



Fish and Shellfish Program NEWSLETTER

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Recent Advisory News



On August 23, 2024, the Maine Center for Disease Control and Prevention (Maine CDC) issued new freshwater fish consumption advisories recommending either no consumption or limited consumption of fish from four waterbodies located on and around the former naval air station in Brunswick, Maine.

The testing of fish is part of the United States Navy's (Navy) ongoing remedial investigation at the former base in response to environmental contamination from the historic use of aqueous film forming foam (AFFF) containing per- and polyfluoroalkyl substances (PFAS) in fire-fighting operations. Data were collected in October 2023 by the Navy, in coordination with Maine's Department of Environmental Protection and the EPA, and shared with the Maine CDC in spring of 2024. The Maine CDC reviewed the data and determined they showed elevated levels of (PFAS) above the Maine CDC's recommended levels for regular consumption.

While testing occurred before the August 19, 2024, accidental release of AFFF at the former naval air station, was not expected to impact the guidance issued on August 23, 2024. The waters likely impacted by the AFFF spill were on the east side of the runway at the air station. The advisory issued on August 23, 2024, recommends a no consumption advisory for those waters based on prior testing data.

Elevated levels of the specific PFAS, perfluorooctane sulfonic acid (PFOS), were detected in fish tissue samples collected from Mere Brook (also known as Mare Brook), Merriconeag Stream, Picnic Pond, and Site 8 Stream.

The new fish consumption advisories in the table on the next page apply to all fish caught in these waterbodies.

https://www.epa.gov/fish-tech

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WATERBODY	CONSUMPTION ADVISORY	
Mere (Mare) Brook from the Eastern side of the runway to Liberty Crossing	Do Not Eat fish of any species.	
Mere (Mare) Brook from Coffin Ice Pond to the Western edge of the runway	Consume no more than 6 meals per year of any fish species.	
All of Merriconeag Stream	Do Not Eat fish of any species.	
All of Picnic Pond	Do Not Eat fish of any species.	
All of Site 8 Stream	Do Not Eat fish of any species.	

In response to the release of AFFF and the reported presence of visible foam on some of the waterbodies on the eastern side of the runway, the Maine CDC additionally recommends

the public avoid any contact with foam on these waterbodies. Out of an abundance of caution, the Maine CDC also recommends the public refrain from any recreational activities (e.g., swimming, boating, wading) that could result in contact with the foam or waters until the potential impact of the AFFF release on these waterbodies is fully assessed.

PFAS are a group of man-made chemicals found in a variety of consumer products throughout the world. Based on a <u>report</u> from the <u>National Academies of Sciences</u>, <u>Engineering, and Medicine</u>, exposure to certain PFAS chemicals has been associated with increases in cholesterol levels, decreases in birth weight, lower antibody response to some vaccines, and kidney cancer.

For more information, please go to:

Maine CDC Scientific Brief: PFOS

Maine CDC PFAS Fish Consumption Advisory FAQ (PDF)



Fish Advisory Extent. Map of waterbodies included in the fish consumption advisory on and around the former Naval Air Station in Brunswick. (*Photo courtesy of the*

Consumption Advisory for the Former Naval Air Station in Brunswick, Maine (PDF)

Freshwater Fish Safe Eating Guidelines (PDF)

For more information, contact Lindsay Hammes at Lindsay.Hammes@Maine.gov.

Source: <u>https://www.maine.gov/dhhs/news/maine-cdc-issues-advisories-eating-freshwater-fish-due-pfas-contamination-former-naval-air-station-fri-08232024-1200</u>

An update was issued on October 21, 2024, by Maine. For more information, https://www.maine.gov/dep/news/news.html?id=13118508

Consumption Advisory for Sucker Fish Species on Yellowstone River below Billings

Women of reproductive age and young children are advised to not consume the nongame fish species

On May 31, 2024, the Montana Fish Consumption Advisory Board, consisting of representatives from the Montana Department of Public Health & Human Services, Montana Department of Environmental Quality, and Montana Fish, Wildlife & Parks (MFWP), issued an updated consumption advisory for fish on the Yellowstone River.

