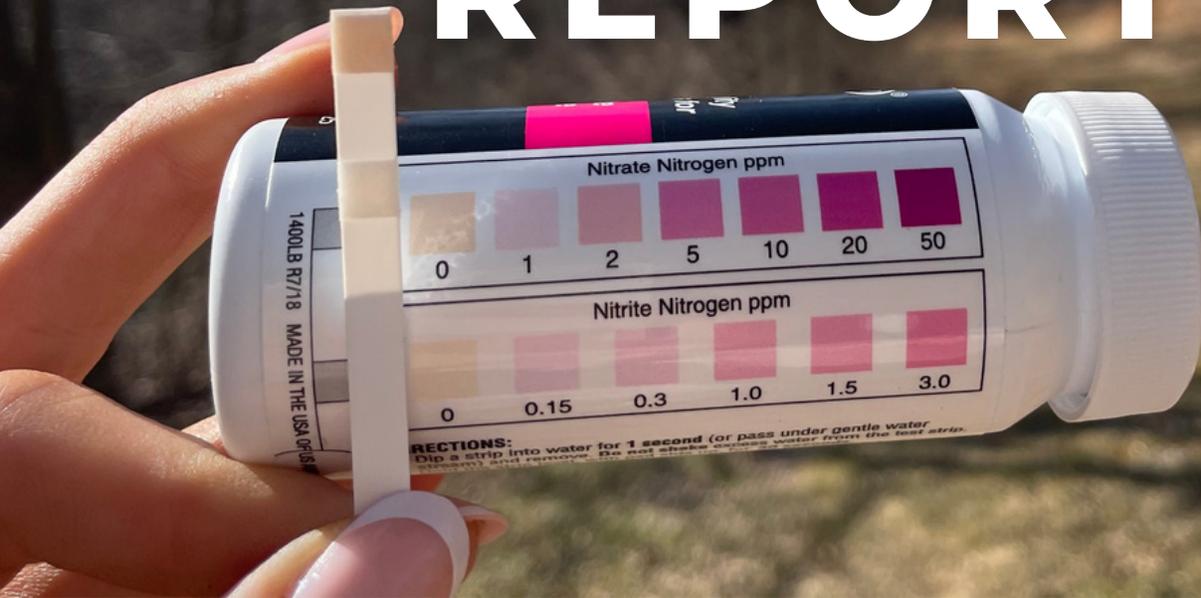


2023

ANNUAL REPORT



www.nitratewatch.org
nitratewatch@iwla.org



Nitrate Watch is a crowd-sourced community science project of the Izaak Walton League of America. This program mobilizes volunteers across the country to monitor nitrate levels in the waterways they care about.

THE GOALS OF NITRATE WATCH ARE...

- **Raise awareness** about the impacts of nitrate on the environment and human health.
- **Identify hotspots** of nitrate pollution.
- **Advocate for solutions** that reduce nutrient pollution.

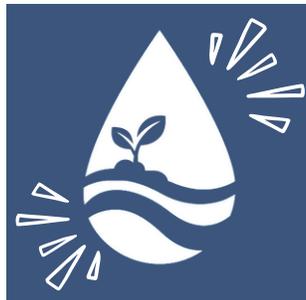
Launched on February 1, 2023, this program has made an impressive splash in just under one year! We've sent kits to over 1,000 volunteers who have reported over 4,000 nitrate readings at sites in 33 states. We are excited to see the engagement this program has inspired in its inaugural year!

In this report, we'll outline the results and participation that Nitrate Watch has seen in 2023 and take a look ahead toward goals for years to come.

Questions about this report? Email nitratewatch@iwla.org

2023 BY THE NUMBERS

1,035
kits sent
to volunteers



4,085
nitrate readings
reported

\$17,900 contributed by
individual donors

700+



people reached via
presentations and tabling

3 webinars with
the experts

33 states
reporting data

6 fact sheets
created



OUR PARTNERS

We are grateful for our dedicated cohort of partner organizations. These organizations are spreading the word, reporting data, and advocating for reduced nitrate pollution in their local communities.

In addition to our official partners, Nitrate Watch volunteers represent **278 organizations** across the country.



[View an interactive map of partners and participating organizations.](#)

Interested in become a Nitrate Watch partner organization?
Email us at nitratewatch@iwla.org.



OUR VOLUNTEERS

It goes without saying that Nitrate Watch wouldn't be possible without a collection of motivated volunteer monitors. These volunteers, whether they participate independently or as part of an organized monitoring effort, are the backbone of Nitrate Watch.

When requesting a Nitrate Watch kit, volunteers are asked how they plan to make a difference about nitrate pollution in their community, beyond monitoring. Here are some of their responses:

Actively monitor streams for changes over a long period of time to help inform local authorities of issues as they arise

Planting cover crops on my fields

Teaching my students about the importance of reducing nitrogen levels in freshwater systems

Advocating for conservation programs that reduce ag nitrogen use and that promote regenerative ag practices

Sharing the results with the public and state officials

Writing a letter to the editor of my local newspaper

Encouraging others to monitor.

Educating neighbors about lawn fertilizers, run off, and how it effects streams and waterways

Offering programs to the public that discuss the issues with nitrate in waterways and share the data on Clean Water Hub to promote discussion about solutions in the local community.

RESULTS

In this section we will summarize nitrate data reported by volunteers across the country in 2023. This includes readings reported by **Nitrate Watch** volunteers as well as volunteers who participate in **Save Our Streams Chemical monitoring**. In addition to summarizing nationwide findings, we'll zoom in and isolate the results for regions that reported at least 75 nitrate readings.

Nitrate Watch data is reported by volunteers on the Clean Water Hub water quality database. To view and/or download Nitrate Watch data, visit www.cleanwaterhub.org.



