



BUREAU OF FRESHWATER FISHERIES MONTHLY REPORT



April 16, 2022 – May 15, 2023

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FISHERIES MANAGEMENT

Spring 2023 Trout Stocking: The spring 2023 trout stocking season is well underway and is set to end on May 26th. Biologists have assisted Lands Management staff in stocking locations in their respective regions. Usage of a small subset of trout stocked waters has been assessed through the season and this information, in conjunction with data gathered in upcoming angler surveys via SurveyMonkey, will be utilized to help information any changes to the trout stocking program for the upcoming fish code cycle. The “History of the Trout Stocking Program” document will be updated to reflect 2023 changes by the end of the stocking season. No major changes, with the exception of adding or dropping stocking points, were made this year. (Berezin-Dowling & Shramko, Hunter and Angler and F-48-R)

Black Bass Assessment

Assunpink Lake (Mercer) – A boat electrofishing survey was completed at Assunpink Lake WMA on 4/19/23 to evaluate the Largemouth Bass population. Assunpink Lake (227-acres) is the largest of the impoundments within the Assunpink Wildlife Management Area. The lake is managed under special Lunker Bass Regulations which contributes to its popularity among bass anglers. The lake is annually one of the most popular WMAs as indicated by the number of fishing tournament permits that are issued. A proposed dredging project would bring much needed revitalization to the waterbody. The lake has suffered from habitat loss from increased sedimentation and infestation of invasive plants including hydrilla and water chestnut. The survey was conducted to establish baseline information on the bass population to quantify any changes that may occur following the proposed dredging project and recent herbicide treatments for hydrilla. A total of 101 Largemouth Bass were collected during the 7,300 s (2.02 hr.) night electrofishing survey. The CPUE of 50 bass/hour was good compared to other waterbodies in the region and higher than when sampled in October 2022, at which time the catch rate was 18 bass/hour. The population appears to be balanced based on the PSD of 77 and PSD-P of 49. No fish greater than memorable size (20”) were collected. We will continue to monitor the population in the spring and fall until any dredging activities occur. (Smith, F48-R)

Lake Audrey (Cumberland) – A boat electrofishing survey was completed at night on 4/27/23 at Lake Audrey WMA to evaluate the Largemouth Bass population. A total of 108 bass were collected during the 5,243 s (1.45 hr.) survey. The CPUE of 71 bass/hour was good compared to other waterbodies in the region and much higher than when last sampled on 8/11/22 (23 bass/hour during the day. A previous survey conducted on 11/15/19 had a CPUE of 69 bass/hour, however that survey was completed during the day. Lake Audrey has developed into one of the most popular WMA locations for bass tournaments in the last few years due to the high population density. The bass population appeared to flourish around 2019 with the abundance of aquatic vegetation. Since then, the abundance of vegetation has declined, and fishing pressure has increased. The pH was 8.19 at the time of the survey but should be monitored throughout the year. The lake should be re-limed to increase the pH should the level drop below 7.0. (Smith, F-48-R)

Lake Carasaljo (Ocean) – Lake Carasaljo is a 67-acre impoundment of the Metedeconk River located in Lakewood Township. The lake was last sampled on 10/17/2018. A daytime boat electrofishing survey to evaluate the Largemouth Bass population was conducted on