Women of reproductive age and young children (age zero to six) are advised not to consume any species of sucker caught in the Yellowstone River from the Highway 212 bridge in Laurel to the confluence with the Bighorn River due to elevated levels of petroleum hydrocarbons. Sucker species common in the advisory area include shorthead redhorse, longnose sucker and white sucker. There are no advisories on using sucker meat from this section of river as bait while angling for other fish species.

The previous consumption advisory for all species of fish on the Yellowstone River from Indian Fort Fishing Access Site (FAS) to the Highway 212 bridge in Laurel has been lifted.

Sampling Results

Following the discovery of various polycyclic aromatic hydrocarbons (PAHs) in fish tissue from sampling in July and August 2023, the MFWP crews collected various fish species at three sites on the Yellowstone River from September 27–29, 2023 to assess human consumption restrictions.

During the September 2023 sampling, longnose sucker, mountain whitefish, rainbow trout and brown trout were collected from Otter Creek FAS and Holmgren Ranch FAS. Otter Creek FAS is on the Yellowstone River just downstream of Big Timber. The Holmgren Ranch FAS is on the Yellowstone River between Reed Point and Columbus.

Goldeye, smallmouth bass, channel catfish and shorthead redhorse were collected at Voyager's Rest FAS, located on the Yellowstone River near Worden. Shorthead redhorse collected at Voyager's Rest FAS showed levels of mixtures of petroleum hydrocarbons high enough to warrant the advisory for women of reproductive age and young children.

The same fish species were not collected at all sites, as the species present in the Yellowstone River change as the river habitat changes.

Previous Sampling

In July and August 2023, the MFWP crews collected fish from the Yellowstone River to assess physical injuries to fishes and potential human consumption restrictions as a follow-up to the June 24 train derailment. Fish collected included mountain whitefish, longnose suckers, shorthead redhorse, rainbow trout and brown trout. Multiple fish species showed elevated levels of various PAHs high enough to warrant advisories to avoid consumption. Previous advisories were issued on Aug. 11 and Sept. 19, 2023.

Next Steps

Additional sampling took place in late June at Otter Creek, Holmgren Ranch and Voyager's Rest FASes on the Yellowstone River to monitor for human consumption concerns.

Because of their frequent movement throughout river systems, fish cannot be used to determine the source of a specific contaminant. The Montana Fish Consumption Advisory Board prioritized sampling to monitor for human health concerns, not contaminant source assessment. Other testing methods will be needed to determine a source of this specific contaminant in the Yellowstone River. The hydrocarbons detected in the September 2023 fish samples are widespread compounds in the environment, so finding a specific source may be challenging. Some petroleum hydrocarbons occur naturally in the environment, especially in the shale rock common in the Yellowstone River Basin. Petroleum hydrocarbons are also found in products such as oil, gas, plastics, and pesticides—and are produced through combustion of these products.

Petroleum hydrocarbons, such as those detected in September 2023, contain a complex mixture of chemicals. Some of the chemicals can have effects on the blood, immune system, lungs, skin, and eyes. Other chemicals may affect the liver and kidneys. These effects from eating fish have not been recorded in humans. The chemicals that the EPA and the International Agency for Research on Cancer have determined to be carcinogenic or probably carcinogenic to humans were not detected in fish samples in September 2023. Most of the chemicals in the mixtures detected in the fish samples have not been classified as cancer-causing.

For more information on petroleum hydrocarbons, visit: CDC site on Total Petroleum Hydrocarbons (TPH)

For more information, contact Rebecca Harbage, Montana Department of Environmental Quality, at 406-444-2813 and <u>rharbage@mt.gov</u> or Jon Ebelt, Montana Department of Public Health and Human Services, at 406-444-0936 and <u>jebelt@mt.gov</u> or Chrissy Webb, MFWP, at 406-594-1186 and <u>chrislin.webb@mt.gov</u>.