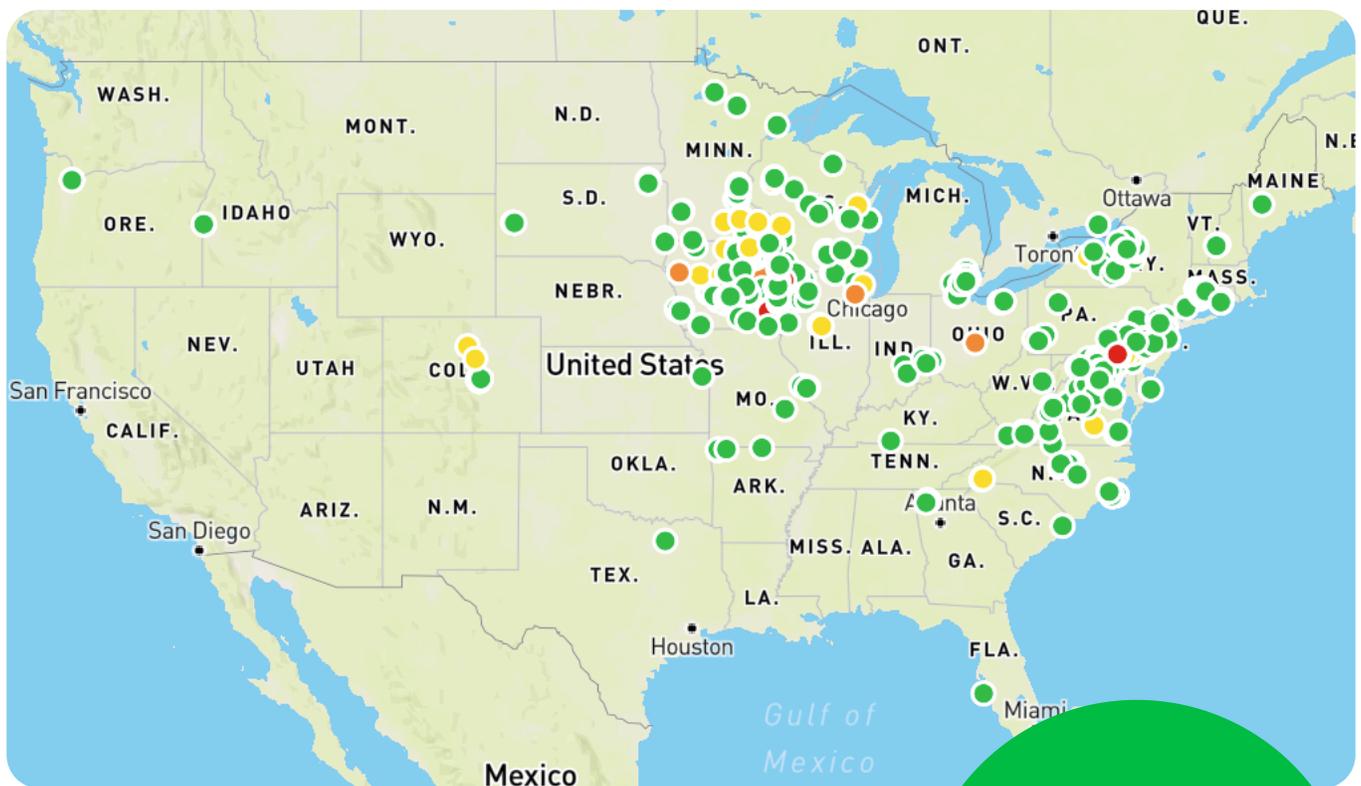
SURFACE WATER & DRINKING WATER

Nitrate Watch volunteers monitor water sources that can be grouped into two categories:

- **Surface Water** includes water from small streams/creeks, rivers, lakes, ponds/wetlands, and drainage/outlet pipes.
- **Drinking Water** includes water from private groundwater wells and public drinking water systems

