NITRATE WATCH®

Izaak Walton League Chapter Toolkit

Monitoring

Outreach

Advocacy

CONTENTS

INTRODUCTION

The goal of this Toolkit is to provide Izaak Walton League members with the information and resources necessary to help engage their chapters and their communities in Nitrate Watch.

Additional information about Nitrate Watch can be found on our website, **www.nitratewatch.org**.

If you have questions, please reach out to **nitratewatch@iwla.org**.

This toolkit contains clickable links to websites and downloadable resources. For this reason, **it is best viewed on a computer** or other internet-connected device.

BACKGROUND

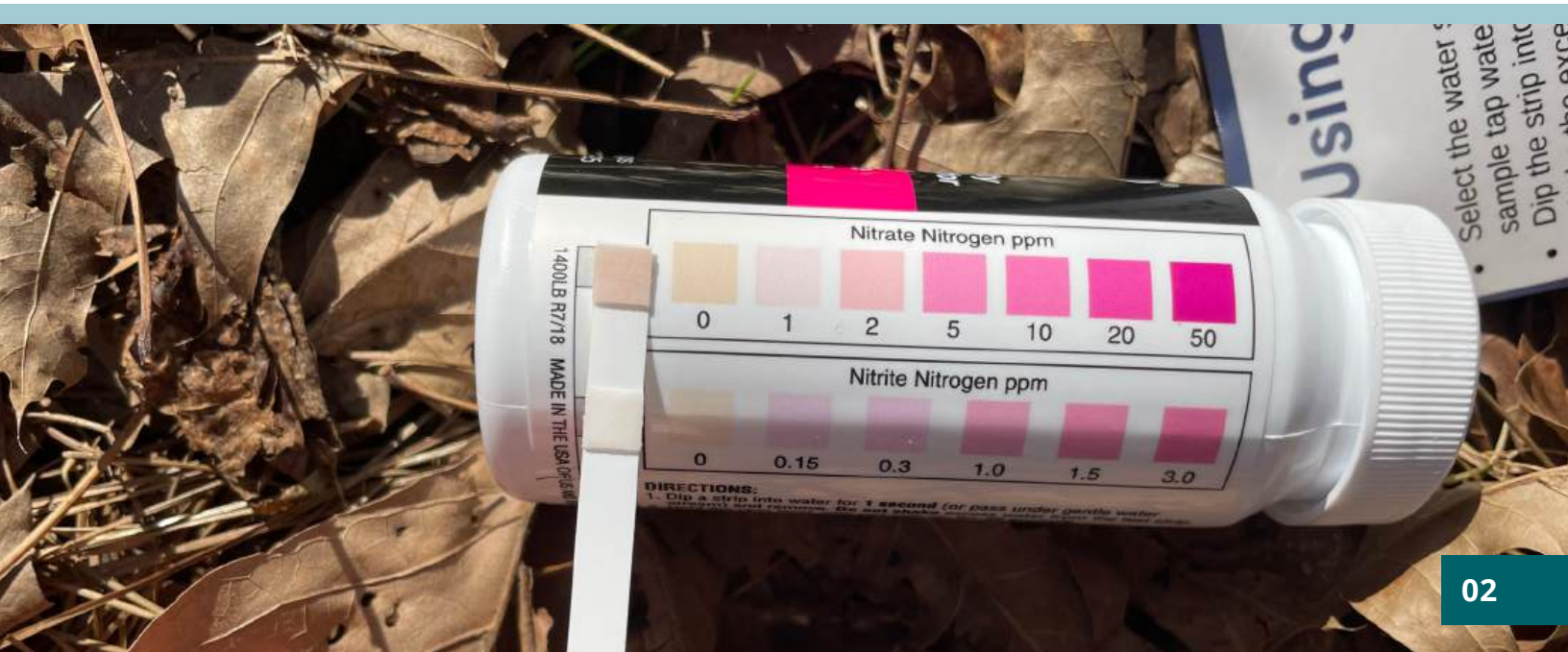
WHAT IS NITRATE WATCH?

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.

www.NitrateWatch.org



BACKGROUND

WHAT IS NITRATE POLLUTION?

Nitrate (NO_3^-) is a naturally occurring compound made up of nitrogen and oxygen. Nitrogen is an essential nutrient for plant growth, but human activities produce more nitrogen than natural systems can use.

Fertilizers, manure, and sewage all add extra nitrogen to the landscape. As this nitrogen moves through the environment, it becomes nitrate. The nitrate can then make its way to streams and sources of drinking water via surface runoff or groundwater saturation. Excess nitrate in water can pose serious problems for the health of humans and the environment.

ENVIRONMENTAL IMPACT

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 may also harbor toxic cyanobacteria, also called “blue-green algae.” These cyanobacteria create compounds called “cyanotoxins” which can be dangerous and even deadly to humans or animals that come into contact with them. When beaches and waterways are closed to swimming in the summer, cyanotoxins from harmful algae blooms are often to blame.

