

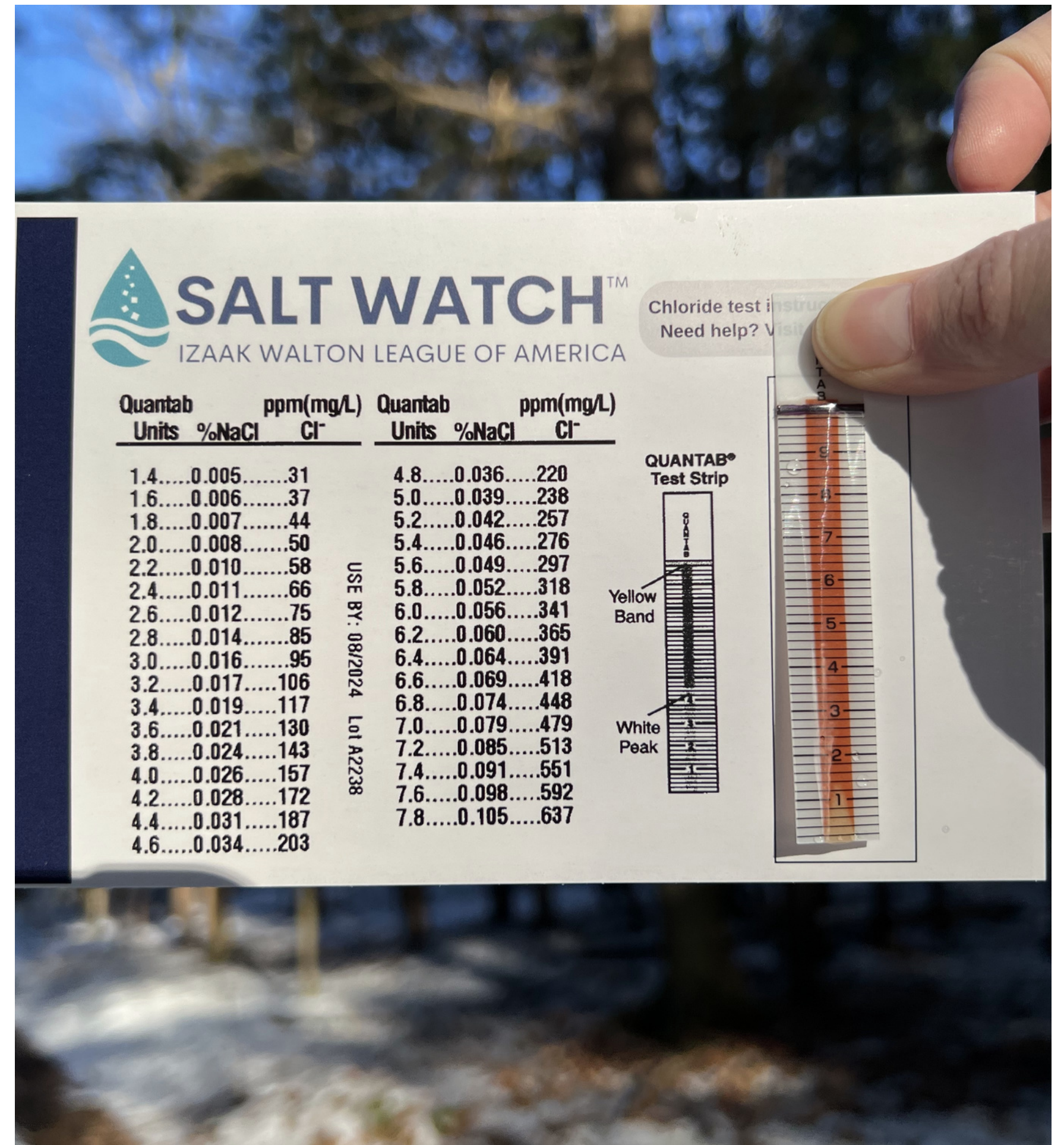


Abby Hileman
Salt Watch Coordinator

Salt Watch

www.SaltWatch.org

- Community Science Program
 - Launched 2018
- Mobilizing volunteers to monitor road salt pollution (chloride) in surface water & advocate for smarter salting practices



Chloride pollution impacts...

