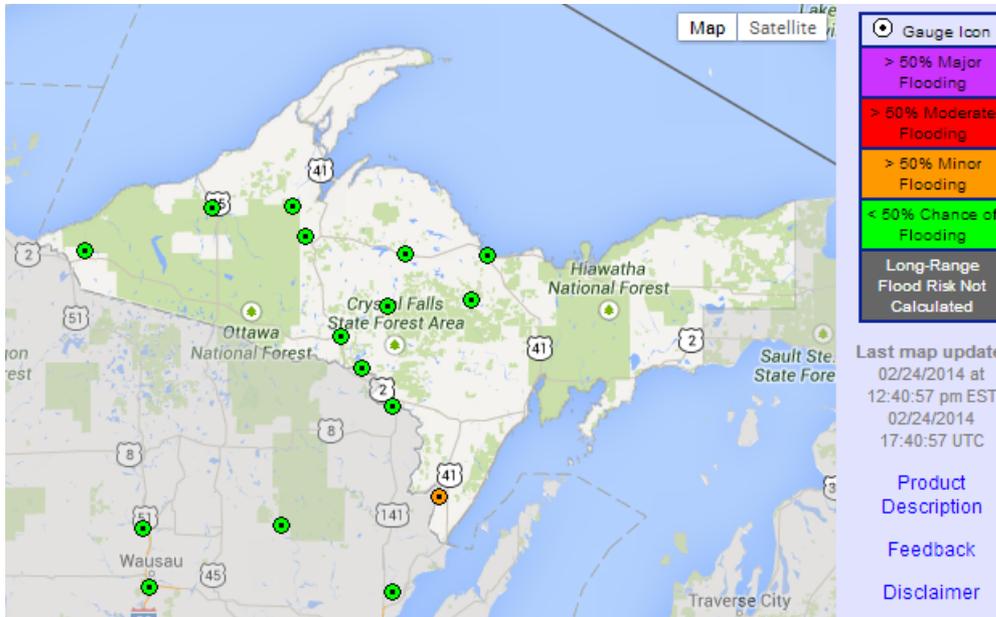
Western/Central U.P.

No Immediate Flood Concerns

Some Concern for late March through April pending warm-up

Spring Thaw Much Later than Lower Peninsula

Map Showing 50% Chance or Greater of Exceeding River Flood Levels in Feb-Mar-Apr



Amount of Snow On the Ground
20” - 55” - Near to Above Normal

Current Water Available in the Snow on the Ground
3” - 10” - 100-140% of Normal

Depth of Ground Frost
Well Above Normal (Winter ‘93-’94)

Amount of Soil Moisture in Ground
Above Normal



Far Southwest Lower



**Amount of Snow On the Ground
Above Normal**

Map Showing 50% Chance or Greater of Exceeding
River Flood Levels in Feb-Mar-Apr

**Current Water Available
in the Snow on the Ground
Above Normal**

**Depth of Ground Frost
Above Normal**

**Amount of Soil Moisture in Ground
Above Normal**





Far Southwest Lower



Locations Most Vulnerable for Spring 2014 to..