HUMAN HEALTH IMPACT

When we consume too much nitrate, it 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 syndrome"), which can cause the skin to turn blueish-gray and may lead to serious illness or death.

Research has shown that other health conditions are also linked to consuming high levels of nitrate. Peer-reviewed studies document increased risk of cancers, thyroid disease, and neural tube birth defects in populations with prolonged exposure to drinking water contaminated with nitrate. Even more concerning - these health effects have been observed when the nitrate levels in drinking water are lower than the current federal drinking water standards allow[1].

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.

1. Ward, M., Jones, R., Brender, J., de Kok, T., Weyer, P., Nolan, B., Villanueva, C., & van Breda, S. (2018). **Drinking water nitrate and human health: An updated review.** *International Journal of Environmental Research and Public Health, 15(7)*. https://doi.org/10.3390/ijerph15071557

ECONOMIC IMPACT

Beyond the obvious value of human health and environmental quality, nitrate pollution is very costly. Nitrate pollution has far-reaching effects on the economy, impacting a wide range of industries. From the cost of nitrate removal infrastructure to keep drinking water safe, to the costs associated with treating nitrate-related health issues, to lost revenue in the recreation and commercial fishing industries, to declining value of waterfront property, the cost of nitrate pollution adds up.

Altogether, the estimated impact of nitrate pollution on the US economy is approximately 210 billion dollars a year[2].

HAVE MORE QUESTIONS ABOUT NITRATE POLLUTION?

Find more answers using the following Izaak Walton League resources:

- Nitrate Watch FAQs
- A Growing Problem: Nitrate in Our Water (Outdoor America 2023 Issue 1)
- Webinar: Nitrate Watch and Public Health
- Webinar: Nitrate in Drinking Water - Public & Private

Still have questions? Send us an email - nitratewatch@iwla.org

2. Sobota, D. J., Compton, J. E., McCrackin, M. L., & Singh, S. (2015). **Cost of reactive nitrogen release from human activities to the environment in the United States**. *Environmental Research Letters, 10(2)*. https://doi.org/10.1088/1748-9326/10/2/025006

MONITORING

REQUESTING YOUR KIT

To participate in Nitrate Watch, you'll first need to request a kit. Nitrate Watch kits are free as supplies allow.

Head to **www.nitratewatch.org** and complete the kit request form.

Kits are send via USPS and should arrive within approximately 1-2 weeks of receiving your request.

KIT CONTENTS:

- a bottle of 25 nitrate-nitrite test strips
- postcards explaining how to use your test strips and how to report your results
- a Nitrate Watch sticker