Source: https://dphhs.mt.gov/News/2024/May/FishConsumptionAdvisory

EPA News

The EPA Finalizes First-of-its-Kind Strategy to Protect 900 Endangered Species from Herbicides

Strategy reflects extensive input of growers and other pesticide users

On August 20, 2024, the EPA released its final Herbicide Strategy, an unprecedented step in protecting over 900 federally endangered and threatened (listed) species from the potential impacts of herbicide, which are chemicals used to control weeds. The EPA will use the strategy to identify measures to reduce the amount of herbicides exposure to these species when it registers new herbicides and when it reevaluates registered herbicides under a process called registration review. The final strategy incorporates a wide range of stakeholder input, ensuring the EPA not only protects species but also preserves a wide range of pesticides for farmers and growers.

"Finalizing our first major strategy for endangered species is a historic step in the EPA meeting its Endangered Species Act obligations," **said Deputy Assistant Administrator for Pesticide Programs for the Office of Chemical Safety and Pollution Prevention Jake Li**. "By identifying protections earlier in the pesticide review process, we are far more efficiently protecting listed species from the millions of pounds of herbicides applied each year and reducing burdensome uncertainty for the farmers that use them."

The Biden-Harris Administration's new approaches for protecting endangered species, which include the Herbicide Strategy, have resolved multiple lawsuits against the EPA. For decades, the EPA has tried to comply with the Endangered Species Act (ESA) on a pesticide-by-pesticide, species-by-species basis. However, because this approach is very slow and costly, it resulted in litigation against the agency and uncertainty for users about the continued availability of many pesticides. At the beginning of 2021, the EPA faced almost two dozen lawsuits covering thousands of pesticide products due to its longstanding failure to meet ESA obligations for pesticides. Some of these lawsuits resulted in courts removing pesticides from the market until the EPA ensured the pesticides comply with the ESA. Now, all but one of those lawsuits has been resolved. Unlike the EPA's historic approach to compliance, the Herbicide Strategy identifies protections for hundreds of listed species up front and will apply to thousands of pesticide products as they go through registration or registration review, thus allowing the EPA to protect listed species much faster.

In July 2023, the EPA released a draft of this strategy for public comment. The EPA received extensive comments, with many reiterating the importance of protecting listed species from herbicides but also minimizing impacts on farmers and other pesticide users. In response to comments, the EPA made many improvements to the draft, with the primary changes falling into three categories:

- Making the strategy easier to understand and incorporating up-to-date data and refined analyses;
- Increasing flexibility for pesticide users to implement mitigation measures in the strategy; and,
- Reducing the amount of additional mitigation that may be needed when users either have already adopted accepted practices to reduce pesticide runoff or apply herbicides in an area where runoff potential is lower.

The EPA focused this strategy on conventional herbicides used in agriculture in the lower 48 states because the most herbicides are applied there. In 2022, approximately 264 million acres of cropland were treated with herbicides, according to the Census of Agriculture from the U.S. Department of Agriculture (USDA). The number of cropland acres treated with herbicides has remained fairly consistent since the early 2010s. The EPA is also focusing this strategy on species listed by the U.S. Fish and Wildlife Service (FWS) because herbicides generally impact those species. For species listed by the National Marine Fisheries Service, the EPA is addressing pesticide impacts through a separate initiative with that agency.

Final Herbicide Strategy

The final strategy includes more options for mitigation measures compared to the draft, while still protecting listed species. The strategy also reduces the level of mitigation needed for applicators who have already implemented measures identified in the strategy to reduce pesticide movement from treated fields into habitats through pesticide spray drift and runoff from a field. The measures include cover crops, conservation tillage, windbreaks, and

adjuvants. Further, some measures, such as berms, are enough to fully address runoff concerns. Growers who already use those measures will not need any other runoff measures. The EPA identified these options for growers through its collaborations with the USDA under its February 2024 <u>interagency MOU</u> and through over two dozen meetings and workshops with agricultural groups in 2024 alone.