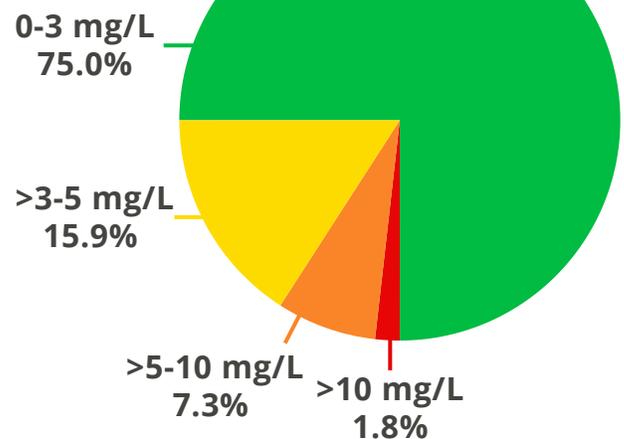
RESULTS

NATIONWIDE

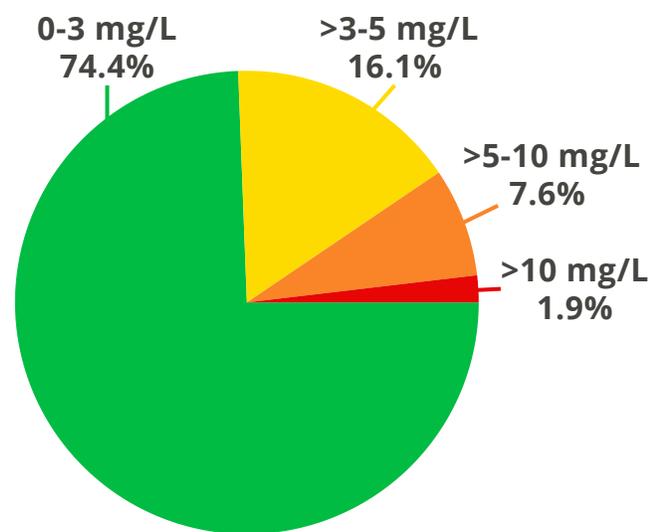
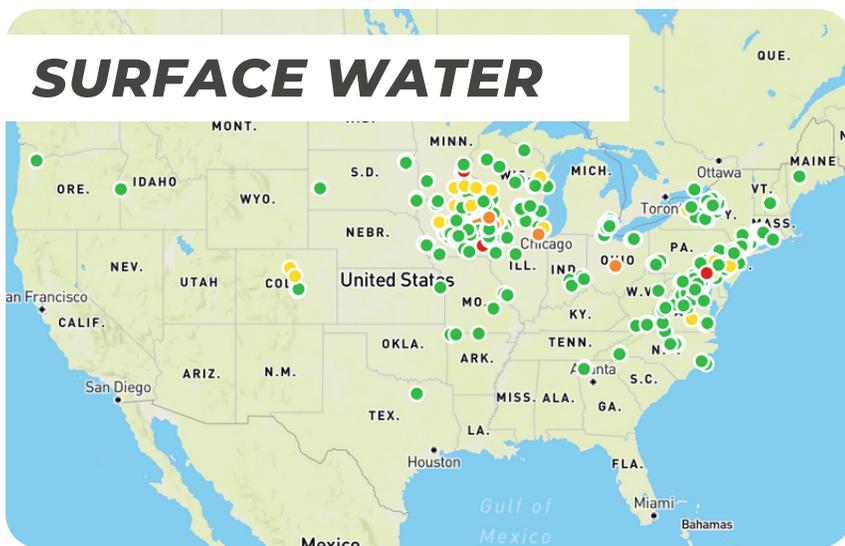


Total nitrate readings: **4085**

- 0-3 mg/L: **3064**
- >3-5 mg/L: **649**
- >5-10 mg/L: **299**
- >10 mg/L: **73**



RESULTS NATIONWIDE



There is no national standard for nitrate in surface water. A typical range for nitrate in a stream is 0-3 mg/L.

Excess nitrate in surface water contributes to:

- algae blooms
- fish kills
- hypoxia/dead zones
- contaminated drinking water sources

Total nitrate readings: **3895**

● 0-3 mg/L:	2898
● >3-5 mg/L:	628
● >5-10 mg/L:	296
● >10 mg/L:	73

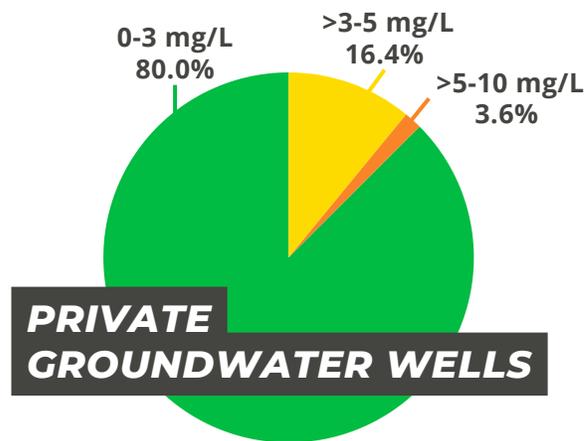
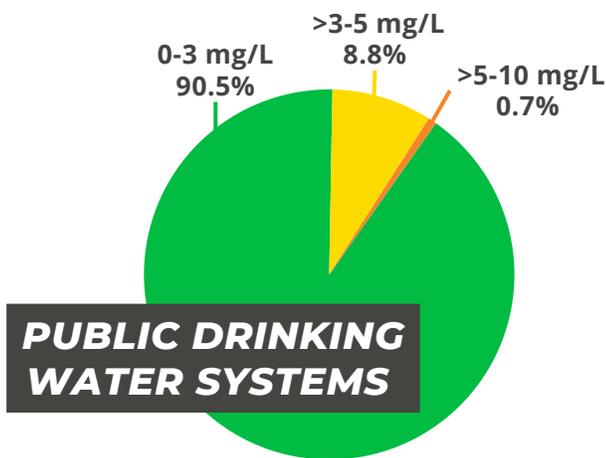
RESULTS NATIONWIDE



Total nitrate readings: **190**

- 0-3 mg/L: **166**
- >3-5 mg/L: **21**
- >5-10 mg/L: **3**
- >10 mg/L: **0**

The EPA mandates that the maximum nitrate concentration for drinking water is 10 mg/L. Well water is not subject to this regulatory standard.