Map Showing 50% Chance or Greater of Exceeding River Flood Levels in Feb-Mar-Apr

Major Flooding
None

Moderate Flooding
St. Joseph River Basin

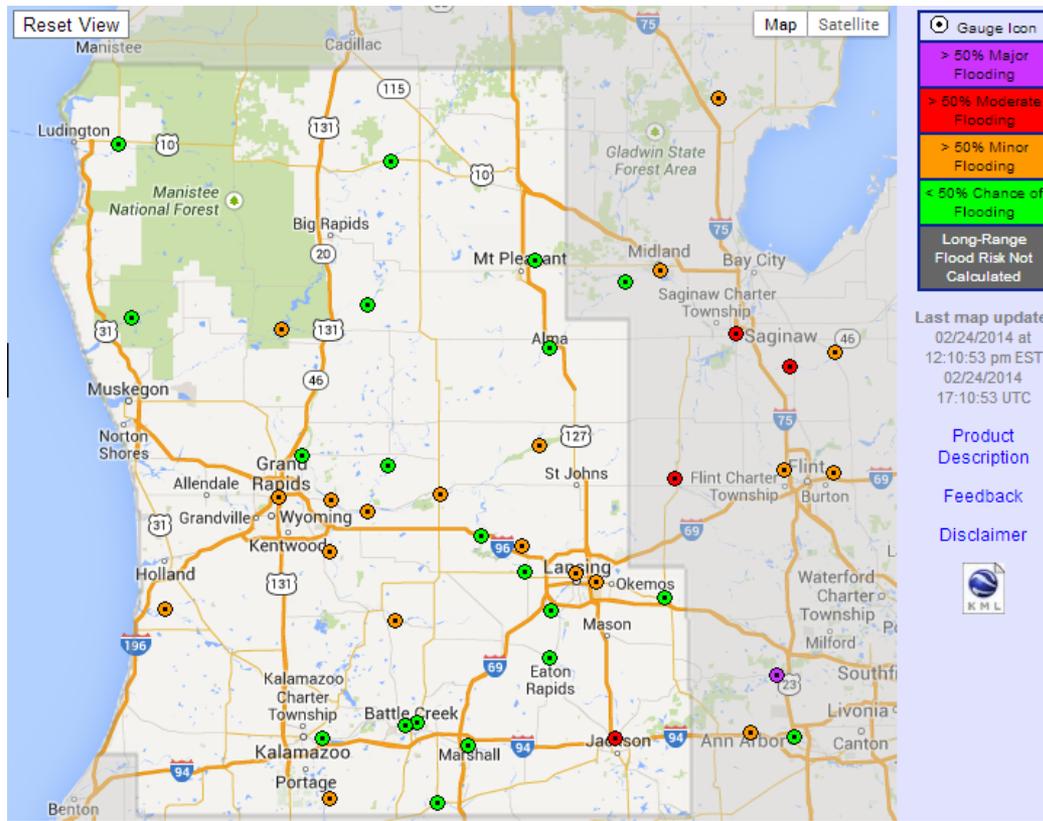
Minor Flooding
None





Southwest Lower

Map Showing 50% Chance or Greater of Exceeding River Flood Levels in Feb-Mar-Apr



Amount of Snow On the Ground Above Normal

Current Water Available in the Snow on the Ground Above Normal

Depth of Ground Frost Near Normal

Amount of Soil Moisture in Ground Above Normal



Southwest Lower

Map Showing 50% Chance or Greater of Exceeding River Flood Levels in Feb-Mar-Apr

Locations Most Vulnerable for Spring 2014 to..

