

Have You Popular V

Biologist Eric Boehm holds two Lunker Bass from Assunpink Lake weighing 6.3 lbs. and 5.6 lbs. The bass were collected on April 24, 2018.



u Fished These Waterbodies?



Assunpink Lake

Assunpink Lake is a 225-acre impoundment located within the Assunpink Wildlife Management Area, Upper Freehold Township, Monmouth County. Assunpink Lake is one of five waterbodies managed under the Lunker Bass Program and one of the most utilized wildlife management areas in the state. In addition, the lake has a good black crappie population and is annually stocked with channel catfish.

The bass population was impacted by largemouth bass virus in the past but has shown consistent improvement since 2013 as revealed by Fish and Wildlife's April 2018 survey. The catch rate for bass was 76 bass/hour based on 1.43 hours of electrofishing. Eighty-four percent of bass were greater than 12 inches, 27 percent were greater than 15 inches and 2 percent were greater than 20 inches long. These bass lengths were longer than when the waterbody was surveyed in September 2017.

Four bass weighing more than 5 pounds were collected during the survey. Five pounds is socially accepted as a "Lunker" bass—a benchmark that Fish and Wildlife has tracked through tournament reports since the Lunker Bass Program's inception in the mid-1990s. The largest bass measured 20.6 inches and weighed 6.31 pounds.

The introduction of two invasive aquatic plant species, *Hydrilla* and water chestnut, has delayed bass recovery from the virus and has complicated fishery management activities. Supplemental largemouth bass were stocked in 2014 and 2016 to enhance the population. Biologists are evaluating how the population responds to stocking through annual electrofishing surveys.

Electrofishing surveys are conducted during the early spring and fall when bass are relating to shallow vegetation. These seasons are great for anglers to catch bass with vibrating jigs and lipless crankbaits cast into the shallows.

Greenwood Lake

Greenwood Lake, shared by New Jersey and New York, covers 1,920 acres. It offers a diversity of fishing opportunities for popular gamefish, from annually stocked walleye, muskellunge and channel catfish to largemouth and smallmouth bass.

Recent efforts to assess the muskie population in Greenwood revealed that it is one of—if not *the* best—muskie lake in the state, with a total of 38 captured. Seventy-nine percent were larger than 36 inches and 55 percent were larger than 40 inches! The size and number of muskies caught were a catalyst to increase the minimum size limit to 44 inches (effective April 1, 2019) and to make Greenwood Lake one of the new Trophy Muskie Waters.

Walleye are frequently encountered by anglers as well. Sampling in 2017 revealed a highly abundant population of walleye during the six hours of electrofishing conducted by both New York DEC and New Jersey DFW. Nearly half of the walleye captured exceeded 20 inches. Largemouth and smallmouth bass are popular gamefish as well. Steps are being taken to create more balance to the fishery and increase the abundance of largemouth bass in the lake, New Jersey DFW has stocked over 60,000 2-inch fingerling largemouth between 2012 and 2017.

With the abundance of aquatic vegetation, boat docks and rock piles, finding a place to fish is never a problem. Summer largemouth bass fishing is excellent on Greenwood Lake. Skipping a wacky-rigged stick bait under a boat dock or flipping the deep weed edges with a Texas-rigged creature bait are go-to techniques that always produce quality bass.

Millstone River

The Millstone River offers anglers an array of resident gamefish including both largemouth and smallmouth bass, a ton of panfish and trophy-sized carp. Annual stocking of northern pike has not produced a desirable fishery, however channel catfish are plentiful with occasional muskie and walleye being caught, presumably transplants from connecting waters that are stocked. Migratory species

include American shad, blueback herring, striped bass, and American eel. Like its mainstem the Raritan River, this 38-mile-long tributary boasts a wide array of fish diversity, with over fifty species of fish found in recent years.

In the continued effort to restore American shad and other migratory fishes on the Millstone River, the Weston Causeway dam in Manville—the lower most impediment to fish passage—was removed during the summer of 2017. This was funded through a Natural Resource Damage Assessment settlement agreement reached between the Trustees for Natural Resources—the NJDEP, the U.S. Department of Interior's Fish and Wildlife Service, and the U.S. Department of Commerce's National Oceanic and Atmospheric Administration—and the party potentially responsible for contamination related to the American Cyanamid Superfund site in Bridgewater Township.

