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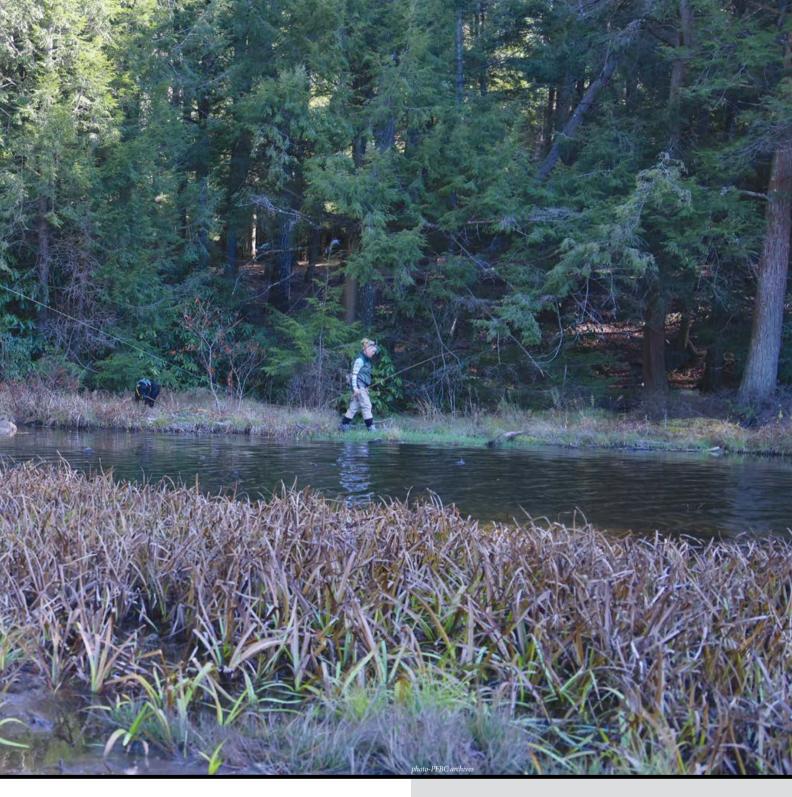
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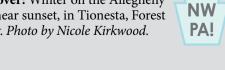
Covers



Front cover: The Pennsylvania Fish and Boat Commission marks mussels with glitter to identify the age and stocking release year of mussels. These mussels were stocked in Dunkard Creek, Greene County. Photo by PFBC archives.

Back cover: Winter on the Allegheny River, near sunset, in Tionesta, Forest County. Photo by Nicole Kirkwood.







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DIRECTOR'S MESSAGE

MORE THAN JUST FISHING AND BOATING!

by Timothy D. Schaeffer **Executive Director**

ong-time readers of Pennsylvania Angler & Boater know that our agency and this magazine are about more than just fishing and boating. Our mission "to protect, conserve and enhance aquatic resources and provide fishing and boating opportunities" and our underlying statutory authority in the Fish and Boat Code vest us with stewardship responsibility for all aquatic species in Pennsylvania—not just those you pursue with a hook and line.

In this edition, you'll read about the groundbreaking work our staff and partners are doing for species like freshwater mussels and the Chesapeake Logperch. The long-term significance of these and related efforts recently led to creating a new Division of Aquatic

Species Restoration to elevate the prominence of this multidisciplinary work that is ultimately aimed at keeping common species common, restoring imperiled species and maintaining the ecological balance of aquatic ecosystems. Enjoy learning about this exciting interdisciplinary work on pages 32-39.

And, with another field season in the books, special thanks to our friends at the Wildlife Leadership Academy (WLA) for helping to inspire and train the next generation of conservation leaders. See page 46. Attending the Bass and Brookies camps is always a highlight of the summer for me, and it's especially gratifying to see WLA alumni like John Bruner and Sage Storm on page 36 implementing the skills they learned at the camps as they work alongside Pennsylvania Fish and Boat Commission staff in the field.

PFBC ON THE JOB

Garrett Herigan Area 2 Fisheries Biologist

y lifelong obsession with fish began as far back as I can remember. As a kid, I spent hours playing in my local streams with a small dip net. Through the years, my preferred fish catching tool shifted to a rod and reel. I'm fortunate to have a career for anglers (and fisheries managers) to with the Pennsylvania Fish and Boat Commission (PFBC), where my obsession an angler without much to show for it, with fish can be utilized to protect, conserve and enhance the outstanding fisheries found in Pennsylvania.

Currently, I work as a Fisheries Biologist in Tionesta, Forest County. My management area encompasses the Allegheny River Basin upstream from the confluence of the Kiskiminetas River. This includes all tributaries and publicly accessible lakes. My primary job duties revolve around gamefish management, which includes conducting fish surveys to inform fisheries management decisions like harvest regulations and stocking programs.



Of the surveys we annually conduct, my personal favorites are any surveys that have the opportunity to catch Muskellunge. These toothy predators occur at low densities and are difficult catch. I've spent hours chasing them as so I'm always excited to get my hands on these fish during our surveys.

My favorite fishing water in my management area is the Allegheny River, specifically from Tionesta upstream to Kinzua Dam. I enjoy fishing the upper Allegheny River, because it's home to all three of my favorite targets—Brown Trout, Muskellunge and Smallmouth Bass. The Allegheny River also offers a scenic and peaceful fishing experience by boat or on foot. Accessing the river for fishing is easy at any of the public boat launches and by foot within the public recreation area of the Allegheny National Forest. \Box







Boating



Catch and Release



Conservation



Fishing



Fly Fishing



Ice Fishing



Lakes



Paddling



Rivers



State Parks



Streams



Tackle and Gear

Women's Steelhead Fishing Program

TESTIMONIAL



Dear Staff,

I hope this note hits your inbox like a hot cup of coffee sipped from a thermos on the stream—warming your soul, lifting your spirits and energizing you throughout the day.

I want to thank you for generously sharing your time and assembling an awesome crew of volunteers for the Women's Steelhead Fishing Program. Your warmth, candor and ability to quickly build community set the tone for an incredible weekend of fly fishing on Elk Creek, Erie County. The streamside mentors and guides helped to demystify the most daunting aspects of fly fishing. Their patience and your kindness made all the difference. Seriously, after years of trial and error, I finally feel like a real fly angler.

The Women's Steelhead Fishing Program helped me gain the confidence and skill to read the stream, cast, mend a line and land some beautiful chromers. Thank you! This program is truly a gift.

A highlight of the weekend was not only being equipped with invaluable skills but opening doors to a network of female anglers. These anglers are steelhead enthusiasts from across Pennsylvania, many of whom I now consider friends. I have been fishing my entire life. Born and raised in Western Pennsylvania, our family photo albums measure fish and the passage of time. When I look at

these pictures, I'm surrounded by the warmth and loving memories of a lifetime of fishing trips. Every photo reveals a smile and story. Fishing is our family's love language—a timeless bond we share across generations, past and present. What's most remarkable is that many anglers share similar stories and sentiments. It was heartwarming joining a community of female anglers. We made new memories, formed lasting friendships and added fish stories that will surely be embellished for years to come.

I'm genuinely grateful for the opportunity to join the Women's Steelhead Fishing Program. In the coming weeks, I hope to return to Lake Erie's tributaries to practice my roll cast and perfect my rendition of the steelhead shuffle. And, thanks to the friendships forged streamside, I have a new group of fishing buddies to meet me at the stream. I'm certain we'll have a blast.

Thanks again for sharing your time, patience and humor. You have created an incredibly warm and inviting community of steelhead enthusiasts. I have already signed up for my next fishing adventure with the Pennsylvania Fish and Boat Commission. Looking forward to learning from you. Take care! □

Kind regards, Jennifer Lanas North East, Erie County





Register for Programs and Events:





TIPS FOR FIRST TIME ICE ANGLERS

by Marilyn Black

If you're considering fishing through ice in winter, the most important aspect is finding an experienced ice angler who's willing to escort and coach you during your first ice fishing session.

At age 25, Bo Bartholomew, Mercer County, ventured onto the ice for the first time 11 winters ago with good friend Chris Hatfield at Lake Wilhelm, Mercer County. Bartholomew's been hooked ever since. He enjoys passing on tips to other anglers and points out that the best days of ice fishing are safe, meaningful and comfortable—his day's success is not measured by the quantity of fish caught or harvested.

- Check ice thickness and clarity with a spud bar before venturing very far onto the ice. Generally, clear ice is the strongest while white ice is the weakest.
- Take a starter pack that includes ice picks, an ice fishing rod (with a sensitive rod tip and rigged with 2-pound or 3-pound-test line), tungsten jigs, bait, a sturdy 5-gallon bucket and an ice auger.
- Try a maggot on a jig, because it's a great all-around option.
- Match what the fish are eating by choosing plastic lures resembling bloodworms or small insects.
- Wear warm, waterproof footwear with ice cleats. Bring an insulated floor mat to keep your feet off the ice while you're stationary.
- Dress in warm layers, and wear a United States Coast Guard-approved life jacket or float coat.
- Don't go ice fishing alone.

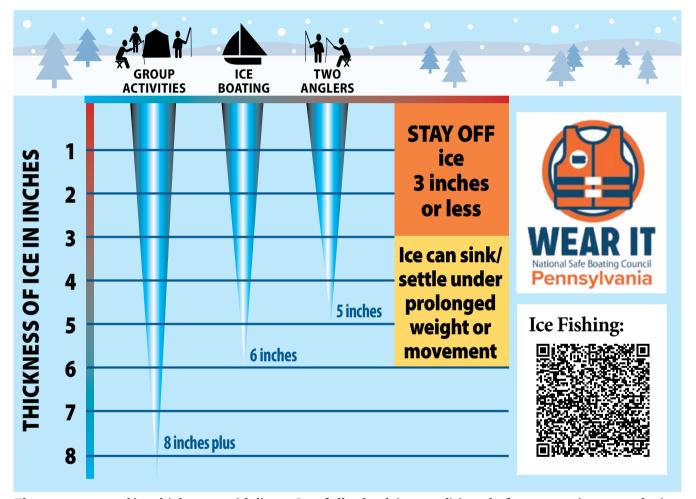
"Ice fishing comes with its own form of exhilaration. Take time to learn and really take in what this sport has to offer," said Bartholomew.

For more information, see the Pennsylvania Fishing Summary/ Pennsylvania Boating Handbook at fishandboat.com.

LAKE ICE SAFETY GUIDE Stay off ice on moving water.

Ice is never 100% safe.