Environment

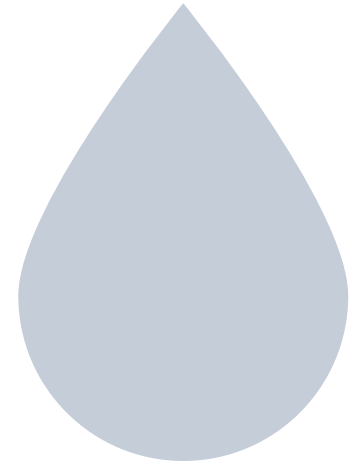


Infrastructure

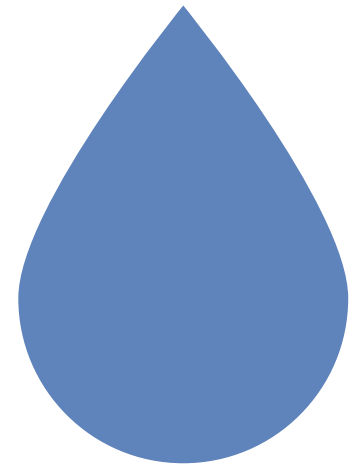


Human Health

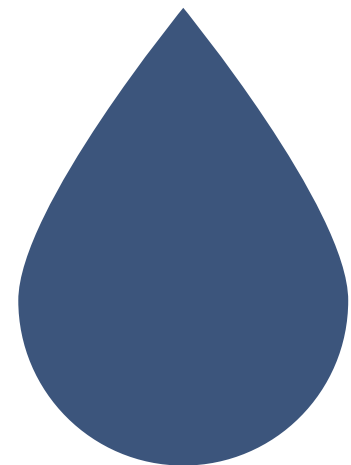




Raise awareness in the general public about the connection between salt and stream/public health



Identify hot spots in freshwater



Advocate for solutions and smarter salt application of road salt by sharing results with private landowners and local and state agencies



GOALS OF SALT WATCH

How to Participate

- Take the Salt Watch pledge and request a kit
- Use test strips to measure chloride
- Snap a picture of the test strip and chart
- Report results on Water Reporter app

www.saltwatch.org



Resources for Monitors: *education*

Webinars

Taking a Closer Look at Road Salt
Clean Water Webinar Series
Taking a Closer Look at Road Salt Pollution in the Environment
1:22:39
IzaakWaltonLeague • 66 views • 13 days ago

Sharing Our Strategies: A Beginner's Guide to Water Quality Communication
Clean Water Webinar Series
Sharing Our Strategies: A Beginner's Guide to Water Quality Communication
57:44
IzaakWaltonLeague • 103 views • 1 month ago

Season 6 Salt Watch Kickoff: Engaging Youths and Mobilizing Adults
Clean Water Webinar Series
Season 6 Salt Watch Kickoff: Engaging Youths and Mobilizing Adults
58:26
IzaakWaltonLeague • 126 views • 3 months ago

Salt Watch Wrap-up: Meet the Salt Watchers of the Month
Clean Water Webinar Series
Season Wrap Up: Meet the Salt Watchers of the Month
59:31
IzaakWaltonLeague • 69 views • 8 months ago

How Road Salt Impacts Our Health and Infrastructure
Clean Water Webinar Series
How Road Salt Impacts our health and Infrastructure
1:03:43
IzaakWaltonLeague • 151 views • 1 year ago

FAQs

Road Salt: The Basics

What's the problem with road salt?

Road salt is important for helping people travel safely in the winter. But road salt doesn't stay on roads: it washes into streams, where it damages the quality of our drinking water and hurts critters that aren't adapted to life in salty environments. [Learn more about the history of road salt, how much we use, and why it's a problem for stream health.](#)

Okay, but don't we still need salt for safety reasons? What are you really suggesting?