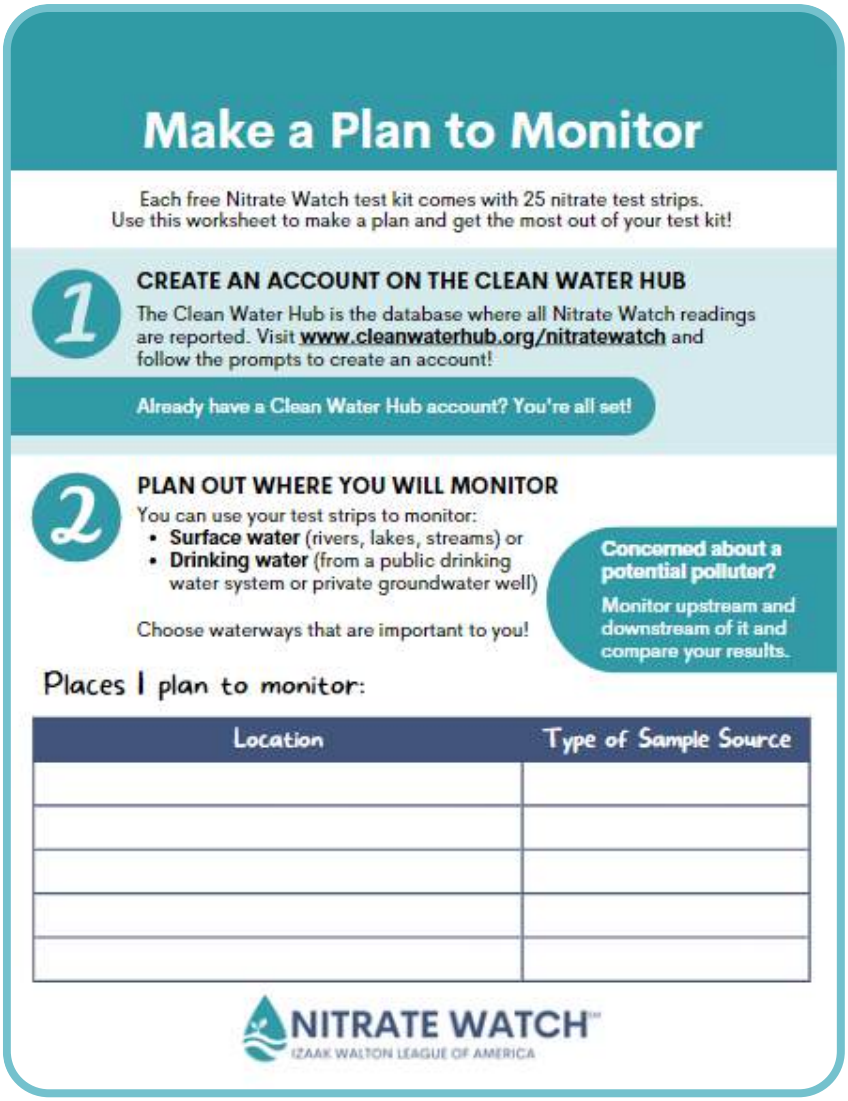
MONITORING

MAKING A PLAN

If you want to make the most of your Nitrate Watch kit, it helps to make a plan. Each Nitrate Watch kit includes 25 test strips - Your goal is to use each and every test strip and report your data on the Clean Water Hub.

The '**Make a Plan to Monitor**' worksheet is a resource that can help you plan out when and how you will use your nitrate test strips.

Click to access the 'Make a Plan to Monitor' 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
IZAAK WALTON LEAGUE OF AMERICA

MONITORING

The postcards in each Nitrate Watch kit include the following instructions:

USING YOUR NITRATE TEST STRIPS

- 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, **estimate an intermediate value**.

SUBMITTING YOUR RESULTS

- Navigate to www.cleanwaterhub.org/nitratewatch. Log in to the Clean Water Hub or create a new account.
- Click on CREATE NITRATE WATCH READING
- Select a site from the dropdown menu or click "Create a New Site"
- Fill out the form for your site.
- Double-check all fields and click SAVE CHANGES when finished.

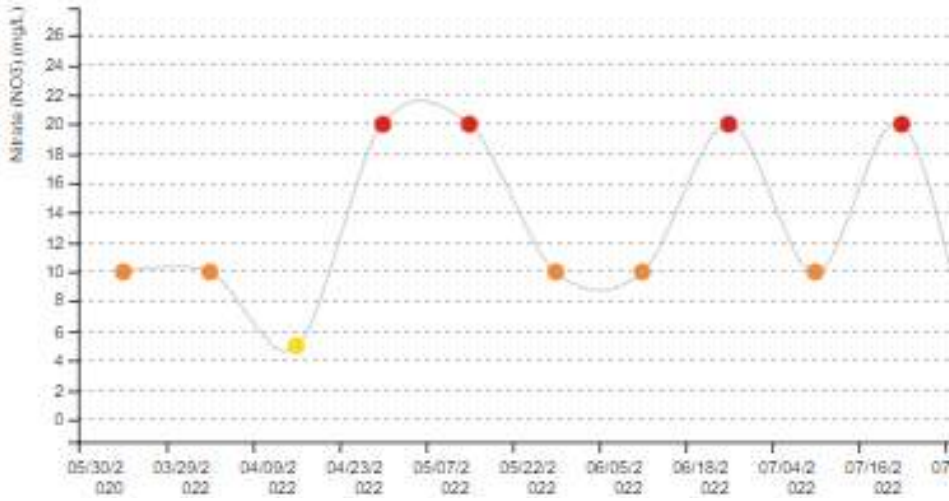
MONITORING

THE CLEAN WATER HUB

www.cleanwaterhub.org

The Clean Water Hub is a water quality database used by the Izaak Walton League and over 200 organization across the country. It houses volunteer-reported data for projects including Save Our Streams, Salt Watch, and Nitrate Watch.

The Clean Water Hub was created to be a place where organizations and individuals can easily share their data, track changes in water quality, and display their results in meaningful ways.



Data is summarized in color-coded graphs and interactive maps. In most cases, data can be easily viewed and downloaded, even without needing to create an account on the Hub.

Want a place where all the data reported by your chapter can be viewed and downloaded? **Fill out this form** and we will create an organization for your chapter the Clean Water Hub.

OUTREACH

SHARING NITRATE WATCH WITH OTHERS

Whether they are hosting an event, inviting people to use their facilities, or simply talking to their neighbor, Izaak Walton League members and chapters are constantly interfacing with their communities. We encourage Ikes and their chapters to see these occasions as opportunities to introduce others to the League's clean water programming - like Nitrate Watch!

In this section, you'll find resources to help get the word out about Nitrate Watch programming.

OUTREACH

MESSAGING GUIDE

It is important that we are consistent in the ways that we communicate about Nitrate Watch and the issue of nitrate pollution. Please review this messaging guide and incorporate it into your communications surrounding Nitrate Watch.

Boilerplate:

What is Nitrate Watch?

- 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.

What are the goals?

- 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.