Minimum ice thickness guidelines for new, clear ice.



These are general ice thickness guidelines. Carefully check ice conditions before venturing onto the ice.

Ice Safety Tips

- · Never go on the ice alone.
- Wear a life jacket or float coat.
- · Stay off cloudy ice.
- Keep away from structures (like logs, stumps and rocks) and springs and shorelines, which may thaw first.
- Understand ice formation factors (like water chemistry, wind and sunlight).
- Test the ice.
- Have a plan for rescue (ropes, ice awls, ice picks).
- Learn self-rescue techniques.
- Dress in layers.
- Take a change of dry clothes.
- Don't drive on the ice.



Lessons from MULTI-SPECIES FISHING

by Braden Eisenhower

photos by the author

If I had it my way, I would fish for Muskellunge until I keeled over, only to wake the next day to repeat the cycle.

Truth is the prominent Muskellunge fisheries are too far for daily visits, and I've conceded that to fish several times throughout the week, I'd need to expand to other species.

I didn't arrive at this conclusion all at once. And, especially early on, the fish were hard-earned. The multi-species approach took years of research and

experimentation, which meant fishless outings and equipment upgrades. But, it was worthwhile.

I follow a seasonal progression, pursuing whatever species is biting best. Or, at times, I'll have a second option if, for example, my preferred destination is unfishable due to high and muddy waters from a stretch of lousy weather.

With this efficient approach, I've become familiar with my equipment—boats and trolling motors, rods and reels, lures and line. Fishing begins with sound fundamentals like making accurate casts, tying strong knots, executing a proper hookset and playing a fish to the net. Each species uniquely addresses these points.

And, let's not ignore the boost in confidence one experiences by catching fish and actively learning.

In many cases, I apply the knowledge acquired with one species elsewhere. Or, I can address a shortcoming. When I was trying to improve my drop shotting skills for bass fishing, out came a downsized version tailored to panfish, an abundant and agreeable lot.

There's also a fresh perspective gained from fishing familiar waters for uncommon species. This practice forces me to orient the boat and present lures differently, often fishing at a slower pace. Muskellunge fishing is like painting with a wide brush. Each cast covers a large area, and the gigantic lure fills the voids. But, give me a bass rod and I find changes in bottom content and subtle depth changes.

Now, I've uncovered new spots where fish may congregate, and I expect other fish to utilize the same spots. I've heard other anglers refer to this relationship as "closing the circle" on the ecosystem.

My early season success for Largemouth Bass stems from my pursuit of ice-out Bluegills. Again, this abundant and agreeable panfish is easy to locate in dark-bottom bays and coves, usually on the Northwestern shores, where the afternoon sun beats down and the water is warmest. The warm water attracts all forms of life, from the microorganisms that draw Bluegills to the Largemouth Bass that gorge on Bluegills.

In the advanced stages, multi-species fishing reinforces how structure and environmental conditions affect a fish's mood. This indicates why I was successful, so I can repeat it another day or apply it elsewhere.

Some of my best crappie fishing occurs on windy days at small lakes. East winds take the structural element (shallow water transitioning to deep) and double its potency by creating a current-eddy scenario. The crappies pile into the slack water on the leeward side to feed on plankton, minnows and so forth.

My friend and fishing partner replicated this on a river system targeting Smallmouth Bass. Current is a given in this environment. However, the addition of a stiff north wind made it difficult to remain in contact with our jigs.

We set up on the leeward side of an island, mostly out of the wind, where we had control of our tube baits bouncing from the shallow, slack water areas to the current seam in deeper water. And there, tucked right where they ought to be, were quality Smallmouth Bass.

Every angler has a favorite fish to catch. But, sometimes those steps outside of our comfort zone are where we grow the most. \Box



Perfecting fishing fundamentals requires time, patience and repetition. Target crappies and Bluegills in the springtime. Abundant populations mean action, which shorten one's learning curve.



iscover Pine Creek before you hit the water. This virtual paddling webinar lets you learn from home. Afterwards, test your skills in a real-life, on-the-creek experience.

A webinar on the Pennsylvania Department of Conservation and Natural Resources (PA DCNR) calendar of events last year caught people's attention. Attendees learned about paddling iconic Pine Creek in northern Pennsylvania through a computer seminar and then followed up with a paddling experience on the creek itself.

To make things even more special, Curtis Sherwood, Tiadaghton State Forest Environmental Education Specialist, and Cody Whipple, his coworker and a former Pennsylvania Fish and Boat Commission (PFBC) employee, ran the seminar. They led people from all over the state back to Sherwood's home creek to experience what Sherwood already knows—a love for the creek and a passion for conservation.

"Our goal was to reach out to people who wouldn't normally have the confidence to go out on the water and explore Pine Creek," said Sherwood. "We wanted to offer a way to reach more people through virtual programming, as a first step in building that confidence. Many beginner paddlers have never experienced moving water. We knew if we gave them a structured and safe experience, we could help them come to love the area and the creek like we do."

On the night of the seminar, Sherwood and Whipple appeared on screen to welcome everyone and give a



brief history of the Pine Creek area. The seminar was available through a link sent to participants and could be viewed on cell phones, tablets and computers.

The seminar prepared visitors and local folks for the temperament of river paddling and rafting. Northern Pennsylvania's beauty brings people to the area, often those who are unaware of the dangers of a river that rages under the right conditions. An exhilarating ride on the river is only for advanced paddlers. For everyone else, safety is in their preparation.

The course navigates regulations and safety concerns, providing information on flotation devices and float plans.

Then, it virtually shows attendees what it's like to be on the river. Sherwood developed a link to Google Earth that shows each section of the creek from Big Meadows Access Area, near Ansonia, to Jersey Shore.

Later in the spring, Sherwood and other PA DCNR employees, certified in water rescue and instruction, take a group of registered program participants down the creek. Last year, the trip was 10 miles long from Rattlesnake Rock to Tomb Flats. Canoes and life jackets were loaned through a collaboration between the Tiadaghton State Forest and PFBC.

"Our success is measured in watching people who have never paddled on moving water experience Pine Creek with small rapids and riffles. They have a sense of what to expect, and they build

confidence and an appreciation for the experience. And,

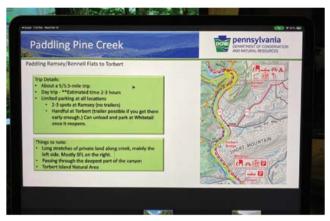
when they finish the trip saying, 'wow', we know that's what it's all about," said Sherwood.

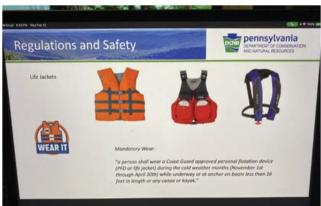
It's about building safe paddling experiences—and a love for our area.

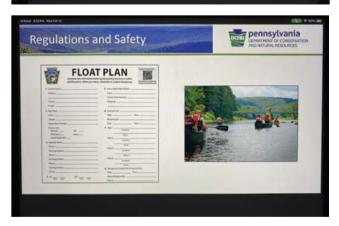
Check the
Tiadaghton State
Forest website Events
section for announced
dates for its next
scheduled webinars.

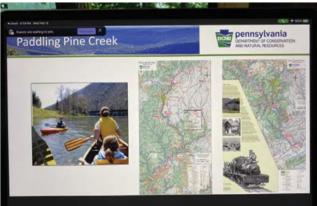
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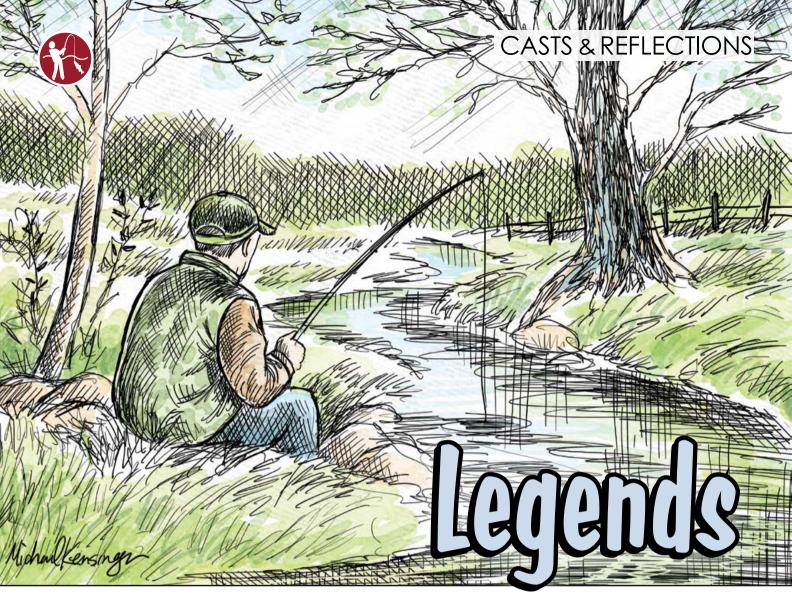








The Virtual Pine Creek Paddle webinar navigates regulations and safety concerns, providing information on flotation devices and float plans.



by Michael Kensinger

Poised at the side my favorite Blair County trout stream for the first time in years, I take in autumn's glorious colors all around me. I reach into my vest for a pill bottle, twist open the cap and excitedly dump a small pile of spinners into the palm of my hand. While not a pill, this fishing lure pile is a cure—a cure for trout fever.

It's been a busy year for me. As I stand alongside a stream I haven't fished for years, I'm overcome with pleasant memories of fishing with my old Pap. My Pap, Edward Kensinger, was a legendary trout angler among the Kensinger clan. Excellent at fishing, he somehow made it a point to slip and fall into the stream at least once or twice a season. He was particularly prone to such mishaps

when he had a lunker on, claiming that he dove in to tackle the trout.

Pap and I would 'kick for minnies' every spring—the act of bringing a large net into a tiny pasture stream and having someone walk downstream to corral minnows into the net. Pap would have a bucket with water, and we'd keep the Blacknose Dace and release everything else. After toting them home, Pap would keep them in a well oxygenated tank. I can still smell it and hear it humming in the garage.

The trout season opener was more favored than Christmas for ol' Pappy, and I still cling to memories of my bewildered grandmother grumbling under her breath at 6:00 a.m. while she cooked up a hearty breakfast for us. With bed head and nightgown, she would bid us

good luck and head back to bed as we finished up.