Yes, salt is needed. We are not pushing a "salt ban." We hope that salt can be used in smarter ways and in smaller quantities moving forward. Alternative approaches include brine or sand application. [Read more about alternative approaches.](#)

It's summer now, so I don't need to worry about road salt, right?

Unfortunately, no. Research finds that road salt can continue to pollute streams in the summer, and that aquatic life can be even more sensitive to salt in warmer weather. [Learn why.](#)

Your Salt Watch Test Kit

Why do you need my address?

We need your address to send you the Salt Watch kit. We will not use your mailing address for any other purposes and your personal information will not be shared outside the Izaak Walton League.

What comes in my Salt Watch test kit?

Your kit will include four easy-to-use test strips, plus a postcard with all the information you need to take salt and submit your results. To use your kit, you'll need access to a stream, a small container (like a juice glass) to hold water, a camera to take a photo of your results, and a computer or smartphone so you can submit your findings.

Are these tests safe?

Yes! The top of the strip may turn your fingers blue, but it is not harmful.

When should I use my Salt Watch kit?

You can use your kit any time you can safely approach a waterway. But it's especially important to test salt levels at the time of events that cause those levels to change. Those times are:

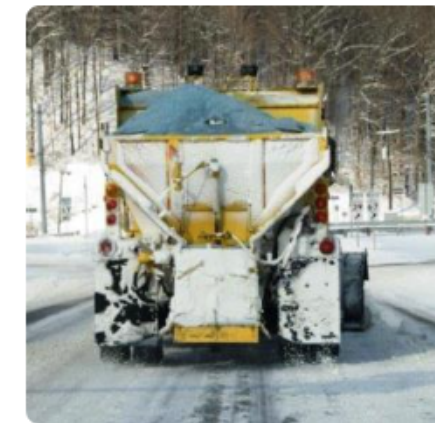
- Before a winter storm, to find out the "normal" level of salt in your stream
- After salt has been applied to roads
- After the first warm day or rainstorm following a snow or freeze
- After the next rain event

If you run out of kits, [feel free to request more!](#) You can test for chloride runoff year-round!

Blogs

Road Salt and Stream Health

Scott Maxham



As the days shorten and get colder, our thoughts shift from outdoor activities to spending time indoors with friends and family. When it's time to snuggle up by the fire, many of us might think it's also time to put stream monitoring and the Clean Water Challenge on hold until spring. But there is still work to be done, even when the temperature drops.

Although we typically suggest [biological stream monitoring](#) (finding macroinvertebrates) in the fall and spring, we should not forget about water quality during the summer and winter months. Each season presents specific threats to stream health. In winter, road salt can cause serious damage to water quality. That's why the League created the [Winter Salt Watch](#) campaign – to help volunteers like you measure salt (sodium chloride) levels in local streams and alert local agencies when they spot a problem.

How exactly does road salt work – and how did we get to using up to 20 million tons of it every year?

Road Salt: A Brief History

Resources for Monitors: *advocacy*

Letters to representatives

- **Maryland**
 - [Find your legislators](#)
 - [Sample letter](#)
- **Minnesota**
 - [Find your legislators](#)
 - [Sample letter](#)
 - [Tell your city council / local property owners to use the model snow and ice policies and contracts with applicators from MPCA](#)
- **Pennsylvania**
 - [Find your legislators](#)
 - [Sample letter](#)
- **Wisconsin**
 - [Find your legislators](#)
 - [Sample letter](#)
 - [Tell your city council / local property owners to use the model snow and ice policies and contracts with applicators from WI Salt Wise](#)
- **Other states**
 - [Sample letter to legislators](#)

Letters to the editor

A little salt goes a long way.