Reminders:

- Refer to ‘nitrate’ not ‘nitrates’
    - Nitrate (singular) refers to the nitrate ion, NO3-, which is the form that nitrate takes when it is present in water. Nitrates (plural) typically refers to nitrate-containing compounds, such as the nitrate salts found in foods and fertilizers. When discussing nitrate pollution in water, it makes most sense to use the singular “nitrate.”

OUTREACH

Reminders (continued):

- Farmers are not the enemy
  - While we recognize that agriculture is one of the primary sources of nitrate pollution, we do not accuse individual farmers of creating this reality. The increasing environmental impact of farming practices is the result of an agricultural system that undervalues conservation. Systemic problems require large-scale solutions. The Izaak Walton League has long stood for policy reform that benefits farmers as well as the environment.
- Nitrate pollution is an urban and rural issue
  - Many urban areas are downstream from animal feedlots or sites that utilize synthetic fertilizers, both of which introduce large amounts of excess nitrate into the watershed. Additionally, there are significant non-agricultural sources of nitrate pollution, such as septic systems and water treatment plants.
- Nitrate Watch is not intended to displace or replicate monitoring done by state or federal agencies
  - The role of this program is to fill gaps where data is not already being collected (in the streams our volunteers recreate in, their private wells, etc.), to raise awareness about the impact of nitrate pollution on human and environmental health, and to empower more people to become advocates for clean water. Just because the data collected by our volunteers doesn't carry the same weight as data collected by state/federal agencies doesn't mean it doesn't have power.
- Be careful not to over-inflate risks/dangers of nitrate pollution, especially when describing human health impacts
  - The stats are compelling enough on their own! We don't want to undermine our credibility by making claims about nitrate pollution that can be construed as stretching the truth.

OUTREACH

OUTREACH RESOURCES

The following resources are available to Izaak Walton League members and chapters to aid in their outreach efforts.

Outreach Postcards (5"x7"):

Ideal for distributing at outreach events or having onsite at your chapter's facilities.

We can send you postcards (as supplies allow)! Use this form to request up to 100 postcards from Izaak Walton League National headquarters: **https://forms.gle/du1fRtnT9y3LtCBP9**

Want to print your own? **Click to view/download the design as a PDF.**

Front

Back

OUTREACH

OUTREACH RESOURCES

Nitrate Watch stickers (2.5"x3.5"):

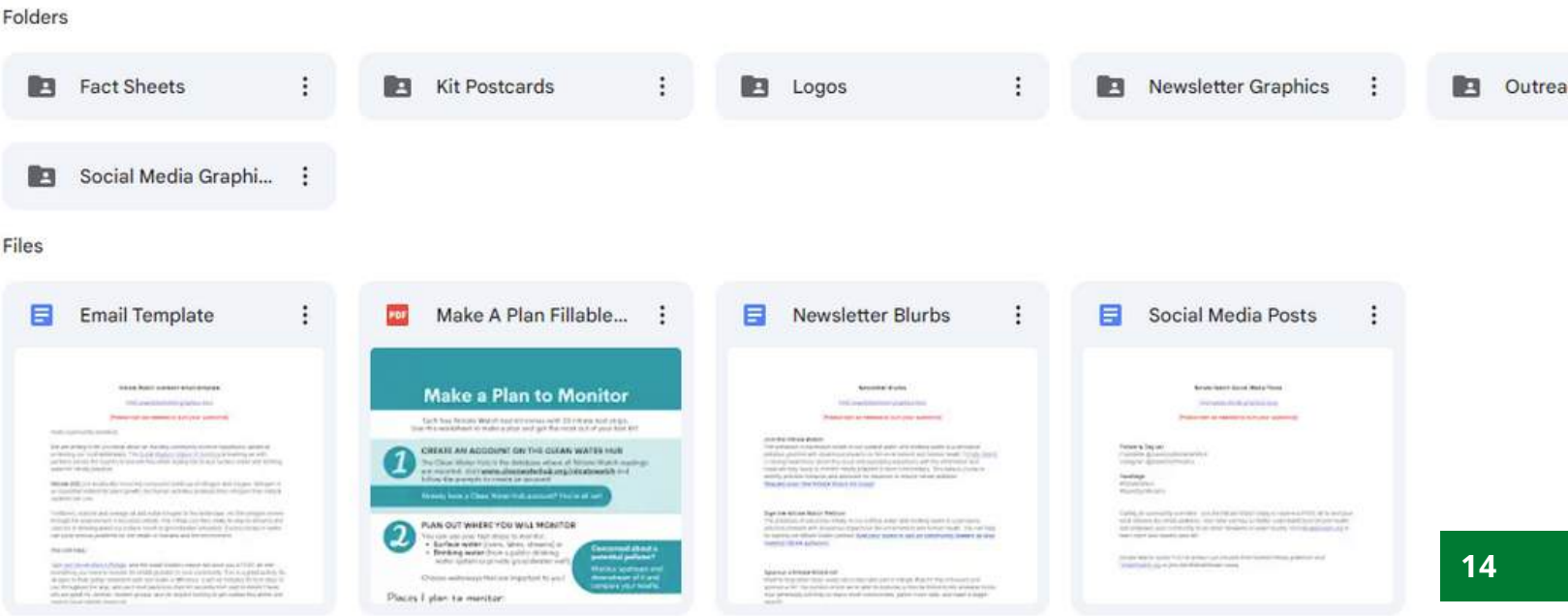
Ideal for distributing at outreach events.