4/21/23. The total electrofishing time was 1.53 hours. A total of 30 Largemouth Bass were collected, resulting in a catch rate of 20 bass/hour compared to 11 bass/hour in 2018. These catch rates suggest a low-density bass population in comparison to other high value bass populations in the state. The PSD, PSD-P, and PSD-M (Proportional Size Distribution) were calculated and compared to recommended values. These are indices used to evaluate the size distribution of a sampled fish population. The PSD for Largemouth Bass is the percentage of fish in the sampled population that are greater than 12"; while PSD-P and PSD-M refer to the percentage of fish greater than 15" and 20" respectively. A PSD of 100, PSD-P of 63, and PSD-M of 3 were calculated suggesting a moderately unbalanced population. A population is considered balanced when index values are within 40-70 for PSD, 10-40 for PSD-P and 0-10 for PSD-M. A population outside these values may indicate problems with either reproduction, recruitment, density, habitat, or forage availability and utilization. All bass collected were observed to be in good condition with relative weights (Wr) ranging from 98-124. The concept of relative weight is that the standard should describe the inherent shape of a fish in good condition. Largemouth Bass, in good condition, should fall within a Wr range of 95-105. When these values are well below 95 for an individual or a size class, problems may exist within the forage base or overcrowding, which is often expressed as thin or underweight fish in poor condition; while values over 105 are associated with fatter, more robust fish in excellent condition. A Largemouth Bass weighing 5.60 lbs and measuring 20.51 in was the largest collected. Several large schools of adult Alewife were observed, and young of the year (YOY) Alewives were collected during the 2018 fall survey. Lake Carasaljo is the second impoundment on this watershed, with Lake Shenandoah immediately downstream being the first. Both dams have fish ladders which appear to provide successful passage for these anadromous river herring. Follow-up spring electrofishing surveys are recommended to gather additional data to continue assessing the fishery over time. The lake was stocked with 2,000 fingerling Largemouth Bass in 2020 and 1,500 in 2021. If catch rates remain low additional supplemental stockings Largemouth Bass may be considered. (Boehm, F-48-R)

Manasquan Reservoir (Monmouth) – Manasquan Reservoir is a 720-acre water supply reservoir in Howell, maintained by the Monmouth County Park System. It is one of the state's most popular bass fishing locations. A nighttime boat electrofishing survey was conducted on 4/20/23, to assess the Largemouth and Smallmouth Bass populations. The reservoir was at or near full pool. Areas sampled include the dam/riprap, northern shoreline, and the western shoreline where the North and South Fork Timber Swamp Brooks enter. A total of 95 Largemouth Bass were collected, of which all were greater than 200 mm (8 in) stock size. The CPUE was 26 bass/hour, based on 2.25 hours of electrofishing. This is slightly lower when compared to an October 25, 2022, survey which had 28 bass/hour. A PSD of 58, PSD-P of 38 and PSD-M of 3 were calculated for Largemouth Bass indicating a balanced population that should provide quality fishing opportunities. A population is considered balanced when index values are within 40-70 for PSD, 10-40 for PSD-P and 0-10 for PSD-M. A population outside these values may indicate problems with either reproduction, recruitment, density, habitat, or forage availability and utilization. Noteworthy was one individual weighing 2.918 kg (6.43 lbs) and 546 mm (21.50 in) in length. Mean relative weights (Wr) for Largemouth Bass were calculated and are as follows; 95 (8-12"), 103 (12-15") and 105 (>15"). The concept of relative weight is that the standard should

describe the inherent shape of a fish in good condition. Largemouth Bass, in good condition, should fall within a W_r range of 95-105. When W_r values are well below 95 for an individual or a size class, problems may exist within the forage base, which is often expressed as thin or underweight fish in poor condition; while values over 105 are associated with fatter, more robust individuals in excellent condition. A total of four Smallmouth Bass were collected. All individuals were greater than the stock size 180 mm (7 in). The largest measured 471 mm (18.54 in) and weighed 1.86 kg (3.47 lbs). The reservoir currently supports a high-quality Largemouth fishery and future management actions should focus on its maintenance. Supplemental young-of-the-year Smallmouth Bass should be stocked whenever available. The lake will continue to be monitored on a regular basis. (Boehm, F-48-R)