Starting with the first snowfall of the year and continuing throughout the winter months, [insert your county, state] relies on sodium chloride (commonly called rock salt) and other chloride-containing ice-melt products to reduce snow and ice accumulation on our roadways. As a nation, we use roughly 20 million tons of road salt per year. Runoff from rain and snow then carries that salt into storm drains, which empty directly into nearby streams, causing potentially dangerous spikes in salt levels.

Increased salt levels in streams can corrode pipes, harm our pets, and make it tough for wildlife to find clean, safe drinking water. Many of us (more than 118 million Americans) depend on local streams for drinking water too. Water treatment plants are not equipped to filter out excess salt, so road salt can end up in our tap water, where it can cause health concerns for people with high blood pressure.

The problem is getting worse: Chloride concentrations approximately doubled in the northern U.S. from 1990 to 2011, increasing even faster than the rate of urbanization in the region. According to the New Hampshire Department of Environmental Services, damages due to road salt cost the U.S. \$16-19 billion a year. More traffic and more roads will only exacerbate the problem further.

Traveling safely is important to all of us – and we can keep our roads and sidewalks ice-free while not destroying water quality in the process. Community members and government officials need to work together to reduce salt use, find alternatives to road salts, and stop the pollution of our nation's streams, rivers, and lakes.

For more information about road salts, please visit saltwatch.org.

Fact Sheets & Best Practices

Be a Smart Salter

Once you put salt down, it doesn't go away...

Salt alters the soil, harms plants, and weakens infrastructure like bridges and roads.

It gets into our streams, lakes, and rivers, putting aquatic life and human health at risk.

It only takes 1 teaspoon of salt... ...to pollute 5 gallons of water

Safe winter driving is easy as 1-2-3

1. **Wait**
Wait to allow time for plowing and deicing.
2. **Know**
Know the current road conditions before you leave.
3. **Slow**
Travel slowly and use caution on the roads.

Reduce your salt use to protect our water!

1. **Shovel**
Clear snow from sidewalks and driveways before it turns to ice. The more snow you remove, the less salt you'll have to use – and the more effective it will be!
2. **Scatter**
If you use salt, scatter it so there's space between the grains. A coffee mug of salt is enough to treat an entire 20 foot driveway!
3. **Sweep**
Once the salt has done its job, sweep up the extra so you can reuse it for later storms – and prevent it from washing away.
4. **Switch**
Salt doesn't work when the pavement temperature is 15 degrees or lower. Switch to sand or use a different deicer that works at low temperatures.

Americans use 20 million tons of road salt every year.

Wisconsin Salt Wise

SALT WATCH
LEARN. WATCH. LEAD.



Heather Wilson

Midwest Save Our Streams Coordinator

Nitrate Watch

www.NitrateWatch.org

- NEW community science program
 - launched Feb. 2023
- Mobilizing volunteers to monitor nitrate in surface water & drinking water



Nitrate pollution impacts...