The final strategy also recognizes that applicators who work with a runoff/erosion specialist or participate in a conservation program are more likely to effectively implement mitigation measures. These conservation programs include the USDA's Natural Resources Conservation Service practices and state or private stewardship measures that are effective at reducing pesticide runoff. The strategy reduces the level of mitigation needed for applicators who employ a specialist or participate in a program. Geographic characteristics may also reduce the level of mitigation needed, such as farming in an area with flat lands, or with minimal rain such as western U.S. counties that are in the driest climates. As a result, in many of those counties, a grower may need to undertake few or no additional runoff mitigations for herbicides that are not very toxic to listed species.

The final strategy uses the most updated information and processes to determine whether an herbicide will impact a listed species and identify protections to address any impacts. To determine impacts, the strategy considers where a species lives, what it needs to survive (for example for food or pollinators), where the pesticide will end up in the environment, and what kind of impacts the pesticide might have if it reaches the species. These refinements allow the EPA to focus restrictions only in situations where they are needed.

The final strategy will also expedite how the EPA complies with the ESA through future consultations with the FWS by identifying mitigations to address the potential impacts of each herbicide on listed species even before the agency completes the consultation process for that herbicide—which in many cases, can take five years or more. Further, the EPA and FWS expect to formalize their understanding of how this strategy can inform and streamline future ESA consultations for herbicides.

The final strategy itself does not impose any requirements or restrictions on pesticide use. Rather, the EPA will use the strategy to inform mitigations for new active ingredient registrations and registration review of conventional herbicides. The EPA understands that the spray drift and runoff mitigation from the strategy can be complicated for some pesticide users to adopt for the first time. The EPA has also developed a <u>document</u> that details multiple real-world examples of how a pesticide applicator could adopt the mitigation from this strategy when those measures appear on pesticide labels. To help applicators consider their mitigation options, the EPA is developing a mitigation menu website that the agency will release in fall 2024 and plans to periodically update with additional mitigation options, allowing applicators to use the most up-to-date mitigations without requiring pesticide product labels to be amended each time new measures become available. The EPA is also developing a calculator that applicators can use to help determine what further mitigation measures, if any, they may need to take in light of mitigations they may already have in place. The EPA will also continue to develop educational and outreach materials to inform the public and help applicators understand mitigation needs and where descriptions of mitigations are located.

The Final Herbicide Strategy and accompanying support documents are available in docket EPA-HQ-OPP-2023-0365 at the <u>Regulations.gov</u> page.

Visit the EPA's website to learn more about how the <u>EPA's pesticide program</u> is protecting endangered species. For more information, contact the EPA Press Office at <u>press@epa.gov</u>.

Source: <u>https://www.epa.gov/newsreleases/epa-finalizes-first-its-kind-strategy-protect-900-endangered-species-herbicides</u>

Per- and Polyfluoroalkyl Substances and Aquatic Life

As part of the EPA's commitment to safeguard the environment from PFAS, the agency uses its Clean Water Act authorities to develop recommended water quality criteria and informational benchmarks to help states and authorized Tribes protect aquatic ecosystems from several PFAS.

- <u>Aquatic Life Criteria Perfluorooctanoic Acid (PFOA)</u>
- <u>Aquatic Life Criteria Perfluorooctane Sulfonate (PFOS)</u>
- <u>Clean Water Act Aquatic Life Benchmarks for PFAS</u>

For more information, contact the EPA Press Office at press@epa.gov.

Source: https://www.epa.gov/wqc/pfas-and-aquatic-life

Other News

Per- and Polyfluoroalkyl Substances Detected in Smallmouth Bass Collected in Mid-Atlantic Watersheds

On September 25, 2024, the U.S. Geological Survey (USGS) published data and announced the presence of PFAS in smallmouth bass from Mid-Atlantic watersheds. Plasma from adult smallmouth bass was analyzed for 13 PFAS at 11 sites for a spatial comparison. At four sites a temporal comparison was made over a three-year period (2017–2019). At two sites tissue comparisons were made using plasma, whole blood, liver, gonad and muscle. Compounds detected at least once are included in the dataset. For all fish collection sites, date of collection, sex, age, length and weight are also documented.

