United States Environmental Protection Agency

Fish and Shellfish Program NEWSLETTER

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

EPA News

EPA Plans to Finalize Water Quality Standards to Protect Critical Fish Species and Clean Up the Water in the Delaware River

This action under the Clean Water Act will bolster fishing and economic opportunities

On April 1, 2025, the EPA notified the U.S. District Court for the Eastern District of Pennsylvania of its intent to finalize a rule revising outdated water quality standards for 38 miles of the Delaware River between Philadelphia and Wilmington. The EPA's forthcoming final rule will prioritize clean water to support aquatic life and benefit those living, working and recreating in Delaware, New Jersey, and Pennsylvania.

"As part of my Powering the Great American Comeback Initiative to provide clean water for all Americans, EPA is committed to issuing updated water quality standards for this portion of the Delaware River," **said EPA Administrator Lee Zeldin**. "When finalized, this action will protect two species of endangered sturgeon and prove to be a boon for commercial and local fishing by also protecting American shad, striped bass and yellow perch."

"EPA's rule, when finalized, will support improved conditions for aquatic life in the Delaware River Estuary, and I am proud of the Delaware River Basin Commission's (DRBC) sound scientific work in the process," **said Kristen Bowman Kavanagh, P.E., DRBC's Executive Director.** "The DRBC will continue to provide resources and expertise to our member states, EPA, and stakeholders to implement the rule."

Water quality standards (WQS) describe the desired condition of a water body and the means by which that condition will be protected or achieved. Water bodies can be used for purposes such as fishing, recreation (e.g., swimming and boating) and scenic enjoyment. This action better aligns water quality standards in this urbanized portion of the Delaware river with standards that already exist upstream and downstream to better support cohesive water quality planning.

This section of the Delaware River between Philadelphia and Wilmington is where several commercially and recreationally important fish species live and spawn. Making sure that

all these oxygen-sensitive fish have adequate water quality that supports reproduction and growth will protect and increase their populations, which will bolster commercial and recreational fishing, job creation, and revenue in the ecotourism sector.

The EPA is continuing to review and consider all the comments as the agency drafts the final rule. The EPA will provide responses to all public comments when the final rule is issued. The EPA intends to comply with all applicable and relevant Executive Orders when issuing this rule.

Learn more about EPA's proposed water quality standards for the Delaware River.

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

Source: https://www.epa.gov/newsreleases/epa-plans-finalize-water-quality-standards-protect-critical-fish-species-and-clean

EPA's Research Vessel Lake Guardian Begins Annual Sampling of Great Lakes

On April 7, 2025, the EPA's largest research vessel, the R/V *Lake Guardian*, began its annual spring water quality survey. During the month-long mission, scientists collected samples of water and organisms such as plankton and zooplankton in each of the five Great Lakes. The data gathered by R/V *Lake Guardian* enables the EPA and partner agencies to assess the impact of invasive species and algal blooms, manage fisheries, and protect the quality of Great Lakes water so it can be used for drinking water, fishing, and recreation.

Since 1983, the EPA has conducted biannual sampling surveys, which together provide a comprehensive assessment of the lakes' health. The spring survey samples the lakes when temperatures are uniformly cold from top to bottom and nutrient concentrations are generally at their highest for the season. The summer water quality survey is scheduled to begin August 1, 2025. The summer survey is designed to sample the lakes when warmer surface water overlays colder bottom water, since these conditions influence nutrient and oxygen levels, algal growth, organism distribution, and fish habitat. These two surveys will add to the EPA's Great Lakes water quality dataset, the longest-running and most extensive monitoring program for water quality and aquatic biota for all five Great Lakes.

Scientists from the Oak Ridge Institute for Science and Education, University of Minnesota Duluth — Natural Resources Research Institute, Cornell University, Michigan Tech Research Institute, Michigan Technological University, Case Western Reserve University, the University of Chicago, and the University of Texas Permian Basin joined scientists from the EPA's Great Lakes National Program Office to conduct the spring survey.

These surveys support EPA Administrator Lee Zeldin's Powering the Great American Comeback initiative, specifically the pillars of Clean Air, Land, and Water for Every American and Cooperative Federalism and Cross-Agency Partnerships. They also fulfill the EPA's statutory requirements in the Clean Water Act to monitor the water quality of the Great Lakes.

Read more about the EPA's Great Lakes monitoring programs.

Source: https://www.epa.gov/newsreleases/epas-research-vessel-lake-guardian-begins-annual-sampling-great-lakes

EPA Begins Removing PCBs from Trowbridge Dam Site in Kalamazoo, Michigan

On April 8, 2025, the EPA started cleaning up soil and sediment contaminated with polychlorinated biphenyls (PCBs) along the Kalamazoo River near the Trowbridge Dam in Allegan, Michigan.

Under EPA oversight, the responsible party, NCR Voyix, is working with Michigan Department of Natural Resources and Michigan Department of Environment, Great Lakes and Energy on the multi-year cleanup to prevent future contamination and erosion and improve water quality and fish health in the Kalamazoo River. The Trowbridge Dam cleanup is part of the larger Kalamazoo River Superfund Site.

