

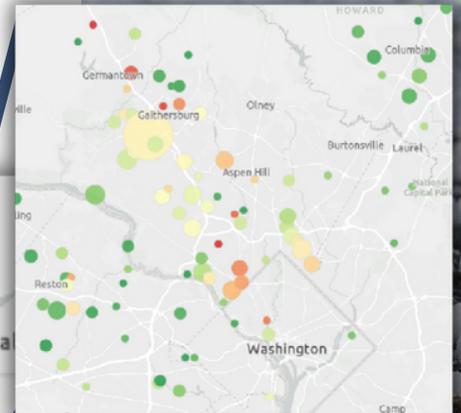
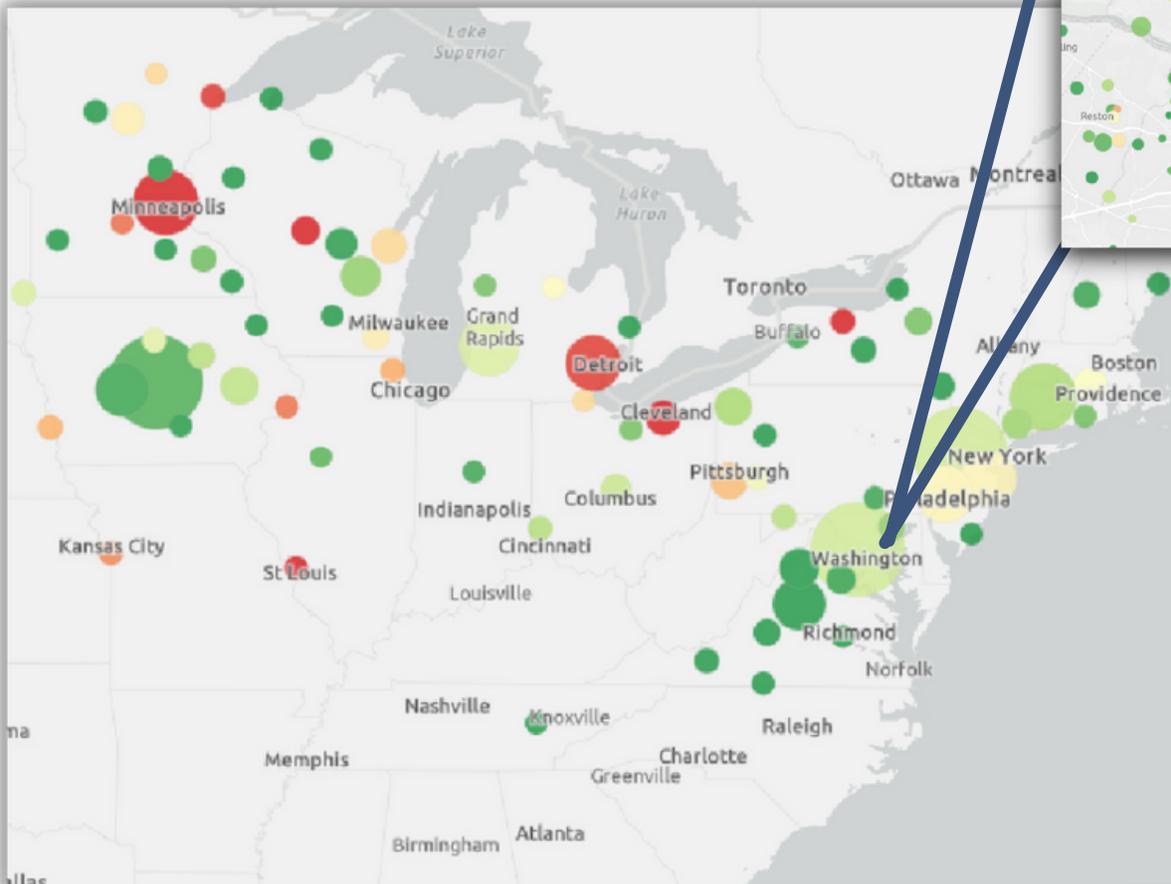
SEASON 6 FINAL REPORT



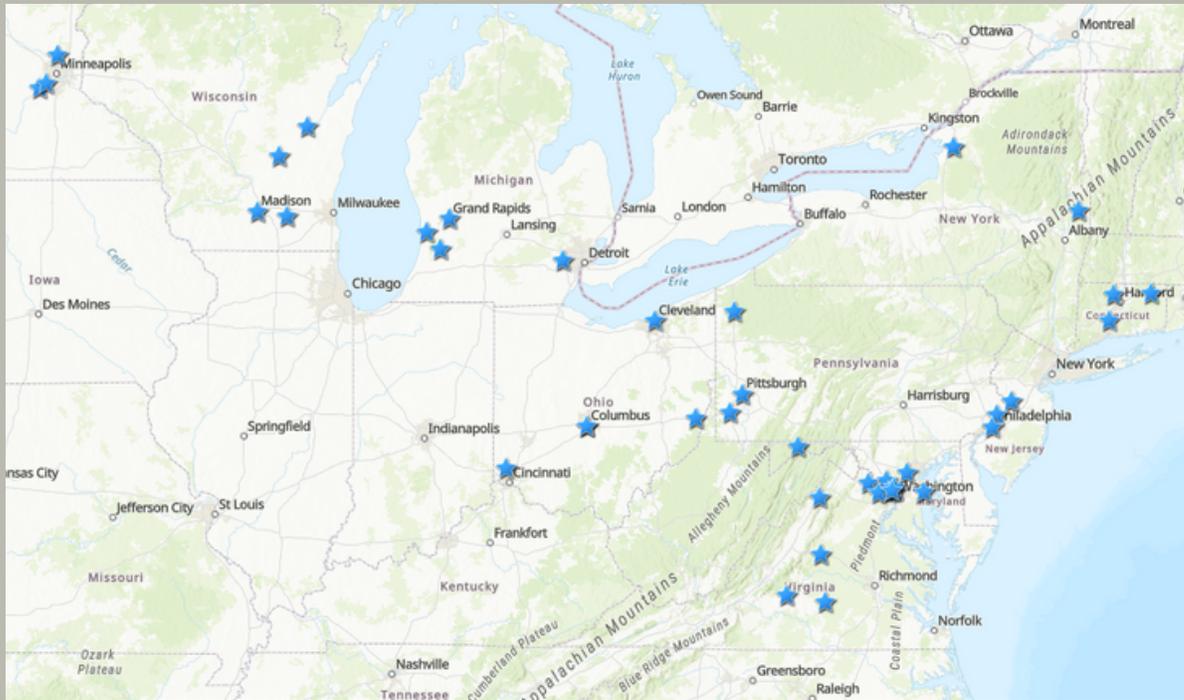
SALT WATCH 2022-2023 SEASON

In the 2022-2023 Salt Watch season, we distributed over **4,200 Salt Watch Kits** and pulled in over **5,200 Salt Watch readings**, with results still coming in! This winter was more mild than the 2021-2022 season, so many regions reported lower chloride levels and reduced salt application. However, many chloride readings were still over 100 ppm - meaning we are still seeing elevated chloride levels across the country.

To view the new season's Salt Watch Map (updated weekly), visit www.iwla.org/saltwatchresults.



SALT WATCH KEY PARTNERS



Salt Watch would not be a success without the hard work, dedication, and collaboration from our partners! With **43 official partners** and over 440 more participating organizations, we depend on groups to pick up the Salt Watch program. Schools and teachers have added Salt Watch to their curriculum, watershed groups have added it to their monitoring programs, and others are using Salt Watch to start monitoring for the very first time! Check out the above map to see more of our key partners across the country, from government agencies to school groups. This map is not comprehensive, and we are adding new partners every day! View the interactive Salt Watch Partner Map here: <https://arcg.is/01r8rD>

We'd also like to thank the Chesapeake Bay Trust, Izaak Walton League of America Endowment, Chesapeake Bay Restoration Fund, and many individual donors that make Salt Watch a success.

To get your organization involved in Salt Watch, please email us at saltwatch@iwla.org



SALT WATCH

Salt Watchers are asked to "pledge" to be a part of Salt Watch when they request their kit. This has led to some great engagement, volunteer connections, and advocacy actions taken by Salt Watch volunteers! (Photo: Right)



Salt Watchers of the Month

Salt Watchers who go above and beyond with their efforts can be nominated by their peers and awarded the "Salt Watcher of the Month" title by Clean Water Program Staff. Read more about them at <https://www.iwla.org/water/stream-monitoring/salt-watch/results/2022-23-findings>.

October



Kaitlyn Royal (PA) is a junior at Allegheny College, PA, double majoring in Biology and Environmental Science & Sustainability and minoring in Education. Kaitlyn has become part of the Salt Watch Community through her work with Creek Connections, a watershed-based educational outreach program at Allegheny College, providing environmental education to local middle schools and high schools.

November



Amy Ulland (VA) became the Stream Monitoring Program Coordinator at Loudoun Wildlife (Virginia) in 2020. She established a Salt Watch partnership with Izaak Walton League last year, with 9 volunteers collecting over 100 chloride data points from 14 stream sites. Encouraged by this success, she worked with several members of the Loudoun Wildlife Stream Team to expand the program. She is now coordinating the efforts of 38 Salt Watch volunteers (including adults, teenagers, and families) who are monitoring 50 stream sites across Loudoun County, VA. Amy is also a Save Our Streams certified monitor and trainer.

Salt Watchers of the Month

December



Gary Bangs (VA) has been a consistent monitor since Season 4 of Salt Watch. He monitors waterways for road salt pollution and keeps an eye out for road salt spills and improperly stored salt piles, making sure they are reported to the proper authorities. Gary lives in northern Virginia and volunteers with Friends of Accotink Creek. You can often find Gary walking his dog along Accotink Creek while rescuing trees from invasive vines and picking up litter.

January



Emily and Rebecca (MA) are both former Coordinators at the Izaak Walton League and have been involved in Salt Watch from its infancy. They both continue to contribute to the program by monitoring for chloride and even meeting up and doing a tabling event for Salt Watch in Boston, Massachusetts!

February



Marialuna Schreiner Cintrón (KS) is a high school senior in Kansas. Marialuna first started road salt research and advocacy her sophomore year, and ever since has been researching road salt online; talking with city officials and scientists about obstacles and solutions to chloride toxicity in Kansas City, MO's waterways; and taking chloride samples with Salt Watch's chloride test strips. An avid Salt Watcher, Marialuna looks forward to working with the environment as a career.