We can send you stickers (as supplies allow)! Use this form to request up to 50 stickers from Izaak Walton League National headquarters: **https://forms.gle/du1fRtnT9y3LtCBP9**

Media Kit:

The Nitrate Watch media kit includes sample text and graphics that can be used for outreach via email, social media, newsletters, and more. It also includes the Nitrate Watch logo, which can be used if creating your own outreach materials.

Click to access the Nitrate Watch Media Kit



OUTREACH

OUTREACH RESOURCES

Tabling Sign:

Promoting Nitrate Watch at an outreach event? Use this sign to draw people to your table or booth.

Click to view/download as a PDF.

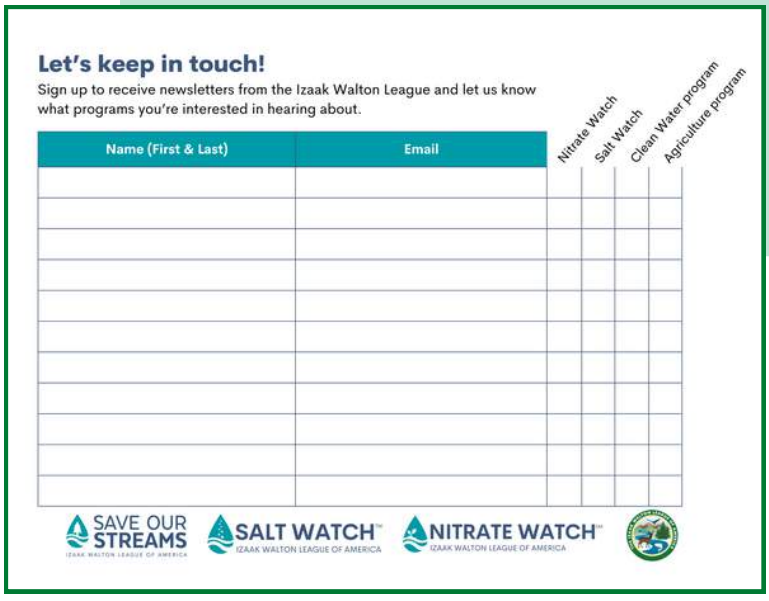
Newsletter Signup Sheet:

Use this newsletter signup sheet when you are tabling and give people a way to stay up-to-date on Izaak Walton League news.

Edit the columns to suit your needs - add a column for your chapter newsletter, if you have one!

Click to download as a word document.

After your outreach event, send a photo/scan of your newsletter sign-ups to **sos@iwla.org** and we will add folks to newsletter lists.



OUTREACH

OUTREACH RESOURCES

Nitrate Watch Presentation:

This presentation is a great tool to use if you're interested in introducing Nitrate Watch to others. It includes a detailed notes section, making your job as a presenter easier.

Click to access the presentation on Google Slides.

Introduction to Nitrate Watch video:

This brief video to explains how nitrate affects the environment, human health, and the economy, and how to get involved in Nitrate Watch. It is a great resource to help educate others and recruit new volunteers.

View the "Introduction to Nitrate Watch" video.

Introduction to Nitrate Watch

OUTREACH

OUTREACH RESOURCES

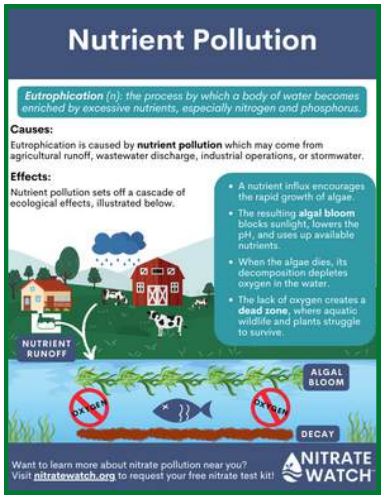
Fact Sheets:

Use these flyers to educate your community about nitrate pollution.

Click on the name of a fact sheet to view it.