Merrill Creek Reservoir (Warren) – A boat electrofishing survey was completed at night on 4/26/23 at Merrill Creek Reservoir to evaluate the Largemouth and Smallmouth Bass populations. Past bass sampling was conducted by a privately hired consultant in collaboration with NJDEP Fish and Wildlife biologists. A total of 17 Largemouth Bass and 40 Smallmouth Bass were collected during the 2.76-hour survey. The CPUE of 6 Largemouth Bass/hour and 14 Smallmouth Bass/hour are both very low compared to other waterbodies and lower than previous surveys. The catch rate was negatively affected by the cold-water temperatures (55 °F) and recent cold fronts. A follow-up survey is planned for the end of May and another survey in the fall. An analysis and recommendations will be provided when the surveys are completed. (Smith and Shramko, F-48-R)

Stone Tavern Lake (Monmouth) – A boat electrofishing survey was completed at Stone Tavern Lake WMA on 4/25/23 to evaluate the Largemouth Bass population. Stone Tavern Lake (51-acres) is the second largest of the three primary lakes on the Assunpink WMA. The lake recently had a concrete boat ramp installed, which complements the newly paved parking area and access road. A total of 134 Largemouth Bass were collected during the one-hour daytime electrofishing survey. Although a few spawning beds were observed most individuals appeared to be in the pre-spawn phase. The CPUE of 134 bass/hour is very high compared to other waters in the region. The lake was last sampled on 5/30/18 at which time the CPUE was 52 bass/hour. The population appears to be balanced based on the PSD of 85, PSD-P of 37 and PSD-M of 1. The population should continue to provide good fishing opportunities for the near future. No further sampling or stocking is required currently. (Smith, F-48-R)

Millstone River Restoration Project - This project aims to restore connectivity of the Millstone River by removing dams. The Weston Mill Dam, previously located just downstream of the Wilhousky Street bridge in Manville, was the first impediment to fish passage on the Millstone River. This dam was 133 feet long and 5 feet high. Originally a mill dam at the Weston Mill, this site included a gristmill, sawmill, dam, and associated waterpower features. The dam was repaired with concrete in the early 20th century. The dam had no current purpose; the mill buildings were claimed by arson in July 1983. In recent years, the dam had partially failed. It was removed in August of 2017 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. NJDEP Fish and Wildlife (with partial funding from the settlement agreement and assistance from the US Fish and Wildlife Service and the Watershed Institute [formerly Stonybrook-Millstone Watershed Association]), committed to monitor changes to the fish assemblages above and below the dam, before and after dam removal. On May 10th and May 11th, with assistance from NJDEP's Office of Natural Resource Restoration, the Watershed Institute, and NJDEP's Watershed Ambassadors, a total of 5 electrofishing surveys were conducted to assess the freshwater fish assemblage related to the dam removal. American Shad were once again documented at the base of the next impediment upstream, the Blackwells Mills Dam. (Collenburg, NRDA settlement agreement and Hunter and Angler)

INVASIVE SPECIES MANAGEMENT

MAPAIS Meeting – Participated in the two-day MAPAIS meeting on 4/19/23 and 4/20/23. The meeting was held in Annapolis, MD, with a virtual option which allowed many that were unable to travel the ability to participate. Highlights from the meeting included the group funding a Rutgers eDNA project, led by Julie Lockwood to monitor the distribution of Chinese Pond Mussels and two presentations by Michael Steiger, DE DNR, and Heather Desko, NJ Water Supply Authority. The presentation by the Delaware fisheries biologist about the preparation of their draft AIS Management Plan was very helpful in the development of our own plan. (Smith)

Invasive Pond Mussel Meeting – Participated in a meeting on 5/2/23 with staff from NJ Fish and Wildlife, USFWS, NJ DEP Pesticide Review, NJ Water Supply Authority and NJ Conservation Foundation to discuss the population of Invasive Chinese Pond Mussels in a small pond within the Raritan River basin. The former aquaculture facility was previously treated with rotenone to remove the invasive Asian Carp that were present. Subsequently a population of Chinese Pond Mussels were found. Eradication was attempted in 2019 however, eDNA and physical sampling indicate the species is still present. Future plans include additional physical and eDNA sampling and eradication. (Smith)