A dredging barge will pump sediments for processing at a newly constructed area off 108th Avenue downstream of the 26th Street bridge. NCR Voyix will build a temporary structure onsite to manage river levels until the cleanup is expected to be finished in three years. The EPA will conduct air and water monitoring around the site perimeter during the cleanup.

Certain access points near boat launches are restricted. The EPA advises residents to adhere to signs and buoys placed along the river to restrict access. To enter and exit the river, residents should use upstream access areas.

For more information, please visit the Trowbridge Dam website.

Source: https://www.epa.gov/newsreleases/epa-begins-removing-pcbs-trowbridge-dam-site-kalamazoo-michigan

Patterns of Per– and Polyfluoroalkyl Substance Occurrence in Fish in the 2018–2019 U.S. EPA National Rivers and Streams Assessment — Recent EPA Publication

On May 15, 2025, the EPA published an article titled *Patterns of Per- and Polyfluoroalkyl Substance Occurrence in Fish in the 2018-2019 U.S. EPA National Rivers and Streams Assessment*, which characterizes the patterns of occurrence of per- and polyfluoroalkyl substances (PFAS) in the tissue of freshwater fish in major U.S. rivers. Many factors are described, including that the concentrations of at least one of these compounds were detected in more than 90% of composite samples. Nine PFAS compounds occurred in more than 20% of the fish; and 96 samples (35%) contained a combination of 7 or more compounds. ThePFAS compounds found in samples were predominantly PFOS, PFDA, PFUnA, PFDoA and PFTrDA.

For more information, contact John Wathen at wathen.john@epa.gov.

Source: https://doi.org/10.1016/j.scitotenv.2025.179216

Recent Advisory News

District of Columbia Department of Energy and Environment Provides Fish Consumption Advisory Update

On December 18, 2024, the District of Columbia Department of Energy and Environment (DCDOEE) has recently completed a tissue study of fish caught in DC waters. Results of the study indicate that persons who eat fish caught in the District of Columbia's Potomac and Anacostia Rivers need to consider eating less of those fish. This notice does not pertain to fish purchased from restaurants, fish vendors, or supermarkets.

The study analyzed the tissue of various species of fish for a variety of chemicals, including PFAS for the first time. The study also analyzed the samples for the chemicals tested in earlier studies such as PCBs, PAHs, metals, and organochlorine pesticides. The study results showed that the majority of species tested contained PFAS. PFAS are at times referred to as "forever chemicals" as they do not break down and tend to accumulate in the environment. Long term exposure to PFAS can put individuals at risk for serious health problems such as cancer, liver problems, thyroid issues, birth defects, kidney disease, decreased immunity, and other health problems. PCBs are also still a chemical of concern in fish tissue.

This notice is preliminary as the EPA final guidance on how to interpret PFAS fish tissue concentrations is not currently available. The equations used to calculate the number of meals based on fish tissue concentrations are under revision by the EPA. Once the guidance and revised equations are available, DCDOEE will complete the analysis of the findings of the fish tissue study and make new fish consumption recommendations, as appropriate.

Comparison of the study results with screening values for PFAS developed by the New Jersey Department of Environmental Protection showed that fewer servings of some species should be eaten.

This notice is provided for persons to consider if they choose to consume DC-caught fish.

With the recent fish tissue study findings, DCDOEE advises the general public to limit consumption of fish from all DC waters, as follows:

- **Do not eat**: Eel, carp, striped bass or largemouth bass
- **May eat**: Three servings per month of blue catfish, or one serving per month of brown bullhead catfish or channel catfish or gizzard shad or smallmouth bass, or snakehead or sunfish or white perch or yellow perch
- **Choose to eat**: Smaller fish of legal size
- Catch and release is encouraged for native species
    - Invasive blue catfish, flathead catfish, and northern snakehead should NOT be returned to the water. These species should still only be consumed in accordance with the preliminary advisory recommendations above.
    - Note DCDOEE did not sample tissue from flathead catfish so does not have data that indicates what amount of flathead catfish is safe to eat.

For more information, contact N. Shulterbrandt at nicoline.shulterbrandt@dc.gov.

Source: https://doee.dc.gov/release/doee-provides-fish-consumption-advisory-update

Connecticut Department of Public Health Loosens Consumption Advisory for Fish from the Hockanum River

On February 6, 2025, the Connecticut Department of Public Health (CTDPH) loosened the consumption advisory for fish caught in four sections of Hockanum River in East Hartford, Vernon, Manchester, and Ellington, Connecticut listed in the table below. CTDPH is taking this action in close coordination with the Department of Energy and Environmental Protection (DEEP). CTDPH changed the advisory on the Hockanum River after evaluating perfluorooctane sulfonic acid (PFOS) concentrations from fish sampled in 2022 and reported in 2023 from several sections of the Hockanum River using CTDPH's safe consumption limits.

"These consumption advisories are necessary to protect public health while allowing for community members to benefit from the nutritional benefits of eating fish," **said CTDPH Commissioner Manisha Juthani, MD**.