Back to my day, with a flick of the wrist, I cast my blue-bead silver spinner into the first hole of the stream. The deep, clear water reveals several trout in hot pursuit of my lure. Through my polarized lenses, I see a 12-inch wild Brown Trout striking the spinner. Almost immediately, the trout falls off the hook and shoots down the stream like a yellow arrow.

Another cast reveals another wild Brown Trout, stream born, with few spots. Spotting in "brownies" seems quite variable, and I tend to favor fish with larger, yet more sparse spotting. And, no Brown Trout will fully win my heart if the red spots are absent from its flanks, which does happen from time to time.

As I amble upstream, I catch, miss and startle many small trout.





One trout that I missed had me bellyaching, as it appeared to be a large, wild Brown Trout that only struck the spinner enough for me to yank it right out of the water, completely startling the fish.

Trout, or I should say wild trout, are extremely wary fish. And, despite feverishly casting a dozen more times on that spot, I can't say I'm surprised that the target fish was not buying it a second time. Ah well, onward I go upstream to the next fishing hole.

Just a few yards upstream, I catch another fish, a small, native Brook Trout. Our only native trout, the Brook Trout is a stunner. And, as much as I hate to admit it, another big trout slips out from the shadowy depths under the cut of the stream bank only to see me before it makes the strike.

Whining to myself, I shuffle up the stream where I come to an old tree that I recognize. It's no ordinary tree. This tree has a story.

My Pap told me about this tree, poised on the stream bank, where he caught one of the biggest trout he'd ever seen on a nightcrawler. I was just a boy when he told me about the "big ol' rainbow" that he dry-docked. Now,

here I am, 37 years old, standing just below it in some riffles preparing for a cast.

Yet, before I cast my spinner, I watch two large, spawning wild Brown Trout about 16 inches long, slipping down from that famous hole into the frothy riffles right at my feet. Startled, I stand still as they swim side-by-side past my ankles. I see their amber-colored fins and ocher-tinged flanks as they slip downstream toward the cover of some rhododendron. With half gratitude and half disappointment, I sigh at the spectacle of the two fish that I hadn't caught.

I cast the blue-bead silver spinner upstream. The spinner plops into the water just below Pap's tree. I reel and the spinner flickers.

SWOOSH!

A dark figure launches from the submerged roots and slams my spinner. I know I have a large Rainbow Trout.

The water churns upward to the surface as the hook-jawed fish bends its massive body to change direction. My reel squeals as the line pulls out. I may have even squealed myself. I'm grateful the tension in my reel is set low to keep the line from snapping. The slimy brute whirls through the water.

The battle is rather unnerving. In a small stream, battling a large trout poses many risks. All it takes is for the line to wrap around one jagged tree root or rock and it's over. Then, there's the chance the hook isn't even set well. I fumble around with the net in one hand and attempt to control the rod with the other hand. As I slip around, nearly following Pap's tradition of diving for trout, the fish slips over the same pool of the spawning Brown Trout.

It takes a few attempts to net it, but I finally scoop it into the net. In water at the edge of the stream, I remove the hook and quickly measure it. From "nose" to tail, the Rainbow Trout measures 21 inches long, making it my largest trout to date and a whole 3 inches longer than the Rainbow Trout my Pap caught and mounted many years ago. Overcome with joy and feeling my Pap's presence, I gently slip it back into the water, where it belongs. And, just like that, a new legend drifts upstream and back under the tree roots from where it came. \Box

W.

Steelhead Adventures in Erie

by Jeff Woleslagle photos by the author

ost winters include a long weekend trip from my home in the southcentral part of Pennsylvania to the Lake Erie region and its tributaries in search of the mighty steelhead. There is a small group of us who normally make this annual pilgrimage to soak up the camaraderie and enjoy time together on the water. Some years, the fishing is incredible and others we work hard for every bite. But, one thing is for certain, our trips are always an adventure. Chasing steelhead in the winter can be daunting, and we have learned a lot over the years.

For us, it's a low budget affair, and we normally rent from a local establishment that caters to fishing groups and has a full kitchen. Each person is responsible for providing a meal to share at some point during the trip, and we look forward to the hearty eating almost as much as we do the fishing. Sometimes, the fishing at this time of year is spectacular, and the water is often uncrowded. There is a peaceful serenity to the winter landscape here that we always enjoy.

We often start our trip by fishing stretches of Walnut Creek and Elk Creek. There are multiple public access points along both creeks, and we often try to explore new water as well. Some of the smaller creeks in the region may also hold a surprising number of steelhead in the winter.

The fish will normally be holding close to the bottom, so an angler should use just enough weight to keep an offering in that zone but not too much that a natural looking drift can't be accomplished. I typically start with a two BB-size splitshot about 18 inches up the line from the bait and adjust it depending on how the fish are responding and how my bait is drifting. A falling barometer often triggers heavier feeding. Warm days when the sun heats up the water by only a few degrees can also be productive.



Having a large landing net is helpful.



Look for fish holding in deeper holes and pockets, especially places with slower current. Areas below small, earthen dams or woody structures are always worth a try. When you find fish in the winter, it's not uncommon for them to be stacked together. It may take a few minutes after you catch one for the area to settle down, but we frequently catch multiple fish from the same hole or stretch.

Noodle rods that are 8- to 10-feet long are good and should be paired with an appropriate size spinning reel. I like 6- to 8-pound-test monofilament or fluorocarbon line. Steelhead are large and powerful fish, so set the drag on the reel light enough to allow the fish to make strong runs after the initial hookset. We carry a large landing net and whenever someone shouts, "Fish on," the person closest to the net comes to aid in landing the fish. Great baits include egg sacs, small minnows, waxworms and small jigs. We tie fresh egg sacs in the evenings when we return.

Plan for possible harsh conditions. Dress in layers and take breaks to get warm. I always pack extra gloves. I know from experience that the first pair will quickly end up wet. Hand warmers are a big help, and a thermos of hot coffee or hot cocoa also helps chase the chill away. Use extreme caution when wading in the winter. If an accident happens, have a plan to quickly get back to a warm vehicle.

This winter, take a trip to the Erie region for a steelhead adventure of your own. \Box



The winter scenery in the Erie region is spectacular.

Steelhead in the winter are often grouped together.



by Christian A. Shane

his month's "TIC (Trout In the Classroom) Spotlight" includes two schools and an environmental center in the northwest region of Pennsylvania.

- Venango County: Central Elementary School, James Ralph, 3rd Grade Science and Social Studies Teacher, Second Year TIC Participant
- Lawrence County: Mohawk Junior High School, Ben Edwards, 7th Grade Science Teacher, First Year TIC Participant
- Erie County: Asbury Woods Nature Center, Emma Mader, Environmental Educator, Third Year TIC Participant

Christian: What inspired you to begin raising trout in your classroom?

James: I took a summer course at Cook Forest State Park called "Meaningful Watershed Education." There, I met our education outreach coordinator for the Venango Conservation District. She encouraged me to start the program at my school.

Ben: I transitioned from a Special Education classroom, where I spent 14 years, to a Science classroom. I was looking for a meaningful experience that students could be engaged in throughout the year. Many students in my district enjoy outdoor activities like hunting and fishing, so I thought this would pique their interests.

Emma: I participated in the TIC program when I was a student growing up in rural Pennsylvania. It was always one of my favorite lessons we did. I couldn't wait to get a tank at Asbury Woods when I started, and, thankfully, they have been incredibly supportive of my vision.

C: Tell us about your watershed (release site) and what connects your school and students to this place:

J: We release on Upper Twomile Run, which is in Two Mile Run County Park. Many of our students participate in the activities held there.

B: We release in Bessemer Lake, Lawrence County. It's a convenient location to bring students, just minutes away from the school. Our students fish, boat and paddle the lake.

C: Share a short story about what your students have gained from this experience?

J: My students study life cycles every year, and I saw this as a way for them to have firsthand experience that aligns with the Science, Technology & Engineering, Environmental Literacy & Sustainability (STEELS) curriculum in Pennsylvania. The student success this year was that they went from not knowing about cold water ecosystems to understanding just how important they are to not just animals but humans. The students were extremely excited any day that science was going to be a TIC lesson.

B: With this being my first year and the first year for Mohawk, I was not sure what to expect throughout the process. My students were excited, on day one, just seeing a fish tank in my classroom. For our release day, more

than 100 seventh graders traveled to Bessemer Lake for the release. Each student was able to release at least one. Then, we traveled to the Mahoning Sportsman's Club, where students engaged in fishing, shooting bows, roasting s'mores and a scavenger hunt. On the morning of the release day, many of my students brought their rods and tackle boxes to school. This created quite a stir around the building. Former students visited my classroom and were envious of the current 7th graders and the TIC program.

C: What has been the biggest challenge or obstacle of the TIC project?

J: The biggest challenge was startup cost and ability to obtain the necessary equipment. Thanks to our local Trout Unlimited chapter, we got everything we needed just in time for our first year.

B: One of my biggest concerns was keeping the water quality stable to ensure the best survival rate. I wanted to make sure my students had the best experience and had trout to release.

C: How do you integrate the TIC project into the classroom? Do you have a particular lesson that you enjoy teaching to incorporate the trout?

J: I use the TIC program to teach our life cycle unit throughout the year. The lessons on trout life cycle and cold water ecosystems are helpful throughout this process.

B: Most Fridays, we did something TIC related—setting up the tank, water testing, water changes and lessons about trout habitat and life cycle. Regarding watersheds, we connected a unit on Earth's Resources and Human Impact and the trout. Students enjoyed lessons on macroinvertebrates and watersheds.

E: We offer field trips, which incorporate our TIC tank for subjects like life cycles, water quality and animal classification. We also offer our trout release free and open to the public to help release our fingerlings. I think my favorite lesson was our magnetic fishing pond. I created this with Pennsylvania-specific fish, and each fish has a fun fact. It's always a hit.

C: Do you do anything in conjunction with your TIC project that's related to fishing, watersheds, conservation or aquatic education?

J: When we get to our release day, we coordinate with the Venango Conservation District to work through a stream study to determine the health of the release stream.

E: Asbury Woods is in the process of developing a Pennsylvania TIC curriculum guide for teachers that connects all these topics. \Box





Children from Central Elementary School, Venango County, learn about macroinvertebrates.



Students from Mohawk Junior High School help with the 55-gallon TIC aquarium.

BECOME A FISHING MENTOR





electing a fly may be the most important part of getting ready to fish for steelhead. With dozens of patterns to choose from, it can be challenging to know where to start. Below are some top patterns that work well on Pennsylvania's Lake Erie tributaries.