During an electrofishing survey in October 2018, evidence of American Shad spawning in the Millstone River was confirmed. "This is an incredible finding and an amazing environmental success story," said DEP Commissioner Catherine R. McCabe. "These juvenile shad were found the first unimpeded migratory season after the dam was removed in the summer of 2017, indicating this species has an inherent tendency to recolonize once obstacles are removed from its migratory path.



Seasonal fisheries technician Maria Berezin with a 7-pound channel catfish, one of many species available to anglers on the Millstone River.



Principal Biologist Chris Smith holds a 6.73 pound largemouth bass from Union Lake collected in March 2018.

Biologist Eric Boehm holds a northern snakehead weighing 9.89 lbs. and measuring 30.12" collected at Salem Canal in June 2018. Anglers are reminded that snakeheads are invasive and must be destroyed when caught.

A rigorous fish stocking program is not necessary, as a respectable fishery currently exists. In fact, additional stocking of top predators could be contrary to the recovery of the American shad population. Unfortunately, two large invasive species are becoming common—grass carp reaching 46 inches and weighing up to 51 pounds plus flathead catfish up to 22 pounds. If encountered, please remove these and other invasive species that have expanded into this watershed.

Access to the Millstone River is plentiful, particularly through the Delaware and Raritan Canal State Park. Most of the river is wadable or can be fished from its banks, but the best approach is floating a small cartop boat or kayak. The river can be accessed

by boat from the primitive boat launch at the south end of Lincoln Avenue Park in Manville.

Salem Canal

Salem Canal is one of the most popular bass fishing locations in southern New Jersey and annually receives the most applications for wildlife management area fishing tournament permits. The canal is a dammed section of the Salem River originating in Woodstown, flowing through the DuPont facility before exiting at its confluence with the Delaware River.

The shallow canal consisting of marshy banks, spatterdock, submerged aquatic vegetation and felled trees make it ideal habitat for largemouth bass and in recent years, the invasive northern snakehead. Although it is not a wildlife management area, Fish and Wildlife owns a parcel of land and a concrete boat ramp located on Rt. 540 (Hawks Bridge Rd).

A boat electrofishing survey was completed in March 2018 to evaluate the largemouth bass and northern snakehead populations. A total of 75 largemouth bass were collected during the 1.77-hour survey. The catch rate of 42 bass/

hour is consistent with recent surveys and indicates a good population density for the region. Seventy-nine percent of largemouth bass were greater than 12 inches; 21 percent were greater than 15 inches. The population is balanced and doing well.

Unfortunately, the northern snakehead is well established in the Salem Canal. Surprisingly, only a few reports of anglers catching snakeheads in the canal were received prior to the Bureau of Freshwater Fisheries first collecting these invasives in 2017. Ninety-five northern snakeheads were collected and removed via electrofishing in 2018 (as of August) during seven electrofishing surveys. A study is currently underway to determine the grow rates and diet of snakeheads in New Jersey.

Despite the presence of the northern snakeheads, the Salem Canal remains one of the best largemouth bass destinations in southern New Jersey. Early spring and late fall are usually the best times to catch trophy size bass, but the summer months are great for catching lots of small fish. Green pumpkin or black and blue jigs work all year long by fishing the many laydown trees throughout the canal. Spinnerbaits, vibrating jigs and buzzbaits are great choices during the summer, worked around vegetation and laydowns.



Freshwater Fisheries Forums and Trout Meeting

North Jersey Fisheries Forum

January 19, 2019; 10 a.m., Hackettstown State Fish Hatchery

South Jersey Fisheries Forum

February 23, 2019; 10 a.m.,
Batsto Village Visitor's Center in Wharton State Forest