Major Flooding

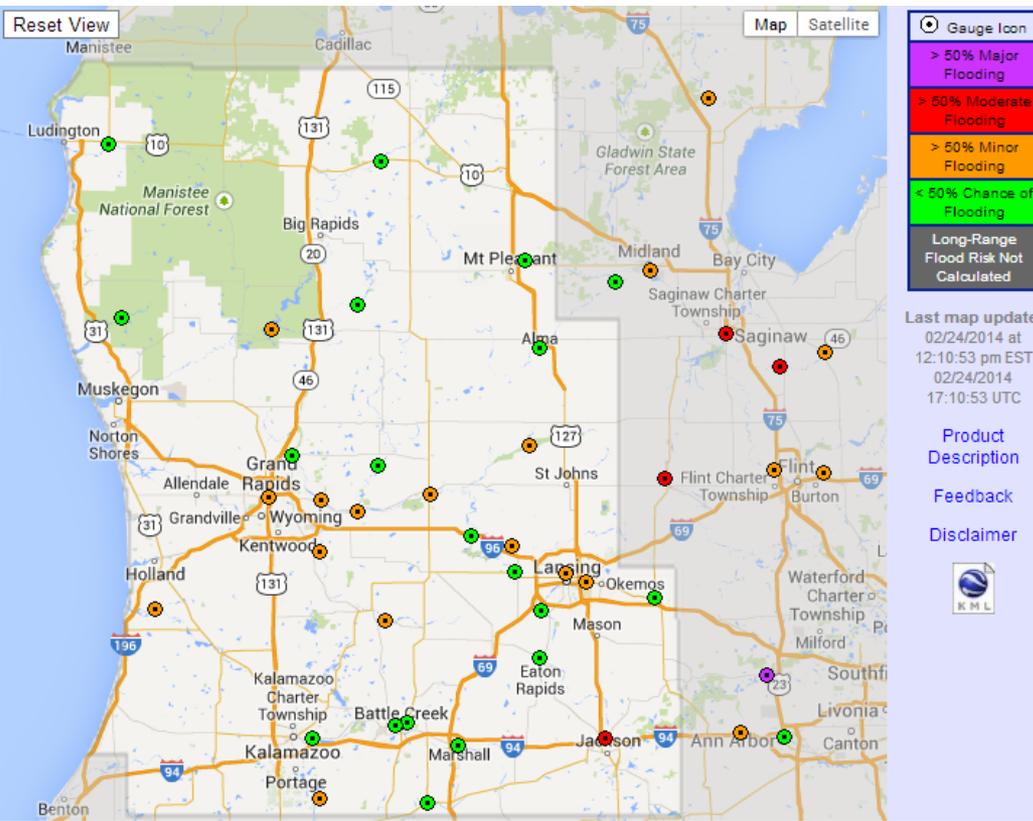
Ice Jams Increase This Risk

Moderate Flooding

Upper Grand River Basin

Minor Flooding

Muskegon River Basin
Lower Grand River Basin
Kalamazoo River Basin





Best Case Scenarios



Would Help Lessen Flood Threat If...

- We have more weeks like last week - cool temperatures with plenty of sunshine
- Slow Snow Melt with no rain - Gradual Warming with periods Below Freezing
- Spaced Out Smaller Rainfall Events - Allowing Drainage to Occur
- Slow Erosion of Ice with rivers being free and clear of ice before any big rain event



Worst Case Scenarios



Would Increase Flood Threat If...

- Significant Additional Wet Snow Events Occur Late in the Season
- Quick Change from Cold to Very Warm and Wet Pattern
- Significant Intense Rainfall Happening at Once or Multiple Times (like April 2013)
- Heavy Rainfall Occurs Across Entire Basins - especially the Headwaters
- Rapid Snow Melt - Long Time Well Above Freezing with Very Warm Days (50+)
- Combination of Lots of Rainfall and Rapid Snow Melt before Ice is off the Rivers
- Quick Breakage and Release of thick River Ice