For more information, contact Vicki S. Blazer at <u>vblazer@usgs.gov</u> and 304-724-4434 or Heather Walsh at <u>hwalsh@usgs.gov</u> and 304-724-4445.

Source: <u>https://www.usgs.gov/data/and-polyfluoroalkyl-substances-pfas-detected-smallmouth-bass-collected-mid-atlantic-watersheds#connect</u>

Scientists Improve the Way They Measure Fish Fat to Accelerate Understanding of Fish Population Health

New streamlined method allows scientists to vastly increase the number of samples they can analyze at a time, gaining insights into fish population health—information critical for fisheries management.

On September 24, 2024, the National Oceanic and Atmospheric Administration (NOAA) announced that scientists at the Alaska Fisheries Science Center streamlined a method used to determine the amount of energy-rich fat in fish. As a result, the number of fish samples they are now able to analyze has substantially increased.

Scientists have long regarded lipids (or fat) as the most important energy reserve for animals in marine ecosystems. They are more caloriedense than proteins and sugars and



Bryan Cormack, fisheries biologist at the Alaska Fisheries Science Center, uses a multi-channel pipette for streamlined high-throughput processing using the sulfo-phospho-vanillin (SPV) assay. He processed more than 2,700 SPV samples this past year. (*Photo courtesy of the NOAA Fisheries/Cody Pinger*)

are used to fuel growth. Fish with lower lipid values have slower growth and lower reproductive potential and are weaker overall. Measuring the total lipid content of fish is widely used as a metric to understand the overall health and condition of a population. Moreover, prey species with higher lipid content contribute to the overall health of the predators that eat them.



Coho salmon from the northern Bering Sea that will be processed for lipid content using the sulfo-phospho-vanillin (SPV) assay. (*Photo courtesy of the NOAA Fisheries/Cody Pinger*)

Traditional methods for analyzing lipids take a lot of time and produce relatively few results. On average, a technician can produce results from 15 samples in an 8hour day using gravimetric analysis. Using the new method, a single technician can <u>produce results from 69</u> <u>samples in an 8-hour day</u>. The new method drastically increases productivity while maintaining very high accuracy and precision. More data generated on a faster turnaround is important for decision-makers to inform fish stock assessments and fisheries management on tighter time scales.

Optimizing the Method for Efficient Data Delivery

"Good data about fish stocks requires large sample sizes," remarks Cody Pinger, lead author and analytical chemist with the Alaska Fisheries Science Center. "And in my experience of measuring fish lipids, laboratory methods are usually slow and tedious. For nearly a decade, our group has been working to optimize the sulfo-phospho-vanillin assay, and I'm thrilled to say that we have increased our productivity many-fold while maintaining good accuracy and precision."

The sulfo-phospho-vanillin (SPV) assay has been long studied as a rapid alternative to traditional methods for lipid analysis. "We ramped up productivity by adapting the assay to modern chemistry instrumentation, and then validated these measurements on important Alaska fish stocks," continues Pinger.

The sample processing starts with a fish. For some species, the entire fish is blended into a uniform mixture; for others, we only process the muscle tissue. The sample is extracted into organic solvent. The following steps include heat and concentrated sulfuric acid followed by a reaction with vanillin in the presence of phosphoric acid—hence the name sulfo-phospho-vanillin. This process generates a final product that is a clear liquid with a pink tint. The darker the pink equates to more lipid in the sample.

From there the sample is passed through a spectrophotometer, which measures the amount of light absorbed by the sample. This fine-tuned instrument can quantify the amount of lipid in each sample. The 96-well format allows the team to analyze many more samples at once, which streamlines the process and is more efficient than traditional methods.

Calibrating and Applying the Data

Prior research studies show that achieving high accuracy with this method depends on proper calibration so that it can be applied to a variety of species.