CTDPH is modifying the previous 'do not eat' consumption advisory for the Hockanum River from the Connecticut River in East Hartford to the outlet of Union Pond in Manchester including East Hartford Lake as well as the Ellington section of the Hockanum River to "Do not eat bass, all other species - one meal per month." However, the "Do not eat" consumption advisory remains in effect for the section of the Hockanum River from and including Union Pond in Manchester east through the remainder of Manchester and through Vernon to the outlet of Shenipsit Lake on Tolland Avenue. The "Do not eat" advisory also includes several riverine impoundments of Papermill Pond, including Pitney Park in Vernon and the Tankerhoosen River upstream to the dam on Main St, Vernon. Shenipsit Lake is not included in the advisory.

Waterbody	Species	Precious Consumption Advisory (2022)	Updated Consumption Advisory
East Hartford Section	All	Do Not Eat-Everyone	Do not eat Bass, All other Species, 1 Meal Per Month-Everyone
East Hartford Lake	All	Do Not Eat-Everyone	Do not eat Bass, All other Species, 1 Meal Per Month-Everyone
Manchester Section from East Hartford border to the outlet of Union Pond, Manchester	All	Do Not Eat-Everyone	Do not eat Bass, All other Species, 1 Meal Per Month-Everyone
Union Pond, Manchester Section to outlet of Shenipsit Lake, Tolland Avenue, Vernon (includes several riverine impoundments of Papermill Pond, including Pitney Park and Tankerhoosen River (upstream to dam at Main St., Vernon))	All	Do Not Eat-Everyone	No Change
Ellington Section	All	Do Not Eat-Everyone	Do not eat Bass, All other Species, 1 Meal Per Month-Everyone
Shenipsit Lake, Vernon, Ellington and Tolland	All	No Specific Advisory	No Change

CTDPH's safe consumption limits for PFOS are protective of the general population as well as sensitive groups, which include pregnant women, women planning on becoming pregnant, nursing women and children under 6 years old. However, it also is important to note that there is a pre-existing statewide advisory in place for all freshwater finfish and shellfish caught in Connecticut because of mercury contamination. Sensitive groups should limit their consumption to no more than one meal per month. For all other groups, the advice is to limit

consumption to no more than one meal per week of freshwater finfish and shellfish. This statewide advisory does not apply to sunfish or trout as there are no consumption limits for these fish species, unless otherwise noted.

Additional information on CTDPH fish consumption advisories can be found at: **https://portal.ct.gov/fish**.

For more information, contact CTDPH at 1-877-458-FISH (3474).

Source: https://portal.ct.gov/dph/newsroom/press-releases---2025/hockanum-river-fish

Health Officials Update Fish Consumption Guidance in Some Waterbodies due to PFAS

On April 17, 2025, the Minnesota Department of Health (MDH) updated its fish consumption guidance due to PFAS found in fish from some waterbodies in 10 Minnesota counties. In the Twin Cities metro area, some waterbodies in Anoka, Carver, Dakota, Hennepin, Ramsey and Washington counties are impacted. In Greater Minnesota, some waterbodies in Douglas, Martin, McLeod and St. Louis counties are impacted.

PFAS are harmful chemicals that have been widely used for decades to make products that resist heat, oil, stains, grease and water. PFAS may accumulate in a person's body over time and may become a health concern. They are linked to developmental effects, including low birth weight in infants and a weaker immune system in children. Exposure to some PFAS may also cause changes in liver function and increase cancer risks.

The most stringent fish consumption guidelines ("do not eat") advise everyone to completely avoid eating certain fish. Other guidelines just advise certain people ("sensitive populations") to limit how many servings they eat of certain fish.

According to the new guidance, fish no one should eat include:

- All species of fish caught in Minnesota River Valley ponds and Long Meadow Lake (Hennepin County).
- Bass caught in Mooney Lake (Hennepin County).
- Walleye caught in George Lake (Martin County).
- Yellow perch and common carp caught in Otter Lake, McCuen Creek, Bear Creek and the south fork of the Crow River (McLeod and Carver counties).

The new fish consumption guidance is less restrictive than before for rainbow smelt caught in Lake Superior. Based on the updated review of PFAS data, MDH has determined that it's now OK to eat up to one serving per week. The previous limit was one serving per month.

The rest of the new guidance, including a list of impacted waterbodies by county, can be found on MDH's Fish Consumption Guidance webpage under "April 2025 Update."

"Our fish consumption guidance can help anglers and their families make informed choices about which fish to eat and how often," said Angela Preimesberger, MDH's fish consumption guidance program lead. "Following the guidance enables you to reduce your exposure to contaminants while still enjoying the many benefits of eating fish, which is an important part of a healthy, well-balanced diet."

MDH works with the Minnesota Department of Natural Resources (DNR) and the Minnesota Pollution Control Agency (MPCA) to select lakes and rivers to monitor for contaminants. Since 1974, MDH has used data from these monitoring activities to advise anglers on fish consumption when levels of mercury or PCBs may be unsafe for human consumption. The Fish Contaminant Monitoring Program added PFAS in 2004.

Fish consumption guidance is based on:

- **Where you caught the fish.** Some waterbodies have lower levels of PFAS and other contaminants than others.
- **Who you are.** Some people are more sensitive than others to negative health effects from exposure to PFAS. The most sensitive groups include people who are or could become pregnant, those who are breastfeeding or plan to breastfeed and children under age 15 years.
- **The species of fish.** The maximum number of servings recommended per week or month may vary among fish species caught in the same waterbody.