Trout Meeting

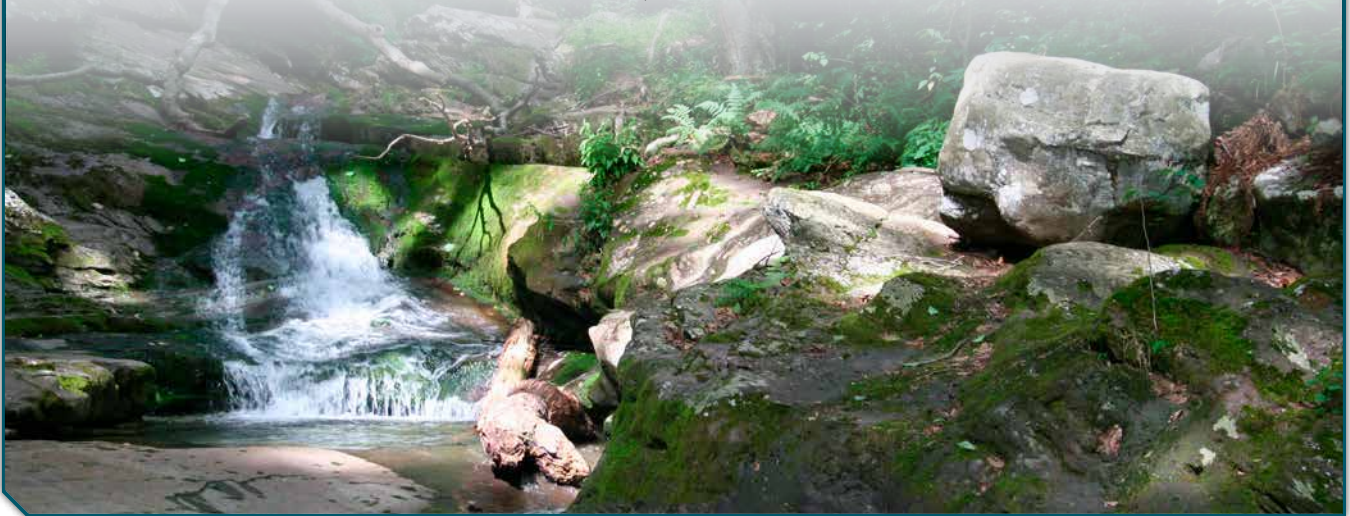
March 2, 2019; 10 a.m., Pequest Trout Hatchery

Come and share your views and recommendations for the future of freshwater fisheries in New Jersey and learn about current research, management and fish culture activities!

The forum at Hackettstown will include a tour of the fish production facilities.

For more information or to pre-register (helpful, but not required) please call (908) 236-2118 or send an e-mail to njfwfish@dep.nj.gov. E-mails should include name, address, phone number and number of people attending.

Presented by NJ Department of Environmental Protection's Division of Fish and Wildlife.




Union Lake

Union Lake is an 898-acre impoundment of the Maurice River located within the Union Lake Wildlife Management Area, Cumberland County. The lake is the largest impoundment, and—at 27 feet—one of the deepest in southern New Jersey. Union Lake is one of the most-utilized wildlife management areas in the state. It has one of the best largemouth bass populations in southern New Jersey and has been extensively sampled in recent years—for good reason.

Sampling in 2015 suggested that the largemouth bass population had stabilized from previous issues associated with largemouth bass virus. The stocking of over 60,000 fingerling largemouth bass since 2009 has boosted the once-struggling population. Despite the exceptional electrofishing results of the last three years, anglers still find catching bass rather difficult as indicated by the WMA Fishing Tournament reports.

A boat electrofishing survey was completed at Union Lake WMA in March 2018 to evaluate the bass population. A total of 123 were collected during the 2.42-hour daytime survey. The largest individual was 21 inches and weighed 6.73 pounds. The catch rate of 50 bass/hour indicates a good population density for southern New Jersey impoundments.

Ninety-five percent of the largemouth bass collected were over 12 inches, 73 percent were over 15 inches and 5 percent were over 20 inches long. These numbers are off-the-chart for New Jersey waters and indicate a trophy population! Seven largemouth bass of more than 5 pounds were collected during the survey. Although smallmouth bass are not frequently caught during electrofishing surveys at Union Lake, tournament catch reports indicate the population is doing well.

Anglers can test their skills 12 months of the year. Early spring, pre-spawn bass prowl the shallow flats looking for vegetation and places to spawn. These bass can be caught with jigs, spinnerbaits and lipless crankbaits. During the summer, many bass are found lurking in the deeper waters near drop-offs with stumps. Deep-diving crankbaits and Texas-rigged worms work very well. Fall and winter bass can be shallow or deep and lipless crankbaits, suspending jerkbaits and small swimbaits are great choices. 



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Freshwater Fisheries Project Highlights

Introduction

New Jersey Division of Fish and Wildlife's Bureau of Freshwater Fisheries is responsible for the protection and management of our state freshwater fisheries resources. The bureau's responsibilities are multi-faceted and include the culture and management of wild and stocked fish populations, protection and enhancement of their habitats and public education about the fisheries resources. On average, the Bureau of Freshwater Fisheries conducts over 200 fisheries surveys annually, gathering information on over 40,000 individual fish representing more than 70 species.