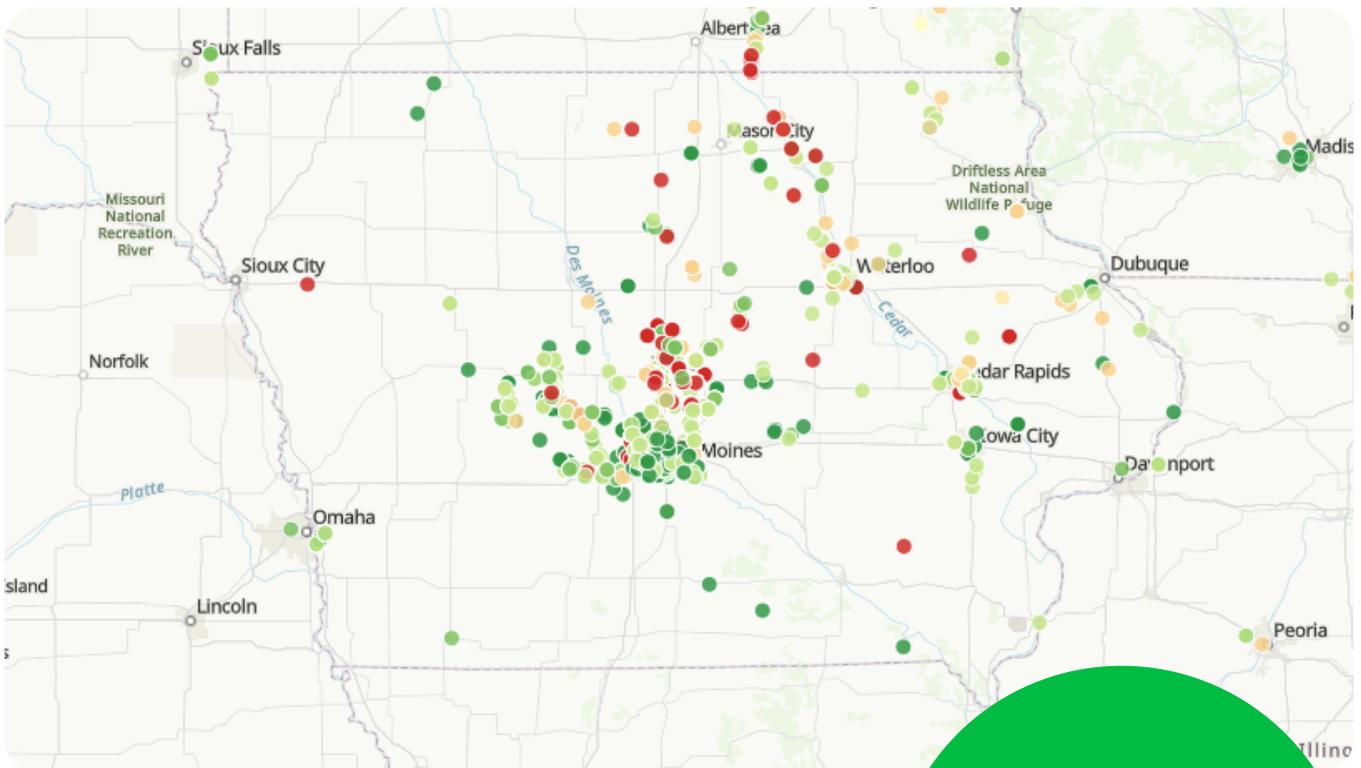


Research indicates that a drinking water standard of 10 mg/L may not be sufficiently protective of human health. Adverse health effects have been observed with prolonged exposure to drinking water containing nitrate concentrations of 5 mg/L, or even less.



RESULTS

IOWA



Total nitrate readings: **2733**

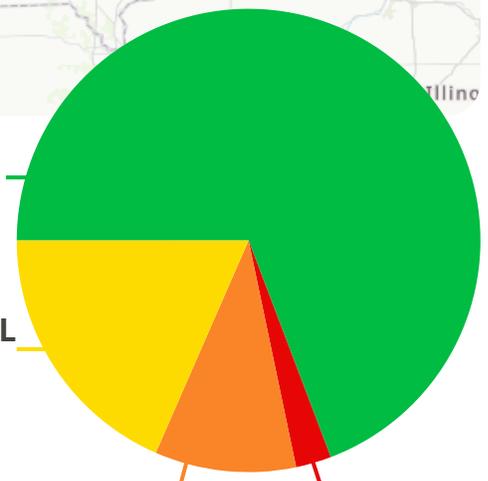
- 0-3 mg/L: **1899**
- >3-5 mg/L: **506**
- >5-10 mg/L: **270**
- >10 mg/L: **68**