TECHNICAL ASSISTANCE

Biotics Database – Significant time was spent compiling documented occurrences of rare fishes by NJDEP Fish and Wildlife's Bureau of Freshwater Fisheries. Data from other organizations was also collected and compiled with the goal of incorporating their data into the Biotics database managed by the Bureau of Endangered and Nongame species. Data was officially uploaded into the database with contributions from NJ Fish and Wildlife's Bureau of Freshwater Fisheries, NJDEP's Bureau of Freshwater and Biological Monitoring, NJDEP's Pinelands Commission, and The Academy of Natural Sciences of Drexel University. (Collenburg)

Berry's Creek Site Visit (East Rutherford) and Meetings – Berry's Creek is a 4.5-mile-long tributary of the Hackensack River. The purposed project aims to remedy this highly degraded superfund site by dredging contaminated sediment from the creek. On 4/17/23 multiple locations along the mainstem Berry's Creek as well as East and West Riser Ditches were visited to provide context to ongoing discussions on the location's suitability for river herring and the potential waiving of anadromous timing restrictions for an upcoming large-scale remediation dredging

project. Subsequent meetings on 4/18 and 5/15 were held with BFF, MRA, and OER staff along with various interested parties (EPA, NOAA, USFWS, and DEP). A determination will be made as to whether it is reasonable to waive the anadromous fish timing restriction. (Crouse/Corbett/Boehm/Rozema/Davis)

Multi-Stressor Study – NJDEP’s Division of Science and Research’s proposal for a study to determine the role anthropogenic stressors (contaminants, degraded water quality) have on sensitive fish populations in Northern New Jersey was accepted with partnership with NJDEP Fish and Wildlife and the Bureau of Freshwater and Biological Monitoring (BFBM). With the recent discovery of the role of tire anti-degradant 6 p-Phenylenediamine (6PPD; and degradant byproducts) in urban runoff mortality syndrome in coho salmon, there is an increased interest how this chemical interacts with other salmonids across the country. While trout species in New Jersey are not as acutely sensitive to these anti-degradants as coho salmon, additional stress from degraded water quality and acutely toxic compounds in run-off may contribute to a multi-stressor scenario. NJFW has committed to stream temperature monitoring on the study sites along with conducting electrofishing surveys on the current fish assemblage. (Collenburg, F-48-R)

Round Valley Reservoir and Spruce Run Reservoir Coordination Meeting – On 4/25/23 a multi-agency (NJDEP Fish & Wildlife, NJDEP Parks & Forestry, and NJ Water Supply Authority) coordination meeting was held. to discuss projects, ideas, and management of Round Valley Reservoir and Spruce Run Reservoir. Maintenance and sampling schedules were shared, recreational use, as well as updates on the boat steward program that aims to educate the boating community about aquatic invasive species and how to minimize transfer. Fish and Wildlife will be hiring a boat steward to serve at Round Valley Reservoir during high using days (Friday, Saturday, Sunday, and holidays) between Memorial Day to Labor Day. The NJWSA will reimburse NJDEP Fish & Wildlife in accordance with the MOU from the NJWSA’s Raritan Basin Source Water Protection (SWP) Fund, which is customer-funded to support projects that result in the protection of drinking water sources. (Collenburg and Crouse)

WMA Fishing Tournament Permits – Fishing organizations began submitting applications for the 2023 season. A total of 155 applications have been received and all conflicts were resolved. Permits were distributed in early March and will continue to be issued as new requests and changes in schedules are received. (Smith)

PEQUEST TROUT HATCHERY (Ed Conley)

Inventory Data

<u>Stocking Program</u>	<u>Length</u>	<u>Average Daily Increase</u>	<u>Conversion</u>
Spring 2024 RBT (7 months old)	4.5"	0.027	1.76
Spring 2023 RBT (19 months old)	11.6"	0.019	2.26
Fall/Winter 2023 RBT (19 months old)	12.3"	0.012	1.89

Flow Rates – April 2023

6.34 inches of precipitation fell during the month of April.