Featured below are highlights of select fisheries projects currently underway. For more information on any of the 200 annual surveys conducted by the Bureau of Freshwater Fisheries, go to www.NJFishandWildlife.com/bfwf_highlights.htm.

Columbia Lake Dam Removal

The Columbia Lake dam was located 1/4 mile upstream of the Paulins Kill River's confluence with the Delaware River in Knowlton Township, Warren County. The dam impounded a 43-acre lake, stretching more than 1.5 miles upstream. Since its 1909 construction, the 18-foot high, 330-foot long dam formed a barrier to fish passage, severing New Jersey's third largest tributary to the Delaware River from its watershed.

This obstruction blocked American shad access to their historic spawning grounds and impeded the movement of American eel. Dam removal in 2018 restored fish passage to over 10 miles of river, restored a natural flow regime and reclaimed 1.5 miles of stream habitat.

Columbia Lake Dam on the Paulins Kill prior to initial breach of the dam.





Brook Trout

Rinehart Brook — Brook Trout Restoration Project

A brook trout restoration project was initiated in 2017 on Rinehart Brook, a tributary to the Black River within Hacklebarney State Park. This restoration project, the first of its kind in New Jersey, was designed to assist the recovery of a struggling brook trout population by removing interspecific competition exerted by non-native brown trout, the dominant species in Rinehart Brook.

Initially, 93 percent of trout in this stream were brown trout. Fish and Wildlife biologists removed more than 1,100 brown trout by electrofishing approximately 2 miles of stream eleven times. These efforts caused a dramatic shift in species composition, and by early October 2018, zero brown trout were found for the first time in the study! In that time the brook trout population has more than doubled. These initial results are very encouraging. The brook trout population has more than doubled, comprising nearly 100 percent of all trout present in Rinehart Brook.

In addition, there was no evidence of a successful brown trout spawn during the fall of 2017, as no young-of-the-year browns were found during sampling the following spring. Biologists will continue to remove brown trout and monitor the brook trout population through electrofishing.

Stocked Trout Movement Study in the Big Flat Brook / Flat Brook Catch and Release Area

A two-year trout movement study in the Big Flat Brook *Catch and Release* area was initiated in the spring of 2017 to help determine the cause of a low number of stocked trout found during the summer months despite heavy stocking, a no harvest regulation along with adequate temperatures and habitat.

Biologists surgically implanted a tracking transmitter into the body cavity of 80 trout. The transmitters allowed biologists to track individual stocked trout to determine if they were leaving the catch and release area. It was revealed that predators play the biggest role in the limited number of trout. Several transmitters were found among the boney remnants of partially consumed trout, near dens or animal runs. A couple of transmitters were tracked back to a great blue heron rookery.



A radio transmitter is surgically implanted into an anesthetized rainbow trout, allowing biologists to track the fish's location.

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Stream Temperature Monitoring

Initiated in 2012 to monitor stream temperature in several major trout stocked rivers and a few trout production streams, the Bureau of Freshwater Fisheries expanded its network in 2018 to include 78 sites, making New Jersey's program one of the largest stream temperature monitoring efforts in the northeast.

The continuous temperature monitoring program is designed to closely monitor stream temperature in areas that have marginal thermal habitat for trout stocking, to understand thermal regimes in our major river systems and to monitor trout production streams. The monitoring of Trout Production streams allows biologists to gain a deeper understanding of stream temperature's role on the life cycle of New Jersey's wild trout and to assist in guiding management of these streams, especially under the forces of a warming climate.

Native Species Management

Several native freshwater fish species are in decline throughout their ranges due to a combination of factors not limited to: habitat alteration and stream fragmentation, diminished water quality and competition from non-native species. Any loss of New Jersey's native species could have a severe adverse impact on the ecology and health of the environment. Steps must be taken to conserve these native species.

Fish population surveys provide valuable information on these species allowing Fish and Wildlife biologists to map species distributions, assess their status and identify threats to native fishes. Continued fisheries inventories, regulations and implementation of specific management strategies are necessary to protect and enhance these vulnerable species.



The blackbanded sunfish is declining throughout its east coast range, but is holding on within New Jersey's Pine Barrens.



