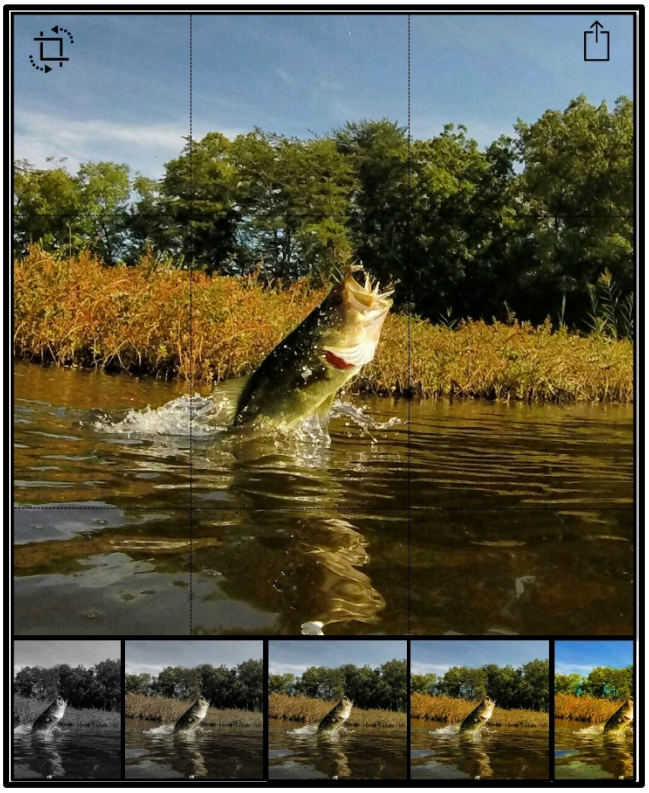


Welcome to COMPASS

Click banner to

GET YOUR FISHING LICENSE

Your license money directly funds fish conservation, including this program. Approximately $318,624 was spent to support the Tidal Bass Program in 2018, thanks to license sales and federal taxes on sport fishing tackle, import duties on motorboats and a portion taxes on small boat engine fuels. Some statewide services from this program include:

- ✓ Customer service via phone, e-mail, webinars, this annual review and outreach year-round
- ✓ Support hatchery production to grow bass, buy bass, and stock bass
- ✓ Carry out bass surveys required by Maryland's Fishery Management Plan for tidal bass
- ✓ Issue bass tournament permits and assist release boat captains to protect bass
- ✓ Design, conduct and report scientific studies to improve management of the fisheries
- ✓ Develop web content to promote conservation and provide customer resources
- ✓ Provide educational seminars for K-12 and college students, and fishing clubs
- ✓ Organize and participate with public, Black Bass Advisory Subcommittee

A Chesapeake Bay and Coastal Sport Fishing License is $15 ($22.50, nonresidents) and a resident non-tidal license is $20.50 ($30.50, nonresidents). Fishing licenses entitle a person to fish for 365 days in Maryland. Funds support healthier watersheds, education programs, and quality customer service. No one should miss out.

RECRUIT
Introduce a friend to fishing

RETAIN
Buy a fishing license

REACTIVATE
Ask a friend to buy their fishing license again, even if they have not for a while