Monitoring the Latest Flood Risk

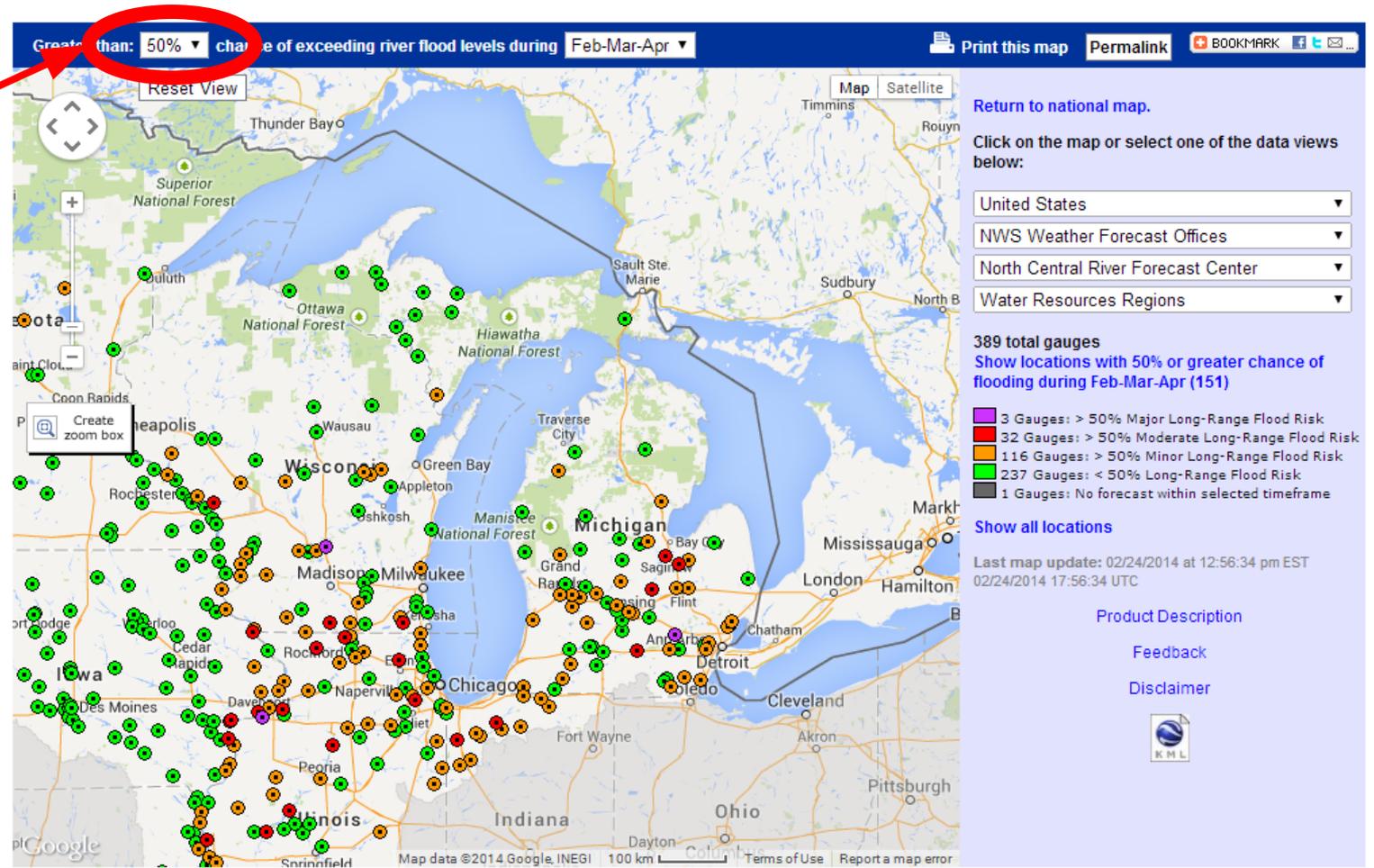
Graphic Below to be Updated March 6 for March-April-May

Map Detailing 50% Chance of Exceeding Flood Stage

<http://go.usa.gov/BFT4>

Can see other percentages

Including...
25%, 75%, 95%





In Summary...

Upper Peninsula

No Immediate Flood Concerns

Some Concern for early-mid April pending warm-up

Lower Peninsula

Moderate to High Risk for River Flooding This Spring

Keep an Eye Out for...