Environment

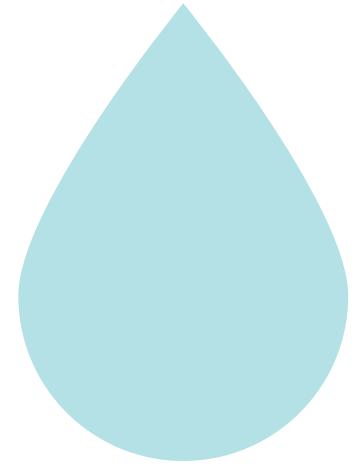


Human Health

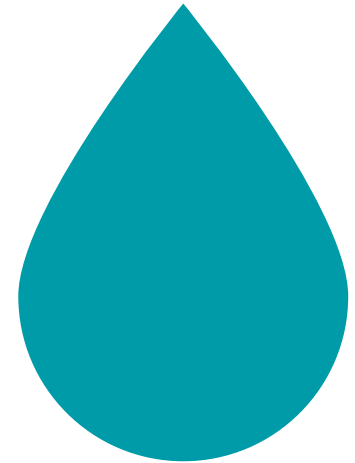


Economy

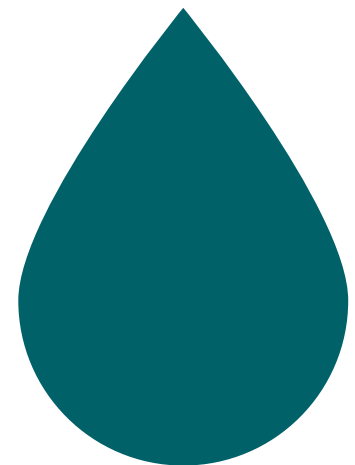




Raise awareness about nitrate pollution and its impacts on human health and the environment



Identify hot spots of nitrate pollution across the country



Advocate for solutions that reduce nutrient pollution

A background image showing a dense green algae bloom on the surface of water, illustrating the environmental impact of nutrient pollution.

GOALS OF NITRATE WATCH

How to Participate

- Take the Nitrate Watch pledge and request a kit
- Use test strips to measure nitrate
- Report results on the Clean Water Hub

www.nitratewatch.org

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**.



NITRATE WATCHSM
IZAAK WALTON LEAGUE OF AMERICA


Did you know?

Nitrate is a naturally-occurring chemical that helps plants grow. However, human activities produce more nitrate than natural systems can handle.

Fertilizer, manure, sewage, and other substances contain nitrate, which is easily transported through water in surface water and groundwater saturation.

Learn how to participate

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 <10 ppm. Recent studies show that consuming water with less than 10 ppm of nitrate can still have dangerous health effects. There is no regulation on drinking water wells.