0-3 mg/L
69.1%

>3-5 mg/L
18.5%

>5-10 mg/L
9.9%

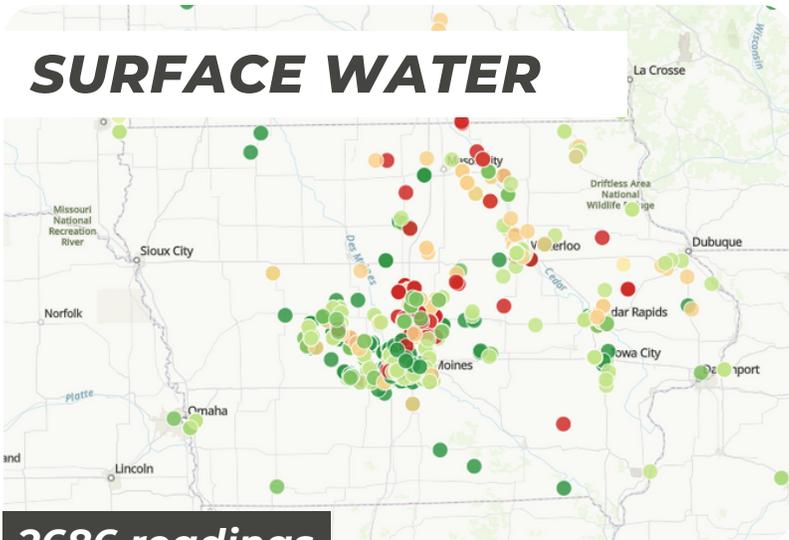
>10 mg/L
2.5%



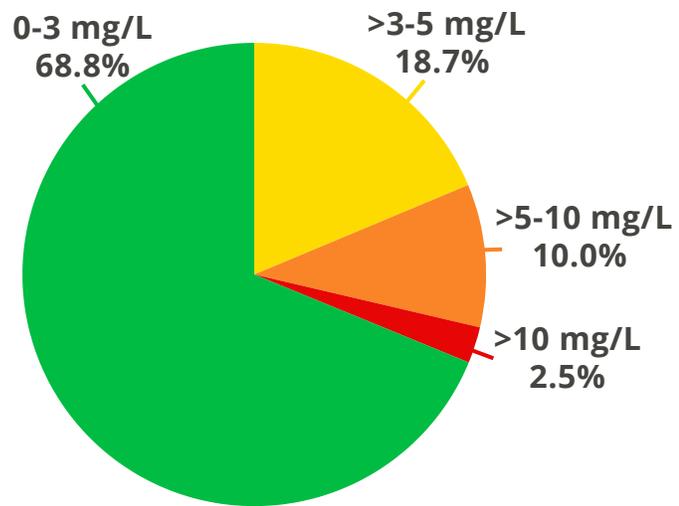
RESULTS

IOWA

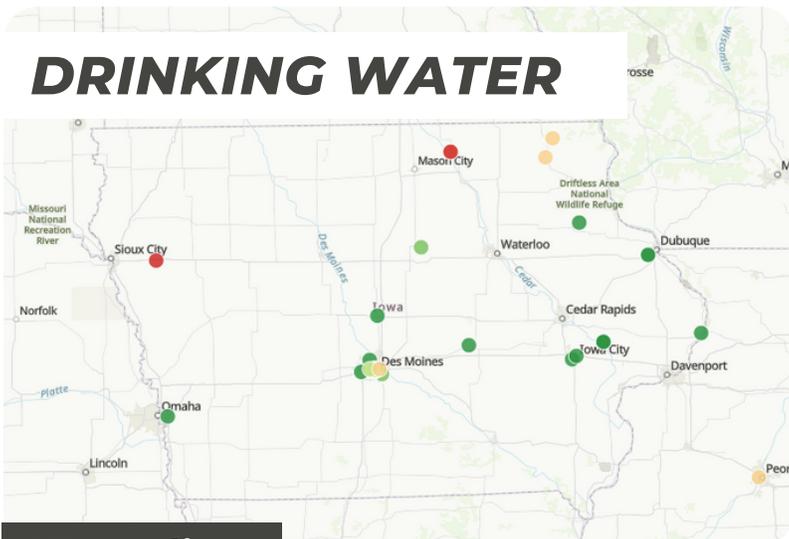
SURFACE WATER



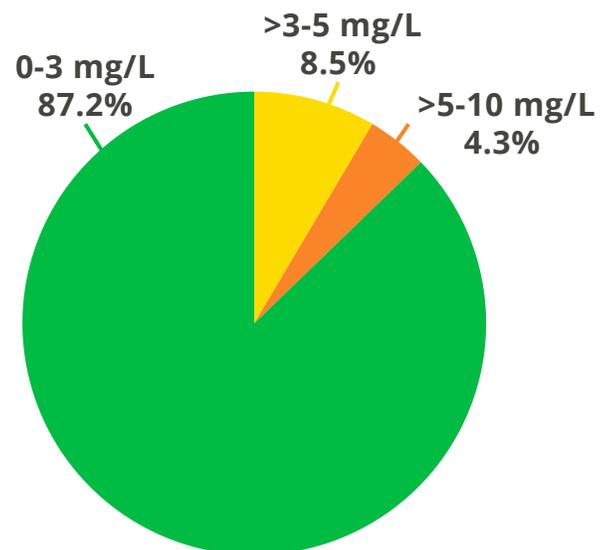
2686 readings



DRINKING WATER

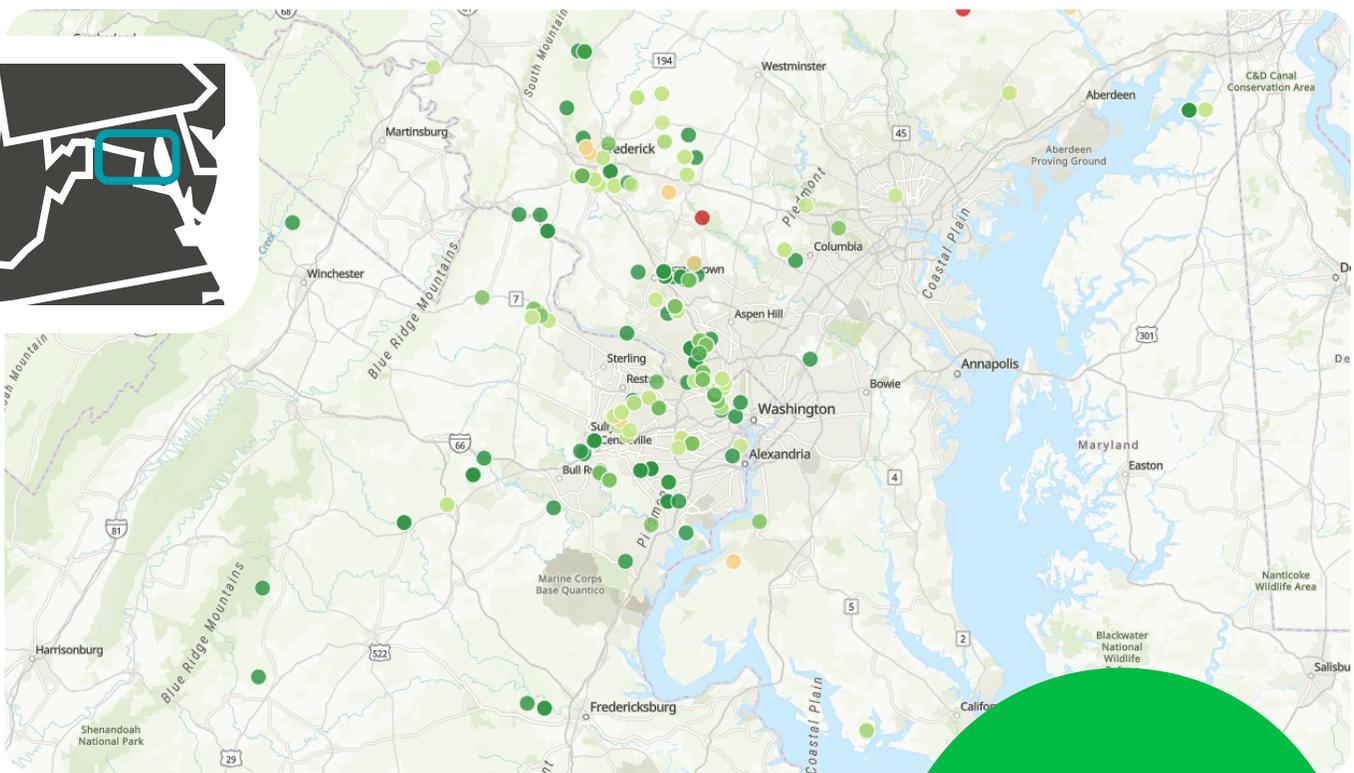


47 readings



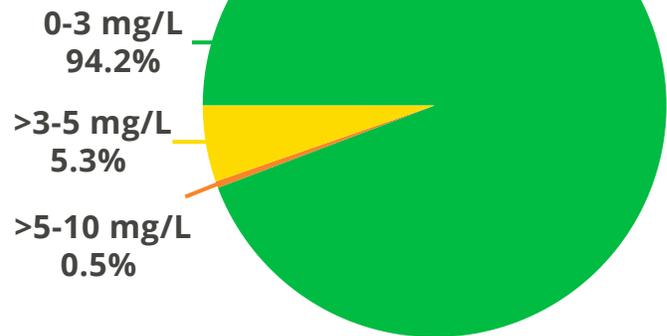
RESULTS

GREATER DC AREA



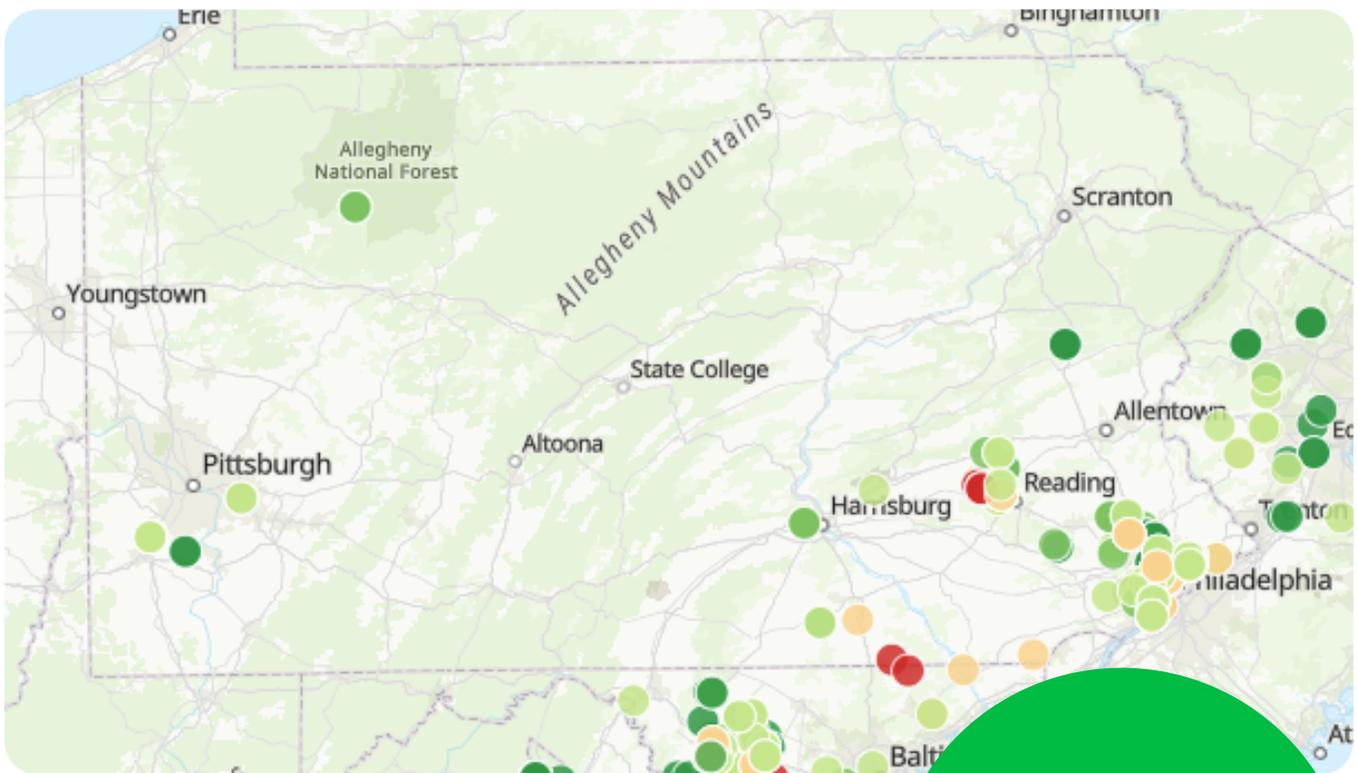
Total nitrate readings: **432**

●	0-3 mg/L:	407
●	>3-5 mg/L:	23
●	>5-10 mg/L:	2
●	>10 mg/L:	0



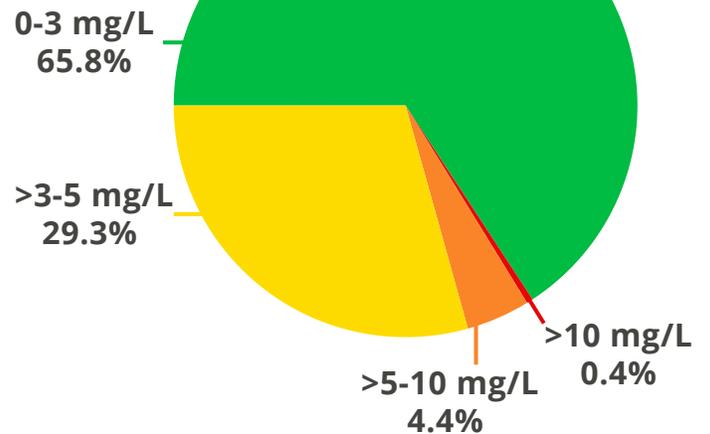
RESULTS

PENNSYLVANIA

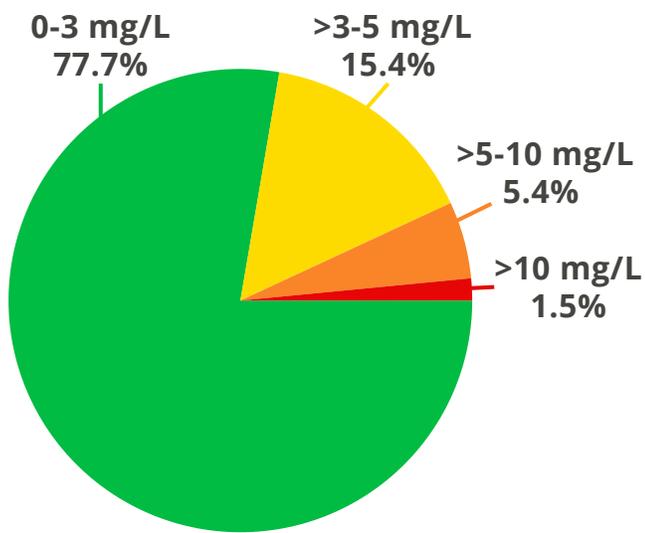


Total nitrate readings: **225**

- 0-3 mg/L: **148**
- >3-5 mg/L: **66**
- >5-10 mg/L: **10**
- >10 mg/L: **1**

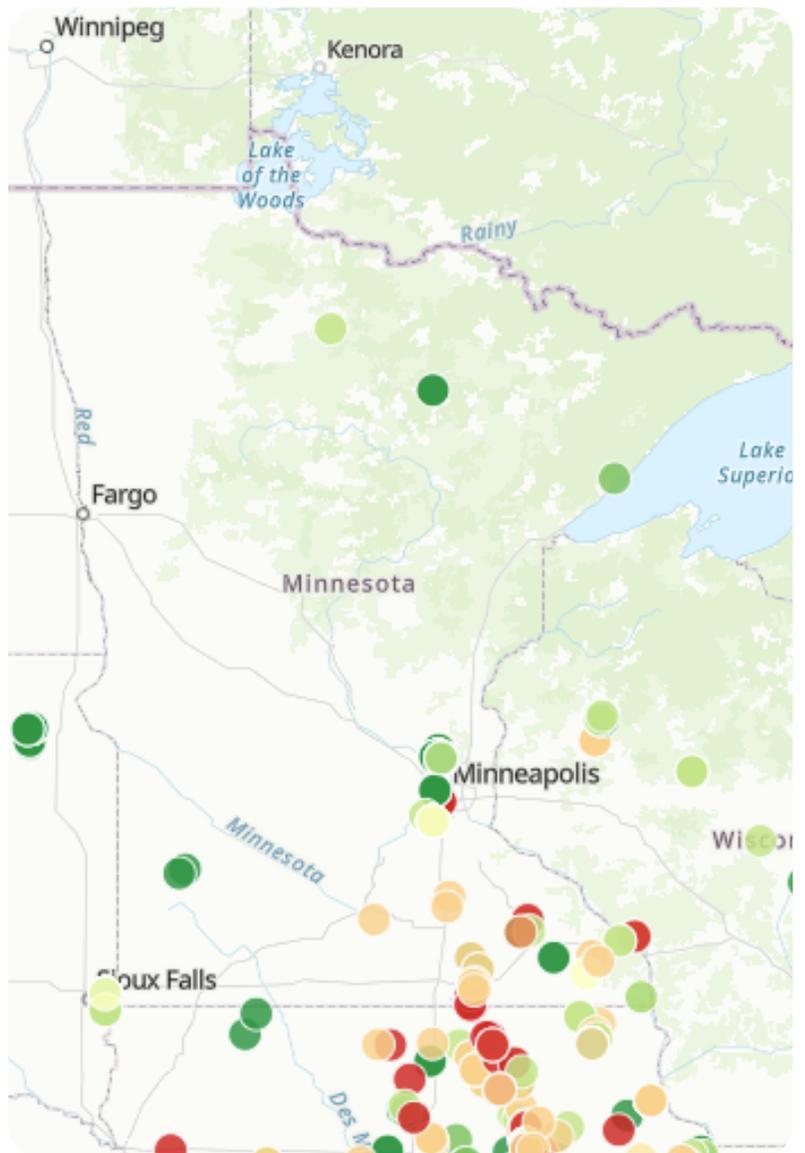


RESULTS MINNESOTA



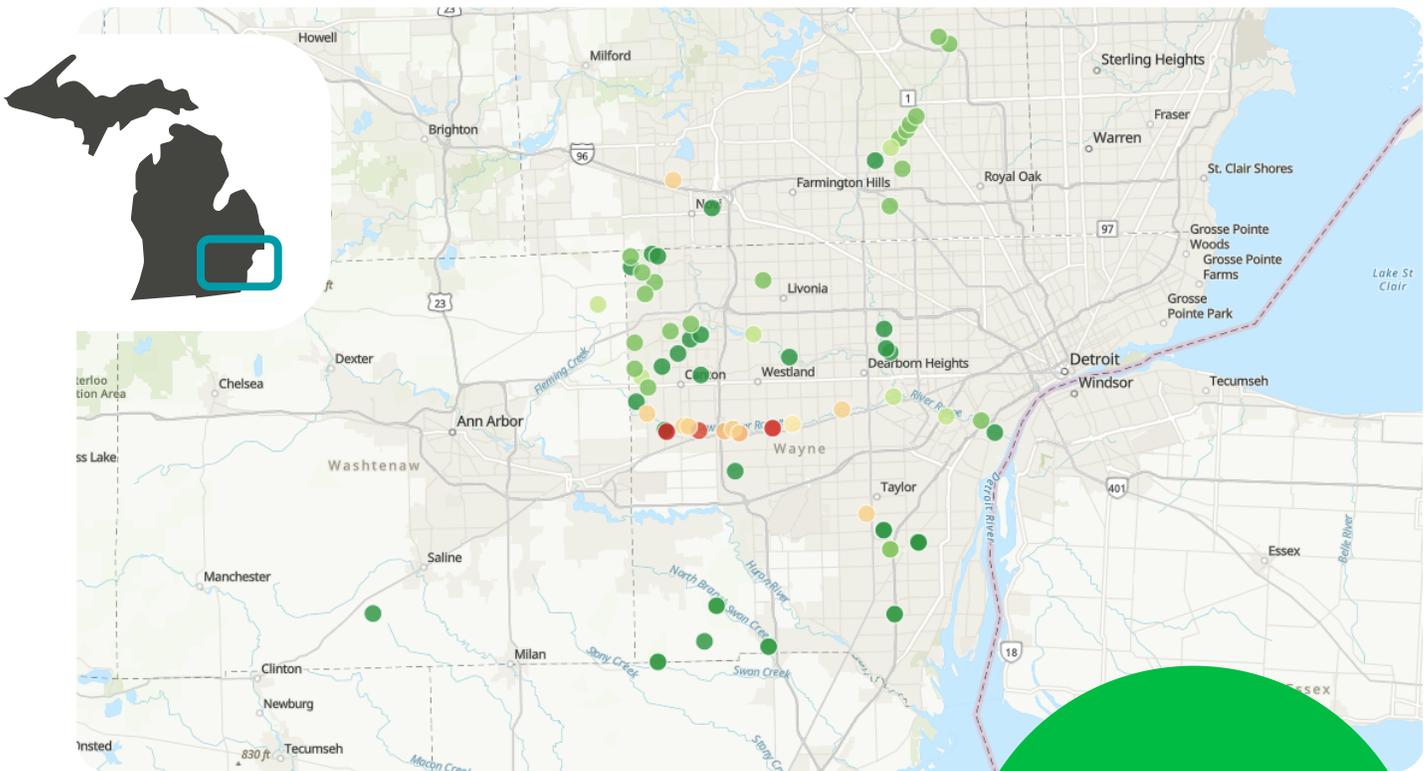
Total nitrate readings: **130**

● 0-3 mg/L:	101