The Pumping Rate Average for April was 6,392 gpm. An average of 9.2 million gallons per day was pumped during the month of April.

The potable well pumped 8,713 gallons for the month of April.

Fish Culture Activities

Since the 2023 Spring Stocking program began on March 20th, 513,025 production-size Rainbow Trout have been stocked along with 8,235 broodstock, and 12,675 surplus as of the end of in-season week #5. Surplus production fish started being added to stocking trucks during the end of week #4. With the final two weeks of stocking remaining, Spring 2023 production trout remains only in the H-line. 110 Hook-A-Winner tag numbers returned so far.

The fish for the 2023 Fall Program fish were inventoried and reset into several pools to reach desired growth for stocking in October. Also, fish for the 2023 Winter Stocking Program were set up at this time to be stocked in November.

Spring sorting of the 2024 production stock outside has concluded in which smaller fish graded off using metal grader boxes and pools are reset as they become available. Pools are than reset to 13,500 Rainbow Trout.

Miscellaneous Activities

Brief power outages early AM on 5/10/23 and 5/14/23 that set off alarms. The alarm panel was reset, and flows checked. Staff monitored fish.

2022 Performance Report for Federal Aid was completed. Started working on 5-Year Performance Report for Federal Aid.

Had a meeting with DOT on 4/25 afternoon about potential paving projects at Pequest through a program that uses CBT funding. Showed them the areas and provided maps. They will work on estimates.

Reviewed UV quote from Portasoft. Reached out to Cory Stevenson about the quote to see if it looked sufficient and discussed project timelines. Also, responded to the inspector and updated him on the UV report extension request.

Received final NOV on chiller - updated inspector still waiting on the install.

James McCullough reached out on 5/2 from the Radon department and had site visit on 5/5 to set-up instrument for 3-day test, take photos, and determine locations for e-perms. Nursery study will go on for about a year or so and be tested at different phases. He picked up the equipment on 5/8. Due to equipment failure, will be back to take a sample on 5/23, and will contact us about the next phase in a few weeks.

HACKETTSTOWN STATE FISH HATCHERY (Craig Lemon)

Intensive Culture (Inventory)

<u>Species</u>	<u># Fish</u>	<u>Avg.”</u>
Landlocked Salmon	3,200	9.7”
Northern Pike	37,000	4.0”
Tiger Muskellunge	1,200	3.6”
Muskellunge	10,000	1.2”

Stocking Totals

(April 16 – May 15)

<u>Date</u>	<u>Species</u>	<u>Location</u>	<u># Fish</u>	<u>Size (Inches)</u>	<u>Total Pounds</u>
4/25	Np	Deal Lake	10,420	3.8”	129
4/16	Mk	Mountain Lake	125	10.6”	25.5
4/16	Mk	Furnace Lake	100	10.6”	20.4
4/18	Mk	Mercer Lake	420	10.6”	86
4/19	Mk	Echo Lake Reservoir	420	10.6”	86
4/20	Mk	Greenwood Lake	2,922	10.6”	596
4/17	Wa	Delaware R.-Kitt.	264,450	fry	2.7
4/18	Wa	Delaware R.-Milford	356,900	fry	3.7
4/20	Wa	Delaware R.-Belv.	505,250	fry	5.2
5/11	Lmb	Orange Pk. Pd.	55	13.5”	92
5/11	Bs	Orange Pk. Pd.	80	6.0”	13

Bs – Bluegill

Lmb – Largemouth Bass

Mk – Muskellunge

Np – Northern Pike

Wa - Walleye

Intensive Culture

Landlocked Salmon

Currently culturing 3,200 fish about 9.7-inches in three 2,000-gallon tanks. Staff cleaning and feeding them daily.