Fish consumption guidance will be updated as new scientific information becomes available, so check the DNR's LakeFinder or MDH's Fish Consumption Guidance webpage before you eat fish caught in Minnesota.

Eating fish is just one way people are exposed to PFAS. PFAS are present in many consumer products, environments, workplaces and homes. Minnesota has been taking action to eliminate PFAS for many years, and current recommendations can be found in the state's PFAS Blueprint.

For more information, contact Amy Barrett at amy.barrett@state.mn.us.

Source: https://www.health.state.mn.us/news/pressrel/2025/fish041725.html

Other News

Lake Trout Restoration in Lake Champlain — A Success

Stocking program to cease

On April 11, 2025, the U.S. Fish and Wildlife Service (FWS) announced that thanks to a successful, decades-long effort by FWS, Vermont Fish and Wildlife Department and New York State Department of Environmental Conservation, lake trout have been restored to Lake Champlain. As a result, the wild population no longer needs to be augmented by hatchery-reared fish, and stocking will end after this spring.

Lake trout restoration. (*Photo courtesy of Joshua Morse and the Vermont Fish and Wildlife Department)*

The decision was announced by the Lake Champlain Fish and Wildlife Management Cooperative — a working group of fisheries professionals from the three agencies — at its annual meeting on April 10, 2025.

The cooperative has collaborated to increase the lake trout population since 1972, by stocking hatchery-raised juvenile trout and initiating a sea lamprey control program in 1990. Sea lamprey is an invasive parasitic species that preys on the fish. The latest survey of lake trout suggests Lake Champlain's population is self-sustaining because of these measures.

"The Service is proud to be a partner in this cooperative and of our contributions towards improving conditions to restore this native species in Lake Champlain," said Wendi Weber, regional director for FWS in the Northeast Region. "It's exciting to see the return on investments in the sea lamprey program, by rebuilding an important recreational fishery and supporting the regional economy."

Recreational fishing in Lake Champlain generates about $474 million in economic activity annually.

The lake trout restoration program was created in the 1950s by the state agencies, who began stocking the lake annually with yearling lake trout. It quickly became apparent that invasive sea lamprey, which first entered the lake from the Hudson River through the Champlain Canal, were preying on the stocked trout. In 1990, FWS partnered with the state agencies on a sea lamprey control program, and the federal agency has led the program since 2011.

"Bringing back Lake Champlain's native lake trout to the point that they no longer depend on stocking is an incredible conservation success," said Andrea Shortsleeve, interim commissioner for Vermont Fish and Wildlife Department. "This would not have been possible without strong partnerships — scientists and conservation groups from across the region support our decision to stop stocking and focus on maintaining good numbers of wild trout."

The cooperative will stock trout once more this spring, then continue to assess the health of the population and prepare a plan that includes benchmarks for reinstituting stocking if wild lake trout numbers appear to be declining.

“The establishment of a self-sustaining lake trout population in Lake Champlain is a direct result of a robust cooperative effort between partner agencies and the University of Vermont to restore this native fish and associated fishery,” New York State Department of Environmental Conservation Acting Commissioner Amanda Lefton said. “This restoration effort serves as a model for states to effectuate positive and collaborative conservation outcomes.”

While stocking was critical given losses to sea lamprey, successful re-establishment of a wild lake trout population would not have been possible without strong measures to control the invasive species. Native to the Atlantic Ocean, lamprey play an important role in ocean and coastal river ecosystems but cause havoc when they invade inland waters with no natural predators. Lamprey latch onto fish like lake trout and feed off their bodily fluids, seriously harming or killing the hosts.

FWS’s lamprey control program is multifaceted and includes adding physical barriers to rivers and streams entering Lake Champlain; applying lampricides that target and kill larval sea lamprey before they prey on fish; and trapping and removing adults before they can spawn.

After reaching a high of 99 sea lamprey woundings per 100 lake trout in 2006, the rate dropped to 23 per 100 in 2022. The wounding rate has hovered around the cooperative’s target of 25 for the last two years. Continued control of this invasive species will support restoration of other native fish species and sustain a thriving recreational lake trout fishery that bolsters local economies. For every $1 invested in the sea lamprey control program, $3.50 is returned to the economy.

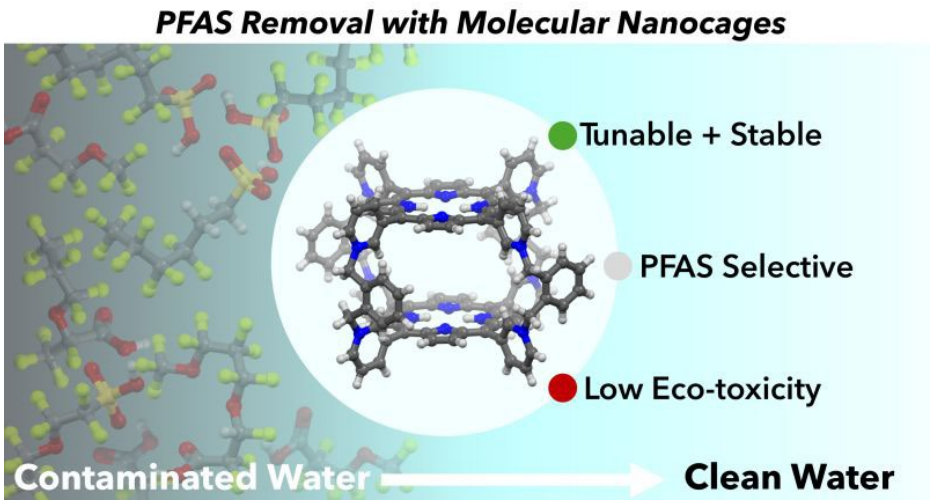
For more information, contact FWS Northeast Region Headquarters at (413)253-8200.