Egg Patterns:

Egg patterns work well in sizes 6-8 for most anglers. Try brighter and larger size 4 flies in dirty or high water. Most egg patterns can be tied in a variety of colors from orange to chartreuse. Natural colors and smaller flies down to size 10 work well in clear flows and when fish eggs are in the water.



Egg flies from top to bottom, starting left: Clown Egg, McFly Foam Egg, Babine Special, Beadhead Egg, Sucker Spawn Fly and Sucker Spawn.

Nymph Patterns: Nymph patterns in sizes 4-10

Nymph patterns in sizes 4-10 imitate stoneflies, mayflies and other aquatic macroinvertebrate life. Erie streams hold a wide variety of natural nymphs. Nymphs may attract more attention both in clear or low water and when steelhead have been in the streams longer.



Nymphs from top to bottom, starting left: Beadhead Kaufmann Rubber Leg Stonefly, Pink Hothead Stonefly, Purple Prince Nymph, Squirmy Worm and Hairy Stone.

Streamer Patterns:

Streamers in sizes 4-8 often imitate baitfish or other prey that steelhead may encounter in the stream or in the big lake. Some are more general attractors to get the attention of aggressive fish. Off-color or stained water is a great time to try larger, brighter flies like streamers.



Streamers from top to bottom: Intruder, Mini Game Changer, Egg Sucking Leech and Beadhead Woolly Bugger.



Of Turtles and Stolen Vehicles

While investigating a boat accident involving four individuals caught in a strainer on the river, I received a call from the 911 center requesting my assistance. A local department arrested a juvenile for stealing a vehicle, getting into a high-speed pursuit and wrecking the vehicle.

I know what you're thinking, "Why would a Waterways Conservation Officer (WCO) be called out to a stolen vehicle?"

There is a twist, of course. While they were searching the automobile, there was a huge Snapping Turtle in the back of the vehicle.

The suspect saw the big turtle in someone's yard and put it in the back.

Instead of just being charged with stealing a vehicle and attempting to flee and elude law enforcement, the suspect was also charged with animal cruelty (because the turtle was hurt), fishing without a license and possession of a Snapping Turtle out of season.

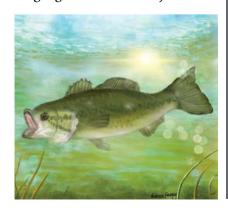
Several months after the incident, I was at the District Attorney's Office. Several staff members surrounded me and wanted to know the details of the case—the details that were not written down on the complaint form. After rehashing the story, the only question they had was, "What happened to the turtle?" The turtle was released back into the wild.—WCO Jeffrey B. Giardina, Mercer County.

Big Bass

As a WCO, we get asked all kinds of questions throughout the day. Sometimes, we get questions that make us laugh to ourselves.

One day, WCO Cable and I were patrolling Glendale Lake, Prince Gallitzin State Park, Cambria County. We came across a couple fishing near a boat launch. As we approached, we asked if we could see their fishing licenses. After a few minutes, the man found his license and provided it to us. As we were starting to motor away, the man said he had a question for us. He asked us why Glendale Lake was not on the Big Bass **Program Special Regulations** list in the *Pennsylvania Fishing* Summary/Boating Handbook, because he caught several large bass on the lake. Officer Cable and I looked at each other and smiled. We explained to him that big bass waters didn't mean there were big bass at those specific waters. It means those locations are in a program to help those bodies of water grow bigger and more bass.

It's important to read and understand the *Pennsylvania Fishing Summary/Boating Handbook.*—WCO *Nathaniel J. Yingling, Cambria County.*



PFBC ON THE JOB



Andrew G. Saunier
Waterways Conservation Officer

Home County: Crawford County
Current District: Western Crawford County
Years as a WCO: 5 years

Where is your favorite place to fish or boat in Pennsylvania? Why?

"Kinzua or the Allegheny Reservoir—
it's difficult to beat that place. There are
beautiful views, and it's easy to find a place
to yourself during the summertime. The
Allegheny National Forest also has camping
set up along the reservoir that's only
accessible by boat. We usually try to spend
a weekend there at least once a summer."

What species of fish do you fish for the most?

"Panfish—they are pretty easy to catch, and there are so many around, which makes it hard for me to get skunked."

Spinning rod, baitcaster or fly rod?

"Either a spinning rod or fly rod depending on what I'm after."

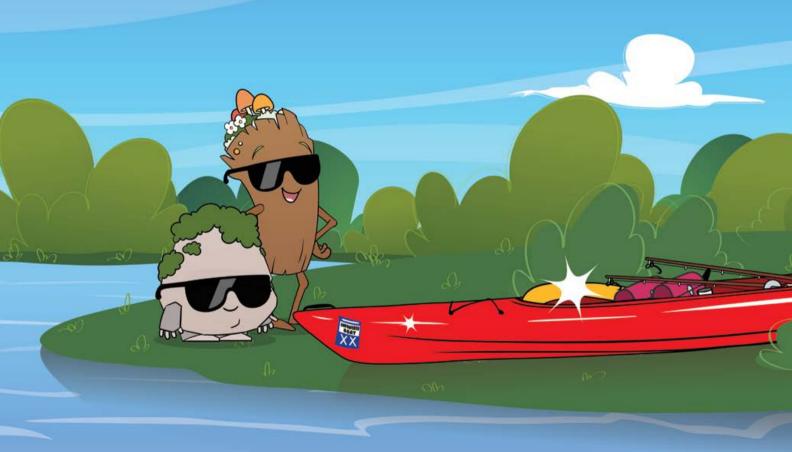
Motorboat, canoe or kayak?

"Usually a kayak, but lately, I don't mind a leisurely cruise on the family's pontoon boat."

Favorite fishing or boating scene in a movie? "The hostage rescue scene in the Captain Phillips movie with Tom Hanks."



GOOD CLEAN FUN



Go along with our favorite animated friends as they enjoy a day on the water fishing and kayaking. When Log makes a new friend, Rock quickly reminds her of the importance of caring for our natural resources and leaving aquatic species in their natural habitats. Before their day of fishing is done, Rock suggests his way of cleaning up to avoid the spread of Aquatic Invasive Species, skipping the music and cleaning "in style."

Watch the Episode:





2026 SEASONS, SIZES and DAILY LIMITS

COMMONWEALTH INLAND WATERS-2026

Species	Seasons		Minimum Size	Daily Limit
ALL SPECIES OF TROUT	Statewide Opening Day of Trout Season		7 inches	5-streams, lakes and ponds
The state of the s	April 4 at 8 a.m. through Sept. 7			(combined species)
	Extended Season: <i>Stocked trout waters</i> Jan. 1 through Feb. 15 and Sept. 8 through Dec. 31		7 inches	3 (combined species)
Additional regulations may apply-				
consult the current <i>Pennsýlvania Fishing Summary.</i>	Extended Season: Waters not managed as stocked trout waters Jan. 1 through Feb. 15 and Sept. 8 through Dec. 31		NO HARVEST - Catch and immediate release only	
BASS - Lakes, Rivers and Streams	Jan. 1 through April 10 and Oct. 1 through Dec. 31		15 inches	4 (combined species)
Largemouth, Smallmouth and Spotted	April 11 through June 12		NO HARVEST - Catch and immediate release only	
Additional regulations may apply.			(no tournaments permitted) NO HARVEST begins at 12:01 a.m.	
Additional regulations may apply.	June 13 through Sept. 30		12 inches	6 (combined species)
Muskellunge and Tiger Muskellunge*	Open year-round		40 inches	1 (combined species)
Pickerel*			18 inches	4
Northern Pike*			24 inches	2
Walleye and Saugeye (Hybrids)	Jan. 1 through March 14 and May 2 through Dec. 31		15 inches	6
Sauger	Jan. 1 through March 14 and May 2 through Dec. 31		12 inches	6
American Shad**	Open year-round		No minimum	3
American Shad	Open year-round -Lehigh River, Schuylkill River*** and tributaries		NO HARVEST - (Catch and immediate release only
American Shad	CLOSED YEAR-ROUND			
River Herring**	Susquehanna River and tributaries			
Hickory Shad**	CLOSED YEAR-ROUND			
Herring, Gizzard Shad	Open year-round		No minimum	50 (combined species)
American Eel	Open year-round		9 inches	25
Striped Bass and Striped Bass/ White Bass Hybrids	Open year-round		20 inches	2 (combined species)
Sunfish, Yellow Perch, White Perch, Crappies,	Open year-round		No minimum	50 (combined species)
Catfish, Rock Bass, Suckers, Carp, White Bass, Bowfin and Other Gamefish Not Otherwise Listed				
Additional regulations may apply- see Panfish Enhancement Special Regulations.	rentife.			
Baitfish/Fishbait*** (except Mudbugs/includes Crayfish)	Open year-round		No minimum	50 (combined species)
Mudbugs (Dragonfly Nymphs)	Open year-round		No minimum	Unlimited if taken from lakes, ponds, swamps and adjacent areas. 50 per day if taken from moving waters (rivers and streams).
Mussels/Clams		CLOSED YEAR-RO	UND	
Paddlefish, Spotted Gar and Other Threatened and Endangered Species	CLOSED YEAR-RO		UND	

SEASONS, SIZES AND DAILY LIMITS — Except for trout season, which begins at 8 a.m., all regulatory periods in the fishing regulations are based on the calendar day, one of which ends at midnight and the next of which begins immediately thereafter. * Except those species in waters listed in the Brood Stock Lakes Program. Tiger Muskellunge is a muskellunge hybrid.

** Unlawful to take, catch or kill American Shad in the Susquehanna River and all its tributaries. River Herring (Alewife and Blueback Herring) has a closed year-round season with zero daily limit applied to Susquehanna River and tributaries, Lehigh River and tributaries, Schuylkill River and tributaries, West Branch Delaware River, Delaware River, Delaware Estuary, Delaware River tributaries upstream to the limit of the tidal influence and Conowingo Reservoir.

*** Lehigh River upstream of the first dam in Easton, Pennsylvania and its tributaries and the Schuylkill River upstream of the I-95 Bridge and its tributaries.

NOTE: It is not a violation of the bass regulations if a bass is immediately returned unharmed to the waters from which it was taken. It is unlawful for an angler to cast repeatedly into a clearly visible bass spawning nest or redd in an effort to catch or take bass.

NOTE: For bass regulations, power dam pools and recreational dam pools on the Susquehanna River and navigational dam pools on the Ohio River drainage are "rivers." It is unlawful to conduct a fishing tournament on the North Branch, West Branch or main stem of the Susquehanna River that allows a tournament angler to harvest bass. NOTE: Stocked trout waters are closed to fishing from February 16 to the opening day of the regular trout season in April, unless included in the Stocked Trout Waters Open to Year-Round Fishing Program.