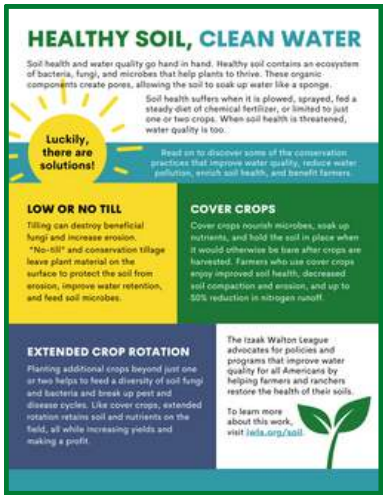
Fact sheets can also be found on the Nitrate Watch **'Take Action' page.**

Nutrient Pollution 101



Nitrate & Drinking Water

Healthy Soil, Clean Water



Cost of Nitrate Pollution

Reducing Nitrate Pollution at Home

Nitrate and Algae

ADVOCACY

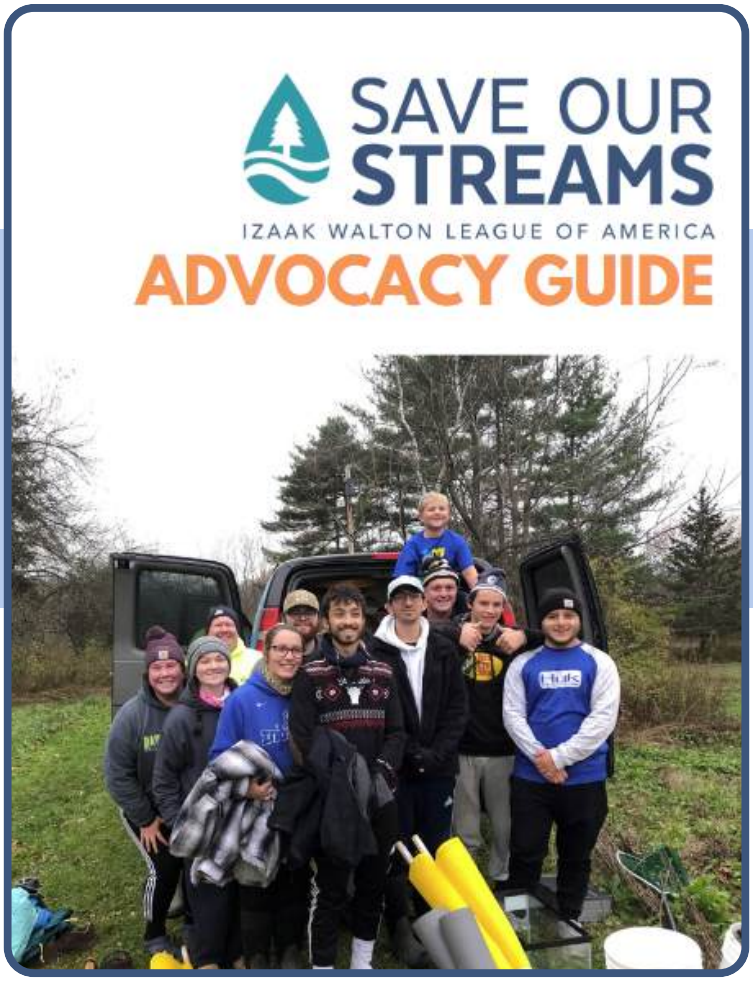
SPEAKING UP FOR CLEAN WATER

Advocacy, by definition, is the support or recommendation of a particular cause or policy. With federal, state, and local governments as integral players in the protection of natural resources, it is vital that individuals advocate for what matters to them.

In this section, you'll find tips and resources to help you advocate for clean water that is free from unsafe levels of nitrate.

This section includes excerpts from the Save Our Streams Advocacy Guide.

Click to view the complete Save Our Streams Advocacy Guide.



ADVOCACY

WATER QUALITY COMMUNICATIONS

Here are some important things to keep in mind as you hone your message and communicate about water quality issues:

- **Use your data.** The data you collect can bolster your cause. Being transparent with your data gives your credibility, but manipulating or hiding data will harm that credibility.
- **Understand community needs.** Every community has unique needs and concerns. Is your community concerned about development? Agriculture? Road salting? Identify where your mission can align with existing environmental concerns.
- **Identify reasonable asks.** Not every campaign or action is appropriate for every audience. Figure out what actions your audience can take, and what actions they can't. An individual landowner can't stop a salt truck, but they can sign a petition to reduce road salt use and attend public meetings.
- **Build partnerships.** It's likely there are already watershed or environmental groups in your area. Find ways they can help amplify your voice and how your data can help their cause. Partnerships will help you reach a wider audience and show the breadth of your issue.
- **Educate.** Many people may not know about local threats to clean water. Don't assume that everyone has the same level of knowledge as you. Likewise, don't assume that they are uninterested or don't care.
- **Listen.** Most importantly, listen to the citizens, businesses, and committees you reach out to. Everyone is entitled to clean water for all kinds of reasons, from access to drinking water to outdoor recreation. Your reasons may be different than your neighbors'. By listening and acknowledging the views of your community, you can identify effective ways to make positive change.

ADVOCACY

LOOK FOR COMMON GROUND

There are so many forces influencing water quality and we all view environmental issues through a unique lens. Our perspectives on water quality issues may be shaped by our upbringing, educational background, career, and more.

This diversity of perspectives can be difficult to navigate, but it also creates ample opportunities to find common ground when communicating about water quality issues. If your audience is wary of pinpointing climate change as a contributing factor to water quality issues, they may still be receptive to discussing the effects of urbanization on water quality. Maybe your audience is not inspired to take action based solely on the environmental impact of water pollution, but the human health impacts are more compelling.