Source: https://www.fws.gov/press-release/2025-04/lake-trout-restoration-lake-champlain-success

Molecular Nanocages Remove 80–90% of PFAS, or 'Forever Chemicals,' from Water

The porphyrin-based chemical nanocages remove more PFAS from groundwater than traditional filtering methods while keeping toxicity low

On April 14, 2025, the U.S. National Science Foundation (NSF) announced researchers funded by the NSF have created a molecular nanocage that captures the bulk of PFAS, found in water — and it works better than traditional filtering techniques that use activated carbon. Made of organic nanoporous material designed to capture only PFAS, this tiny chemical-based filtration system removed 80 to 90% of PFAS from sewage and groundwater during the study, respectively, while showing very low adverse environmental effects.



An illustration of porphyrin-based molecular nanocages that are engineered for selectivity, water stability and fast sorption. These nanocages achieve on average 90% removal of 38 PFAS compounds from mixed water solutions. The material shows promise for more efficient, safer and sustainable water remediation. (*Photo courtesy of NSF and RENEW, University at Buffalo*)

The study was led by scientists at the University at Buffalo and published in *American Chemical Society ES&T Engineering*.

PFAS are chemical compounds sometimes called “forever chemicals” and are commonly used in food packaging, nonstick coatings and other applications. PFAS do not degrade easily and are notoriously difficult to remove from water sources. Studies show exposure to PFAS may cause a range of negative health impacts, including decreased fertility, developmental delays in children and increased risk for some cancers. The safe and effective removal of PFAS from groundwater, sewage and other water sources is a national challenge.

Molecular nanocages have been previously suggested as candidates for pollutant removal, including for PFAS. Their sturdy structures provide capabilities to capture, remove and chemically deactivate hazardous substances like PFAS and many others. They could also potentially filter out noxious gases from the air, the study authors say.

The researchers synthesized the nanocages from a group of organic chemicals called porphyrins. Previous studies have shown success with porphyrin nanocages in removing dyes, antibiotics, insecticides and chemicals that disrupt human hormone production from water.

The researchers then tested their nanocages' ability to absorb 38 different types of PFAS, including GenX, a type of PFAS commonly used in nonstick cookware and other materials. The results showed the nanocages removed 90% of PFAS from groundwater and 80% from unprocessed or “influent” sewage.

The organic molecular nanocages also outperformed the PFAS-filtering abilities of activated carbon, particularly in unprocessed sewage. Activated carbon and other purification or filtration methods, such as ion exchange resins and reverse osmosis, tend to interact weakly with PFAS, the researchers note. They are also costly, high-maintenance and energy-intensive in comparison to nanocages.

"Porphyrin-based nanocages offer a potentially practical solution to the challenges of PFAS removal," says Samy El-Shall, a program director in the NSF Division of Chemistry. "The material can also be mass-produced at scale, and the cages are modifiable to remove PFAS only while leaving other water contents alone."

For more information, contact the U.S. National Science Foundation at info@nsf.gov.

Source: https://www.nsf.gov/news/molecular-nanocages-remove-80-90-pfas-or-forever-chemicals

National Oceanic and Atmospheric Administration Seafood Inspection Program Marks 15 Years Since Deepwater Horizon Disaster

On April 29, 2025, the National Oceanic and Atmospheric Administration (NOAA) Seafood Inspection Program announced its continued efforts to support emergency oil spill responses to protect public health and seafood safety.

The NOAA Seafood Inspection Program (SIP) has a long history of supporting emergency responses to oil spills, helping protect public health and maintain confidence in seafood safety. From the 1989 *Exxon Valdez* spill to the 2010 *Deepwater Horizon* disaster, our seafood sensory analysts have played a vital role. They evaluate seafood safety, conduct sensory testing, and provide training. Fifteen years after *Deepwater Horizon*, our program remains essential in upholding trust in the safety and quality of seafood worldwide.

How NOAA Tests Seafood for Oil Contamination

Over time, NOAA has enhanced how it checks seafood for oil contamination. One of the main methods used now is sensory analysis, where trained experts smell and taste seafood to detect petroleum-related odors and flavors.

Highly Sensitive

Trained human testers can detect oil contamination at extremely low levels — sometimes even better than chemical tests. Studies show that trained experts can notice petroleum taint in seafood at just 10 parts per million of certain harmful compounds. This helps ensure seafood is safe for consumers.

Fast and Efficient

Sensory analysis allows experts to quickly determine whether seafood is safe, helping authorities decide when to close or reopen fishing areas. Since sensory analysis requires little equipment, it can be easily expanded for large oil spills. This makes it possible to assess more areas, frequently, and use resources efficiently during environmental emergencies. This helps ensure seafood is safe for consumption.