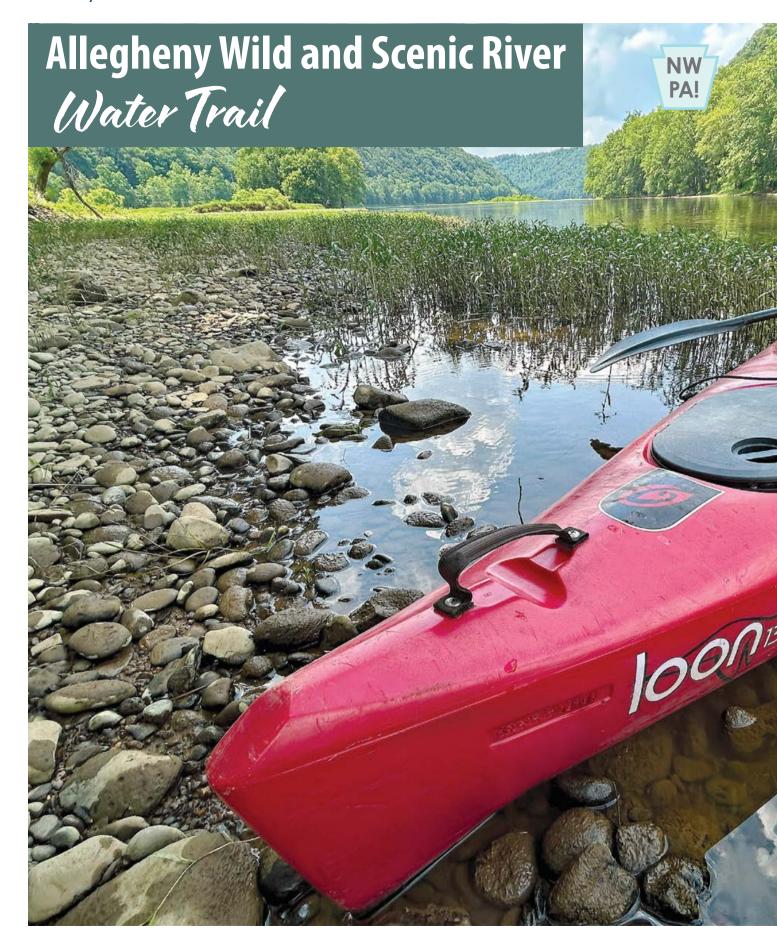
NOTE: Landlocked Alewife less than 8 inches in length taken from inland ponds, lakes or reservoirs that are collected by legal means may be harvested for use as baitfish.

NOTE: It is legal to fish for trout in Class A streams year-round, with no harvest beginning the day after Labor Day to the opening day of

trout season the following year. The exception is those stream sections designated as both Class A Wild Trout Streams and Stocked Trout Waters (Miscellaneous Special Regulations). These stream sections are closed to fishing from February 16 until 8 a.m. on the opening day of trout.

***** BAITFISH includes all forms of minnows; suckers, chubs, Fallfish, lampreys; Gizzard Shad 8 inches or less; and all forms of darters, killifishes and stonecats (except those listed as threatened or endangered species). Legally taken gamefish may be used as bait. It is unlawful to use or possess goldfish, comets, koi and Common Carp as baitfish while fishing. FISHBAIT includes crayfish, crabs and the nymphs, larvae and pupae of all insects spending any part of their life cycle in the water.

For all crayfish species, the head must be immediately removed behind the eyes upon capture unless used as bait in the water from which taken.



There are numerous islands on the Allegheny River that offer opportunities to pull over and camp.

by Bob Frye

his was a different experience from the one we'd enjoyed further upriver on another occasion. Not better, not worse, still fun. But different.

It was midmorning on the Saturday of a holiday weekend, and we were in Franklin, Venango County, preparing to paddle about 9 miles on the Allegheny

preparing to paddle about 9 miles on the Allegheny River. A flotilla of kayakers and tubers launched just before us, some playing classic 80s rock. More joined downstream, where an outfitter churned out boaters one after another, assembly line style. Later still, we encountered motorboats and personal watercraft towing tubes.

It didn't feel crowded. There's lots of water to go around.

Our previous trip was a midweek, multi-day float upriver of Tionesta, Forest County, camping on one of the seven islands that make up Allegheny Islands Wilderness (at 368 acres, one of the smallest official wilderness areas in the country). Then, our only company was bold raccoons hanging around after dinner, eyes glowing, on the edge of our campfire light.

But, that's the 107-mile Middle Allegheny River Water Trail. Almost 87 of those miles are federally designated as "wild and scenic"—the section immediately downstream of Kinzua Dam; the section from Allegheny National Forest's Buckaloons Recreation Area to Alcorn Island, near Oil City; and the section from Franklin to Emlenton.

Yes, it's also classified as a "recreational" river, meaning it's less true wilderness and more what may be called adventuresome.

"That's kind of the beauty of the Allegheny," said Piper VanOrd, owner of Allegheny Outfitters in Warren. "Someone once said to me, 'you're trying to pitch it like it's backcountry up here.' But, I look at it as the complete opposite. This river, like the forest around it, is for the most part a really great place to get your feet wet. It's a great place to dabble in all of the different disciplines of outdoor recreation including paddling, because it's pretty forgiving in the grand scheme of river systems."

"But, there are spots where you find your peace and your quiet, for certain, especially on the wild and scenic sections," said VanOrd.

Lots of people explore it, in all sorts of ways.

That's partly due to its reliability. The Kinzua Dam controls the river's flow, so it never gets too low to paddle, even in the summer. It can get too high but never too low.

Then, there's its comparatively gentle nature.

The Allegheny River has spots requiring care. There's a Class II rapid behind United Refining Company in Warren, Warren County, and another at Oil City, Venango County. The latter is the most technical spot on the river, though paddlers can avoid it by going



Kayakers enjoying a sunny day while paddling on the wild and scenic portion of the Allegheny River.

river right. Another spot worth noting is near Starbrick, Warren County, midwayish between Warren and Buckaloons Recreation Area. Long ago dredged, it gets 50-feet deep.

"If you're looking downriver, you may think it's the perfect spot to pull over, have some lunch and have a swim," said VanOrd. "It's not."

None of those areas are in the wild and scenic portion of the river, though. Its sections are beginner friendly. They have some scattered Class I rapids, the tamest variety, and plenty of smaller riffles, with a lot of S curves.

"In general, it's an easy river," said Harry Parkinson, Allegheny Canoe Club President. "And, there are a lot of different ways to enjoy it. You can do something fairly short, about 3 miles, or you can do a more typical 7 or 8 miles. Or, you can load up your camping equipment and go out for two or three days."

Some paddle even longer. A lot of scouts paddle Kinzua Dam to President Township to earn their 50-mile badge. Others do the 66 miles from Kinzua Dam to Oil City, and still others do the entire 107 miles.

Shore camping, when islands get scarce, helps make that possible. The Danner Primitive Camping Area, Clear Creek State Forest, upriver of Kennerdell, is float-in or hike-in only.

Paddlers cover many miles where there are fish to be caught, like trout. The Pennsylvania Fish and Boat Commission (PFBC) annually stocks about 60,000 fingerling Brown Trout and Rainbow Trout in the river, just below Kinzua Dam, at Conewango Creek, Warren County.

"It's not a big numbers thing," said Garrett Herigan, PFBC Fisheries Biologist. "But, you can catch some 20-something-inch trout."

He's personally seen 24-inch trout while doing survey work and heard of anglers landing even larger ones.

That river stretch is managed under Miscellaneous Waters with Special Regulations, with a daily limit from opening day through Labor Day of two trout per day, both at least 14 inches. It's catch and release the rest of the year.

Three other species dominate the river—Muskellunge, Smallmouth Bass and Walleyes.

"Smallmouth Bass are most common in the faster, free-flowing upper portions of river," said Herigan. "Places where you've got nice big rocks and boulders, that's the kind of habitat they prefer."

"The muskies are more a pool-type species, so they're looking for that slower moving stuff, maybe some of the deeper pools, creek mouths, things like that. And, the Walleyes are kind of scattered throughout."

The Smallmouth Bass fishing, in particular, can be good when compared to the best flowing smallmouth fisheries in Pennsylvania, especially lately. Biologists monitor Allegheny River bass, looking for those 15 inches and longer. Historically, the river's produced nine such fish per hour of surveying effort.



An old bridge pillar on the Allegheny River downstream of Franklin, Venango County.

"Recently, we've been exceeding that average. The last three survey years, which were 2021, 2022 and 2024, we were at 20 fish per hour," said Herigan. "Even 9 or 10 is still a good number of fish. And, these most recent years are just exceptional. But, it's the variety that really makes the river special," said Herigan.

"The Allegheny River is neat to me, because the Walleye fishing is good; the bass fishing is good; the musky fishing is good; and there's also an element of coldwater trophy trout. You throw out something like a jerkbait and you really have no idea what you might catch," said Herigan.

"Whether on the river to fish or simply paddle, pack sunscreen and water," said Parkinson. "The Allegheny River is wide enough that you'll be in sun, not shade. If you're traveling at a leisurely pace, figure on covering about 2 miles per hour."

Access is good. There are launches up and down the wild and scenic portion of the Allegheny River, some more developed, some less developed. Multiple liveries offer canoes and kayaks for day and overnight trips.

A number of small towns line the river, too. They offer various amenities, from campgrounds to restaurants.