Lengthy Warm-ups and Significant Rainfall

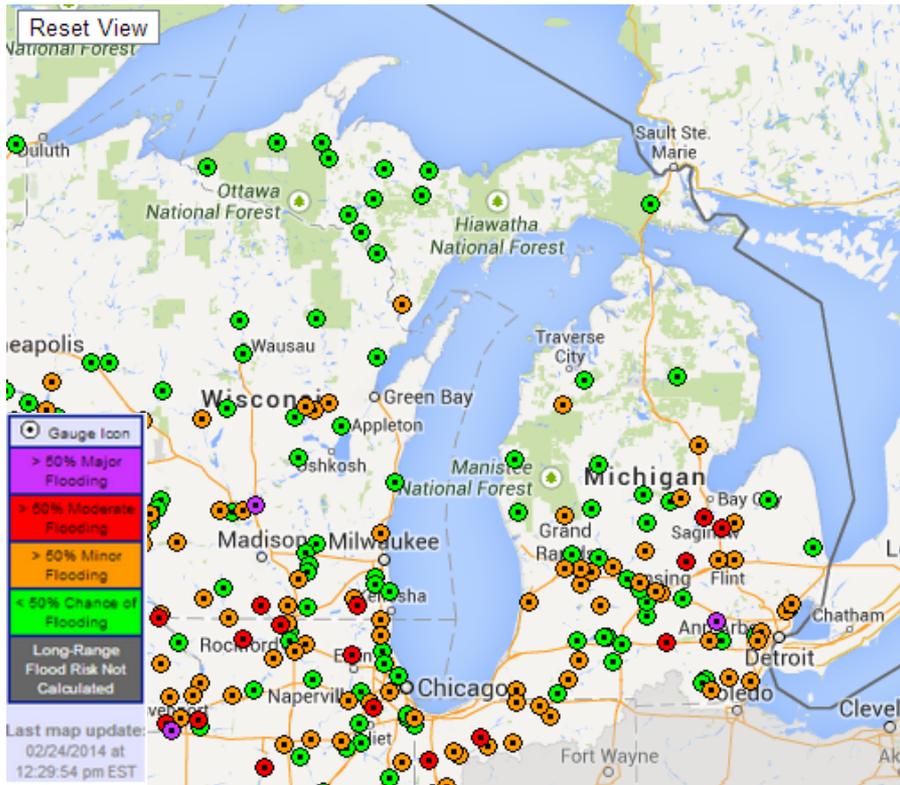
Flowing or Quick Breakup of River Ice



Next Webinar Scheduled



Map Showing 50% Chance or Greater of Exceeding River Flood Levels in Feb-Mar-Apr



March 17, 2014 10:00 AM EDT

<http://join.me/nws-grandrapids>

Dial In Information will be the same
Email will be sent containing call specifics

A PDF Version of these slides with Clickable Links to shown information can be found at the following page