March



Gregg Thompson (MN) has been a Bush Lake Chapter member since around 2000 and a Chapter board member for around 18 years. Gregg works as a Watershed Specialist for a neighboring city. He has worked in environmental protection planning for around 25 years and everyday sees the impacts of pollutants (like chlorides) on waterbodies. Gregg has been a phenomenal asset to Salt Watch and has even tabled for the program during festivals!

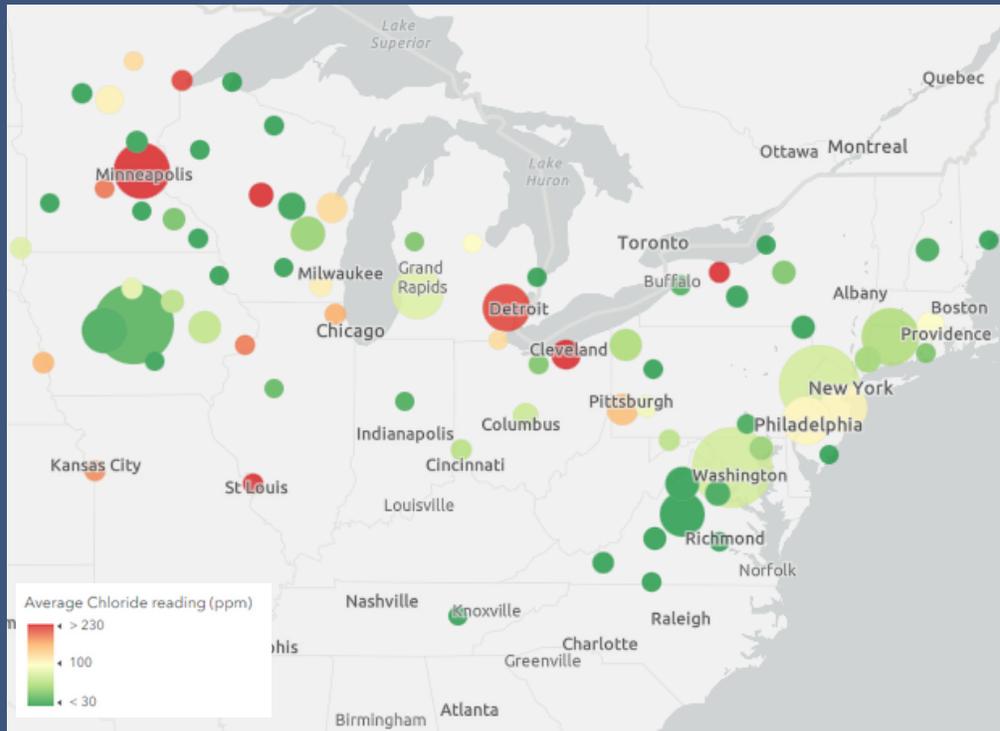
Photo of Gregg's salt sampling helpers: daughter, Adie (11 yo), in foreground, and son, Luca (9 yo), in background.

April



Brett Lorenzen (NY) describes himself as a recovering lawyer and a non-profit executive, currently splitting his time between being a consultant and a hunting/fishing guide. He is a volunteer for the Friends of the Upper Delaware River (FUDR) in New York and has been essential for FUDR's Salt Watch success—from figuring out potential monitoring locations to collecting samples, rain, or shine!

NATIONWIDE



Total Chloride Results: 5,543

- Excellent (0-30ppm): **30%**
- Good (31-100ppm): **46%**
- Poor (101-230ppm): **17%**
- Toxic (231+ppm): **7%**

Official Partners: 43
Participating Orgs: 443
Number of Volunteers: 1,198
Sample Locations: 2,330

Even with less snow and ice accumulation in many regions across the country, our dedicated Salt Watchers have been reporting data year-round!

This year, we made the transition from "Winter Salt Watch" to "Salt Watch." The transition comes with the need to monitor for chloride pollution in waterways year-round. The program has also grown beyond just a winter monitoring program. As we've learned from some of our Partners' data reports in Connecticut and Philadelphia, chloride levels can be elevated in the summer and fall (indicating possible groundwater contamination) and can even spike during drought events.

As chloride persists, our monitoring efforts do too.

Thank you for being part of the solution.



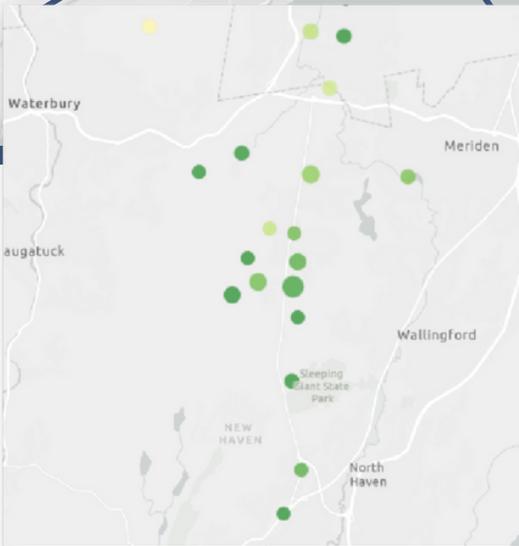
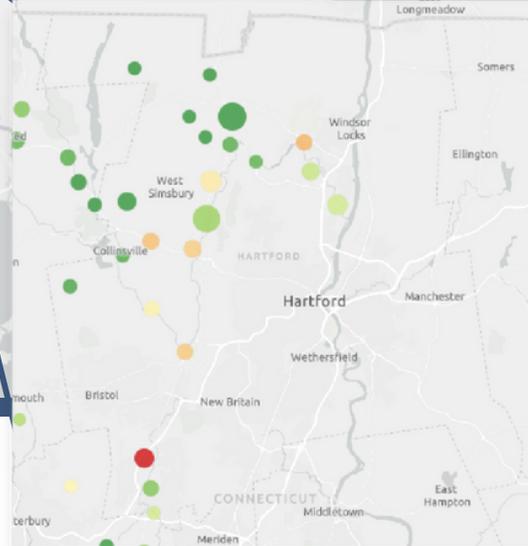
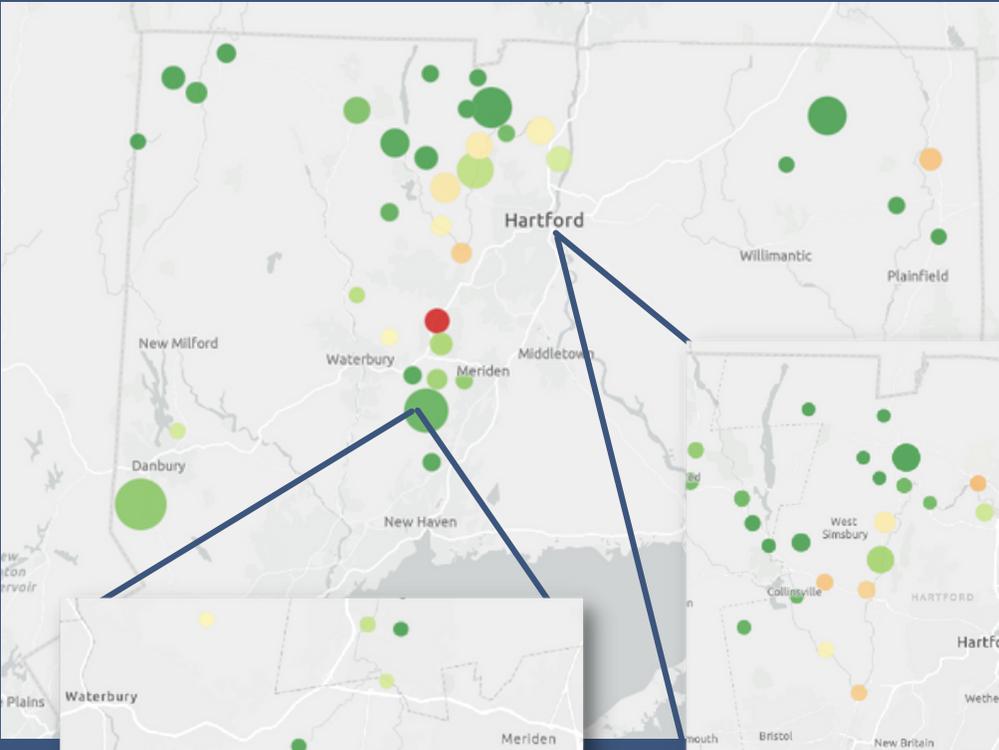
SALT WATCH™

IZAAK WALTON LEAGUE OF AMERICA

CONNECTICUT

Total Chloride Results: 297

- Excellent (0-30ppm): **37%**
- Good (31-100ppm): **50%**
- Poor (101-230ppm): **10%**
- Toxic (231+ppm): **3%**



Connecticut Partners:



Hartford County

137 Total Results

Excellent: **28%**

Good: **48%**

Poor: **19%**

Toxic: **5%**

Cheshire

42 Total Results

Excellent: **33%**

Good: **62%**

Poor: **5%**

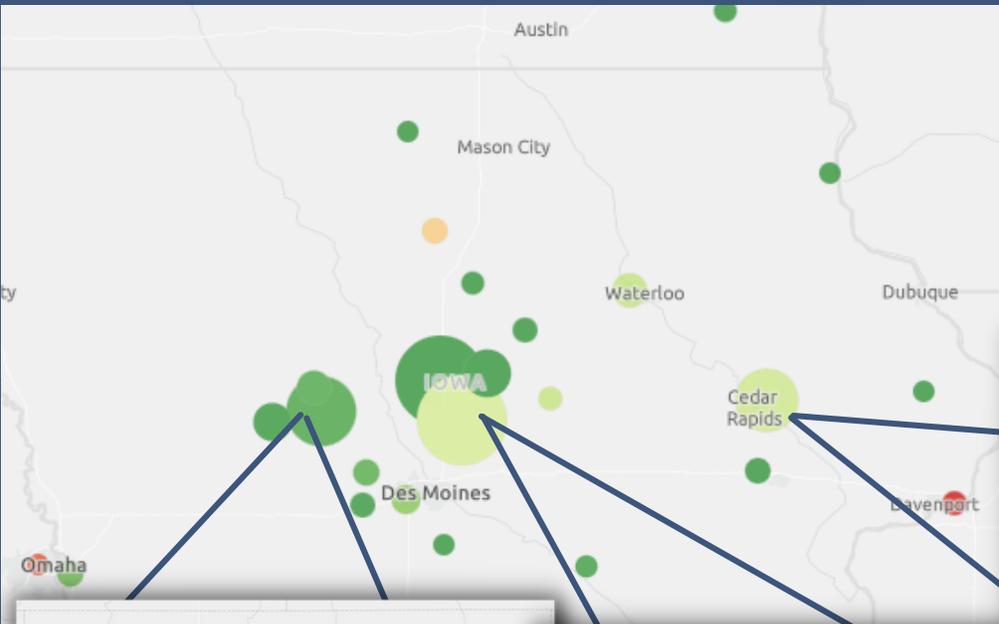
Toxic: **0%**

Farmington River Watershed Association

The Farmington River Watershed Association (FRWA) received grant funding to conduct chloride monitoring in the watershed for the summer of 2022, which allowed for year-round monitoring. Since the watershed was in a severe drought during the summer, low baseflow of waterways resulted in chloride levels that were higher in the summer than the winter! FRWA looks forward to continuing Salt Watch year-round to monitor locations long-term and to develop best management practices to reduce salt pollution.