By using this reliable and efficient approach, NOAA helps keep seafood safe and maintains public confidence in the seafood industry.

How NOAA Is Improving Seafood Safety After Oil Spills

The Deepwater Horizon oil spill led to major advancements in how NOAA responds to environmental disasters. NOAA SIP quickly refined its methods to check seafood safety in real time to meet urgent needs. By training state and industry partners, a faster more efficient system to assess seafood contamination during emergencies was established.

Ongoing Efforts to Keep Seafood Safe

Updating Inspection Procedures

In December 2024, NOAA introduced the first major rule changes since 1971, aiming to streamline administrative and inspection processes. These updates help teams quickly assess seafood safety during oil spills, reducing delays in response efforts.

Strengthening Industry Partnerships

NOAA is working closely with federal agencies, state authorities, and the seafood industry to support NOAA's National Seafood Strategy, which aims to strengthen industry resilience and competitiveness. This collaborative approach works to promote and protect seafood safety in future environmental crises.

Through modernization and innovation, NOAA continues to improve its seafood safety measures, ensuring a quick and effective response to future oil spills.

International Collaboration

Since the *Deepwater Horizon* oil spill 15 years ago, NOAA has continued to extend its expertise globally, helping other countries protect seafood from oil spill contamination.

In early 2022, a tanker accident off the coast of Lima, Peru, spilled nearly 12,000 barrels of crude oil. It affected about 44 square miles of ocean and contaminated local fisheries. The Peruvian government reached out to NOAA and the U.S. Food and Drug Administration for help. Agency experts trained Peru's National Fisheries Health Organization on how to detect petroleum contamination in seafood using sensory analysis techniques. This training improved Peru's ability to ensure seafood safety after the spill.

The *Deepwater Horizon* disaster served as preparation for this international collaboration. The tools, training, and methods developed during that crisis helped NOAA to swiftly apply its expertise to meet Peru's needs.

Protecting Seafood, Strengthening Resilience

The NOAA Seafood Inspection Program plays a vital role in keeping seafood safe after environmental disasters. By leveraging sensory analysis, building strong partnerships, and ongoing modernization initiatives, NOAA continues to protect public health and support the seafood industry worldwide. The lessons learned from *Deepwater Horizon* continue to shape and strengthen these efforts.

For more information, contact NOAA Southeast at dgueho@ldaf.state.la.us.

Source: https://www.fisheries.noaa.gov/feature-story/noaa-seafood-inspection-program-marks-15-years-deepwater-horizon-disaster

Tech and Tools

The Future of Red Snapper Data: Using Active Acoustic Monitoring and Artificial Intelligence to Collect Data

On April 15, 2025, NOAA announced that NOAA Fisheries is using advanced technologies and artificial intelligence to collect and analyze red snapper and reef fish data. These technologies can identify species, abundance, and the health of observed fish stocks, leading to more reliable data.

In February, NOAA Fisheries took the initial steps to collect more comprehensive fisheries data by testing equipment that will be used to estimate the abundance of red snapper in the Gulf of America. They will use advanced video and acoustic cameras, combined with echosounders and artificial intelligence (AI) to collect these data. It's a first-of-its-kind attempt to develop next generation surveys to improve and automate detection of red snapper, even in low visibility conditions, using acoustic technologies.

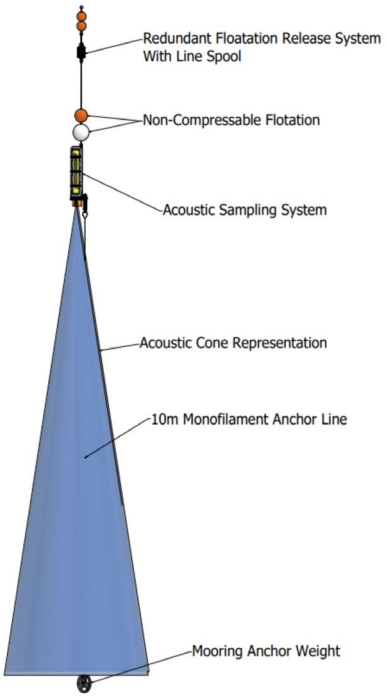
A Way of Life for Coastal Communities

Stock assessments include estimates of recreational catch, effort, and discards (when a fish is returned into the ocean dead or alive). They factor into how saltwater fishing seasons are determined. In the Southeast United States, saltwater fishing is a favorite pastime. Offshore fishing in the Gulf of America specifically has been cited as one of the top reasons people visit the region. Red snapper is the flagship species for what is considered to be the largest recreational fishery in the world. Red snapper are highly prized for their cultural and recreational value. Having an idea of their abundance in the Gulf is crucial for the sustainable management of the species and the coastal economies that rely on thriving fisheries.

NOAA Fisheries' Responsibility

NOAA Fisheries is responsible for monitoring fish populations, managing stocks, and enforcing regulations, operating under 10 National Standards of sustainability. The Southeast Fisheries Science Center is responsible for providing stock assessments to inform management. These assessments are a scientific report containing information on the collection, analysis, and details on the condition of a fish stock and estimating its sustainable yield. Managing sustainable fisheries is a dynamic process that requires consistent attention to new scientific information that can guide management actions.