NITRATE WATCHSM
IZAAK WALTON LEAGUE OF AMERICA

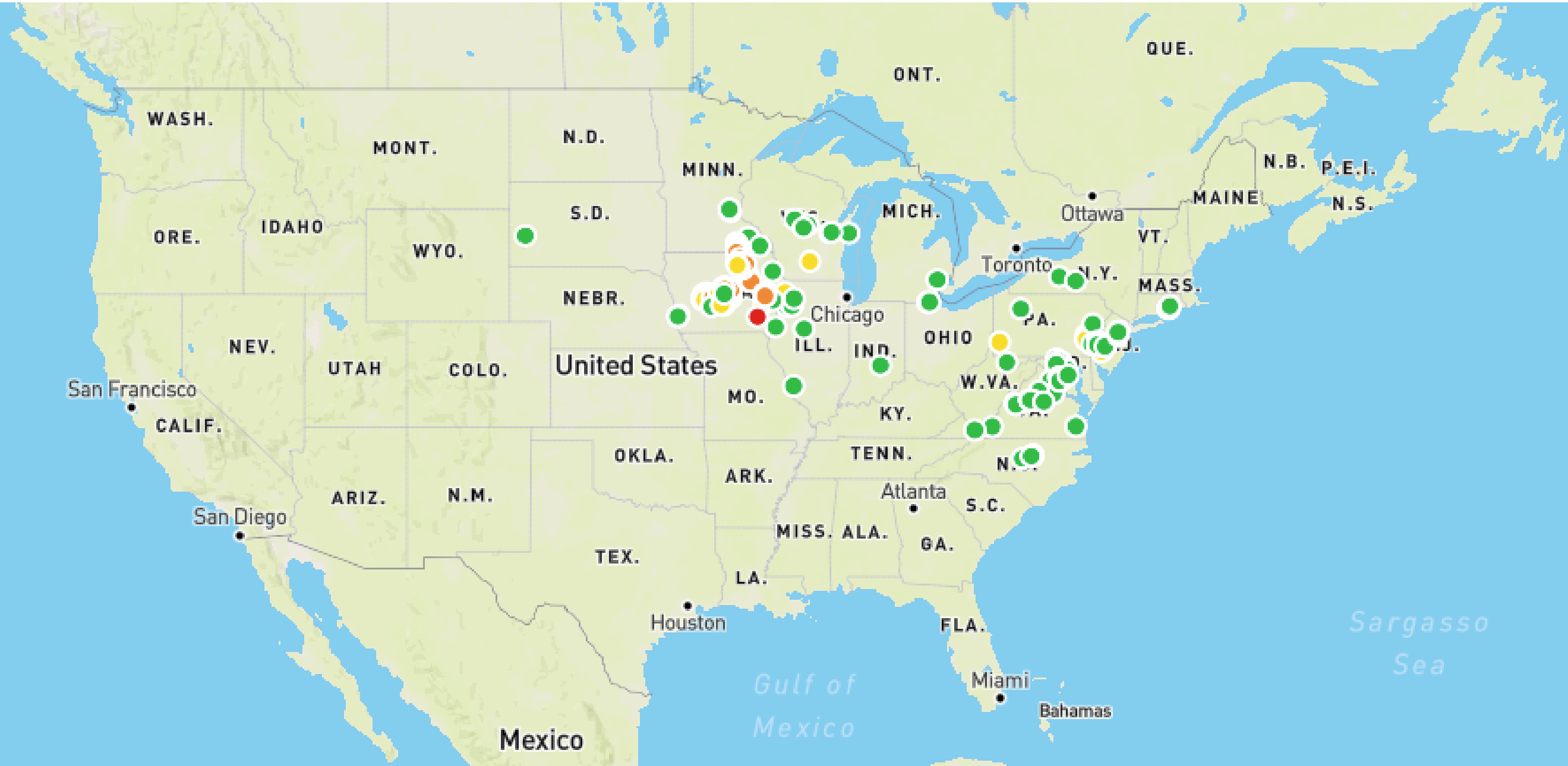


NITRATE BELONGS ON THE LAND, NOT IN OUR DRINKING WATER.

NITRATE WATCHSM
IZAAK WALTON LEAGUE OF AMERICA
WWW.NITRATEWATCH.ORG

View Results

Start Date End Date
or
Filter by Year



Resources for Monitors: *education*

Make a Plan worksheet

Make a Plan to Monitor

Each free Nitrate Watch test kit comes with 25 nitrate test strips. Use this worksheet to make a plan and get the most out of your test kit!

1 CREATE AN ACCOUNT ON THE CLEAN WATER HUB

The Clean Water Hub is the database where all Nitrate Watch readings are reported. Visit www.cleanwaterhub.org/nitratewatch and follow the prompts to create an account!

Already have a Clean Water Hub account? You're all set!

2 PLAN OUT WHERE YOU WILL MONITOR

You can use your test strips to monitor:

- **Surface water** (rivers, lakes, streams) or
- **Drinking water** (from a public drinking water system or private groundwater well)


Choose waterways that are important to you!

Concerned about a potential polluter?

Monitor upstream and downstream of it and compare your results.

Places I plan to monitor:

Location	Type of Sample Source



NITRATE WATCH™
IZAACK WALTON LEAGUE OF AMERICA

FAQs

Nitrate: The Basics

Where does nitrate come from?

Nitrate is formed when nitrogen combines with oxygen in water. It occurs naturally in plants, including in many vegetables that we eat. It also comes from human-made sources, including fertilizers, animal feedlots, and sewage. Nitrate dissolves in water and can easily be carried by rainwater and melting snow until it reaches surface water or groundwater. When there are elevated levels of nitrate in a water source, that's almost certainly because of human-made contaminants.

Why is excess nitrate bad for human health?

When we consume too much nitrate, that can make it harder for our blood to transport oxygen. In infants younger than six months, that can lead to a condition called methemoglobinemia (or "blue baby disease"), which can cause the skin to turn blueish-gray and may lead to serious illness or death.

Ongoing research has found that other health conditions are also linked to consuming high levels of nitrate. Peer-reviewed studies document increased risk of colon cancer, thyroid disease, and neural tube birth defects, like spina bifida and anencephaly, in populations with prolonged exposure to drinking water contaminated with nitrate. What is even more concerning is these health effects are observed when the nitrate levels in drinking water are lower than antiquated federal drinking water standards allow.