● >3-5 mg/L:	20
● >5-10 mg/L:	7
● >10 mg/L:	2



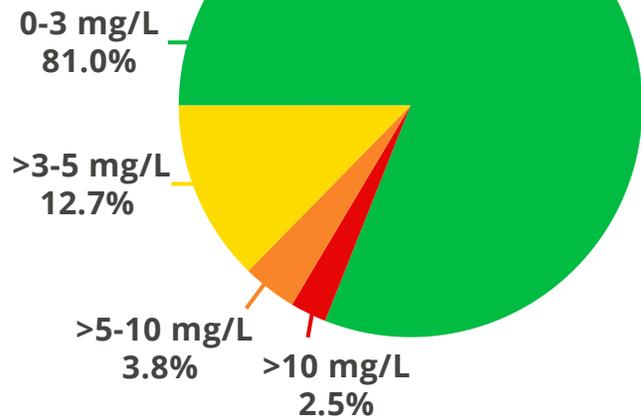
RESULTS

SE MICHIGAN



Total nitrate readings: **79**

- 0-3 mg/L: **64**
- >3-5 mg/L: **10**
- >5-10 mg/L: **3**
- >10 mg/L: **2**





LOOKING AHEAD

We are already excitedly making plans to build upon the momentum we've created in Nitrate Watch's first year. Keep an eye out for the following activities (and more) in 2024!

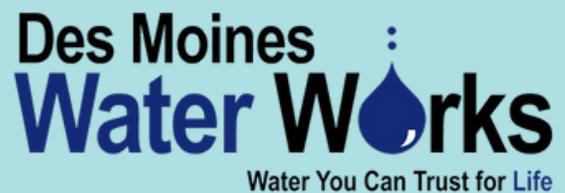
- ***Advocacy campaigns in priority regions***
- ***Outreach to underrepresented regions with a known nitrate pollution problem***
- ***Tracking EPA's risk assessment for nitrate in drinking water***
- ***Increased volunteer participation***



THANK YOU!

We are so grateful for the volunteers and donors that support Nitrate Watch and contribute data!