Using Acoustic Monitoring to Count Fish



Acoustic sampling system sits on the deck of a research vessel before deployment (left), schematic image of how the acoustic echosounder sampling system sits in the water column using bottom-mounted mooring methodology (right). (*Photo courtesy of NOAA Fisheries*)

Red snapper are reef fish generally found at 30 to 620 feet deep. NOAA uses active acoustic monitoring to explore and analyze these habitats in an undetected manner. Through the use of sonar and active acoustic technologies, they can collect the data they need in any visibility.

NOAA scientists deploy echosounders or other acoustic sensors to capture and record activity from marine animals. Echosounders work by emitting a sound pulse, which travels through the water column. It bounces off objects, including plankton, the seafloor, and — in this case — reef fish. The sound is reflected back to the same device, which calculates the range and properties of the objects. The recorded activity is then analyzed to identify species and observed abundances.

Acoustic methods provide valuable data for understanding trends and changes over time. To accurately identify abundances of red snapper specifically, NOAA also collects video and other supplementary data along with the echosounder and imaging sonar datasets.

Additionally, NOAA is engaging in a collaborative data modernization initiative to ensure the data collected are accessible, interoperable, and able to be effectively analyzed. They are creating an application programming interface to serve as a cloud-based data management tool. It will provide users with an all-in-one solution to load, transform, and analyze acoustics data from all science centers across the United States.

On the Horizon

Traditionally, video and acoustic survey data are analyzed manually. For example, a scientist would review video collected underwater to determine which species are present and active, including recording and counting the number of fish present in the videos. In these red snapper data collection projects, NOAA will be using advanced technologies and Artificial Intelligence to analyze the data collected to identify species, abundance, and health of the observed fish stock. Using this system of data collection and analysis promotes efficiency, and allows NOAA to capture more reliable reef fish data. This will benefit millions of anglers, supporting and positively contributing to Gulf coastal economies by improving and maintaining the health of NOAA fisheries. This work is part of a larger

science initiative at NOAA Fisheries that aims to modernize its data acquisition and management. Learn more about the advanced technologies NOAA is using to support this goal.

For more information, contact NOAA Southeast at dgueho@ldaf.state.la.us.

Source: https://www.fisheries.noaa.gov/feature-story/future-red-snapper-data-using-active-acoustic-monitoring-and-artificial-intelligence

National Institute of Standards and Technology Researchers Develop Material for Measuring Arsenic in Shellfish

On March 13, 2025, the National Institute of Standards and Technology (NIST) announced a new standard reference material will help ensure that geoduck clams and other shellfish are safe to eat

- Geoduck clams are an important U.S. food export and are critical to local economies on the Washington state and Alaskan coasts.
- To ensure that these clams and other shellfish are safe to eat, they must be tested for toxic elements and compounds, including inorganic arsenic.
- NIST researchers have developed a standard reference material that will support more accurate measurements of inorganic arsenic in geoduck clams and other shellfish.

Even if you are a big fan of scallops, oysters and other shellfish, you may not have heard of the geoduck clam. But these outsized mollusks are an important food export to Asia and vital to coastal economies in Washington state and Alaska. Divers from these states harvested more than $60 million worth of them in 2023, according to NOAA.

To promote confidence in their food products, these states must test geoduck clams and other shellfish for toxic elements and compounds, including inorganic arsenic, a known carcinogen.

To help ensure accurate measurements, researchers at the National Institute of Standards and Technology (NIST) have developed a standard reference material (SRM) made of geoduck tissue containing very carefully measured amounts of inorganic arsenic. This material will help states monitor inorganic arsenic levels in their geoduck exports. It will also help ensure the food safety of geoduck clams and other shellfish sold in the U.S.

“Many marine organisms absorb arsenic because it is naturally present in the ocean environment,” said NIST biologist Colleen Bryan Sallee, who led the development of the material. “This material will help ensure that inorganic arsenic is accurately measured in shellfish for determining food safety.”

Previously, geoduck clams were tested for total arsenic, which includes the element in both its organic and inorganic forms. But the inorganic form is considered more toxic, and the new SRM will help labs accurately measure that form specifically.

SRM 2983: Inorganics in Geoduck Clam Tissue (*Panopea generosa*) consists of one jar of frozen geoduck clam tissue, along with a document listing the measured amounts of organic and inorganic arsenic, with uncertainty values for each.

NIST researchers developed the geoduck clam reference material by shucking, cleaning and dicing geoduck clams and then freezing them in liquid nitrogen. The material was ground into a fine powder, and researchers then used an analytical laboratory technique to measure precise amounts of arsenic. (*Photo courtesy of NSF and RENEW, University at Buffalo*)

Seafood testing laboratories and research organizations can ensure the accuracy of their measurements by running a small sample of the SRM through their instruments. If their results match the certified values from NIST to within a specified uncertainty, then they can have confidence in their measurement methods. If not, they'll know they need to adjust their methods.

To create this new material, researchers shucked, cleaned and diced geoduck clams, froze them in liquid nitrogen, and ground the frozen tissue into a fine powder. They used an analytical technique called inductively coupled plasma mass spectrometry to measure the arsenic amounts in the material.