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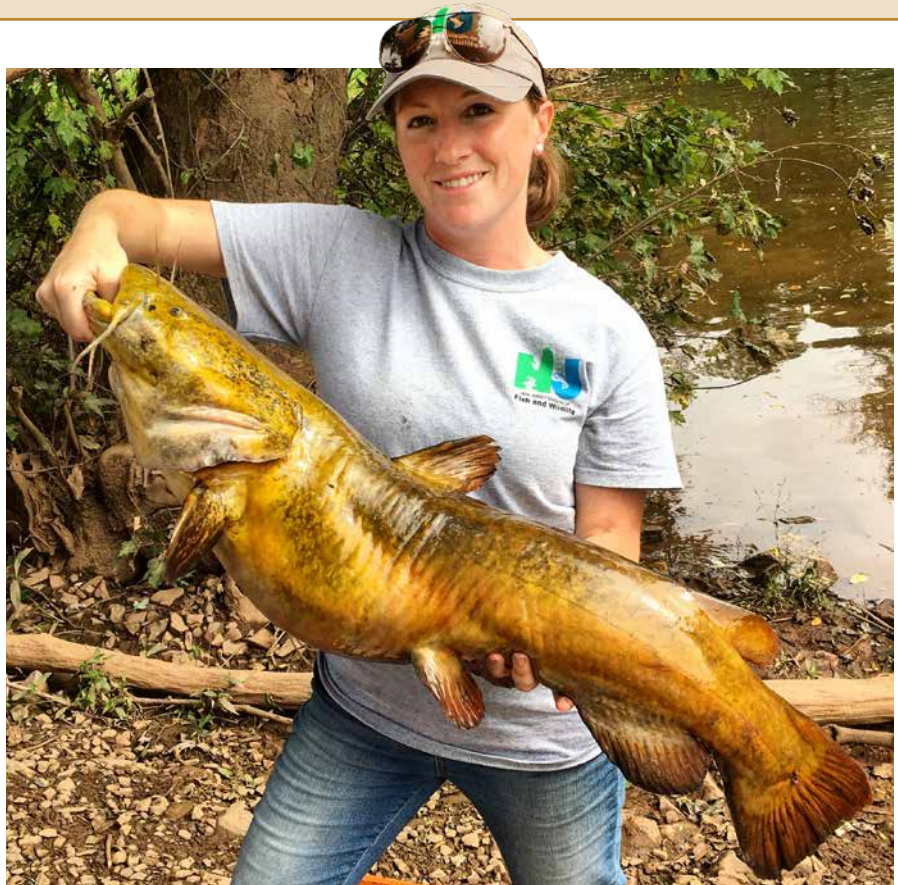
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Invasive Species Assessments

Introductions of invasive, non-native fish and aquatic plants are a growing concern of natural resource managers in New Jersey and nationwide because of the potential to dominate and destroy aquatic ecosystems causing irreversible economic and cultural damage. In New Jersey, 10 species of fish (Asian swamp eel, bighead carp, grass carp (diploid) and silver carp, brook stickleback, green sunfish, flathead catfish, oriental weatherfish, snakehead and warmouth have been identified as having the potential to become a significant threat to indigenous animals, the environment or to become a public safety hazard.

Regulated as *potentially dangerous fish*, possession and/or release of live specimens of these species is prohibited. When these species are encountered while angling, they **must be destroyed**. (See also *Potentially Dangerous Fish*, page 17 and *Invasive Fish*, page 44.)

The northern snakehead is the most recently introduced and frequently discussed of these potentially dangerous species. It is widely distributed within the Delaware River Basin and often sought by anglers. Fish and Wildlife is actively monitoring locations along the Delaware River to remove snakeheads and to assess their effects on game and native fish species. 



Weighing over 20 pounds, this large and colorful flathead catfish, an invasive species caught on the Millstone River, is displayed by seasonal fisheries technician Kate McStravog.

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New Jersey's FREE Freshwater Fishing Days

June 8 and Oct. 19, 2019

NJ Division of Fish and Wildlife has split the Free Fishing Days. The first will be held on June 8, 2019 during the summer as is traditional. This day is part of the National Fishing and Boating Week which highlights the importance of recreational boating and fishing to enhance peoples' quality of life and to preserve our country's natural beauty. The second Free Fishing Day will occur after fall trout stocking on October 19, 2019 to bring attention to this great fishing opportunity. On these two days, residents and non-residents may fish New Jersey's public fresh waters without a license or trout stamp. All other regulations, including size and daily catch limits, remain in effect.