Approaching water quality issues from many angles can help rally audiences with varying perspectives around the common goal of cleaner water.

ADVOCACY

INFLUENCING LOCAL POLICY

Get in touch at a local level

Your local elected officials and government agencies are there to work for and listen to you. Their job is to listen to concerned residents and respond accordingly. You can write or call your local leaders, or you can show up to a meeting like a city council or a local planning board. In towns and small cities, decisions are often made by the few people who put in the effort to be involved in local politics and decision making. Showing up to meetings in person can give you the opportunity to have your voice heard.

Advocate for your cause

Many local policymakers are dealing with a wide range of issues. If you can come and clearly share why a water quality issue is important to you, it can make a big difference. They might not know about local water quality, and educating them can help them make more informed decisions.

Are they still not listening to you?

If you get brushed off or boxed out, you can put in the work to become one of those decision-makers yourself! While you might not want to become a local government employee, there are often openings on local boards that always need more people involved. You could become one of those people and amplify your voice on water quality.

Get Creative.

Want to get the attention of your elected officials? Consider bringing a sample of water from their district to their office and demonstrate a Nitrate Watch test. Better yet, invite them to come monitoring with you in the field!

ADVOCACY

INFLUENCING STATE AND FEDERAL POLICY

Get in touch

Your elected officials may seem hard to pin down, but they are meant to listen to your needs. They often have staff and at least one local office in your district if you cannot get in touch with them directly. You can write or call your representatives, and potentially get a meeting with a staff member, if not the representatives themselves. Learn who represents you and how to contact them here: **ballotpedia.org/Who_represents_me**

Advocate for your cause

There is strength in numbers. One comment or one letter about a cause from one person may not make much of an impact, but working with others can amplify your efforts. Find out if there are people already advocating for your interests and join them! If you are the first to care, or the most driven, you can start to organize like-minded people. Get a group to call or write to your representatives' offices. Specific legislation that you support or oppose can make advocating simpler by defining a clear ask for your representatives: a vote.

ADVOCACY

TAKING ACTION AS A COMMUNITY

A group of united voices is more powerful than a single voice. Mobilizing your community to take action for clean water is one of the best things you can do to protect your local waterways. Once you have worked with a community and gotten community buy-in, you can use your collective voice to effect change.

- **Make it fun!** The best and most engaging advocacy groups engage new people at events that are meant to be fun, such as state fairs, public events, brewfests, and more!
- **Build community partnerships!** Partnerships with local businesses and organizations can help make an event more attractive and reach a new audience. Think outside the box! Diverse partners will help reach a diverse audience and strengthen community buy-in.
- **Don't forget to ask.** With busy lives, many folks are hesitant to commit to a cause or event unless explicitly asked to do so. Make sure to ask folks for their support or participation, and clearly set expectations for what you are asking them to do.
- **Collect signatures.** Gathering signatures and testimonials from your community will amplify your message and gather more attention from decision and policymakers.
- **Get involved with outreach events.** Host or attend public events to educate the community.
- **Get boots on the ground.** Some people prefer to commit to a one-time tangible action. Activities like trash cleanups, restoration days, invasive species removal, or water quality monitoring provide a chance for people to contribute to the cause, and it gives you a platform to engage them in discussion and education. You could develop long-time community partners!