The chemical reaction between lipids, acid, and vanillin is dependent on the specific molecular composition of the fat, which varies between species of fish. Fat from a salmon filet is chemically different from fat from a Pacific cod. In a perfect world, all samples could be calibrated using a widely available fish oil. In Pinger and his team's case, they used menhaden oil for that purpose. However, this does introduce some error when you're analyzing many different species with different lipid profiles.



A 96-well plate of lipids from walleye pollock after performing a SPV assay. The more intense pink color equates to more lipid in the sample. (*Photo courtesy of the NOAA Fisheries/Cody Pinger*)

To fine-tune the results of the SPV assay using menhaden oil for calibration, the team developed calibration models for each species analyzed. This <u>study</u> looked at:

- Pacific herring
- Cod
- Pollock
- Capelin
- All five species of Alaska Pacific salmon (Chinook, coho, pink, sockeye, and chum)

The results produced data that matched what traditional methods produced. This validated the SPV method and certified a novel way to measure lipids in Alaska marine fish.

After many years in the making, Cody Pinger and his team are thrilled with the results. Pinger says, "This has been a long time in the works, and we are all thrilled to be able to provide high quality data in such an efficient manner. The more information we can provide about the annual status of our ecosystems and fish stocks, the better for management of these commercially and ecologically important marine resources."

For related information, see this recent publication:

Pinger, C., D. Porter, B. Cormack, C. Fugate, and M. Rogers. 2024. High-Throughput Determination of Total Lipids from North Pacific Marine Fishes Via the Sulfo-Phospho-Vanillin Microplate Assay. *Limnology and Oceanography: Methods*.

For more information, contact <u>cody.pinger@noaa.gov</u>.

Source: <u>https://www.fisheries.noaa.gov/feature-story/scientists-improve-way-they-measure-fish-fat-accelerate-understanding-fish-population</u>

Lakes in Marginalized Communities Sampled Less, Study Finds

Water is essential for all forms of life humans included and understanding the quality of available water is critical to knowing where to drink, swim, fish and otherwise make use of the resource.



Satellite imagery of lakes in residential areas. (Photo courtesy of the U.S. National Science Foundation)

A new analysis, published on September 9, 2024 in *Frontiers in Ecology and the Environment*, by U.S. National Science Foundation-funded researchers that combines census data and information on lakes finds that critical sampling and monitoring is less likely to occur in lakes surrounded by marginalized communities. This disparity makes assessing the water quality in those communities extremely difficult.

In reviewing both population demographics and one-time monitoring data at the continental scale, the researchers found that lakes in communities of color were three times less likely to be sampled at least once than lakes in white communities. The same disparity exists when comparing lakes in Hispanic communities to those in non-Hispanic communities, the study also found.

The disparity in terms of long-term monitoring — monitoring lakes for 15 years or more — was even greater. Lakes in communities of color were seven times less likely to have long-term monitoring data when compared to white communities. The research also found that lakes in Hispanic communities were 19 times less likely to have long-term monitoring data than lakes in non-Hispanic communities.

"Where we sample can matter as much as what we sample," said Matt Kane, program director in the U.S. National Science Foundation Directorate for Biological Sciences. "These findings reveal the need to expand sampling and monitoring to get an accurate picture of water quality across the country that can serve as the basis for management and policy decisions."

For more information, contact Matt Kane <u>mkane@nsf.gov</u>.

Source: https://new.nsf.gov/news/lakes-marginalized-communities-sampled-less-studyfinds#:~:text=In%20reviewing%20both%20population%20demographics,than%20lakes%20in%20white%20com munities

United States Geological Survey Science Opportunities Related to the Nationally Relevant Study of Microplastics

On June 6, 2024, the USGS released a strategic vision document that identifies science gaps and prioritizes research relevant to the mission, expertise, and capabilities of the USGS. The intention is for the USGS and stakeholders to use this as a starting part for planning, prioritizing, and designing microplastic research projects.

The widespread occurrence of microplastics throughout our environment and exposure to humans and



Microplastics Sources, Pathways and Fate Conceptual Diagram. (Photo courtesy of the Environmental Health Program USGS)

other organisms over the past decade has led to questions about potential health hazards and mitigation of exposures. Microplastics have been documented in tissues and organs of humans and wildlife, to have effects on benthic communities, and to cause potential nutritional and reproductive effects in some wildlife species.