Muskellunge

Currently culturing about 10,000 1.2-inch fingerlings in two 350-gallon circular tanks. The fish ended brine shrimping on 5/15. Inventory is planned for the week of 5/15.

Northern Pike

We are currently culturing four lots of pike totaling 37,000 fish. They are being weight counted and inventoried weekly. Surplus fish were stocked Cranberry and Deal Lakes. They are currently in four 1,000-gallon tanks and four 2,000-gallon tanks. Tanks cleaned twice daily. Staff are hand feeding multiple times a day.

Tiger Muskellunge

Currently culturing 1,200 3.6-inch fingerlings in one 1,000-gallon tank.

Walleye

Staff set up 500,000-day-old Walleye fry in the 4-acre pond.

Intensive Production Work

We are currently pumping 610 gpm of 52°F water and 250 gpm of 68°F water. Staff cleaning all tanks in the morning. Tank cleaning takes 6-8 hours a day with all the Esocids. Feeders are being filled daily. Weight counts and inventories are being performed weekly to measure fish growth. Staff turned on the 80°F recirculation system on in preparation for Hybrid Striped Bass and Channel Catfish.

Extensive Culture

Largemouth Bass/Smallmouth Bass

4/4 – Smallmouth Bass Broodstock setup – 57 adults from pond 50 to pond 15.
4/21 – Largemouth Bass Broodstock setup - 54 adults from pond 50 to pond 13.
4/21 – Largemouth Bass Broodstock setup – 30 adults from pond 50 to pond 48.
4/27 – Largemouth Bass Broodstock setup – 40 adults from pond 89 to pond 17.
5/3 – Smallmouth Bass Broodstock setup – 50 adults from Yards Creek Res. to pond 50.
5/11 – Largemouth Bass Broodstock setup – 50 adults from pond 89 to pond 40 east.
5/8 – Smallmouth sitting on nests in pond 15.

Channel Catfish

All broodstock catfish are in pond 90. Pond 74 has 600 two-and-a-half-year-olds. Ponds 78 and 92 have about 50,000 three to five-inch fish from this year in them. All these ponds are being fed daily as the weather is warming up.

Walleye

Staff set up 525,675 fry in the 4-acre pond between 4/15 – 4/17. The pond has been fertilized 2-3 times a week to maintain plankton blooms.

Extensive Culture Work

Screens are being brushed daily, and water levels and flows are being adjusted. Dissolved oxygen and temperature data is being collected. All 60 ponds are full. Many of the ponds are being dyed to keep filamentous algae controlled. Staff have started fertilizing the Walleye fingerling pond with pulverized Alfalfa Meal and liquid Nitro.

Information & Education

Provided information and photos for four GoFishFriday's posts 99-102. 2,523 likes, 88 comments, and 82 shares. Answered as many questions as possible on these posts. Hosted a Take Your Kid To Work Day for about 50 employees and their kids. Toured the hatchery building first followed by an awesome day of fishing. Participants caught 110 Largemouth Bass that were set up as this year's broodstock for spawning. Chris and Nicole took a hatchery trip and displays to the DEP Courtyard for Take A Kid To Work Day. Hosted a tour for the family of the late Superintendent Bob Williams Family on 4/22. Crew Supervisor Tyler Tresslar gave a PP Presentation about the hatchery and its programs to the Federation of Sportsmen's Clubs on 5/22 in Ocean City. Hosted a field trip for a Belvidere School Group on 5/25.

New Garage Project

Participated in a DPMC meetings on 4/28 and 5/12. The old garage was demolished on March 4th and 5th. The project is at 90% completion. Some painting and garage door installation needed to finish up. Hope to be moved in soon.

CBTM Project – Pond Flume Equipment

Created a new project for the construction of flume covers, tongue & grove boards, slides, plugs, and screens. Project cost of \$7,000.00. Staff are building flume covers, slides and screens. Staff picked up another load of plywood to cut into pond slides. The project has been completed and is in the closeout stage.