ADVOCACY

ADVOCACY RESOURCES

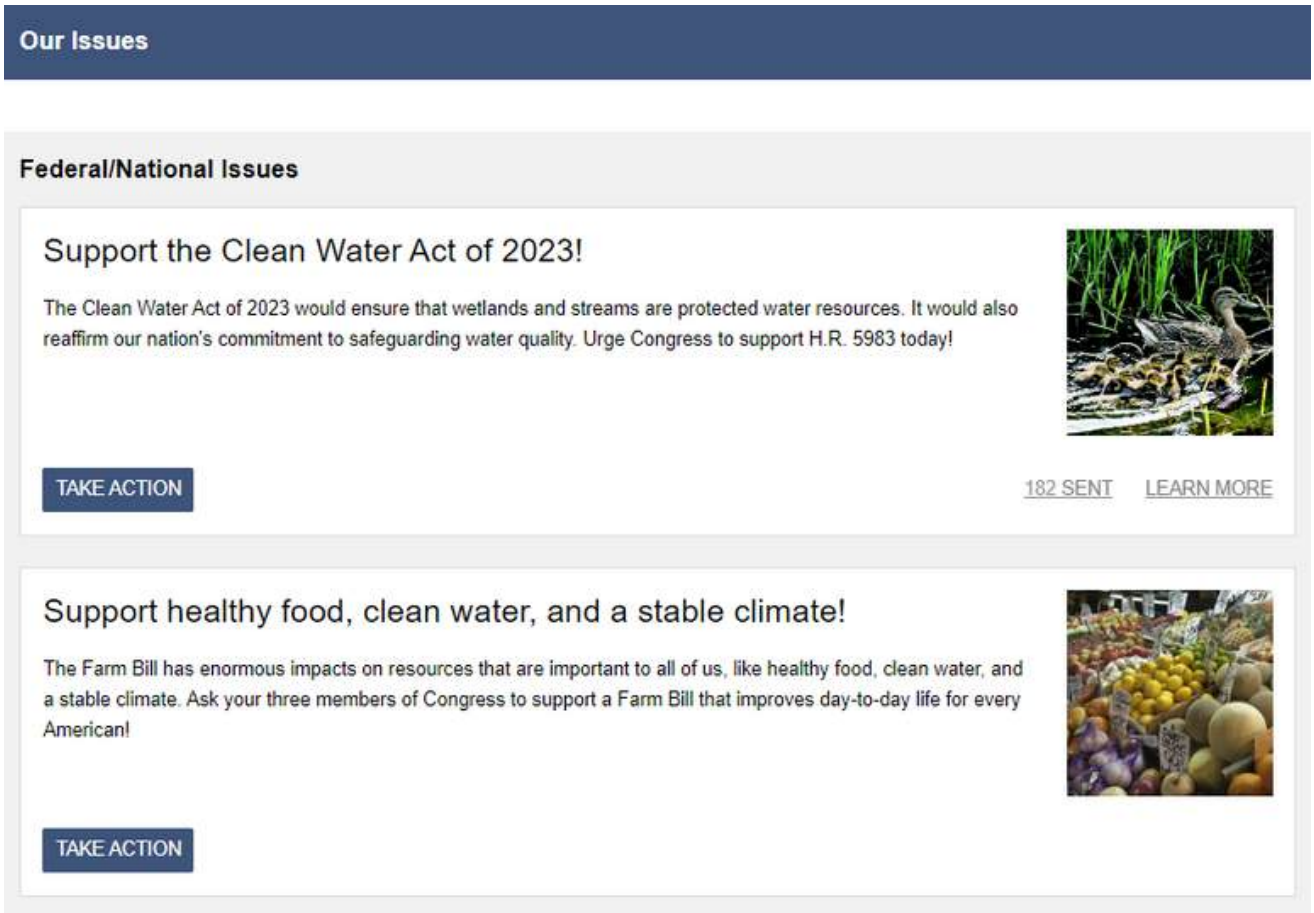
The following resources are available to Izaak Walton League members and chapters to aid in their advocacy efforts.

Action Alerts

www.iwla.org/actionalert

On the Izaak Walton League of America website, you can find Action Alerts for current issues, often related to protections for clean water. These Action Alerts make it easy to contact your representatives about timely conservation issues.

To be notified about new Action Alerts, you can subscribe to email updates on our website. Click **Get involved > Sign up, Stay Informed.**



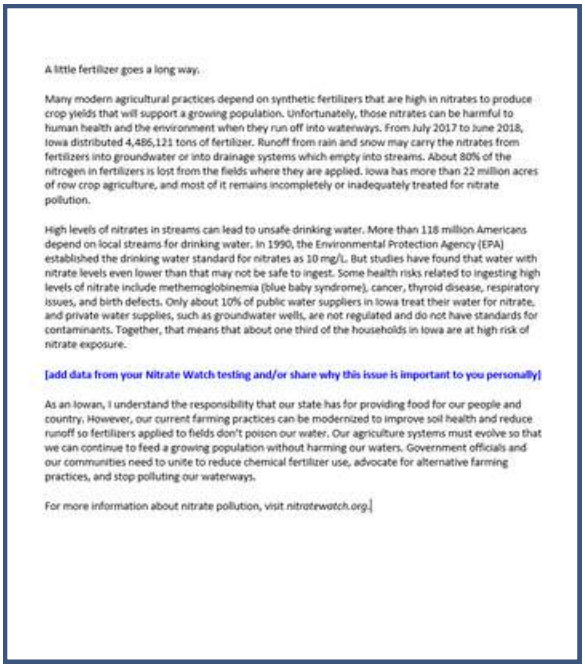
ADVOCACY

ADVOCACY RESOURCES

The following resources are available to Izaak Walton League members and chapters to aid in their advocacy efforts.

Nitrate Watch Petition
www.iwla.org/nitratepetition

The Nitrate Watch petition calls up on community leaders to stop harmful nitrate pollution. Add your name and encourage others to do the same.



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*.

Letter to the Editor Templates

We've created template letters that you can use as inspiration for a letter to the editor of your local paper. Make these templates your own by adding information about the impact of nutrient pollution on your community. Including data from your Nitrate Watch testing is a great way to make your letter unique!

Find letter templates on the Nitrate Watch **"Take Action" page**.

QUESTIONS?

Visit our website, **www.NitrateWatch.org**

Shoot us an email at **nitratewatch@iwla.org**

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