



BUREAU OF FRESHWATER FISHERIES MONTHLY REPORT



May 16, 2022 – June 15, 2024

Shawn Crouse, Chief
Craig Lemon, Superintendent
Edward Conley, Superintendent

Christopher Smith, Principal Fisheries Biologist
Ross Shramko, Principal Fisheries Biologist

Dominick Mercurio, Crew Supervisor Bldg. Maintenance
Tyler Tresslar, Crew Supervisor, WMAO
Nicholas Healy, Crew Supervisor, WMAO
Brad Duckworth, Crew Supervisor, WW

Scott Collenburg, Sr. Fisheries Biologist
Eric Boehm, Sr. Fisheries Biologist
Justin Rozema, Assistant Biologist

Thomas Bissonnette, Technician I
Charles Sedor, Technician II
Kyle Civalier, Technician II
Nick Ruberto, Technician II
Doug Cutler, Technician II

Matthew Gadek, Sr. Wildlife Worker
Shaun Young, Sr. Wildlife Worker
Chris Sherwood, Sr. Wildlife Worker
Andrew Hutnik, Wildlife Worker
Travis Nitko, Wildlife Worker

Steve Jeffries, Repairer

Ross StCerny- Agency Representative Trainee

Seasonals: Gerald Bender, Lynsey Bell, Abby Bronicio, Chris Cohen, Thomas Goetschkes, Michael Kays, Kaitlin Kolakowski, Sarah Kyryczenko, Karl Lightner, Erin McLean, Matt Moury, Nick Moury, Jesse Tyther, Brooke Wakefoose, and Cheryl Weeks

FISHERIES MANAGEMENT

Paulins Kill – 5-year Post Columbia Dam Removal (Warren) - A stream electrofishing survey was conducted at the base of the notched Paulina Dam (2023) on the Paulins Kill. This survey was done to evaluate the fishery below the Paulina dam prior to its removal later this year. This survey is both part of the post dam removal assessment of the Paulins Kill following the removal of the Columbia Lake Dam and can be used as a pre-dam removal survey for the Paulina Dam. This barge and backpack electrofishing survey was conducted on 6/4/24 by Fish & Wildlife staff. The Paulina Dam was notched at the time of the survey and is assumed to act as a barrier to upstream fish movement to most fish species and only a partial barrier to American Eel and Sea Lamprey. The primary reason for this survey was to document any fish assemblage changes in the area from before the Columbia Lake Dam was removed in 2018 to now, 5+ years after the Columbia Dam was completely removed. Fish & Wildlife staff conducted the pre-dam removal surveys at this same location on 6/8/2015.

The most notable change in the fish assemblage was to the anadromous fish species (as expected). Gizzard Shad which were not found in the 2015 survey were numerous and an exact total could not be counted. Over 100+ Gizzard Shad were estimated at the base of the dam in a deeper pool too deep for standard sampling techniques. Gizzard Shad were first documented at this site in 2019 the year following the Columbia Dam removal. American Eel also showed a major shift in abundance from the pre-dam removal work in 2015 to the post-dam removal work this year. The 2015 survey found 11 American Eel (4 greater than 200mm & 7 less than 200mm). This showed that the Columbia dam was not a complete barrier to American Eel, but was certainly having a major impact by only passing a few American Eel. The 2024 survey collected 110 American Eel (11 greater than 200mm & 99 less than 200mm). This large increase in smaller American Eel found at this location demonstrates how the overall Eel biomass has significantly increased since the removal of the Columbia Dam. It is important to note that the Paulina Dam is still acting as a partial to full barrier at this time and that fish and American Eel abundance numbers are likely inflated due to the impediment to upstream movement at this survey location.

Unfortunately, Fish and Wildlife staff did not document any American Shad at this location. This could be attributed to the time of year the survey was conducted as early June is towards the tail-end of the American Shad migration or possibly due to the possibility that the overall American Shad migration into the Paulins Kill is still low due to the relatively recent removal of the Columbia dam barrier. American Shad have been confirmed in Blairstown below the USGS gauging station about ½ mile downstream of the Paulina Dam. It is still presumed that American Shad can traverse the USGS gauging station dam in Blairstown, but actual evidence of American Shad upstream of the gauging station has not been confirmed using electrofishing methods.