The USGS Microplastic Strategic Vision Document describes both short-term (1–2 years) and long-term (3 years +) science opportunities related to the nationally relevant study of microplastics. These opportunities were identified through literature gap analysis and alignment with USGS expertise and capabilities.

The Science Opportunities that could be addressed by the USGS capabilities are organized into six categories:

- 1. Environmental Sources, Pathways, and Fate
- 2. Human and Wildlife Exposure Routes
- 3. Ecotoxicology
- 4. Sampling Protocols
- 5. Analytical Methods
- 6. Interdisciplinary Science to support Microplastic Research

Across the nation, the USGS has broad and unique interdisciplinary expertise, tools, and capabilities, as well as field and laboratory capacities. The USGS relies on the internal and external collaborative opportunities to utilize these capabilities and conduct comprehensive research. The interdisciplinary nature of USGS science provides a framework to understand how microplastics enter the environment, sorb pathogens and chemicals, and transform and move through ecosystems. The USGS utilizes a One Health approach to understand how human health is intricately linked to the health of plants, animals, and ecosystems.

Utilizing a One Health framework on microplastic research is a more holistic approach that allows scientists to better understand and assess the cross disciplinary components (the relation between the ecosystem and the health of humans and wildlife) rather than working in silos. This approach facilitates the leveraging of resources, more efficient data collection and more timely results for informing decisions more quickly. The USGS microplastic strategy complements research conducted by other agencies and provide critical information for regulatory and other policy decisions.

For more information, contact Rip Shively at <u>rsshively@usgs.gov</u> or Deb Iwanowicz at diwanowicz@usgs.gov

Source: <u>https://www.usgs.gov/programs/environmental-health-program/science/usgs-science-opportunities-related-nationally</u>

Recently Awarded Research

National Fish and Wildlife Foundation Announces \$4 Million in Grants to Support Sustainable Fisheries

Grants will support efficient fisheries data collection and expand innovations to new fisheries

On March 28, 2024, the National Fish and Wildlife Foundation (NFWF) and NOAA Fisheries announced \$4 million in grants to support data modernization and electronic data collection in U.S. fisheries. The grants will generate \$7.5 million in matching contributions for a total conservation impact of \$11.5 million.



Fishing boat near Sitka, Alaska. *(Photo courtesy of the NFWF)*

coexistence with wildlife," said Jeff Trandahl, executive director and CEO of the NFWF. "The grants announced today highlight the NFWF's growing partnership with fishing communities to develop and implement cost efficient gear and electronic technologies that work for fishermen and expand these benefits to new communities."

The grants were awarded through the <u>Electronic Monitoring and</u> <u>Reporting Grant Program</u> (EMR Grant Program), a partnership between NFWF and NOAA Fisheries and the Walton Family Foundation.

"Recreational and commercial fisheries and the species they rely on all benefit from the availability of accurate and timely data to support sustainable fisheries and The 17 projects will expand proven electronic technologies to new fisheries, deploy artificial intelligence onboard vessels to make electronic data collection more efficient, and enhance data collection in some of the nation's largest fisheries. Projects will support sustainable management efforts in federal and state fisheries in Alaska, California, Florida, Hawai'i, Maine, Massachusetts, New Jersey, Oregon, Rhode Island and Washington State, along with the territory of Puerto Rico.

"Together with the NFWF, we are proud to invest in the advancement of electronic data collection and data modernization to support fisheries management across 10 states and Puerto Rico," said Assistant Administrator for the NOAA Fisheries, Janet Coit. "These advancements will greatly benefit fishing communities, marine ecosystems, and improve our science-based sustainable fisheries management efforts in the face of our changing climate."

This year's grants include multiple projects to build tools and capacity for conservation partners to collect timely and accurate data. One example is a project working to equip tribal government partners with hardware to electronically collect and share fisheries survey and environmental data from the field, providing long-term efficiency gains for the partnership while enhancing data available for conservation decision making. Additional projects will continue the growth of electronic monitoring and electronic reporting in fisheries around the United States.