NIST produces more than a thousand SRMs that promote public health and safety and support U.S. industry. These materials help ensure accurate measurements in industries ranging from food (peanut butter and infant formula) to health care (cholesterol in blood serum) to manufacturing (carbon steel) and many more.

NIST researchers collaborated on this project with the NOAA Fisheries Seafood Inspection Program, the Washington State Department of Health, and the Southeast Alaska Regional Dive Fisheries Association.

SRM 2983: Inorganics in Geoduck Clam Tissue (*Panopea generosa*) is available for purchase at the NIST Store.

For more information, contact Alex Boss at alexandra.boss@nist.gov.

Source: https://www.nist.gov/news-events/news/2025/03/nist-researchers-develop-material-measuring-arsenic-shellfish

Recent Publications

Journal Articles

The list below provides a selection of research articles.

- Fishing for Data: AI Approaches to Advance Recreational Fisheries Monitoring
  Baker, L.R., N. A. Knott, R. Gorkin III, S. Aubin, C. Brown and K. J. Peters. Fishing for Data: AI Approaches to Advance Recreational Fisheries Monitoring. *New Zealand Journal of Marine and Freshwater Research* 2025 Pages 1-18.

- Individual Outcomes Matter in the Context of Responsible and Sustainable Catch-and-Release Practices in Recreational Fisheries and Their Management
  Cooke, S.J., S.C. Danylchuk, S.R. Tracey, R. Arlinghaus, R.J. Lennox, J.W. Brownscombe, A. Weir, S.G. Hinch, D.A. Patterson, and M.L. Guckian. 2025. Individual Outcomes Matter in the Context of Responsible and Sustainable Catch-and-Release Practices in Recreational Fisheries and Their Management. *Fisheries* 50(4):172-181.

- Occurrence and Distribution of Per-and Polyfluoroalkyl Substances (PFAS) in Tidal Salt Marsh Creeks
  Corbitt, E.R., L.A. Leonard, M.A. Mallin, and R.N. Mead. 2025. Occurrence and Distribution of Per-and Polyfluoroalkyl Substances (Pfas) in Tidal Salt Marsh Creeks. *Marine Pollution Bulletin* 216:117932.

- Per-and Polyfluoroalkyl Substances (PFAS) Composition and Distribution in Surface Water of the Miccosukee Indian Reservation, Everglades and Tributaries in the Coastal Environment of Miami, Florida
  Heath, C., A. Castaneda, E. Ornstein, M.G. de Navarro, B. McNamee, S. Najera, D. Calzadilla, and N. Quinete. 2025. Per-and Polyfluoroalkyl Substances (Pfas) Composition and Distribution in Surface Water of the Miccosukee Indian Reservation, Everglades and Tributaries in the Coastal Environment of Miami, Florida. *Environmental Research*:121627.

- Strategies to Deter Pacific Herring from Aquatic Farm Infrastructure
  Hollarsmith, J.A., K.M. Boswell, C. Taylor, K. Friedman, J. Vollenweider, R.J. Cates, T. Stephens, A. Bishop, and K. Cieciel. 2025. Strategies to Deter Pacific Herring from Aquatic Farm Infrastructure. *North American Journal of Aquaculture*: vraf002.

- Juvenile Salmonids Traverse Coastal Meta-Nurseries That Connect Rivers Via the Sea
  Munsch, S.H., T.R. Bennett, J. Faukner, M.J. Halloran, K.M. Hanson, M.C. Liermann, M.L. McHenry, J.R. McMillan, R.E. Moses, and B. Pagliuco. 2025. Juvenile Salmonids Traverse Coastal Meta-Nurseries That Connect Rivers Via the Sea. *Frontiers in Ecology and the Environment*:e2848.

- Seasonal Patterns of Mercury Bioaccumulation in Lobsters (Homarus Americanus) from Maine
  Stoicov, D., C.A. Bonin, A.J. van Wijnen, and E.A. Lewallen. 2025. Seasonal Patterns of Mercury Bioaccumulation in Lobsters (Homarus Americanus) from Maine. *Academia biology* 3(1).

- Exploring the Complexities of Seafood: From Benefits to Contaminants
  Taylor, B., K.F. Ofori, A. Parsaeimehr, G. Akdemir Evrendilek, T. Attarwala, and G. Ozbay. 2025. Exploring the Complexities of Seafood: From Benefits to Contaminants. *Foods* 14(9):1461.

- Microcystin Contamination of Shellfish Along the Freshwater-to-Marine Continuum within US Mid-Atlantic and Northeast Estuaries
  Wallace, M.K., R.M. Kudela, and C.J. Gobler. 2025. Microcystin Contamination of Shellfish Along the Freshwater-to-Marine Continuum within US Mid-Atlantic and Northeast Estuaries. *Harmful Algae*:102860.

- Patterns of Per-and Polyfluoroalkyl Substance Occurrence in Fish in the 2018–2019 US EPA National Rivers and Streams Assessment
  Wathen, J.B., and A.C.C. Balbuena. 2025. Patterns of Per-and Polyfluoroalkyl Substance Occurrence in Fish in the 2018–2019 US EPA National Rivers and Streams Assessment. *Science of The Total Environment* 977:179216.

Upcoming Meetings and Conferences

American Fisheries Society
August 10–14, 2025
San Antonio, TX

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 Fish_Advisory@epa.gov.

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