"That is what makes the Allegheny River such a great river." Paddlers can tailor their experience to their wants and needs. "It's a beautiful river to come explore," said VanOrd. "All skill levels and abilities, there's a stretch of river for everybody up here." □



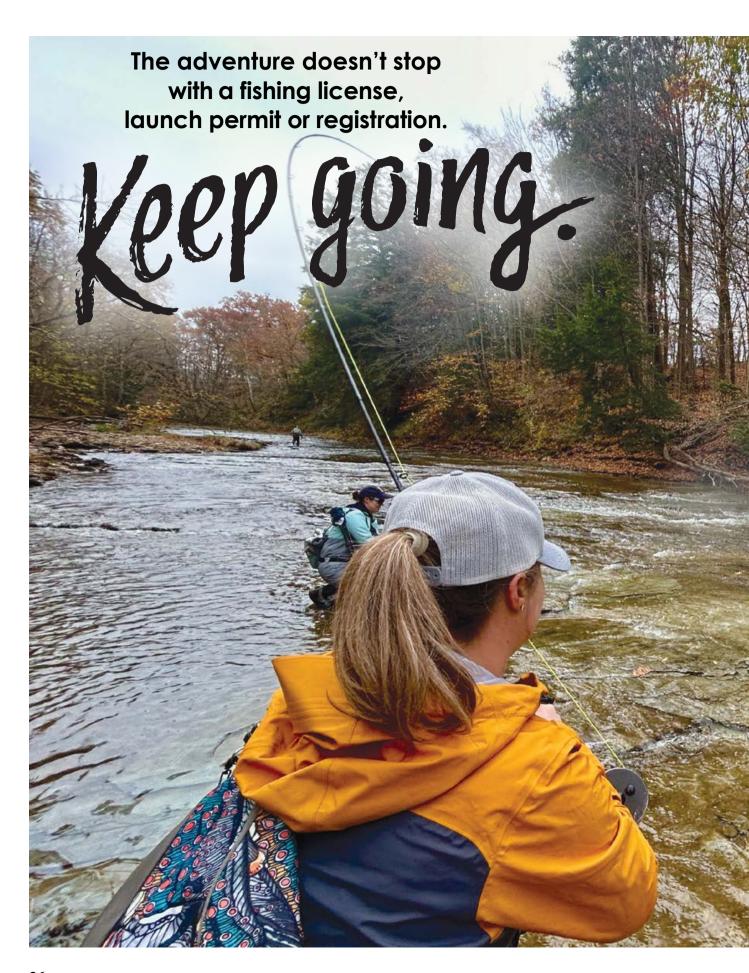
The Belmar Bridge on the Allegheny River, near the entrance of Sandy Creek on river left, was built in 1907 by Charles Miller and John D. Rockefeller.

Fun Facts

- One of the seven islands that make up the Allegheny Islands Wilderness—Thompson Island—was the site of the only American Revolutionary War battle fought in northwestern Pennsylvania.
- The Allegheny Islands Wilderness and most other islands in the river feature sycamore trees, shagbark hickories, silver maples, green ash and lots of underbrush. So, while there are no "official" campsites, tent sites are obvious.
- About 9 miles south of Franklin, paddlers will find Indian God Rock. On river left, it has more than 50 carvings made between 1200 and 1750 by Native Americans who used the river to travel. It's on the National Register of Historic Places.
- There are two fish hatcheries in the area that allow public viewing—Allegheny National Fish Hatchery, operated by the U.S. Fish and Wildlife Service, and Tionesta State Fish Hatchery, managed by the Pennsylvania Fish and Boat Commission.



Named "La Belle Rivière" by French explorers, the wild and scenic section of the Allegheny River flows through areas of narrow forest valleys, wilderness islands and broad, rural landscapes rich with the early history and culture of the region.







Bring your best friend on a late fall hike to look for fishing spots.



Go snowmobiling when the conditions are ideal and explore fishing possibilities along the way.



Try your luck at steelhead fishing. Kate Fritz caught this steelhead during a Women's Steelhead Fishing Program.



Hunting can lead to locating great fishing spots.



Enjoy the beauty of a winter hike after a snowfall.



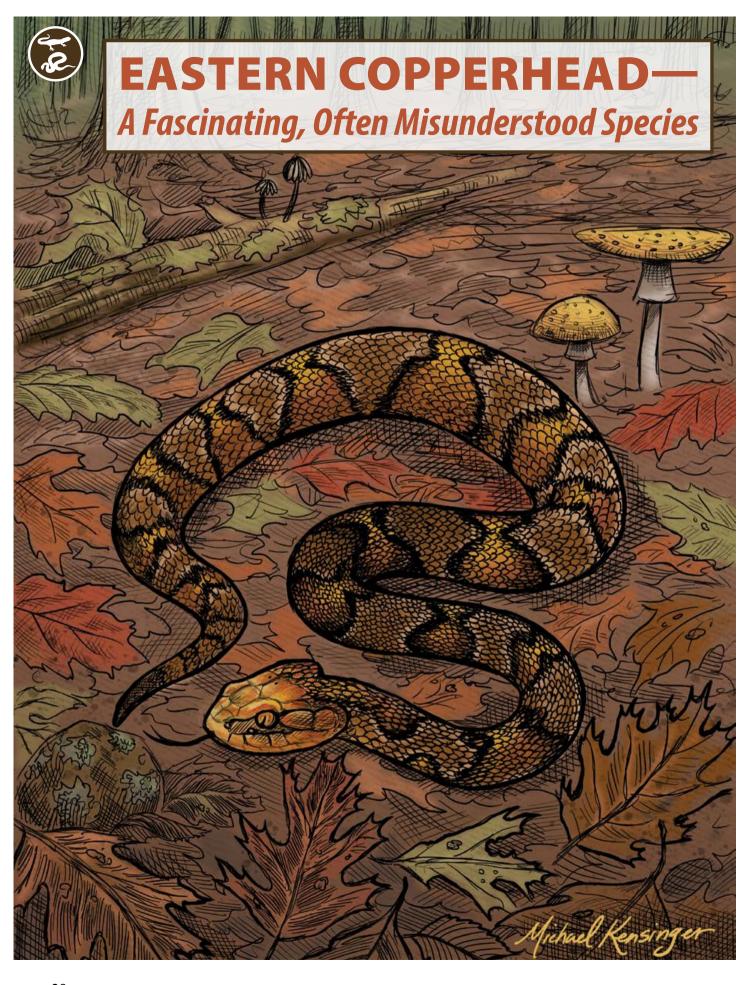
Find a scenic trail and bike to a quiet fishing spot in late fall.



Bring your camera to catch exciting wildlife in action.



Pete Cartwright landed a Smallmouth Bass on a swimbait while wade fishing on the Allegheny River in November.



by Brady J. Crytzer

In the dense woodlands, rolling hills and rocky outcroppings of Pennsylvania, one snake species commands a mix of fascination and fear—the Eastern Copperhead (Agkistrodon contortrix).

With its distinct copper-colored head, this venomous serpent has earned a reputation that's often undeserved. While copperheads are indeed capable of delivering a venomous bite, their shy and reclusive nature makes them far less dangerous than many assume.

The Eastern Copperhead stands out from other snakes due to its characteristic appearance. Its body is generally light brown or gray, with darker bands that run across its back in an hourglass pattern. These markings provide excellent

camouflage against the forest floor, where fallen leaves and twigs create a perfect backdrop for the snake to blend in.

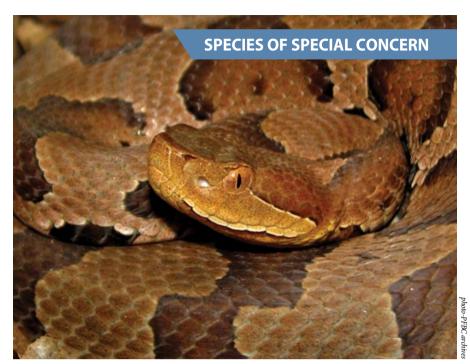
The most notable feature, however, is its copper-colored head, which contrasts sharply with the rest of its body. This striking coloration not only gives the snake its name but also helps it absorb heat from the sun, crucial for its ectothermic lifestyle.

Adult copperheads typically range in length from 18 to 36 inches, with females generally being slightly larger than males. Though they are venomous, their bite is usually not lethal to humans, and fatalities are extremely rare. The venom of a copperhead is primarily hemotoxic, meaning it affects blood and tissues, causing localized pain, swelling and bruising, rather than attacking the nervous system as neurotoxic venom does in other species like rattlesnakes.

Copperheads are found throughout much of Pennsylvania. Their preferred habitats include deciduous forests, rocky hillsides and areas with ample leaf litter. They are most spotted in areas that offer a mix of open spaces and woodland, near streams or in areas with stone outcroppings. These habitats provide the copperhead with essential resources including shelter from predators, sun for basking and prey to hunt.

In Pennsylvania, copperheads are more commonly seen in rural or wooded regions, far from the urban centers where they are often feared. The snake tends to avoid human populations, and its sightings are relatively rare, often occurring during the warmer months when the snake is most active. Despite their elusive nature, copperheads are an integral part of the ecosystem, serving as both predator and prey in the food web.

Eastern Copperheads are primarily ambush predators. They lie in wait for small mammals, birds, amphibians



The Eastern Copperhead (Agkistrodon contortrix)

and reptiles to wander within striking distance. Their diet is largely composed of small rodents, such as mice and voles, which they capture using a sit-and-wait strategy. When a potential meal comes too close, the copperhead strikes with surprising speed and precision, injecting venom to immobilize and begin the process of digestion before swallowing their prey whole.

Copperheads are most active during April through November, when they are often found basking in the sun or hunting for food. They are known to be crepuscular or nocturnal, with peak activity occurring in the early morning or late evening when temperatures are cooler.

When threatened, copperheads generally prefer to retreat rather than strike. They may give a warning by vibrating their tail, much like a rattlesnake, but they rarely engage in an attack unless cornered or provoked. If you come across a copperhead, the best course of action is to give it plenty of space and allow it to move on its way.

While the copperhead can evoke fear, it's a fascinating and valuable species that plays a key role in maintaining ecological balance. By learning to coexist with these reptiles, residents of Pennsylvania can contribute to the conservation of this unique snake, ensuring it remains a part of the state's diverse wildlife for generations to come.

Understanding their behavior, respecting their space and dispelling myths surrounding their venomous nature are key steps toward fostering a more harmonious relationship with these misunderstood creatures. □

Brady J. Crytzer teaches history at Robert Morris University. The author of seven books studying the early history of Pennsylvania, he lives and fishes outside of Pittsburgh.



BRINGING THEM BACK

his year, the Pennsylvania Fish and Boat Commission (PFBC) and its conservation partners stocked more than 400,000 eels into the Susquehanna River, thousands of mussels in creeks and rivers across the state, restored a little fish that until recently had almost been forgotten, translocating 100 Chesapeake Logperch this year alone, and stocked more than a million American Shad fry into the Juniata River. Each of these milestones was marked only through significant effort carried out by PFBC staff and dozens of committed partners to restore species that have been impacted by human progress for generations. Go with us, in the next few pages, as we look closer at what it takes to make these species restoration projects a reality.