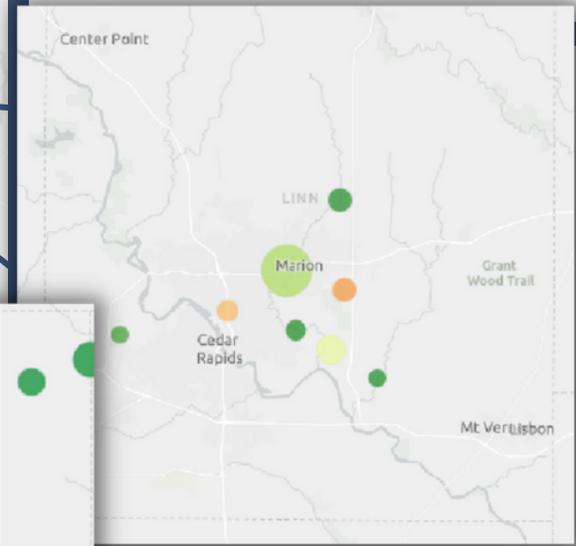
Participating Orgs: 14

IOWA



Total Chloride Results: 872

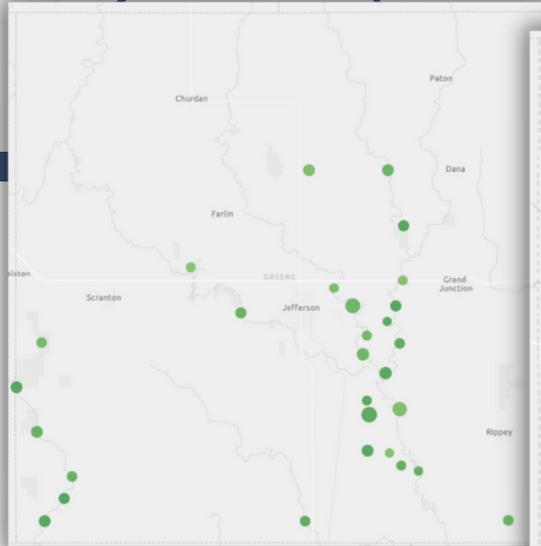
- Excellent (0-30ppm): **40%**
- Good (31-100ppm): **51%**
- Poor (101-230ppm): **6.5%**
- Toxic (231+ppm): **2.5%**



Linn County

63 Total Results

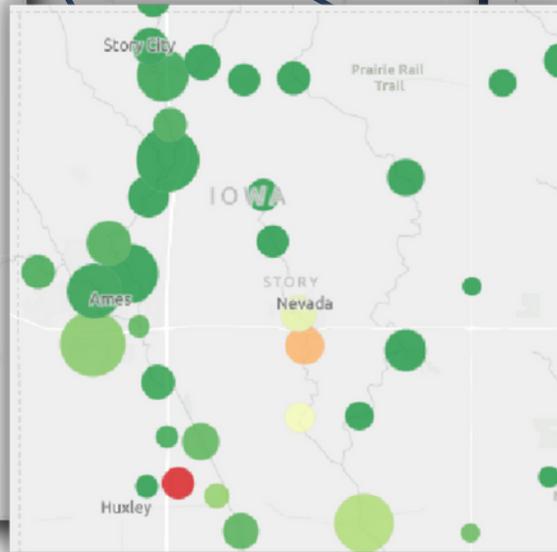
- Excellent: **13%**
- Good: **62%**
- Poor: **17%**
- Toxic: **8%**



Greene County

118 Total Results

- Excellent: **8%**
- Good: **92%**
- Poor: **0%**
- Toxic: **0%**



Story County

540 Total Results

- Excellent: **48%**
- Good: **43%**
- Poor: **6%**
- Toxic: **3%**

Participating Orgs: 13

Thanks to the work of groups like Story County Conservation monitoring throughout the summer, Iowa led the way for most of the year with data submissions!

In the News:

Quad-City Times IOWA NEWS Davenport tests effort to reduce salt on winter roads



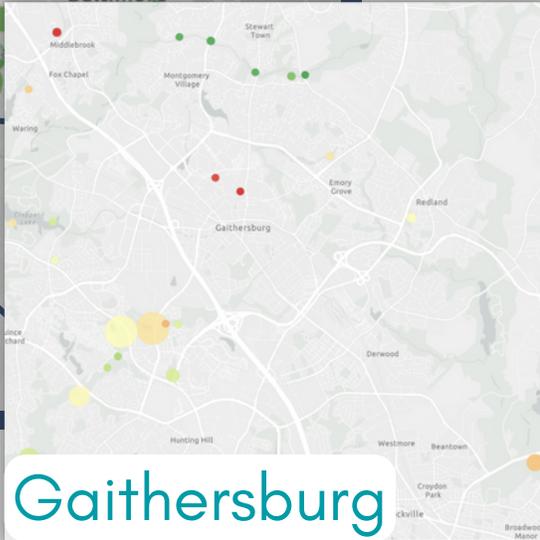
Organization monitoring excess road salt in waterways

MARYLAND

Total Chloride Results: 617

- Excellent (0-30ppm): **9%**
- Good (31-100ppm): **55%**
- Poor (101-230ppm): **33%**
- Toxic (231+ppm): **3%**

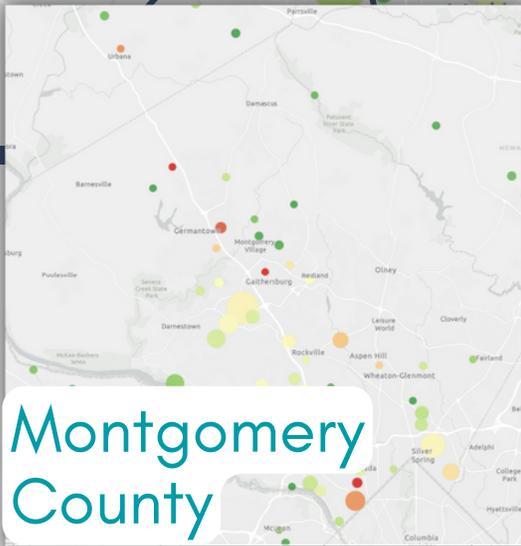
Maryland Partners:



Gaithersburg

170 Total Results

- Excellent: **1%**
- Good: **47%**
- Poor: **51%**
- Toxic: **1%**



Montgomery County

473 Total Results

- Excellent: **4%**
- Good: **50%**
- Poor: **42%**
- Toxic: **4%**

Salt Reduction Bill in Maryland

A bill was submitted in Maryland to require contracted "for hire" salt applicators to take a road salt training and certification program to learn about equipment calibration and road salt best practices. Unfortunately, the bill did not make it out of committee. However, this bill was a big step for Maryland and we can't wait to see what next year brings!

Applicator Training

Maryland Department of the Environment (MDE) is launching a pilot training and certification program for road salt applicators. Salt Watch set this path in motion with our Gaithersburg applicator training and we played a role in the development of MDE's certification program!

Participating Orgs: 74

New Partners:

We welcomed four new Partners in Maryland this year! We're happy to welcome Frostburg State University, Rock Creek Conservancy, Muddy Branch Alliance, and Patapsco Heritage Greenway.

In the News:



A Low-Salt Diet for Our Roads
I Hate Politics Podcast



Salt levels in drinking water could be near tipping point
Virginia professor leads 5-year effort to study problem in Chesapeake states



Road salt: How much is too much?



Road Salt Spreading a Slippery Slope to Water Pollution

GAITHERSBURG SALT WATCH

This year was our second being funded for a focused Salt Watch program in one community with Gaithersburg Salt Watch. It has been a great opportunity for us to learn and apply what we've learned to better help partners across the country make meaningful change in their own communities.

Staff has participated in community events, like farmers markets and a Salt Watch hike--giving out Salt Watch kits and information about chloride runoff to community members. **Over 150 Salt Watch Kits** this season have gone out to school groups and residents in Gaithersburg. We also held our first applicator training for commercial salt applicators to learn how to properly apply road salt on sidewalks and parking lots while becoming "Smart Salt Certified."