THIS IS MARYLAND. FISH & HUNT MARYLAND

THE PREMIER DESTINATION FOR FISHING AND HUNTING

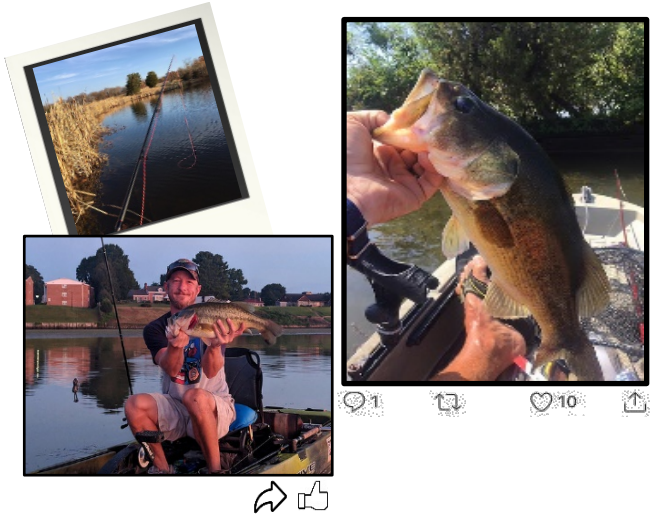
- Free Public Access Fishing Map
- Prizes for Sharing Your Data
- Where/When Trout are Stock
- Fish a Tournament
- Brag about your Catch
- Join a Youth Rodeo
- Find a Charter Boat Guides
- FishMaryland Milestone Awards
- Get Unparalleled Customer Service

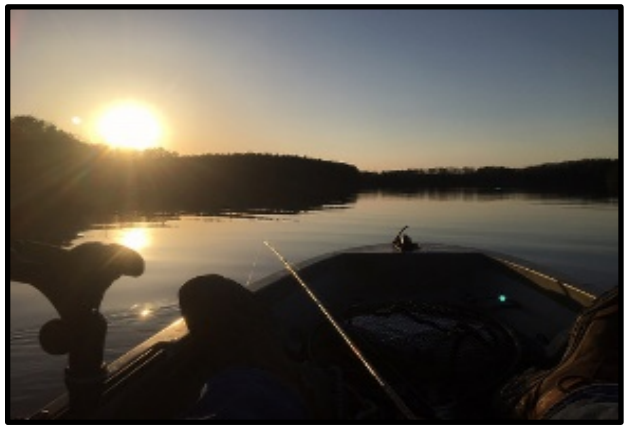
MARYLAND DEPARTMENT OF NATURAL RESOURCES
Fishing and Boating Services | 580 Taylor Ave B-2 | Annapolis, MD 21401
In Maryland: 410-260-8257 | Out of state: 877-620-8367
TTY Users call via the Maryland relay

3/2019 DNR 17-022119-126 dnr.maryland.gov/fisheries

SOCIAL MEDIA IN BASS FISHING

Make Maryland bass fishing trend in 2019, #marylandbass or #marylandbassfishing. Social media has revolutionized everything from communication to business. Bass fishing being no exception, social media gives anglers a chance to tell their stories. Everyday people miss out on good opportunities to capture wild experiences in the world of bass fishing. For those who can get out there, many share experiences. Tell those stories on Facebook (MarylandDNRFisheries), Twitter (@mdnrfish), or Maryland Angler's Log. Showcase a black bass at the heart of the story, but do not stop there. Capture the experience of kayaking or boating through Maryland's scenic waters. Just pick a scenic location, bring some friends, and live the adventure.





WILDLIFE CRIME STOPPERS

To contact Maryland Wildlife Crime Stoppers, citizens can call or text 443-433-4112, email mwc.dnr@maryland.gov, or report violations using the department's free mobile app. Maryland Wildlife Crime Stoppers was established to increase public awareness of the impact of illegal harvesting of fish and wildlife populations, and encourage anyone with knowledge of these activities to connect with Maryland Natural Resources Police.

Stewards can receive cash awards if they supply Maryland Natural Resources Police with information leading to the arrest and conviction of a suspect. Awards are made possible through a partnership between Natural Resources Police and Maryland Wildlife Crime Stoppers. Tipsters should give names, addresses, vehicle descriptions, and as much information as possible. Anonymity of the caller is guaranteed.

Maryland Wildlife Crime Stoppers depends solely on financial support from corporate, individual and public donations or gifts. Donations to Maryland Wildlife Crime Stoppers can be sent to: 580 Taylor Ave., E-3, Annapolis, Maryland 21401.

FIND THE BASS

Are you a student, or an angler looking for information about bass and forage fish? In the past those data were only available by email request (s). Now, thanks to fishing license sales, maps of hot spots for bass are on the Public Access Map. New in 2019 will be an opportunity for the general public to download most of the data that we collect, including forage fish and water quality. Users only need to select a group of sites from a map, identify a time frame (if any), and a target species (if any). Look for this new opportunity later in the year from the Tidal Bass Program's homepage.

ELECTROFISHING 101

People have said electrofishing catches all the fish, messes up fishing, and worse, kills bass. But what is electrofishing and what does it really do to the fish?

Shocking! Electroshocking (also called "electrofishing") stuns fishes temporarily.

Ever been fishing and seen a metal boat dangling its probes from the bow like overcooked spaghetti noodles? Or maybe you have seen someone wading through the stream, waving a wand in the water between small boulders? The operators are using a gas generator or battery to create a current that travels from a negative pole (or anode) to a positive pole (or cathode). The probes and wand are usually cathodes. The boat hull and the "tail" of a backpack electroshocker are usually the anodes. When a fish gets caught in the electric current, the fish can get stunned temporarily, allowing scientists to net it from the water.

Here, I tackle some of the concerns I have heard in the past ten years about electrofishing.

Working wood. Staff using electrofishing probes and long handled nets near submerged wood to survey bass.

1. Electrofishers catch all the fish. Not true. Any fishing gear captures only a portion of a population, though some gear is better than others. Single pass electrofishing captures only a portion of the population and how much depends on the type of species, abundance, habitat conditions, experience of the netters, and condition of the gear. The Tidal Bass Survey catches about 50 percent of largemouth bass at a site. Because the program does not catch all of the bass at a site, the catch is referred to as a "relative abundance."

2. It is dangerous. True. Electrofishing can be very dangerous. Electrofishing scientists working with the Tidal Bass Survey follow a strict set of safety guidelines created by the U.S. Fish and Wildlife Service. Electrofishing units create an electrical current that sends electrons from an anode, through water, which adds resistance to the current of electrons until they reach the cathode. Resistance decreases with salinity. Power output affected by current and resistance can cause serious damage to humans if they become part of the circuit. To keep from becoming part of the circuit, our scientists have extensive safety training and at a minimum, wear rubber boots and gloves. As part of the safety policy, elecrofishing boats are required to cease electrofishing within 100 feet of another person.

Want to know more about electrofishing safety? Click HERE.

3. It messes up fishing. Maybe. Research published on largemouth bass from Illinois lakes showed that electrofishing can prevent bass from feeding for up to 4.5 hours, but usually 1.5 – 2 hours. If the fish are not hungry, they might not strike a lure. Adult bass about 0.5 pounds tended to feed within an hour of electrofishing, but fish that were larger (1 pound) took about 2 hours.

The department has recorded at least one electrofished bass that was reported an hour later by an angler. Recognizing conflicts with angling, the Tidal Bass Program limits its surveys to a few selected shorelines during a narrow time window and avoids working areas ahead of anglers whenever possible.

4. It kills the bass! Very rarely. The electric current travels through the fish and paralyzes it temporarily. Some fish, though, are barely paralyzed while others lie motionless for a minute or two. Once the fish becomes motionless, scientists capture it with long handled nets and allow it to recover in a tank of water (if on the boat) or in a bucket of water (if wading a stream). Usually fish recover within a few minutes. Sadly, about one or two bass die each year during the survey. These fish are retained when possible for biological analyses.

Backpacking? A backpack electrofisher is often used in small, wadeable streams.

Stunned! Largemouth bass recover from electrofishing in a tank of oxygen rich, cool water before being measured, weighed, checked for disease or marks, and then released to the site where they were caught.

MANAGEMENT

Subcommittee Highlights

The Black Bass Advisory Subcommittee:

- Established Nick Kuttner (Potomac Riverkeeper) as liaison to department regarding habitat issues affect tidal freshwater habitat. Connect with Nick and the department on habitat issues by downloading free Water Reporter app.
- Found no convincing evidence that catch-and-release or off-limits areas in tidal rivers during spring helped protect recruitment[1].
- Encouraged attention to forms of fishing that damaged spawning habitat during spring.
- Reviewed and improved department's best management practices for reducing stockpiling at weigh-in areas.
- Considered regulations restricting possession in non-tidal and tidal black bass fisheries and advised no changes.
- Discussed wanton waste problems, which can be penalized as littering violations if a culprit is identified unequivocally.
- Recommended greater coordination between Virginia and Maryland on managing Potomac Bass resources.

The public is invited to attend and announce concerns. See department's calendar for dates.

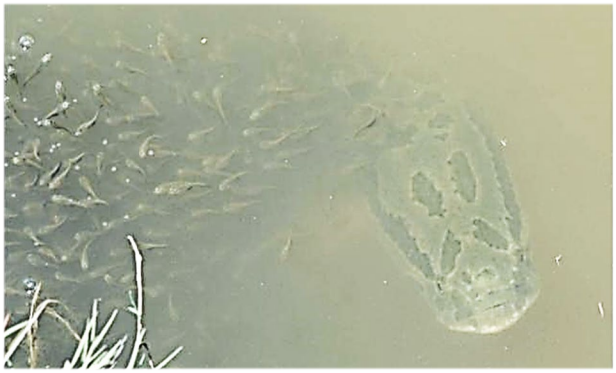
[1]Recruitment – process of juveniles growing and surviving to be a subadult or adult.

Potomac Bass Management

The four jurisdictions responsible for managing the bass fishery in the tidal Potomac River have formed a technical committee to track the status and health of the largemouth bass population. The technical committee met twice in 2018 to draft a plan that could include a large scale tagging program aimed at tracking the total number of bass over time. This effort, the first of its kind in the history of tidal bass management in the Chesapeake Bay, follows the format of the Chesapeake Bay's Blue Crab Winter Dredge Survey. As part of this herculean effort, the technical committee will generate an inter-agency status report for the Potomac River largemouth bass fishery. This report will become a foundation in managing this world-class fishery.

Do Snakeheads Change Ecosystems?

Federal and State agencies have been working together to answer that question. For six months, they have been surveying Blackwater River on the eastern shore to learn the actual impacts of newly introduced northern snakehead to a freshwater marsh community.



Guarding Parents. Northern snakehead guards young from troublemakers.

Since northern snakeheads were first discovered in the tidal basin of the Chesapeake Bay in 2004, scientists and anglers have learned this fish eats a lot of different things, including bugs, fish, and occasionally, small mammals that fall in the water. While the survey is on-going, scientists are learning that when snakeheads become abundant, they can significantly lower the number of perch and sunfish in an ecosystem.

Catch one? Be careful when pulling out the hook.

Look at them choppers. The mouth of snakeheads has many sharp teeth.

CONSERVATION

Kayaker Wins Conservation Award

Don Goff, President of Susquehanna River Fishing Club won the Director's Black Bass Conservation Award for his club's stewardship in the fishery. His club won materials to help improve post-release survival of largemouth bass. Future applicants for the award should be engaged in conservation of the resource, have a youth membership and have its members successfully complete the fun and easy, Bass Class. Stay involved and build a better fishery. Read more to see if you qualify,

Click here

Be a Bass Conservationist: Six Simple Expert Tips

By:

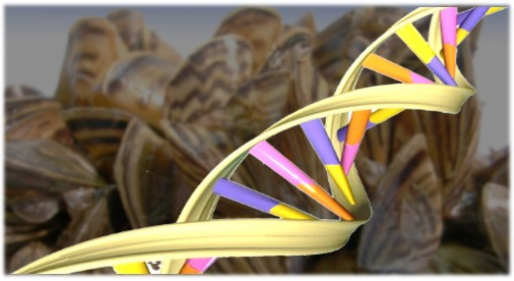
Gene Gilliland,
Conservation Director,
B.A.S.S.

Few people can speak more authoritatively about black bass conservation resources than Gene Gilliland, Conservation Director of Bass Anglers Sportsmen Society. We asked Gene for his top tips for being a good conservationist.

- ☐ When landing bass, keep them off the boat deck, carpet or ground and handle them as little as possible to preserve the bass' protective slime coat.
- ☐ Land fish quickly, do not play them to exhaustion, remove hooks quickly and learn to safely remove hooks in the throat and gut.
- ☐ Practice selective harvest; follow the state's length and bag limit regulations and only keep the more abundant smaller bass, returning the larger fish to grow and spawn.
- ☐ Do not be a litter bug; never discard worn or torn soft plastic lures, fishing line, hooks, sinkers or bait into the water; always look for recycling bins on shore and dispose of these items properly.
- ☐ Never transfer or stock any fish into public waters; leave the fish stocking to the experts in your state's Department of Natural Resources.
- ☐ Always clean, drain and dry your boat and properly dispose of any mussels or vegetation clinging to the hull or trailer before leaving the lake, bay or river to avoid transporting invasive species.

For more on conservation, watch some experts (including Gene) during short video clips and earn yourself a conservationist certificate from the Bass Class.

Using DNA to Find Invasive Species



Have you ever seen a silver carp take flight? Watch a few videos on YouTube and you will see what I mean. They cause a lot of problems. If these fish, or other invaders get into Maryland waters, then an early and rapid response is the best chance for detecting them.

Early detection systems for aquatic nuisance species now include screening DNA, similar to how crime scenes are screened for DNA to identify suspects. These methods are useful for detecting nuisance species because sometimes, it can be hard to otherwise see the species underwater – unless you are Aquaman.

While these DNA methods have been used across the United States, they have not been evaluated as early detection tools for nuisance species in tidal or non-tidal waters of Maryland. In 2018 the State received funding from U.S. Fish and Wildlife Service to develop the protocols and methods for these tools, and develop a way of reporting the results, and their limitations, regionally and statewide.

The work is on-going. Last year, twenty samples were taken from waterbodies across Maryland. Scientists will be looking for twelve aquatic nuisance species, including didymo, silver carp, and flathead catfish.

Visit our webpage to learn more about Maryland's Aquatic Nuisance Species.

FISHERY ASSESSMENTS

Best Bass Fishing in Bay

As many know, the Potomac River and upper Bay fisheries are premier bass fisheries for the State. But what about other areas? The Tidal Bass Survey uses boat electrofishing to sample largemouth bass during fall in many of the major tidal freshwater rivers of the Chesapeake Bay watershed. That information is used to create a fishery assessment. This year, approximately 152,800 feet of shoreline were sampled. Assessments below, ordered with best tidal freshwater fisheries first, are based on angler participation, catch and life history information reported from the Tidal Bass Survey, recreational anglers, and tournament anglers.

1. Potomac River

Despite tough weather, anglers fished the tidewater of Potomac River to good reward. **Catch rates reported by tournament anglers were greater than previous years and were similar to levels reported between 2008 and 2011, when the fishery was considered hot.** Tournament anglers caught and weighed, on average, three bass per day. Recreational anglers, who reported all bass they caught during the day, caught seven bass per day. The reported number of tournament angler-days (2,193) was similar to years since 2014, but half that during highly popular years between 2008 and 2011. Fewer angler-days could be symptomatic of a larger fishing trend because recent research showed angler effort in the tidal freshwater on Potomac River was at least twenty-times greater in 1990 and 1994 than in 2017. **Overall this world-class fishery was in good shape** and benefitted from better reproduction, better handling care by anglers, and annual stocking.

2. Upper Chesapeake Bay

The fishery in the upper Chesapeake Bay has maintained its popularity as a must-fish destination for bass anglers. Tournament angler-days reported from the upper Chesapeake Bay has been similar annually since 2010 and recreational angler effort was similar between 1987 and 2017. **Reproduction for the population was good, though recruitment of fish to the adult population may be lagging.** With average abundances from surveys and relatively high catch rates reported by tournament anglers, **the fishery earns high marks**. Catch rates reported by recreational anglers (four bass per day) and tournament anglers (two bass per day), while lower than those for Potomac River, are normal for the tidal population from the Susquehanna Flats and its rivers. The improvement for this population since 2014 to 2016 resulted from better environmental conditions, better fish handling by anglers and annual stocking.

3. Patuxent River

In a word, "phenomenal" describes this population. While not as popular for tournament or recreational anglers as the Potomac River or the upper Bay, this population thriving in the tidal Patuxent River is robust and healthy, more so than assessments of 2011 to 2014. **Reproduction was exceptional,** and coupled with average growth and normal levels of annual survivorship, it may not be a surprise that **this little known tidal freshwater fishery exhibits extraordinary levels of recruitment and relative abundance.** Since the last survey in 2014, the Patuxent River has been stocked effectively with a total of 2,279 juveniles and subadults[2].

[2]Subadult-older than 1 year, but not yet sexually mature.

4. *Gunpowder River*

Once popular for fishing, the tidal freshwater Gunpowder River bass population has declined in popularity and size over time, but has recently improved. It suffered a massive blow in December 2016 because of a fish kill due to a common algal species (*Karlodinium*) and environmental stress. The number of caught and weighed bass reported by tournament anglers was similar to those from the upper Chesapeake Bay (two bass per day) and **average catch from the Tidal Bass Survey was fourth highest among populations surveyed**. Reproduction was good and the population's size structure indicated good recruitment and annual survivorship. Growth rates of young bass (ages one to three) were high and **all body condition indices indicated adults were foraging well**. In addition to the weigh-in station of Maryland Bass Nation at Dundee Marina, this population has benefited from stocking of 5,439 advanced fingerlings and subadults since annual stocking began in 2013.

5. *Marshyhope Creek*

Marshyhope Creek, scenic, quiet, relatively pristine and recently notable for the many observations of Atlantic sturgeon, revealed surprisingly low numbers of largemouth bass, at least in typically high quality areas. Tournament anglers weighed about three fish per day, which is a fairly typical weigh-in value for Marshyhope Creek and its confluent, Nanticoke River. However, **reproduction in high quality areas was unusually poor for the population.** Additionally, growth rates for young bass (ages one to three) were lower than usual, possibly explaining low recruitment and fewer stock size fish and fewer adults. **Data in 2018 might signal a trend because total abundance was also low in 2016.** Surveys in 2019 and 2020 should further indicate whether 2018 was an anomaly, or a sign of a serious problem. **As always, bass anglers are strongly encouraged to share their own observations of this fishery.**

6. *Middle River*

The fishery at Middle River, though historically popular, maintains a small population supported by stocking efforts. Within the past three years, the Tidal Bass Program was able to better monitor this fishery because it secured an electrofishing boat capable of sampling these brackish, moderately high salinity rivers efficiently. The Middle River population exhibited **good reproduction and moderate relative abundance, but a size structure that was not indicative of a normal stock of bass**. Average growth rates for young bass (ages one to three) were low, and were among the lowest measured during the survey. Unfortunately, catch data from recreational or tournament anglers are not available and so, cannot be used to assess the quality of the population. In addition to at least 500 subadults stocked by Maryland Bass Nation, this population has been stocked with at least 800 subadults purchased by the department in the past 3 years.

7. *Bush River*

The newest of the rivers to be surveyed by the Tidal Bass Survey, the Bush River population showed good reproduction and a size structure typical for bass populations. **Unfortunately, average relative abundance was the lowest of the three central region rivers (also, Middle River and Gunpowder River).** For the first time in 20 years, Bush River was stocked in 2018 and with 265 subadults. With continued dedicated surveys, the department will amass more details about this fishery.

8. *Wicomico River*

With low levels of reproduction, as well as relatively poor catches of adults, the tidewater population of upper Wicomico River near Salisbury continues to offer a relatively small, challenging fishery. While growth and body

condition levels suggest fairly healthy individuals, **recruitment remains difficult and likely hinders growth of the population.** The population was stocked in 2012 with 3,216 advanced fingerlings, and may again in 2019. **The Tidal Bass Program seeks feedback to learn whether anglers want to prioritize this fishery for continued surveys and fishery management.**

Stock Now, Fish Later

The Tidal Bass Program stocked over 175,000 largemouth bass juveniles and subadults in 2018 to tidal freshwater rivers of the Chesapeake Bay. This was done to both grow and enhance fisheries for the state. Bass fishing is good in a lot of tidal rivers and it is made better through these dedicated efforts.

One common tool to offset woes causing poor reproduction or survivorship is stocking. Even though only a relatively small proportion of bass nests may need to be successful for the population to be sustainable, population recovery from widespread natural disasters and nest failure can limit reproduction and recruitment. Disease or angling, could further add stress that reduces survivorship.

Stocking for maintenance or increasing the size of a largemouth bass population, unfortunately, can be challenging. The release of fry (one inch) does not usually contribute significantly to the spawning stock of bass because they get eaten. Predation on juvenile bass generally limits the success of stocking programs. The release of larger juveniles (greater than two inches) may temporarily increase the proportion of fish in the population. In 2006 to 2009, the Virginia Department of Game and Inland Fisheries released thousands of juveniles that contributed to high percentages of the age two and age three cohorts. The contribution of juveniles to older age classes also greatly depends on habitat quality.

Tidal Bass Program generally uses two types of stocking for its tidal rivers. In popular fisheries where there may be high levels of nest failure or adult mortality, but awesome habitat, routine stocking of two to four inch juveniles can help sustain the population.

Bass juveniles are released in low densities over multiple days and across many sites that tend to have submerged structure for refugia. For fisheries where there is interest in growing the population in spite of normally limited suitable habitat, advanced fingerlings (two to eight inches) or subadults (eight to twelve inches) are purchased and released. While these fish may not reproduce well because of limited nursery habitat, they are big enough to escape many predators and more quickly enter the fishery, assuming good growth and low harvest.

A full list of areas stocked in 2018 can be found by clicking HERE.

Bass Disease in Maryland

Bass get sick too. Usually less than five percent of bass caught in the Tidal Bass Survey have signs of injury or disease. But, when a fish is wounded, the break in skin can be infected by bacteria.

Fish can get viruses too. Two well-known viruses affecting largemouth bass and smallmouth bass is Largemouth Bass Virus and Viral Hemorrhagic Septicemia. Below are some common infections reported in Maryland and nationwide.

Click Here for Our Fish Pathogen Map.

Parasites

Largemouth bass and smallmouth bass can become infected with tapeworms, parasitic copepods and small flatworms called trematodes. Trematodes can attach to fish skin and be seen with the naked eye. Usually a fish does not carry many (if any) parasites. If a fish is heavily parasitized with visible worms, then that may be related to poor habitat conditions.

Water Mold

Water molds cause fungal infections on the skin of bass. Infections of the skin and gills can lead to death, but are not usually common enough to cause problems with the population.

Bacteria

Columnaris, a possibly lethal disease, can be caused by a common bacterium that grows because of handling or environmental stress. An example of environmental stress is poor water quality.

Aeromonas is another common bacterium in freshwater and tidal rivers. This bacterium infects opened wounds caused by bird or hooks, or whatever else breaks the fish skin.

Viruses

The two most common viruses affecting bass are Largemouth Bass Virus (commonly, LMBV) and Viral Hemorrhoragic Septicemia (commonly, VHS). Largemouth Bass Virus was first documented in the United States in 1991 from Florida. The virus was documented using DNA because there are no good, externally visible signs of the disease caused by LMBV. A die-off of 1,000 bass was first attributed to LMBV disease in South Carolina in 1995. Since then, LMBV disease is said to have caused the death of thousands more across the United States. The recent problems of smallmouth bass in Susquehanna River are now thought to be caused by LMBV disease. The virus is found in over half of the United States and in many areas where disease has not been observed. The presence of the virus combined with environmental or handling stress can cause disease and death.

A significant virus affecting bass, VHS has caused numerous deaths of bass and sunfish for at least a decade in the Great Lakes region. Disease from VHS kills juvenile fish of many species, causes lesions (in some species) and most likely causes disease in cool water. Aquaculture and hatchery operations growing trout and other cold water species, routinely test for VHS. This virus has not been documented in Maryland.

HEY, WHAT'S THIS?

Can you successfully guess what this is and what it is used for? E-mail responses to, joseph.love@maryland.gov. Good luck!

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