Eels Go to School

More than 50 classrooms in three states are using eels captured at Conowingo and Octoraro dams to engage students in learning. Forty-five of the classes, this year, are in Pennsylvania including at Commonwealth Charter Academy, Dauphin County, where thousands of students will get access through virtual and in-person learning. The Susquehanna River Basin Commission runs the program and does the handoff from bucket to classroom tank.



Steve Urban, Commonwealth Charter Academy Greenhouse Specialist, pours 28 American Eels into a classroom tank. They will be released at the end of the school year.

Perhaps no species in our waters is more mysterious than the American Eel. Besides its odd shape for a fish, much about the eel is still unknown. Even now, no human has ever seen the American Eel spawn, though we know that as a catadromous species, basically opposite of the anadromous species like salmon and shad, they spawn in the ocean and return to fresh and brackish waters to mature.

"They start out as glass eels, and they float with the ocean currents until they reach the mouth of the river. Then, they're elvers, which are about 2- to 5-years old. That's when we start collecting them," explained Julia Burkheimer, Fisheries Biologist, Normandeau Associates.



Eels must be collected, because much of this restoration work is literally moving them past four dams along the lower Susquehanna River. Committed wildlife resource professionals and federal regulations ensure eels get dozens of helping hands to make their way upriver.

The work is seven days a week from May to October. In the busy months, "We've gotten anywhere from 18,000 to 20,000 eels in one day, which is huge for us," said Andrea Danucalov, Senior Manager of Regulatory Licensing, Constellation Power. "We've had years as high as 620,000 eels," culminating in more

than 2 million eels moved upriver since 2008 when the U.S. Fish and Wildlife Service started the project.

The "eelway" capture system, at Octoraro and Conowingo dams, lures the animals' instinct by imitating an entrance to an upstream current. It all requires a lot of human effort with nets and buckets. The eels are driven to upriver release sites from Harrisburg, Dauphin County, to Williamsport, Lycoming County. And then, they're on their own. They live out their lives upriver for about 20 to 30 years. At that time, they're about 3 feet long as they head back down and start the process over again. The eels have another challenge









Each day, scientists net the elvers from the holding tank at Conowingo Dam, MD. They transfer them to buckets and then drive them upriver to be released.

when they head back to sea. Scientists continue to study the impact that turbines, used to generate electricity in dams, have on adult eels as they migrate to the ocean.

Eels are a keystone species, a key species in maintaining the health and stability of the aquatic ecosystem. Additionally, "eels are native to the Susquehanna River Basin," explained Burkheimer. "They also, as they travel, swim through mussel beds, collecting the larvae of the mussels." That symbiotic relationship is essential to freshwater mussel reproduction, and mussels are vitally important to water quality.



By the end of the season this year, the project collected and transported about 400,000 eels upriver.



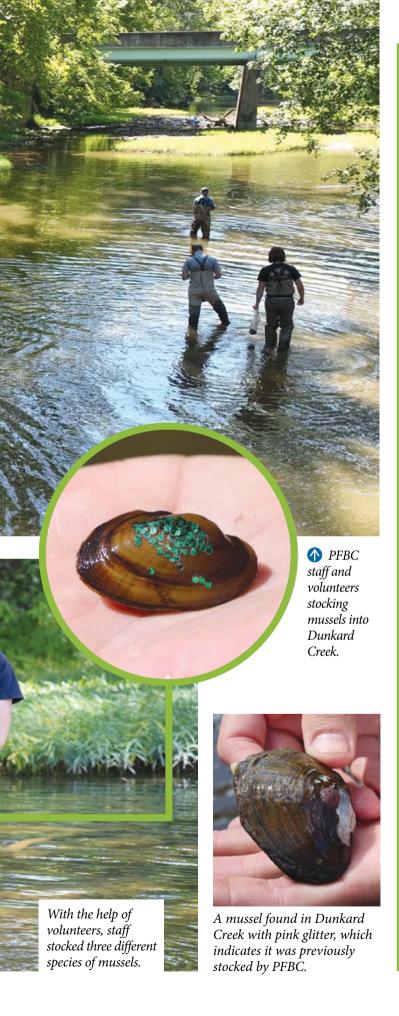
photo-Michael Yatsko

The PFBC has been helping restore mussel colonies in Commonwealth waters for many years. For the last 5 years, that has included propagating the mussels that will be stocked in Pennsylvania.

But, these mollusks can make it tough to get them to grow. "So, when they're little, I don't think they're as finicky. But, once they become adults, just like us, they are like 'I like hot dogs and hamburgers' instead of eating, you know, vegetables or whatever," quipped Scott Ray, PFBC Fisheries Biologist. Getting them to eat is all important given that they must grow from microscopic to at least 1 inch to be stocked, a process that takes at least 3 years.

More than 12,000 mussels have been stocked into three different watersheds this year, and like many restoration processes, it requires time-consuming human involvement. With the help of volunteers, staff must place each mussel in a certain position and depth one at a time. Since the program's beginning, over 40,000 mussels have been stocked. And, perhaps most promising, PFBC scientists have sighted previously stocked mussels reproducing in the waters where they were placed, giving hope for a self-sustaining future for Pennsylvania mussels.











An adult female Wavy-rayed Lampmussel, Lampsilis fasciola, was found and is mimicking the appearance of a small fish to attract larger fish to its larvae, which require a host. The tiny baby mussels will then attach to, and be carried by, the fish.

Species Restoration

CHESAPEAKE LOGPERCH



Intil about 20 years ago, the Chesapeake Logperch was a forgotten species, and because its worldwide range is so narrow—the lower Susquehanna River and Potomac River watersheds and some tributaries of the Chesapeake Bay—it wasn't even considered in plans for species restoration. But, in recent years, the PFBC and partners have taken steps to give this tiny darter a chance, focusing on work that keeps it from landing on the U.S. Fish and Wildlife Service's list of endangered species.

As tiny as the fish is, the steps in restoring it, although vitally important, are also tiny. For the PFBC and partners, the work includes taking small Chesapeake Logperch populations from the streams they retreated to when polluted waters became inhospitable and returning them to restored streams. Subsequent surveys and monitoring, as some fish are tagged, have shown success with populations discovered in other restored waterways.

Two years ago, the PFBC's Union City Aquatic Conservation Center began breeding the Chesapeake Logperch in captivity. They started with a few pairs, a species that is slow to propagate, and have produced more than 300 fingerlings this year. The process is quite complex as the fry are so small (think half the thickness of a sheet of paper and as long as a small grain of rice). They can't even eat baby brine shrimp, the standard first food. So, biologists have innovated new protocols and hope to produce more than 1,000 each year to aid in the recovery of this small but now unforgettable species.



Livery April, when shad begin their migration run from the ocean to spawn in the Potomac River, the PFBC begins its annual efforts to bring American Shad, *Alosa sapidissima*, back to the Juniata River and Susquehanna River basins. Staff spend weeks raising the tiny fry at the Van Dyke Research Station. Intermittently, they also tag the fish with OTC (oxytetracycline), marking their tiny earbones (otoliths), so they can distinguish these hatchery-reared fish from wild fish when they return in future years.

Release is a tedious process beginning with corralling the translucent fish, about the size of a small pin. They are carefully scooped into 5-gallon buckets with salt and oxygen added to the water. Then, the buckets are placed on the back of a truck to make the trip to the stocking site.

Once at the river, it's another test of patience. "We took the temperature of the river, and it was 68-degrees F. Our buckets were 70-degrees F," explained Amber LaGrelius, PFBC Fisheries Technician. "So, we slowly added river water into the buckets until our bags matched the river temperature. Then, we took the bags out and dumped the babies into the river."

They grow into juveniles in freshwater and journey to the ocean, where they become adults. In 3 to 5 years, they'll come back to their release spot to spawn the next generation.

This year, just more than a million shad were released into the Juniata River. It's a far cry from the millions PFBC annually released in decades past. While the Juniata River fry are worth the effort, the challenges the fish meet in other Pennsylvania waterways are immense. Despite valiant efforts by numerous partners, fish passage is problematic on the Lehigh, Schuylkill and Susquehanna rivers. Even when fish ladders work properly, like at Conowingo Dam, crews must hand sort collected fish to prevent spreading non-native Aquatic Invasive Species. Better fish passage systems, like the one on the Susquehanna River at Shikellamy State Park, hold promise for better success in the future.

There's some good news. In the Delaware River and Estuary, where shad are not impeded by dams, a genetically distinct, self-sustaining

wild population of American Shad persists. "But, we can't let our guard down," said Daryl Pierce, PFBC Area 5 Fisheries Manager. "We need to focus our efforts on improving fish passage through dam removal within our tributaries of the Delaware River Basin." The PFBC and partners manage the population and are learning more about the behaviors of fish with the help of anglers who share angler logs, an effort that connects science and those who care about the species that need our help. \(\sigma\)

Species Restoration:









Release is a tedious process beginning with corralling the translucent fish, about the size of a small pin. They are carefully scooped into 5-gallon buckets loaded with 15,000 to 20,000 fish each.



by Darl Black

photos by the author

ften regarded as the ideal fish for beginner anglers, Bluegills, as well as Pumpkinseeds and other sunfishes, are wildly popular with anglers of all ages—myself included. These little powerhouses are fun to catch.

Moreover, using a lure of your own design increases the excitement of catching sunfish. Novice anglers can skip the live bait and go directly to a small hand-tied jig to readily engage these painted water warriors. If you can tie your shoe, you can tie a jig.

Tools and Supplies

- Basic tools include a tying vise, bobbin to hold the thread, bobbin threader, hackle pliers, an economy pair of 3½-inch fly tying scissors and tying thread.
- Use pre-molded 1/32, 1/48 and 1/64-ounce leadheads in hook sizes #10 and #8 but no larger than #6. Hook size is critical, because Bluegills and Pumpkinseeds have small mouths.
- Take small weighted floats. Tiny jigs are impossible to cast without additional weight. A multipurpose bobber is an all-in-one bite indicator, depth control aide and casting aide. I prefer a ¾- or 1-inch snap-on foam float with a weighted ring.



• Have a limited assortment of tying material including marabou feathers, craft fur, chenille, strips of round rubber bug legs and tinsel flash for metallic accent. If you can find inexpensive ones, strung 3-inch neck hackles are useful.

Jig Patterns

The diet for sunfish includes a long list of aquatic nymphs, larva, adult insects, leeches, snails, aquatic worm and small crayfish. However, you don't necessarily need to tie something that resembles natural prey. Bluegills and Pumpkinseeds also go crazy for bold colorful party favors as well. They will likely 'slurp' about anything they can get into their small mouths.