Annual Pequest Open House and Fishermen's Flea Market

Date: to be determined

Keep watch on Fish and Wildlife's website, Facebook and Instagram pages for the 2019 event date!

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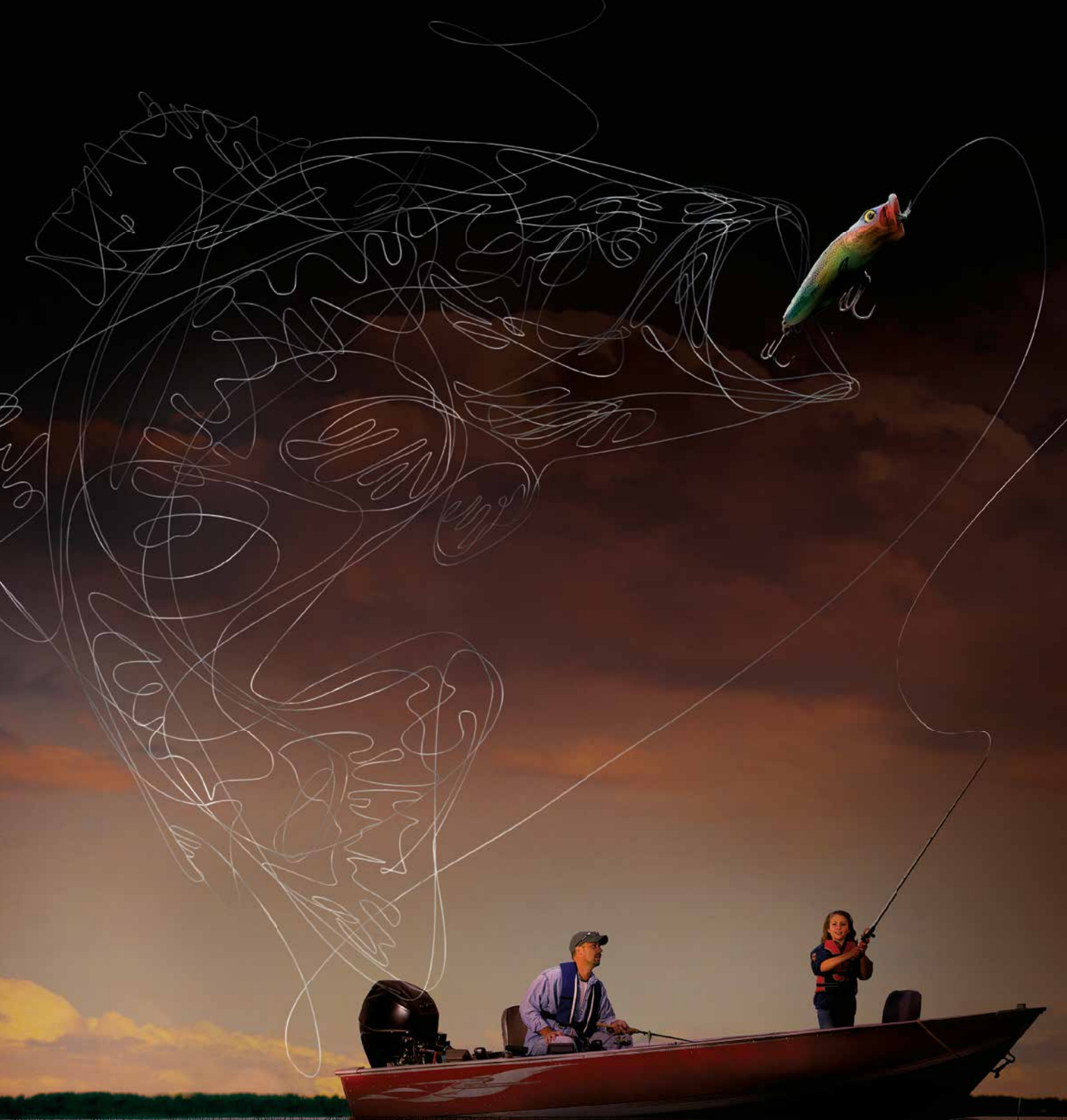
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