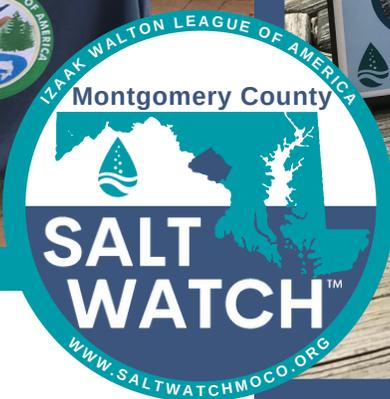
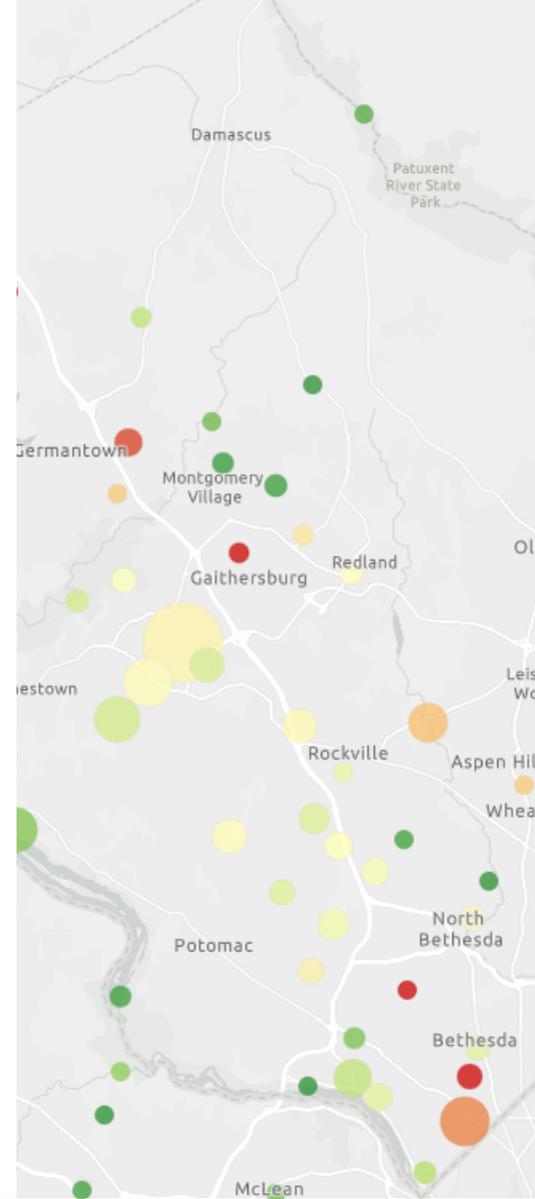
Learn more about Gaithersburg Salt Watch at www.saltwatchgaithersburg.org. Special thanks to the Chesapeake Bay Trust in partnership with the City of Gaithersburg for funding this project.



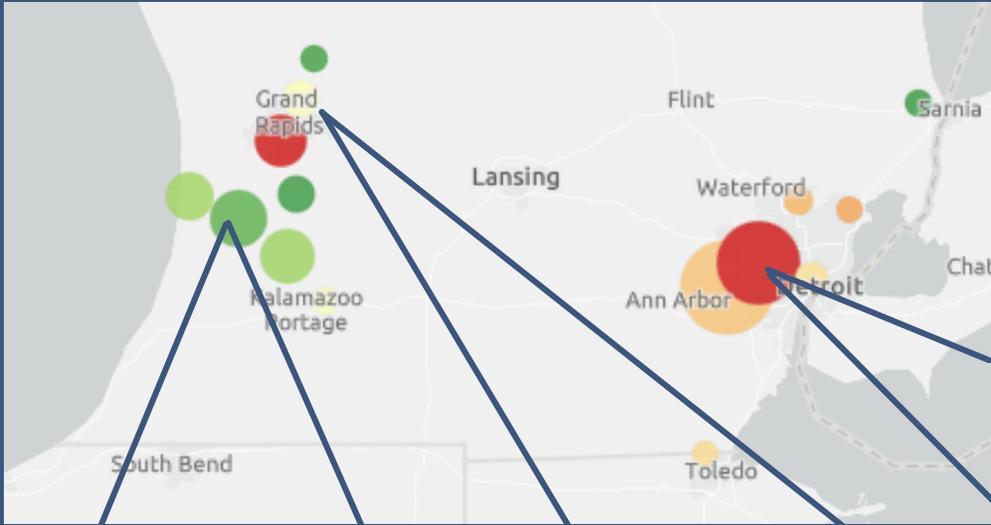
MOCO SALT WATCH

This year was our first being funded for a focused Salt Watch program across Montgomery County (MoCo), Maryland. It has been a great opportunity for us to work with new partners and groups across the county interested in reducing road salt pollution. We want to see what we can learn from Montgomery County to help partners across the country make meaningful change in their own communities.

Staff has participated in community events, like farmers markets and festivals, giving out Salt Watch kits and information about chloride runoff to community members. We have even translated our informational materials and Kits to Spanish to reach additional groups. **Over 400 Salt Watch Kits** this season have gone out to school groups and residents in MoCo. Learn more about MoCo Salt Watch at www.saltwatchmoco.org. Special thanks to the Chesapeake Bay Trust in partnership with the Montgomery County DEP for funding this project.

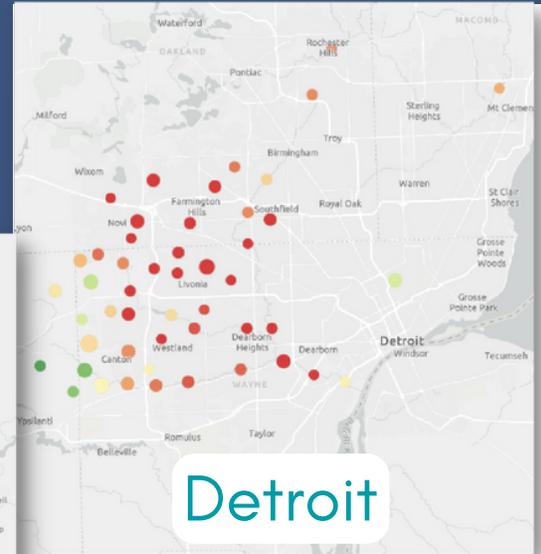


MICHIGAN



Total Chloride Results: 336

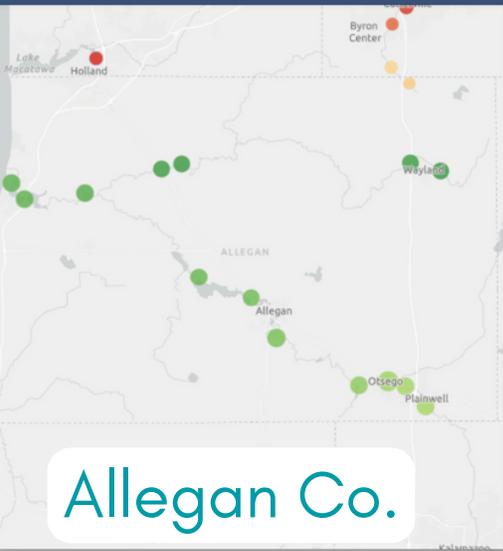
- Excellent (0-30ppm): **9%**
- Good (31-100ppm): **43%**
- Poor (101-230ppm): **21%**
- Toxic (231+ppm): **27%**



Detroit

167 Total Results

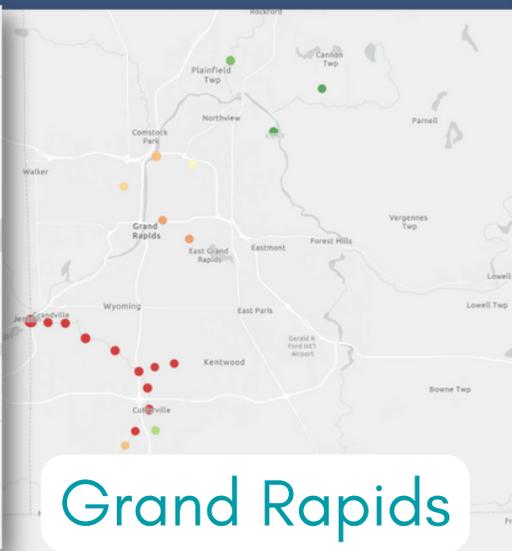
- Excellent: **3%**
- Good: **23%**
- Poor: **32%**
- Toxic: **42%**



Allegan Co.

112 Total Results

- Excellent: **17%**
- Good: **82%**
- Poor: **1%**
- Toxic: **0%**



Grand Rapids

46 Total Results

- Excellent: **7%**
- Good: **17%**
- Poor: **30%**
- Toxic: **46%**

Participating Orgs: 27

Michigan Partners:



In the News:



Volunteers find high road salt levels in Michigan waterways



HERE ARE 3 POTENTIAL ALTERNATIVES TO USING ROAD SALT IN MICHIGAN



Volunteers find high road salt levels in Michigan waterways

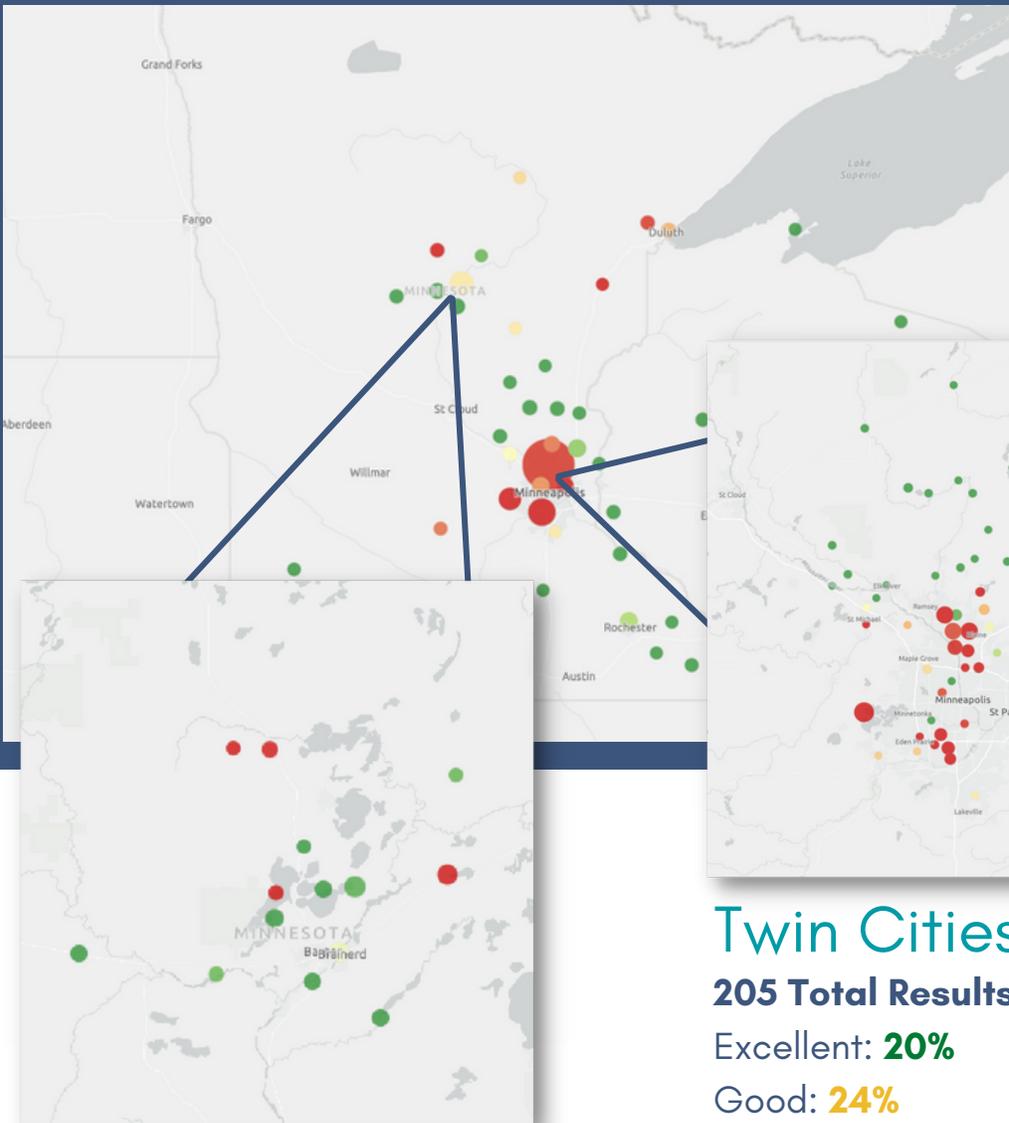


Volunteers find high road salt levels in Michigan waterways



Volunteers find high road salt levels in Michigan waterways

MINNESOTA



Total Chloride Results: 332



**Participating
Orgs: 30**

**Minnesota
Partners:**



Twin Cities

205 Total Results

Excellent: **20%**

Good: **24%**

Poor: **21%**

Toxic: **35%**

Brainerd

52 Total Results

Excellent: **72%**

Good: **13%**

Poor: **4%**

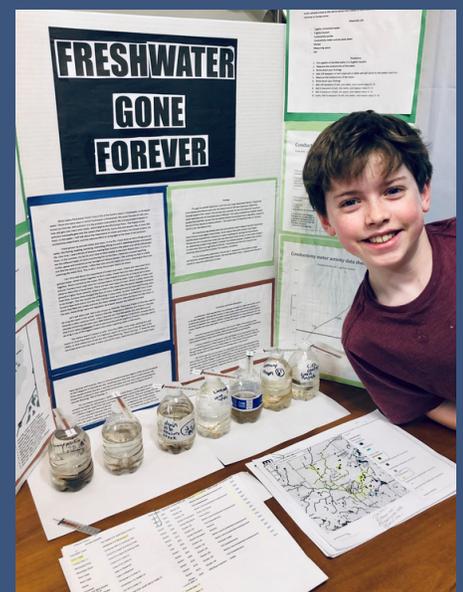
Toxic: **11%**

Bill in Minnesota

A bill was submitted in Minnesota to offer free limited liability protection to road salt applicators who pass an applicator training program use best practices. Unfortunately, work on the bill was paused in 2023, so it did not pass. The bill's sponsor plans to work on the bill over the interim and bring it back next year!

New Partner

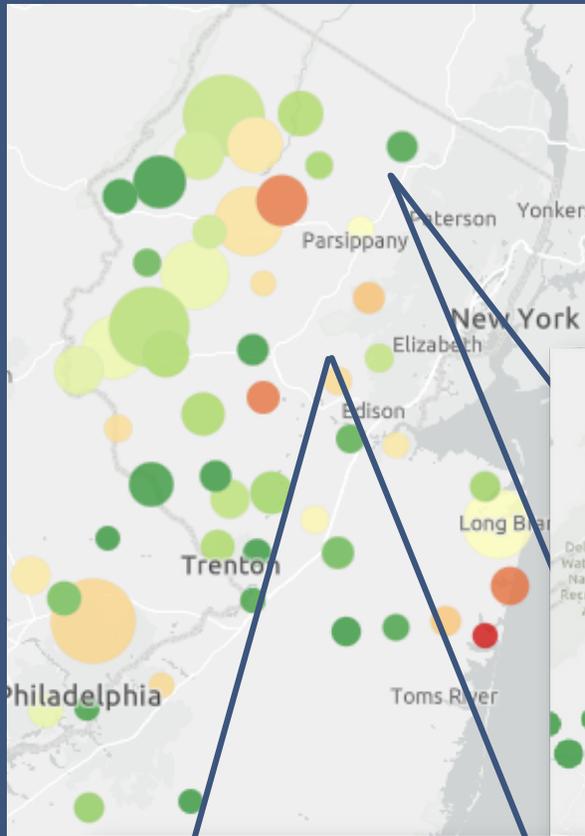
We're excited to add the Carver County Water Management Organization as an Official Salt Watch Partner this year!



Science Fair Project

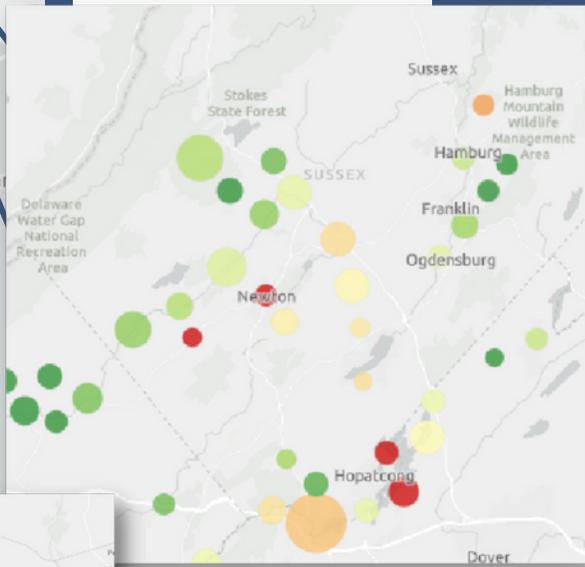
One of our Salt Watchers used Salt Watch as part of his 5th grade science fair project!

NEW JERSEY



Total Chloride Results: 1,030

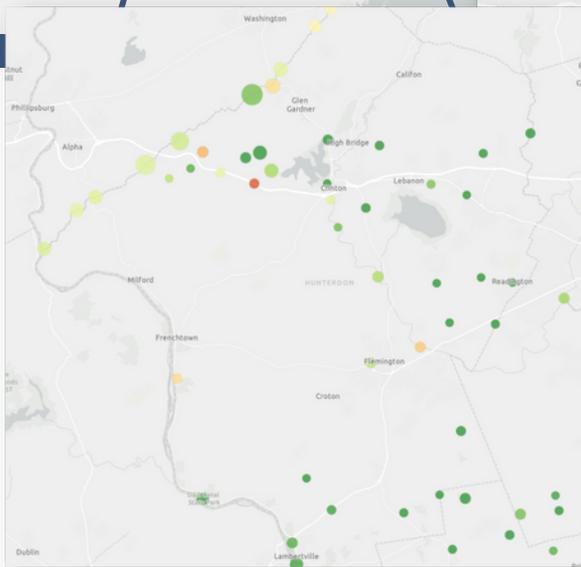
- Excellent (0-30ppm): **18%**
- Good (31-100ppm): **54%**
- Poor (101-230ppm): **23%**
- Toxic (231+ppm): **15%**



Sussex Co.

269 Total Results

- Excellent: **15%**
- Good: **46%**
- Poor: **34%**
- Toxic: **5%**



Hunterdon Co.

285 Total Results

- Excellent: **20%**
- Good: **60%**
- Poor: **18%**
- Toxic: **2%**

**New Jersey
Partner:**

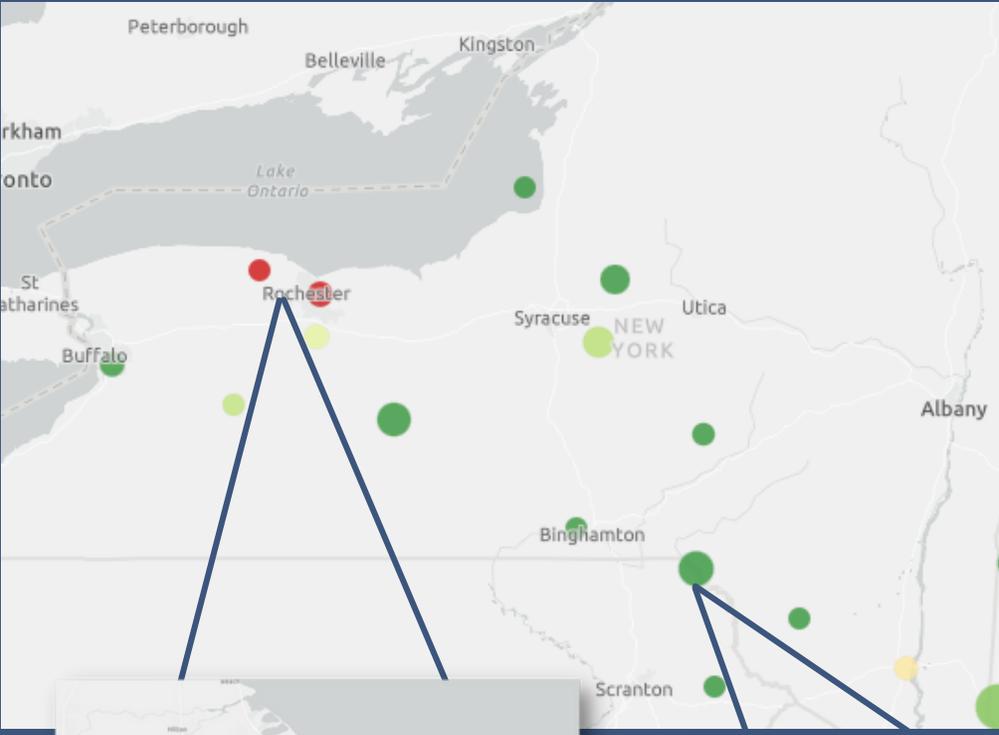


New Jersey Watershed Watch Network

Thanks to our partner, New Jersey Watershed Watch Network, New Jersey had the highest number of data submissions out of any state!