Realistic or wild—imagine it, tie it and name it. Then, have a fishing party with friends to test out your creation. □

An assortment of recently hand-tied and named Bluegill bugs. Perfection is not required. Clockwise from top left: Mousie or Rat-tailed Maggot, Fire Ant, Sunrise, Northern Lights, Golden Nugget, Leech (wet), three Indigenous Whatsisits (experiments) and a Pinkie in the center. Materials used include various colors of chenille, marabou feathers, hackle feathers, craft fur, round rubber bug legs and tinsel flash. Leadheads painted with inexpensive nail polish.



"ALL IN" on Lake Erie Research

by Mike Parker Communications Director Pennsylvania Fish and Boat Commission

s'Great Lakes States' go, Pennsylvania is a small but important player.
With approximately 63 miles of shoreline along Lake Erie, the Keystone State pales in comparison to the total lake frontage claimed by New York, Ohio, Michigan and Ontario, Canada, respectively. However, the Keystone State's role in the research and management of Lake Erie's world-class fishery no longer takes a back seat to anyone.

Earlier this fall, the Pennsylvania Fish and Boat Commission (PFBC) dedicated its new Lake Erie Research Unit (LERU) facility. The \$2.4 million, 2,800 square-foot building, located on the grounds of the Fairview State Fish Hatchery, Erie County, contains a research laboratory, library, conference room and modern office space for three full-time biologists, seasonal biologist aides and a Waterways Conservation Officer.

"What this will allow us to do is to really be full partners with the rest of the states in the Great Lakes watershed in managing this unbelievable fishery for Pennsylvania," said Tim Schaeffer, PFBC Executive Director, during a dedication ceremony on September 3, 2025. "We are 'all in' on Lake Erie, and we are 'all in' on the work our staff is doing here, so we can keep delivering fishing and boating opportunities."

Staff that comprise the LERU are tasked with the management of fish within Pennsylvania's portion of Lake Erie. Among the unit's annual tasks are population assessments of Yellow Perch each summer, multi-state cooperative assessments of cold water species including Lake Trout and young-of-the-year assessments for all species, which includes Lake Erie's robust Walleye population in the fall.

The new facility offers a modern replacement for the LERU's former home, an 1800s era historical residence known locally as the Thornton house. While staff moved out of the dilapidated property in 2020 to work from a leased office space nearby, plans for the new facility moved forward, to include the most important feature of the building, a 500-square-foot state-of-the-art research laboratory.

"It's going to make our jobs and our lives so much simpler, and the products that come out will be so much better," said Mark Haffley, Lake Erie Research Unit Leader. "For example, in the old facility, we just didn't have an adequate space for processing fish. We were conducting that work outdoors, sometimes in the summer heat, while fighting off flies and yellow jackets. Now, we'll have a climate-controlled area with sterilized stainless steel surfaces and other equipment to complement the skills of our staff."

Inside the laboratory, Haffley and others will have access to a refrigerator, freezer and ice machine, which are all necessary pieces of equipment to preserve their catch. Other features include a chemical fume hood and a dedicated necropsy table to be used for vital tests that require gathering accurate weights, measurements and diet analysis.

"Most importantly, we'll see a major improvement to biosecurity within these processes," said Haffley.

The LERU facility was paid for through a special account within the PFBC's Fish Fund, which includes proceeds from several natural gas leases on PFBC properties.

In addition to the new building, the LERU team will soon welcome a replacement to its long-time research vessel, the Perca, which has been in service on Lake Erie since 1959. The new, 55-foot-long vessel manufactured by Lake Assault Boats will be slightly longer and wider than the Perca but will resemble the current boat in appearance as a tribute to its service. The \$3.5 million research vessel remains under construction and is scheduled for delivery in June 2026. □



The new Lake Erie Research Unit in Fairview, Erie County.



The new 500-square-foot research laboratory.



Office space for PFBC staff.



Mark Haffley, Lake Erie Research Unit Leader, demonstrates laboratory equipment to John Mahn Jr., PFBC Board President and District 2 Commissioner.



Fishing and Holiday Lights



hake off cabin fever and spend a day on Tulpehocken Creek, just outside Reading, Berks County. Cast a line at Stilling Basin, Blue Marsh Lake, and downstream at a Delayed Harvest Artificial Lures Only section of Tulpehocken Creek in the Keystone Select Stocked Trout Waters program. For details, see the *Pennsylvania Fishing Summary*. After a day on the water, visit Holiday Lights at Gring's Mill. The Gring's Mill Recreation Area is conveniently located along the Tulpehocken Creek.

photo-courtesy of Berks County Parks and Recreation Department

NOVEMBER/DECEMBER Highlights



LIGHTS ON THE LAKE

Stop by Misery Bay in Presque Isle State Park, Erie County, for some ice fishing during the day. Then, drive through the park after dark on weekends in December to enjoy the Presque Isle Lights. The light display is free, but you can make an optional donation to the Presque Isle Partnership. Find out more at discoverpi.com/ events/presqueisle-lights.



WILD ILLUMINATIONS

Explore Pittsburgh Zoo & Aquarium and observe some of Pennsylvania's freshwater fish, amphibians and reptiles to brush up on your identification skills. Then, beginning November 15, experience the zoo as well as Asian lantern structures and holiday light displays at Wild Illuminations. Visit pittsburghzoo. org/make-spiritsbright-with-wildilluminations.





ADVENTURES ON ICE

'Tis the season when ice anglers look north for the first signs of ice. Wellsboro, a small town nestled deep in the PA Wilds, Tioga County, has been featured in Hallmark movies. It's a celebration of wonderful dining and wintertime experiences. Check with the Tackle Shack on ice conditions and the latest ice fishing gear. What better way to dive into winter than ice fishing, hot cocoa and ending the

festival-of-ice.

festival-of-ice.

festival-of-ice.

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TROUT AND ICE SCULPTURES

Squeeze in some late fall trout fishing on Kishacoguillas Creek, Mifflin County, before spending an evening at the Festival of Ice in Lewistown. Hosted by Juniata River Valley Visitors Bureau on December 4 and 5, this event provides a festive atmosphere, highlights unique ice sculptures and window displays and includes a holiday market. Learn more at irvvisitors.com/



OLDE TIME CHRISTMAS

Experience the charm of Jim Thorpe's Olde Time Christmas with streets aglow with holiday lights, carolers filling the air with music and shops bustling with festive cheer—all just steps away from the Lehigh River, where you enjoy crisp winter air and world-class trout fishing. Then, warm up in town with the sights, sounds and spirit of holiday celebration. Explore more at poconomountains. com/jim-thorpe/ christmas-



LITTLE TOWN OF BETHLEHEM

Try a day of fishing for wild Brown Trout on the Artificial Lures Only Trout Slot Limit section of Saucon Creek, Northampton County. See the Pennsylvania Fishing Summary for regulations. Later, explore the Christkindlmarkt Bethlehem. This Germanthemed holiday event features handmade works, live music and visits with St. Nick. Discover more at steelstacks. org/festivals/ christkindlmarktbethlehem.



PENNSYLVANIA AMPHIBIANS AND REPTILES

AMERICAN BULLFROG

Lithobates catesbeianus

The American Bullfrog is a large aquatic frog

with a recognizable call ("jug-o-rum") heard during the early morning or evening hours of summer. Adult bullfrogs are 3½ to 6 inches long with green bodies that have a mottling of dark gray. Its belly is cream to white in color and is nearly parallel to the ground. Bullfrogs have large, protruding eyes and an external eardrum.



SNAPPING TURTLE

Chelydra serpentina

A Snapping Turtle is easily recognized by

its large head and long armored tail. Its tail is as long as its carapace and has a series of large, saw-toothed keels on the upper side. Snapping Turtles have necks covered with loose, warty skin and have strong jaws. Its shell is tan to dark brown. Although it may viciously lash out on land, it's usually inoffensive when submerged in water, where it spends most of its time.

JAN	FEB	MAR	APR
MAY	JUNE	JULY	AUG
SEPT	ОСТ	NOV	DEC

EASTERN MASSASAUGA

winter.

Sistrurus catenatus

The Eastern Massasauga is an endangered rattlesnake in

Pennsylvania and the smallest of the state's three venomous snakes. The biggest threat to this species is habitat loss. It's 20 to 30 inches long, and its back and sides are brownish gray to almost black with a row of dark-brown or black blotches running down the middle of its back. A dark bar, bordered with a lighter color, extends from the eye to the jaw. Several dark bars start at the top of the head and go onto the neck. Its belly is black with white markings.

JAN	FEB	MAR	APR
MAY	JUNE	JULY	AUG
SEPT	ОСТ	NOV	DEC











Wildlife Leadership Academy— The Best Two Summers

by Stefani Guedez

attended the academy last summer and had such a great time that I wanted to do it again. The first time, I saw a black bear, started nature journaling and went to the shooting range. During that summer, I was assigned a project of volunteering and reaching out to people to share what we learned. Because of these efforts, I was invited back at no cost.

This time, I did the bass camp and experienced fishing for the first time. During the WLA experience, I helped the Pennsylvania Fish and Boat Commission (PFBC) build and install 20 porcupine cribs at Foster Joseph Sayers Lake, Centre County, volunteer work supporting a grant to improve shoreline habitat.

"The WLA bass school is a great program where young conservationists can learn alongside fisheries biologists while also completing valuable projects, improving the overall aquatic resource," said Mike Swartz, PFBC Fisheries Biologist.

I now value aquatic life a lot more than I did before and appreciate the organizations that take care of our environment. It also made me want to purchase a fishing license and volunteer more in my community. I even earned a scholarship and visited colleges with the program.

Not only are WLA classes fun and interesting, but they are taught by professionals who are passionate about their work and instill excitement in their students. The adult mentors are also great people who love the outdoors. This camp is always the highlight of my summers. I look forward to going back next year as a staff member. \Box

CONNECT WITH US



Remember, when you're on the water, you must have a life jacket with you at all times. And, from

November 1 to April 30, boaters must wear a life jacket on boats less than 16 feet in length or any canoe, kayak or paddleboard.



#WearItPA:





@PAFishandBoat #FishPA
#PAFishandBoat #WearIt

Join the Conversation! Like, share and stay connected.

FishandBoat.com:





David Flynn, age 9, caught and released this Largemouth Bass while fishing with his dad at Twin Lakes Park, Westmoreland County.



Explore PA Waters

Share photos of your fishing and boating adventures. Remember to wear a properly fitted life jacket if you're on the water. And, make sure it's fully zippered and buckled.

Submit Your Adventure:





