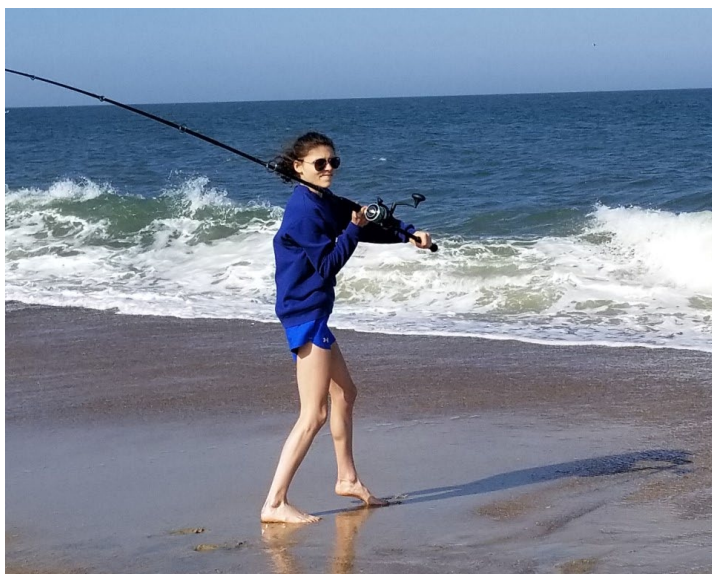




January 2020 - December 2020

# Delaware Bass Tournament News



I don't have to say it, but 2020 was a challenging year. We had to cancel most of our pond fish and tidal bass surveys due to restrictions on allowable crew size. I know that some of your tournaments were impacted as well. Hopefully though, everyone in your families and fishing circles are healthy. On the bright side I got out fishing on the weekends more than usual (partly because my sister talked my brother-in-law into buying a sweet new 20-foot Key West). My daughter, also a freshwater angler, discovered surf fishing. In fact, boat and fishing equipment sales were up in 2020, no doubt caused by a coronavirus-driven outdoor recreation boom. One can only hope that many of the people new to Delaware's public lands and waterways gained an appreciation for the importance of conserving these places for the future. Most of all, let's hope 2021 starts to resemble normal again.

Sincerely,

*Edna*

## Look Out for These Invasive/Non-Native Species

### Red-bellied Pacu (*Piaractus brachipomus*)

These were caught by anglers and removed from Becks Pond and Marshyhope Creek near Woodenhawk. These individuals were likely illegally stocked aquarium pets. This Amazon River Basin native is not known to be tolerant of water temperatures below 60°F.



### Asian longhorned tick (*Haemaphysalis longicornis*)

Unlike other tick species, this one is uniformly colored with no discernable markings, spots, etc., with legs the same color as the body. Documented in Va., W.Va., N.J., N.Y., N.C., Pa., Ark., Conn., Md., and Ky., this tick is a possible carrier of disease.

### European frogbit (*Hydrocharis morsus-ranae*)

A free-floating aquatic plant with leathery heart-shaped leaves and small white flowers, this is found in Pa., N.J., and N.Y. Spread via plant fragments and turions attached to boats and trailers, this plant forms densely tangled mats.



### Zebra mussels

These have spread in the Elk River and its tributaries in Maryland. If you fish in Maryland be sure to thoroughly wash your boat, trailer and fishing equipment to avoid inadvertently transporting adults and larvae to other water bodies in the region.



## Brandywine River Smallies

Check out this nice Smallmouth Bass caught and released by Paul O'Donnell on the Brandywine River in October. It was 19.75 inches in length! A big thank you to Paul for the live release award entry. You have probably heard about Alabama Bass (*Micropterus henshalli*). In addition to competing for resources, did you know that they easily hybridize with Smallmouth Bass? In a relatively short amount of time Alabama Bass can eliminate smallmouth genes. We need to be diligent and prevent the illegal stocking of Alabama Bass in the region, especially in the Brandywine River — or no one will be catching beautiful smalls like this one.

## Delaware Pond Sampling 2020

The Department of Natural Resources and Environmental Control's Division of Fish and Wildlife typically conducts fish community sampling via electrofishing at six to eight state-managed ponds each year. Surveys scheduled for the spring of 2020 at Lums Pond, Tubmill Pond, Abbotts Pond, Blairs Pond, Raccoon Pond and Records Pond were postponed. Current plans to survey these ponds in the spring of 2021, along with Becks Pond, Derby Pond, Craigs Pond, Haven Lake, Horsey Pond, Millsboro Pond and Tussock Pond, are pending. In the interim I thought I'd share a recap of **catch rates (per hour)** at all ponds/lakes based on the most recent survey results.

Pond/Lake	Largemouth Bass		Bluegill		Black Crappie		Redear Sunfish		Yellow Perch	Pumpkinseed	Chain Pickerel <sup>1</sup>	Survey Year
	All	≥15"	All	≥8"	All	≥8"	All	≥9"				
Becks Pond	15	2	20	15	13	4	0	0	8	7	7	2016
Lums Pond	44	12	287	73	41	-	0	0	31	0	0	2015
NCC - average	30	7	154	44	27	2	0	0	20	4	4	
Andrews Lake	89	11	189	137	8	3	0	0	15	3	0	2017
Coursey Pond	46	6	254	74	40	7	0	0	4	*	0	2017
Derby Pond	45	2	136	76	4	2	0	0	37	0	*	2016
Garrisons Lake	30	8	49	8	*	0	0	0	0	19	*	2019
Killens Pond	61	21	156	99	22	0	0	0	0	*	6	2019
Massey Mill Pond	75	21	229	77	16	5	0	0	0	*	*	2019
McColley Pond	124	19	205	108	50	5	0	0	*	*	*	2018
McGinnis Pond	82	20	63	43	15	8	0	0	2	4	*	2017
Moores Lake	101	19	199	90	33	6	0	0	4	58	4	2018
Mud Mill Pond	78	20	92	28	59	5	*	0	0	*	2	2018
Tubmill Pond	48	0	10	12	0	0	0	0	0	24	6	2015
KC - average	71	13	144	68	23	4	0	0	6	10	2	
Abbotts Pond	12	4	58	50	8	4	0	0	0	4	4	2015
Blairs Pond	21	0	72	25	0	0	0	0	23	21	8	2015
Chipman Pond	65	10	201	115	43	32	25	4	32	0	4	2018
Concord Pond	30	8	168	78	17	17	144	36	0	20	32	2019
Craigs Pond	58	14	243	128	0	0	0	0	0	2	*	2016
Griffith Lake	54	13	77	27	8	6	0	0	37	54	23	2018
Haven Lake	35	11	85	12	13	7	*	0	14	13	11	2016
Hearns Pond	84	21	596	288	292	8	79	24	0	0	4	2018
Horsey Pond	71	9	132	57	16	3	0	0	4	0	15	2016
Ingrams Pond	36	9	62	8	36	13	0	0	55	7	3	2017
Millsboro Pond	39	5	134	7	14	0	9	2	38	34	3	2016
Portsville Pond	42	8	61	27	46	42	69	4	*	0	*	2017
Raccoon Pond	35	7	109	47	24	0	0	0	0	0	13	2015
Records Pond	33	4	68	39	32	7	107	69	11	0	3	2015
Trap Pond	91	37	257	86	81	5	50	3	16	*	*	2019
Tussock Pond	40	5	328	86	20	5	0	0	0	*	0	2016
Wagamons Pond	44	12	77	43	3	0	17	20	7	0	0	2015
Waples Pond	27	3	68	18	12	0	24	0	24	0	*	2015 <sup>2</sup>
SC - Average	45	10	155	63	37	8	31	9	15	10	9	

**Note:** Catch rates per hour were rounded to the nearest whole number.

\*Collected in previous surveys or only observed, not captured (and thus a catch rate could not be calculated)

<sup>1</sup> Catch rates of Chain Pickerel may be biased by their ability to avoid electrofishing gear.

<sup>2</sup> Only the eastern half (northbound side of Route 1) was accessible for the survey.



## Nanticoke River Largemouth Bass Genetic Study



Jimmy on Marshyhope Creek with a bass captured for the genetic project.

In fall 2020, a genetic analysis of Largemouth Bass in the Nanticoke River was conducted to determine the population's purity of Northern strain (*Micropterus salmoides*) vs. Florida strain (*M. s. floridanus*). A small clip of fin tissue was collected from 30 bass (8 to 20 inches in length) captured via electrofishing in the river system's Delaware waters. These samples were sent for analysis to Dr. Eric Peatman of Auburn University's aquatic genetics and genomics lab. Results showed that just six bass had more than 95% pure Northern strain genes, while the remainder were intergrades, a mix of Northern and Florida strain genes. Intergrades were found in all segments of the river, with the highest percentage of Florida genes from bass collected in the Marshyhope. As bass randomly spawn with each other, they produce offspring combining the genes of both parents, making it difficult to maintain a pure genetic makeup. Over time, this results in a variety of genetic combinations — as was discovered in the Nanticoke River bass population, where the percentage of Florida genes ranged from 5.7% to 41.4%. From the 1990s to 2019, the DNREC Division of Fish and Wildlife only stocked fingerlings produced by Nanticoke River parent brood stock. However, historical stockings, stockings in Maryland waters and illegal stocking may have introduced genes from other bass populations, including at some point Florida bass, which are native only to peninsular Florida. Florida bass genes may eventually breed out of the population due to Delaware's climate or persist longer through time. Additional analysis is needed to determine what management actions, if any, may be necessary to maintain or improve the fitness of the Nanticoke River Largemouth Bass population.

## A Note About Tagging

Except for a few bass tagged with special orange T-bar tags during telemetry studies in the Nanticoke (2018) and Broadkill (2019) rivers, the DNREC Division of Fish and Wildlife has not tagged bass with external T-bar tags (yellow) since 2014 (Nanticoke River) and 2016 (Broadkill River). Tagging is reserved for specific research, and studies focused on examining bass movement and angler behavior were concluded. The tags are predicted to break off or fall out within a few years, but anglers still occasionally report catching bass five to six years after tagging.



Bass with a yellow T-bar tag.



Bass are scanned by a handheld reader that will display the PIT tag number if the fish is tagged. Otherwise it will display "No ID found," like it did for this bass.

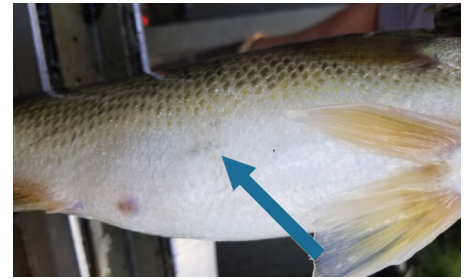
For the next 10 years, Largemouth Bass collected during surveys of tidal bass populations will be internally tagged with passive integrator transponder (PIT) tags, similar to the microchips used for cats and dogs. These small tags have an integrated circuit chip, capacitor and antenna coil encased in glass. The tags, which activate only when scanned by a handheld device that emits a low-frequency radio signal, return a unique alphanumeric code back to the device. Because each tag has its own unique number, biologists can identify individual fish. For Largemouth Bass, the smallest tags are being used (8mm or 0.3 inches long) and are injected subcutaneously near the second dorsal fin. Growth and survivorship data can be collected over time when tagged bass are recaptured during subsequent surveys. If installed correctly, the tags will likely be retained for the lifespan of the bass. They are also relatively non-intrusive and cost a little more than \$1 per tag when purchased in quantity.



PIT tags are loaded into a special large-gauge needle and injected into the fish.

## Broadkill River Telemetry Project

The goal of this project was to evaluate seasonal distribution, identify overwintering and spawning habitat and evaluate bass distribution compared to electrofishing catch rates. Thirty Largemouth Bass were collected from the Broadkill River via electrofishing in June 2019 and surgically implanted with acoustic (69khz) transmitter tags programmed to last more than 450 days. Each tag transmitted a unique code which allowed us to identify individual bass. Signals were recorded by 12 receivers installed throughout the river system on deadfalls, docks and mooring posts. The bass were also manually tracked once a week until mid-September 2020 using a special hydrophone. Over a million signal detections from tagged fish were recorded by receivers and through manual tracking. Water quality data (temperature, pH, dissolved oxygen, conductivity/salinity) was also recorded hourly each day by loggers installed at the boat ramp in Milton (later moved to spillway of Wagamons Pond), near the first set of overhead powerlines, and by the Route 1 bridge. All of this data is being evaluated, along with tidal flux, for influence on bass movement and distribution. Preliminary evidence shows that daily distribution is highly variable from bass to bass, similar to findings from the telemetry project in the Nanticoke River. Some bass never left the upper reaches of the river, while others frequently moved between upper and lower segments of the river. Over 85% of the bass moved into the cove by the Milton Town Park between the end of October and mid-November, possibly following large schools of prey species observed in the cove. Detection data indicated that bass moved in and out of the cove during the winter, but the forays were not lengthy and the bass did not disperse far. Clearly this cove is an important overwintering area for this bass population. A cove associated with Round Pole Branch, along with several other areas of the river, was identified as a potential spawning area. More than 50% of the bass disappeared before the end of the project, potentially due to angler harvest, tag failure or movement out of the receiver array. The data is also shedding light on how the daily and seasonal distribution of this bass population is influencing mark-recapture population estimates and electrofishing catch rates.



Healed incision scar where tag was implanted.

## Stocking 2019 – 2020



2 to 4-inch Golden Shiner – good eating size for bass.

Several hundred Bluegill (4 to 6 inches) were stocked in Mud Mill Pond and Griffith Lake to supplement decreased abundance.

Garrisons Lake was stocked with Golden Shiner, 100 Largemouth Bass (8-inch average size) and 350 Bluegill (4-inch average size) to supplement low abundance of gamefish observed during the most recent survey.

Ingrams Pond was stocked with 100 Largemouth Bass (6 to 9 inches) to restructure the population.

Lums Pond was stocked with Golden Shiner to provide additional forage for Largemouth Bass, which had low relative weights during the last survey.

Largemouth Bass (4-inch average size) were stocked in the Nanticoke River (6,500) and Broadkill River (2,000) to supplement natural reproduction.

To support growing Largemouth Bass populations and to take some predation pressure off Bluegill, Golden Shiners were also stocked in Massey Mill Pond, McGinnis Pond, Ingrams Pond, Killens Pond and Moores Lake.

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### Fish and Wildlife

#### Natural Resources Police

New Castle County 302-836-4682  
Kent County 302-739-6139  
Sussex County 302-855-1901

### Report Violations

302-739-4580  
800-523-3336

### Operation Game Theft

800-292-3030

### DNREC Division of Fish and Wildlife

Fisheries Field Office  
3002 Bayside Drive  
Dover, DE 19901



Submit tournaments  
reports to

<https://de.gov/lmbtourney>