Participating Orgs: 8

NEW YORK

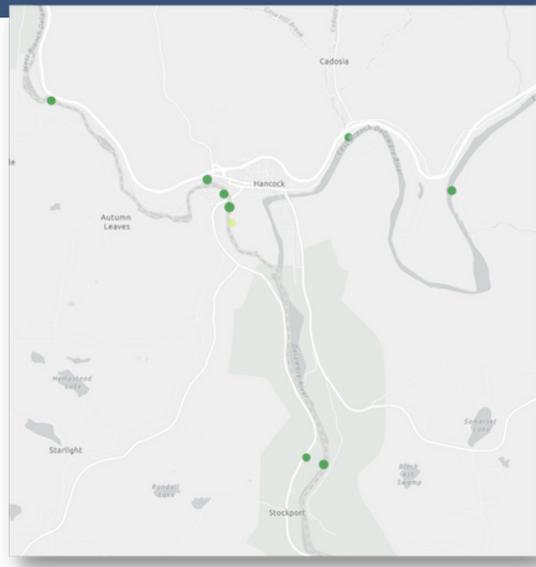


Total Chloride Results: 82

- Excellent (0-30ppm): **64%**
- Good (31-100ppm): **23%**
- Poor (101-230ppm): **7%**
- Toxic (231+ppm): **6%**

New York Partners:

Participating Orgs: 20



Rochester

12 Total Results

- Excellent: **8%**
- Good: **33%**
- Poor: **17%**
- Toxic: **42%**

Hancock

20 Total Results

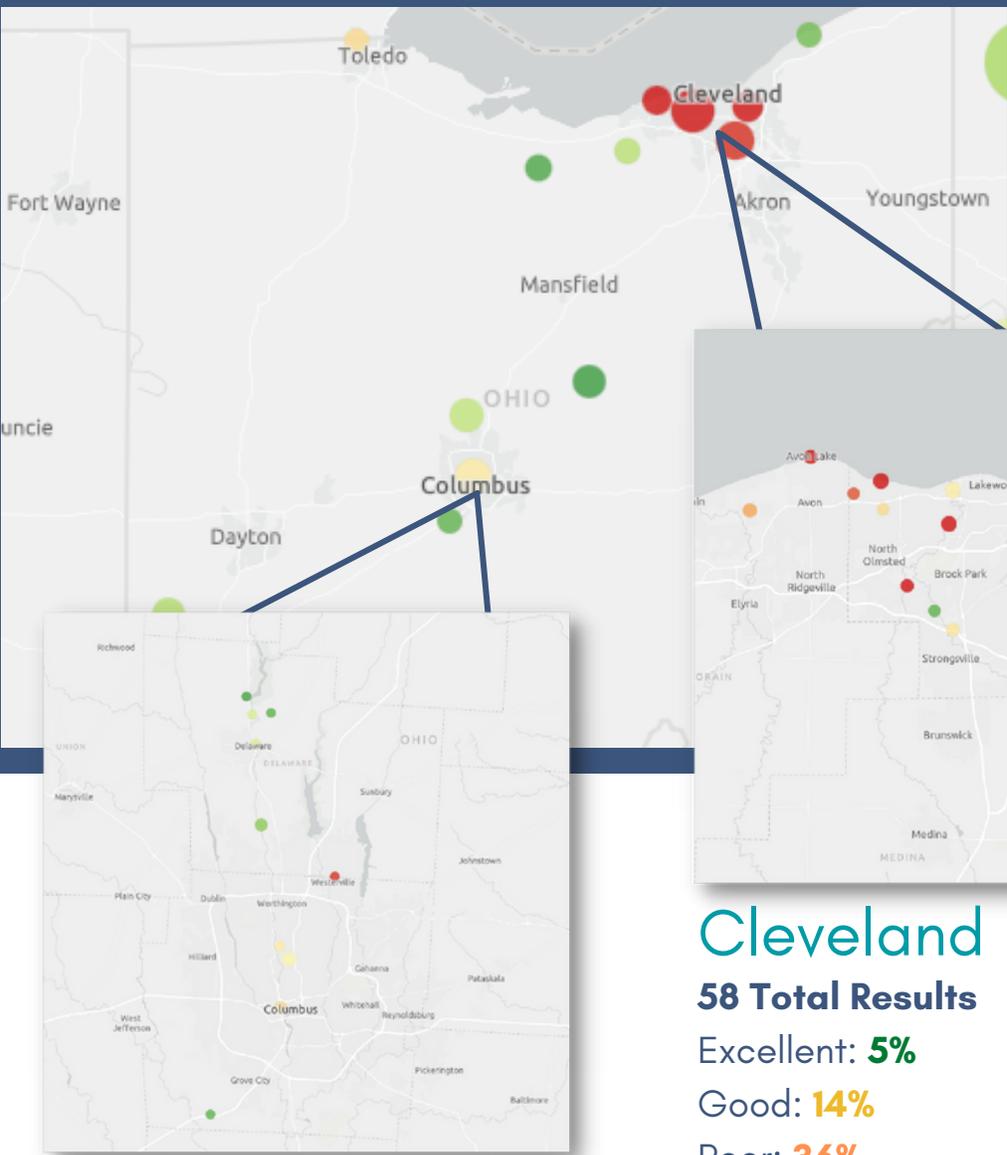
- Excellent: **90%**
- Good: **10%**
- Poor: **0%**
- Toxic: **0%**

We've had increased engagement in New York this year!

Thanks to a news broadcast in Rochester and an increase of participating organizations monitoring with Salt Watch for the first time, New York is becoming more engaged in monitoring for road salt pollution!

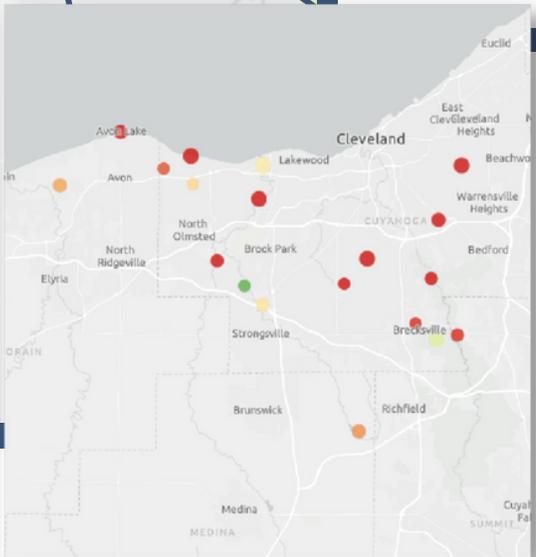
In the News:

OHIO



Total Chloride Results: 112

- Excellent (0-30ppm): **7%**
- Good (31-100ppm): **41%**
- Poor (101-230ppm): **28%**
- Toxic (231+ppm): **24%**



Cleveland

58 Total Results

- Excellent: **5%**
- Good: **14%**
- Poor: **36%**
- Toxic: **45%**

Columbus

28 Total Results

- Excellent: **0%**
- Good: **68%**
- Poor: **28.5%**
- Toxic: **3.5%**

Ohio Partners:



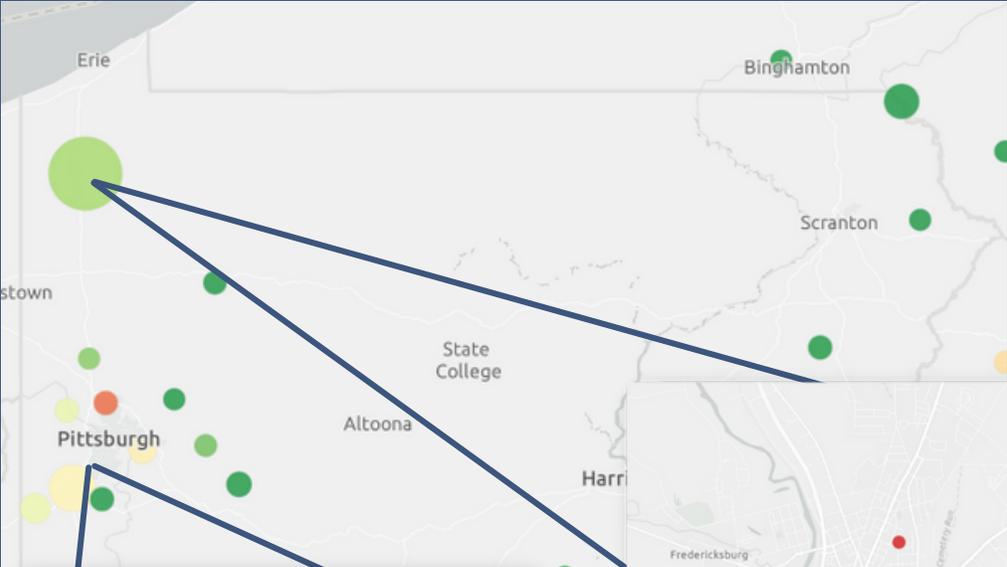
New Official Partners

We're excited to have new Official Salt Watch Partners in Ohio this year! We've already had a lot of involvement in Cleveland already and are excited to see where Season of Salt Watch 7 takes us!

Participating Orgs: 10

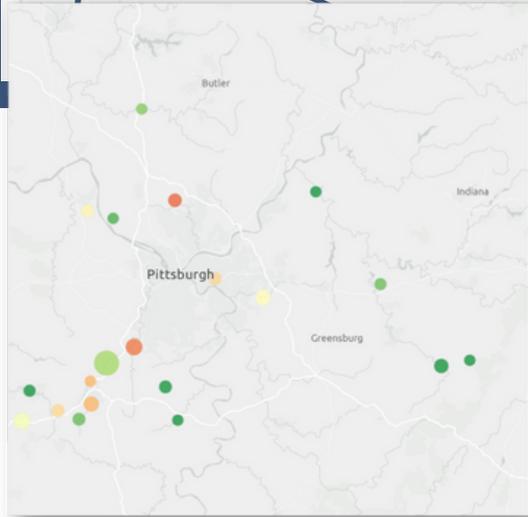
Many of our Ohio Partners have big ideas for the upcoming season and will officially kick off in Fall 2023. We're thankful for their partnership and look forward to learning more about chloride levels in waterways throughout Ohio and helping communities become more mindful in their road salting practices.

PENNSYLVANIA



Total Chloride Results: 329

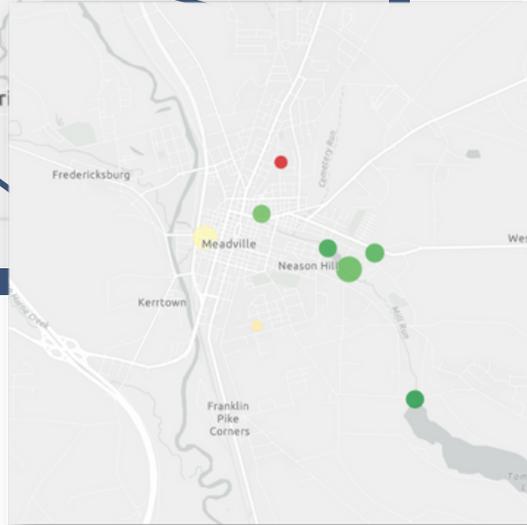
- Excellent (0-30ppm): **21%**
- Good (31-100ppm): **49%**
- Poor (101-230ppm): **25%**
- Toxic (231+ppm): **5%**



Pittsburgh

82 Total Results

- Excellent: **33%**
- Good: **37%**
- Poor: **19%**
- Toxic: **11%**



Meadville

76 Total Results

- Excellent: **16%**
- Good: **74%**
- Poor: **7%**
- Toxic: **4%**

Pennsylvania Partners:

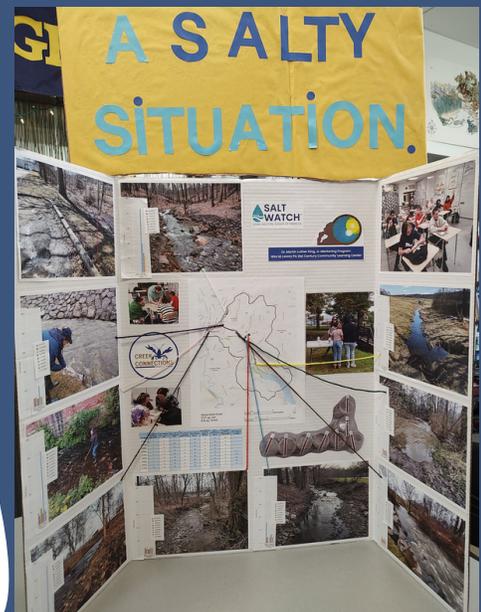


Participating Orgs: 80

Happenings in PA

Allegheny College's Creek Connections engaged school students throughout Crawford County and some students presented their findings in the Creek Connections Student research Symposium! (Photo: Right)

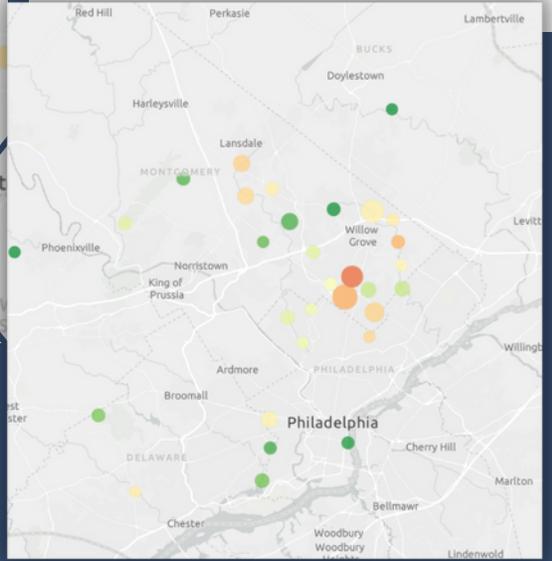
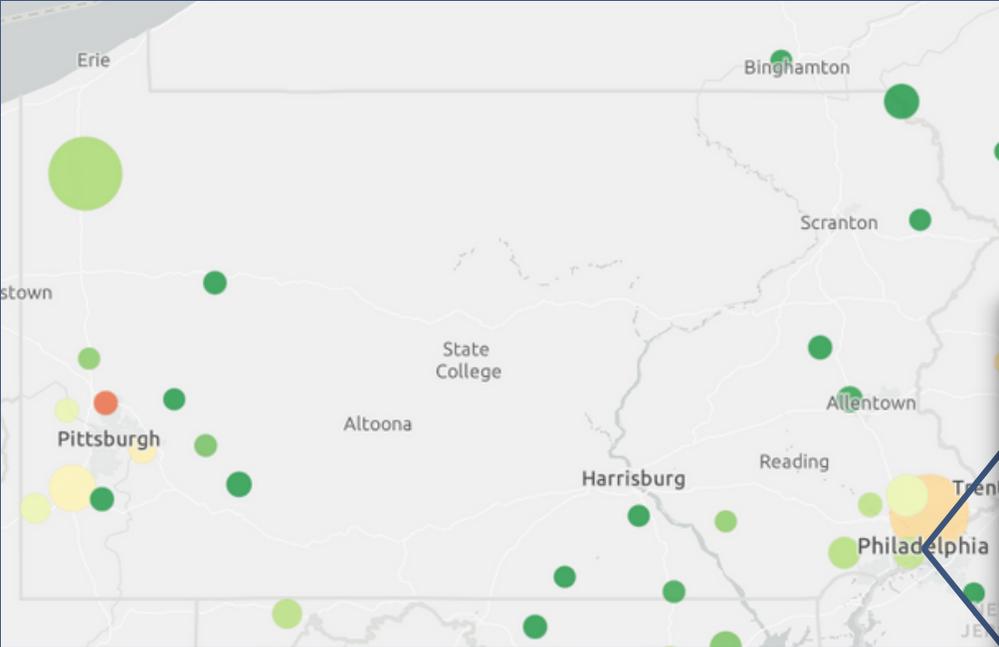
Salt Watch at the Lehigh Valley Watershed Association Conference.



PHILADELPHIA, PENNSYLVANIA

Total Chloride Results: 148

- Excellent (0-30ppm): **7%**
- Good (31-100ppm): **49%**
- Poor (101-230ppm): **40%**
- Toxic (231+ppm): **4%**



Partner Highlights



Salt is a problem in the Tookany-Tacony-Frankford watershed

- Most TTF streams are contaminated with salt
- Salt levels in local streams are 10-30 times higher than natural levels, even in the summer. During winter storms, levels rise to 50-100 times higher than natural (TTF and USGS)

SAVE OUR STREAMS FROM ROAD SALT

The amount of salt in TTF streams is shocking

11,000+ TONS of salt applied by humans flow through the watershed every year

30+ TONS PER DAY

A problem across the world

- An invisible freshwater pollutant - salt - has increased at least 2-4 times in the last 50 years in many places
- Road salt use has more than doubled since the 1970s, and is the main cause of the salt increase in our region
- Road salt dissolves in water and enters streams quickly via runoff from roads and parking lots, and slowly enters into the soil and groundwater
- Even though the problem is getting worse, solutions need to be balanced with safety and economic concerns

Salt (as chloride) in TTF streams

Map includes all available data from 2014-2022, collected by TTF volunteers at 140 sites and data from monitoring sites in the Susquehanna and Delaware River basins. Legend and full color-coded stream monitoring by TTF volunteers and the US Geological Survey (Stations 9 01427084 and 01427087). This is a dynamic map, where are updated with each sampling event.

*Color representation is an estimate based off of data points. This map was created in conjunction with Stream Water Research Center.

Monitoring Blitz

Pennypack Ecological Restoration Trust and Tookany/Tacony-Frankford Watershed have been actively collecting Salt Watch readings, starting conversations with stakeholders, and advocating for smarter salting practices in their region. TTF Watershed even hosted two chloride blitzes in 2022, where volunteers collected many samples across a geographic region in one day to get a better picture of the watershed's health. You can read the [report of the blitzes here!](#)

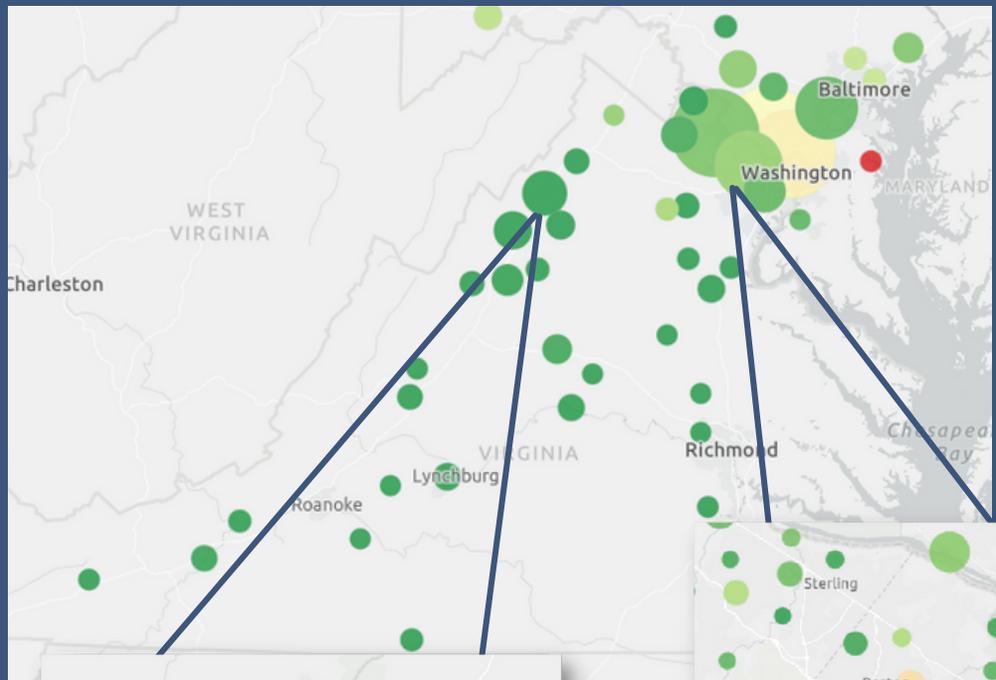
Year-Round Monitoring

One monitor in Philadelphia keeps finding high chloride levels year-round (usually at or over 200ppm)! The lowest levels of the season were 81ppm. Groundwater contamination in the region from over salting events, uncovered salt piles, and other sources are likely causes of the excess chloride.