If plants need nitrogen to grow, why is excess nitrate bad for the environment?

Too many nutrients is a bad thing. When excess nitrate is present in waterways, it may overstimulate the growth of algae, creating what is known as an algal bloom. This not only encourages the formation of unsightly "scum" on the water, but can also have a myriad of negative effects on the environment. When the algae die and decompose in the water, the decomposition process consumes oxygen. This depletion of dissolved oxygen makes it harder for animals to survive in the water. The result is a dead zone, which in turn leads to fish kills and overall decreased plant and animal diversity.

Algae blooms also threaten human health. The drinking water supply for more than 250,000 residents of Toledo, Ohio was shut down for days a few years ago due to a huge algae bloom in western Lake Erie. Algae blooms may harbor toxic cyanobacteria ("blue-green algae") which can be dangerous or even deadly to people or pets. Red tides, a type of harmful algae bloom common in coastal areas, make people and pets sick and require beaches to be closed for days – even weeks – at a time.

Are there any MORE reasons I should be concerned about nitrate levels?

Clean water is not optional, and it is not free. When high nitrate levels are present in waterways that are used for drinking water, the law requires drinking water utilities to remove the excess nitrate to meet drinking water standards. This can be done with nitrate removal technology, but this infrastructure is expensive to install and operate. These costs are then passed on to ratepayers. Depending on the size of your community and the amount of nitrate in your water, you could be paying up to \$1,200 a year, just to filter out the excess nitrate that shouldn't be there in the first place.

What if my water comes from a well?

If you get your water from a well, like an estimated 43 million other Americans, you could be at risk. The EPA does not regulate private wells, nor does it provide recommended criteria or standards for individual wells. Moreover, states do not regulate well water for contaminants like nitrate. Nitrate is impossible to detect by sight, smell, or taste. The only way to know if your well water has elevated levels of nitrate is to test it.

Blogs

What Is Nitrate Pollution?

Alex Peska

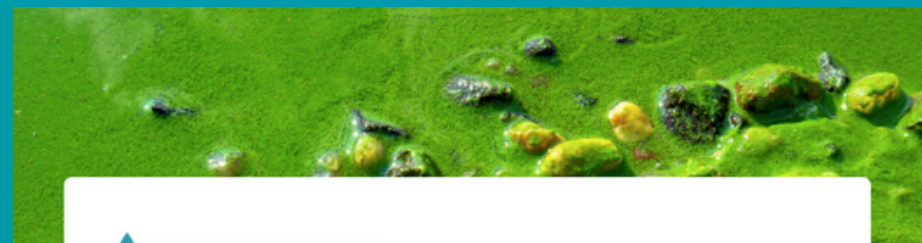


Nitrate Watch is the latest initiative in the Izaak Walton League's campaign to address environmental pollution and degradation. As with many environmental pollutants, nitrates significantly threaten the health of ecosystems and the humans residing near them. Therefore, it is essential to monitor nitrate levels in local waterways in order to prevent harm to all forms of life.

Nitrate (NO₃) is a naturally occurring compound of nitrogen and oxygen. An essential component of life on Earth, nitrate's constituent element, nitrogen, is needed in large quantities by all organisms. Nitrogen is utilized in everything from DNA replication to capturing sunlight for energy production in plants. Without usable nitrogen, the Earth could not support the billions of people now living on our planet.

Resources for Monitors: *advocacy*

Petition



Time to Call a Halt to Harmful Nitrate Pollution

Nitrate is a well-known and highly prevalent water pollutant with harmful impacts to human and environmental health. Nitrates are abundant in synthetic fertilizers, animal manure, and sewage. They are easily picked up by rainfall and frequently run off into water bodies and seep through soil into the groundwater below. Dangerously high levels of nitrate present in our surface waters and drinking water sources are unacceptable and demand action.