"Innovative ideas like these work to modernize fisheries by increasing the speed and transparency of data. They can also decrease the cost of monitoring. All of which can help managers and fishermen operate successful, sustainable businesses," said Cara Eisel, Program Officer at the Walton Family Foundation. "This work will help support sustainable fisheries for generations to come."

The EMR Grant Program was established in 2015 to advance the NOAA Fisheries' sustainable fisheries goals to partner with fishermen and other stakeholders, state agencies and fishery information networks to integrate technology into fisheries data collection and observations. To date, the program has awarded more than \$32.9 million to 112 projects in U.S. fisheries and has generated an additional conservation impact of \$49.3 million through matching contributions. In 2023, Congress appropriated \$3.5 million to the NOAA Fisheries for this program's 2023–2024 slate of awards.

A complete list of the grants made through the Electronic Monitoring and Reporting Program is available here.

For more information, contact Rob Blumenthal at 202-857-0166 or rob.blumenthal@nfwf.org.

Source: <u>https://www.nfwf.org/media-center/press-releases/nfwf-announces-4-million-grants-support-sustainable-fisheries</u>

Tech and Tools

Larval Fish Abundance, Identification, and Auxiliary Data from the Great Lakes and Their Connecting Waters, 2006–2022

On October 1, 2024, the USGS published a dataset containing data collected on various vessel operations on the Great Lakes and their connecting channels, primarily the St. Clair River, St. Marys River, Lake St. Clair, Detroit River, and Lake Erie, although other locations have been sampled and included in this dataset. This dataset contains the field variables, environmental conditions, larval catches (numbers), larval fish identifications, larval fish measurements, and associated auxiliary information with the sampling locations.

For more information, contact Robin L DeBruyne at <u>rdebruyne@usgs.gov</u> or 734-214-7228, Edward F Roseman at <u>eroseman@usgs.gov</u>, or Stacey A Ireland at <u>sireland@usgs.gov</u> or 734-214-7261.

Source: <u>https://www.usgs.gov/data/larval-fish-abundance-identification-and-auxiliary-data-great-lakes-and-their-connecting-o</u>

Recent Publications

Journal Articles

The list below provides a selection of research articles.

- <u>Catch Uncertainty and Recreational Fishing Attraction: Propositions and Future Research Directions.</u> Arlinghaus, R. 2024. Catch Uncertainty and Recreational Fishing Attraction: Propositions and Future Research Directions. *Fish and Fisheries* 25(5):761-780.
- Analysis of Total Microcystins by Lemieux Oxidation and Liquid Chromatography-Mass Spectrometry in Fish and Mussels Tissues: Optimization and Comparison of Protocols.

Bouteiller, P., R. Biré, A.J. Foss, T. Guérin, and E. Lance. 2024. Analysis of Total Microcystins by Lemieux Oxidation and Liquid Chromatography-Mass Spectrometry in Fish and Mussels Tissues: Optimization and Comparison of Protocols. *Science of The Total Environment* 950:175339.

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Upcoming Meetings and Conferences

2024 Great Lakes PFAS Summit December 3–5, 2024 Virtual

American Fisheries Society August 10–14, 2025 San Antonio, TX 85th Midwest Fish & Wildlife Conference January 19–22, 2025 St. Louis, Missouri

SETAC North America 46th Annual Meeting November 16-20, 2025 Portland, OR

Additional Information

This bimonthly newsletter highlights current information about fish and shellfish.

For more information about specific advisories within the state, territory, or tribe, contact the appropriate state agency listed on EPA's National Listing of Fish Advisories website at https://fishadvisoryonline.epa.gov/Contacts.aspx.

For more information about this newsletter, contact Sharon Frey (Frey.Sharon@epa.gov, 202-566-1480).

Additional information about advisories and fish and shellfish consumption can be found at https://www.epa.gov/fish-tech.