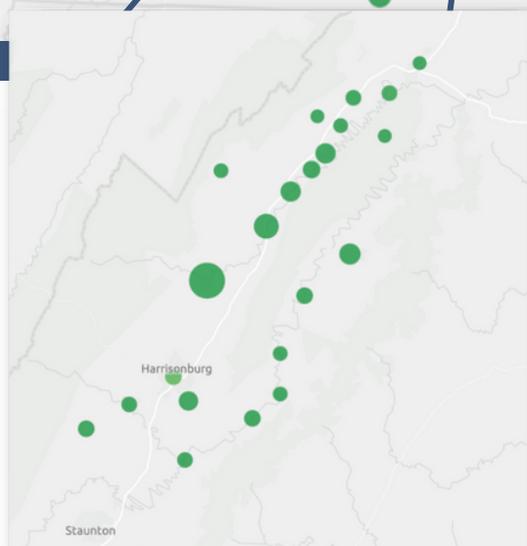
#SaltWatch Date:09/13/2022 Reading: 2.8 Rock Creek at Curtis Arboretum. Huge rainfall overnight. This may possibly be our lowest reading ever at this site.

VIRGINIA



Total Chloride Results: 485

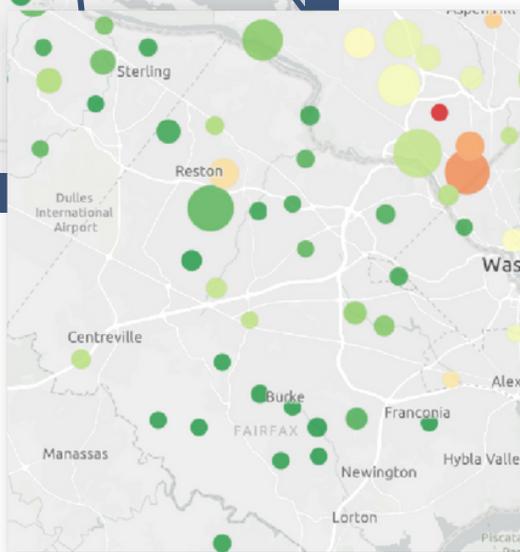
- Excellent (0-30ppm): **55%**
- Good (31-100ppm): **42%**
- Poor (101-230ppm): **2%**
- Toxic (231+ppm): **1%**



North Fork Shenandoah

114 Total Results

- Excellent: **82%**
- Good: **18%**
- Poor: **0%**
- Toxic: **0%**



Reston

96 Total Results

- Excellent: **39%**
- Good: **52%**
- Poor: **7%**
- Toxic: **2%**

Virginia Partners:



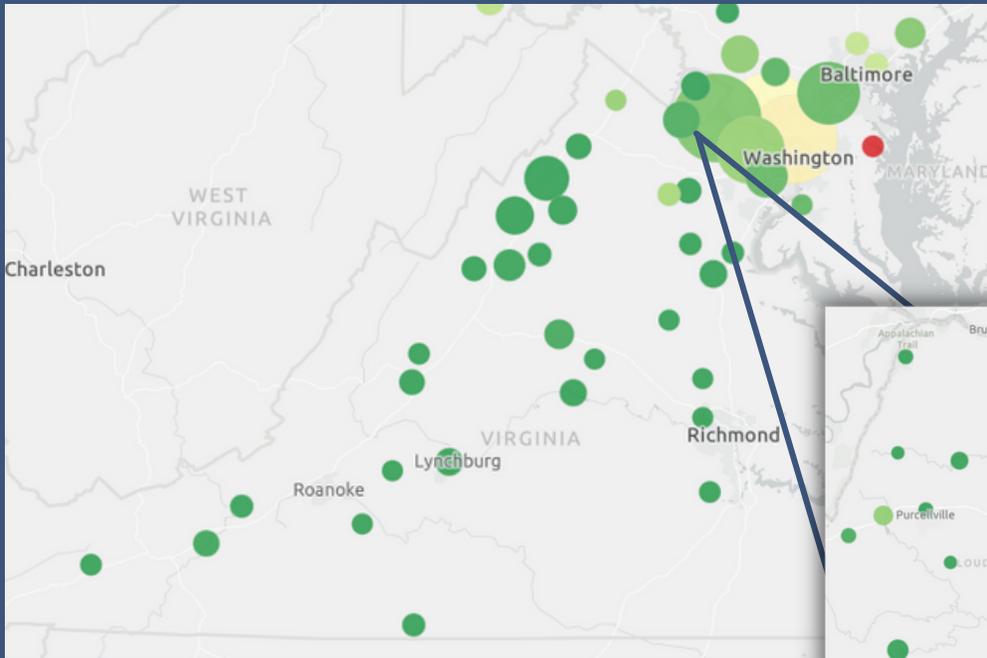
School Engagement:

This year, we have seen a remarkable number of school engagements in Virginia! A teacher at the Massanutten Regional Governor's School has his students monitoring 40 sites near their school and communities with some help from our Partners at Friends of the North Fork!

We also had a student do a Salt Watch study as part of a Youth Conservation Leadership Institute project!

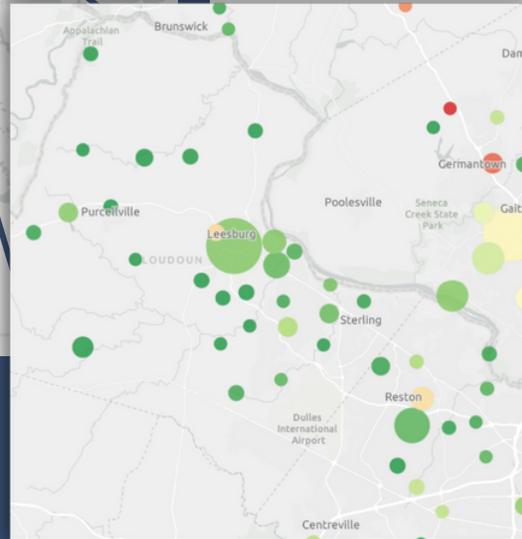
Participating Orgs: 58

LOUDOUN COUNTY, VIRGINIA



Total Chloride Results: 169

- Excellent (0-30ppm): **32%**
- Good (31-100ppm): **65%**
- Poor (101-230ppm): **2%**
- Toxic (231+ppm): **1%**



Partner Highlight



Salt Watch Monitoring

From nine volunteers and fourteen sites to now over 50 sites monitored by around 40 volunteers, Loudoun Wildlife Conservancy has been making huge bounds in their monitoring program thanks to Amy Ulland's leadership in the voluntary position of Stream Monitoring Program Coordinator for Loudoun Wildlife.

Loudoun Wildlife plans to use the chloride data collected to create future action by reaching out to businesses and HOA's nearby to sites with high chloride levels in hopes of educating them in smart salting practices while maintaining safety in the winter. Read more about [Amy's journey in her blog entry!](#)

Environmental Excellence Award

In April, Loudoun Wildlife Conservancy's Stream Monitoring Program was awarded an Environmental Excellence Award for demonstrating leadership on environmental issues. For Loudoun Wildlife, that meant conducting a year-long project focused on testing for *E.coli* contamination, informing the community about the contamination, and empowering the community to take action. [Read more about the project here!](#)

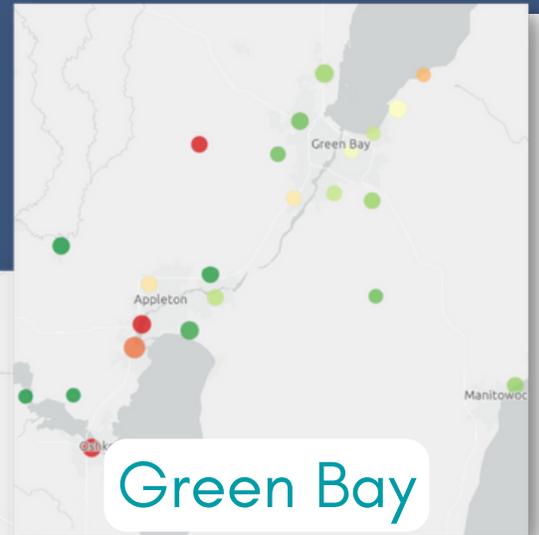


WISCONSIN



Total Chloride Results: 250

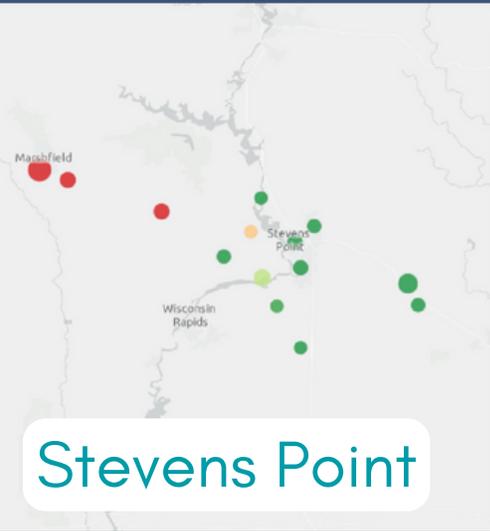
- Excellent (0-30ppm): **36%**
- Good (31-100ppm): **40%**
- Poor (101-230ppm): **13%**
- Toxic (231+ppm): **11%**



Green Bay

88 Total Results

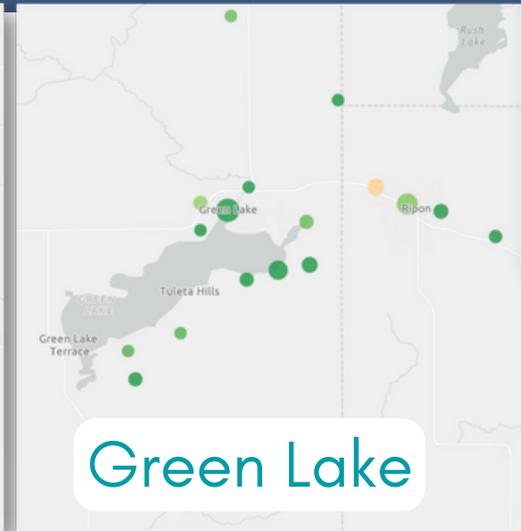
- Excellent: **29%**
- Good: **47%**
- Poor: **15%**
- Toxic: **9%**



Stevens Point

49 Total Results

- Excellent: **39%**
- Good: **18%**
- Poor: **10%**
- Toxic: **33%**



Green Lake

69 Total Results

- Excellent: **39%**
- Good: **54%**
- Poor: **6%**
- Toxic: **1%**

Participating Orgs: 33

Wisconsin Partners:



Bill in Wisconsin

A bill was submitted in Wisconsin to offer free limited liability protection to applicators who pass an applicator training program and maintain due diligence while reducing their salt use.