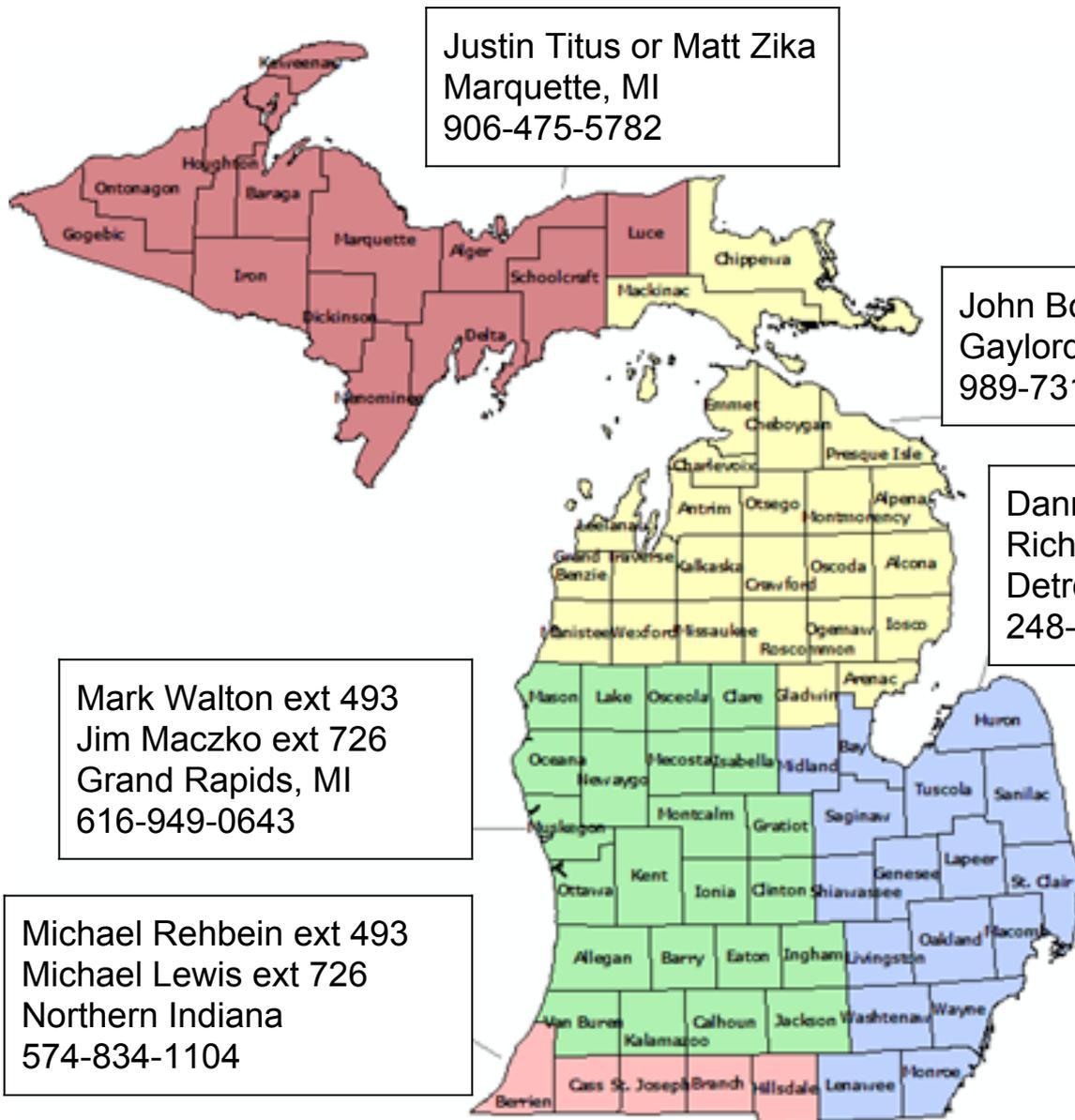
www.weather.gov/grr/webinars

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Any Questions...



Justin Titus or Matt Zika
Marquette, MI
906-475-5782

John Boris or Jim Keysor
Gaylord, MI
989-731-3384

Danny Costello ext 493
Rich Pollman ext 726
Detroit, MI
248-625-3309

Mark Walton ext 493
Jim Maczko ext 726
Grand Rapids, MI
616-949-0643

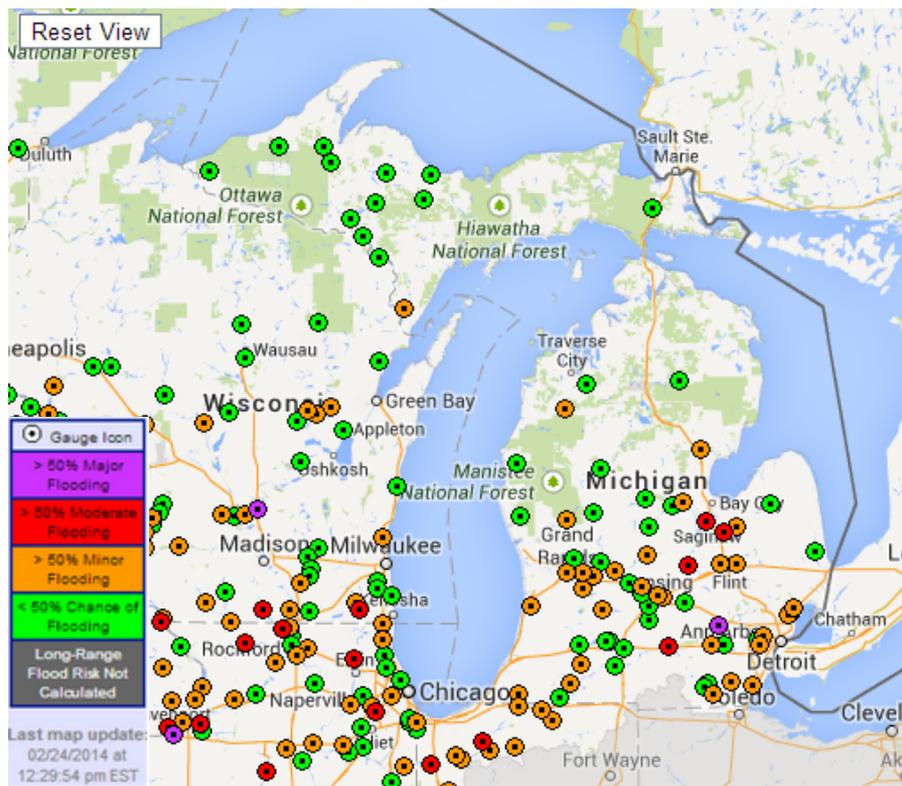
Michael Rehbein ext 493
Michael Lewis ext 726
Northern Indiana
574-834-1104



For Additional Information



Map Showing 50% Chance or Greater of Exceeding River Flood Levels in Feb-Mar-Apr



Forecasts and Warnings

<http://www.weather.gov>

Latest River Stages

<http://water.weather.gov>



- @NWSDetroit
- @NWSGrandRapds
- @NWSGaylord
- @NWSMarquette
- @NWSIWX (nothern Indiana)

Search for National Weather Service 'Office Location'

Bookmark this map at - <http://go.usa.gov/BFT4>