We also want to extend a huge 'thank you' to the following organizations for their support of Nitrate Watch in 2023: Aegon Transamerica Foundation, Des Moines Water Works, Iowa Department of Natural Resources, Iowa Division of the Izaak Walton League of America, Iowa DNR's REAP Conservation Education Program, and the Raines Family Fund.



Thank you for joining Nitrate Watch!

Use this kit to track nitrate concentrations in your local surface water and tap water, and share your data with monitors across the country via the Clean Water Hub.



Did you know?

Nitrate is a naturally-occurring chemical that helps plants grow. However, human activities produce more nitrate than natural systems can use. Fertilizer, manure, sewage, and other substances contain nitrate, which is easily transported through water in surface runoff and groundwater saturation.

Learn
part

Using Your Nitrate Test Strips

step-by-step instructions

- Select the water source(s) you'd like to sample. You can sample tap water, streams, lakes, and more!
- Dip the strip into your water for 1 second and remove. Do not shake the excess water off.
- Hold the strip level, pad side up, for **30 seconds**. At **exactly 30 seconds**, compare the color of the top pad to the color chart on your bottle labeled "Nitrate Nitrogen ppm."
- Remove sunglasses before taking your reading.
- The color will continue to change after 30 seconds, so record your value as close to 30 seconds as possible.
- If your strip's color falls between two values, use the **lower of the two**.

Nitrate in Drinking Water

The Safe Drinking Water Act sets federal drinking water standards at <math><10\text{ ppm}</math> in public water systems. Recent studies show that consuming water with less than <math><10\text{ ppm}</math> can still have dangerous health effects. There is no regulation on drinking water wells.



NITRATE BELONGS ON THE LAND, NOT IN OUR DRINKING WATER.

NITRATE WATCHSM
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