High nitrate levels lead to algae blooms which deplete the oxygen in waterways, creating dead zones where aquatic life is scarce. Algae blooms may also harbor toxic cyanobacteria, which can cause rashes, nausea, and in some cases death to humans and animals that come into contact with the bacteria.

Consuming nitrates in drinking water is known to have negative impacts on human health, including methemoglobinemia ("blue baby syndrome"), thyroid disease, central nervous system birth defects, and colorectal, bladder, ovarian, and kidney cancers. While the EPA has set a drinking water standard of 10 mg/L for nitrates, private water supplies from groundwater wells are not regulated and do not have established standards for

Letters to the editor & Letters to representatives

A little fertilizer goes a long way.

Many modern agricultural practices depend on synthetic fertilizers that are high in nitrates to produce crop yields that will support a growing population. Unfortunately, those nitrates can be harmful to human health and the environment when they run off into waterways. From July 2017 to June 2018, Iowa distributed 4,486,121 tons of fertilizer. Runoff from rain and snow may carry the nitrates from fertilizers into groundwater or into drainage systems which empty into streams. About 80% of the nitrogen in fertilizers is lost from the fields where they are applied. Iowa has more than 22 million acres of row crop agriculture, and most of it remains incompletely or inadequately treated for nitrate pollution.

High levels of nitrates in streams can lead to unsafe drinking water. More than 118 million Americans depend on local streams for drinking water. In 1990, the Environmental Protection Agency (EPA) established the drinking water standard for nitrates as 10 mg/L. But studies have found that water with nitrate levels even lower than that may not be safe to ingest. Some health risks related to ingesting high levels of nitrate include methemoglobinemia (blue baby syndrome), cancer, thyroid disease, respiratory issues, and birth defects. Only about 10% of public water suppliers in Iowa treat their water for nitrate, and private water supplies, such as groundwater wells, are not regulated and do not have standards for contaminants. Together, that means that about one third of the households in Iowa are at high risk of nitrate exposure.

[add data from your Nitrate Watch testing and/or share why this issue is important to you personally]

As an Iowan, I understand the responsibility that our state has for providing food for our people and country. However, our current farming practices can be modernized to improve soil health and reduce runoff so fertilizers applied to fields don't poison our water. Our agriculture systems must evolve so that we can continue to feed a growing population without harming our waters. Government officials and our communities need to unite to reduce chemical fertilizer use, advocate for alternative farming practices, and stop polluting our waterways.

For more information about nitrate pollution, visit nitratewatch.org.

Fact Sheets

Nitrate in Drinking Water

Chemical fertilizers, animal waste, and leaky septic tanks are just a few sources of the elevated nitrate levels in many public water systems and private wells. The impact of nitrate on human health is an area of ongoing research, but there are several health risks that are known to be linked with nitrate in drinking water.



DRINKING WATER STANDARD

The drinking water standard for nitrate as nitrogen is 10 mg/L, as established by the US Environmental Protection Agency in 1992 (over 30 years ago!). Current research suggests that prolonged exposure to nitrate levels below 10 mg/L can still lead to increased health risks.

WELL WATER ISN'T TESTED

Approximately 43 million Americans get their water from private wells, which are not regulated by the EPA. Well users are responsible for testing their own water. Most states recommend testing at least once every other year.

HEALTH CONCERNS

THYROID DISEASE

BIRTH DEFECTS

COLON CANCER

BLUE BABY SYNDROME (METHEMOGLOBINEMIA)

WHAT TO DO

If your drinking water contains nitrate levels above 10 mg/L, take the following steps:

- Contact a licensed well contractor or your public system operator to identify next steps
- Obtain drinking water from a safe source, such as bottled water. **Boiling water will not remove nitrate.**
- Consider installing a reverse osmosis, ion exchange, or distillation water filtration system. Well users may also consider drilling a new well.

JOIN NITRATE WATCH

Want to find out how much nitrate is in your water?

Visit nitratewatch.org to request your free nitrate test kit!