Although no individuals were collected in the official survey, evidence of Sea Lamprey nests were numerous at the survey location in 2024. Prior to the Columbia Dam removal, zero Sea Lamprey were collected or nests documented in the Paulins Kill watershed. Since the removal of the dam, numerous Sea Lamprey nests and adults were documented visually by staff, volunteers and fisherman the past few years. Staff visually counted over 25 Sea Lamprey nests in the immediate vicinity of the 2024 survey location. Sea Lamprey are native to NJ and are a

welcomed indicator of the successful fish passage created since the removal of the Columbia Dam and are not a problem for the fishery like they are in the Great Lakes Region and other landlocked situations.

The overall abundance of species found remained similar (17 species in 2015 – 19 species in 2024) and individual richness was also comparable if you exclude the large increase in Gizzard Shad and American Eel (2015 = 188 individual fish collected, 2024 = 132 individual fish collected) The only significant change in individuals collected was in Shield Darter (proposed Special Concern). 2015 survey found 75 Shield Darter compared to only 15 Shield Darter collected in 2024. This change could be due to sampling bias or possibly the Shield Darter numbers were negatively impacted by the partial removal of the Paulina Dam and the increased sediment transfer downstream after the dam was notched. As sediment continues to flush, benthic conditions should be restored.

In Summary, this work showed that the removal of the Columbia Dam in 2018 had the desired affect of passing anadromous fish species further upstream into the Paulins Kill adding biomass to the river and enhancing the overall ecology and health of the river without having an extreme negative impact on the existing fishery at this time. (Shramko, F-48-R)

INVASIVE SPECIES MANAGEMENT

Completed a site inspection at the Huey Ponds, Hunterdon County on 6/10/24 to observe the application of the molluscicide to treat the invasive Chinese Pond Mussel (Silty Pond Mussel). Princeton Hydro was contracted to perform the application. The manufacturer of the molluscicide was present on site as well as NJ Water Supply, NJDEP, and Conservation Foundation. (Smith)

INFORMATION AND EDUCATION

Fishing Regulations GIS Webmap Meeting - BFF staff met with OFWIS to discuss final changes/additions to the Freshwater Fishing Regulations Webmap on 5/30. A list of various regulation categories (ex: holdover trout lakes, lunker bass lakes, etc.) were subsequently provided to OFWIS to highlight to provide users with a way to visually distinguish and explore the categories on the webmap. (Rozema, Boehm, Crouse)

Fishing R3 Committee - Participated in a meeting with the Fishing R3 Committee on 6/19/24, to receive updates on the status of the management plan that I&E staff are currently developing. (Smith and Rozema F-48-R)

Passaic County Tech. Institute Presentation - Virtually presented a short PowerPoint to two high school AP biology classes at Passaic County Technical Institute on 5/31. The presentation discussed topics such as the role of Fish & Wildlife and fisheries biologists, native/non-native/invasive fish species, and common fish sampling techniques. Students were actively interested in these topics and were excited to learn about the various aspects of Fish & Wildlife as well as the various fish species found in the state. (Rozema)

Electrofishing Demonstration - Demonstrated boat electrofishing to Bureau of Law Enforcement interns on 6/24/2024 at Stone Tavern Lake. Interns had the opportunity to net,

weigh and measure all fish collected. General fisheries management, sampling methods/gear types, regulations, and invasive species were discussed. (Boehm)

TECHNICAL ASSISTANCE

FishTrack Database – The current Access database that holds data for the Bureau of Freshwater Fisheries has become a major issue creating inefficiencies in time spent entering, managing, analyzing, and procuring data. This is likely caused by the transfer or querying of large amounts of information from the Garden State Network, Zscaler, and to the offices in Lebanon. Therefore the backend of the FishTrack Access database was migrated to a Microsoft SQL backend. This should help enhance speed and minimize impact to continuous use amongst users. (Collenburg)

NAACC Assessments – Led the implementation of NAACC assessments on behalf of the Bureau of Freshwater Fisheries with priorities to assess crossings related to native Brook Trout, other wild trout populations, and fish species soon to be listed as Endangered or Threatened (Bridle Shiner, Ironcolor Shiner, and Slimy Sculpin). This will put the Bureau of Freshwater Fisheries in a position to guide and prioritize management of road/stream crossings that may be barriers to aquatic organism movement. (Collenburg)

Buckhorn Creek Tributary Storm Damage (Warren) - A June 2023 storm deposited a severe amount of sediment that impacted the normal flow and direction of a tributary to Buckhorn Creek in Warren County, creating a new stream channel that is now eroding a neighboring property. A Meeting was held with NJDEP Water Compliance and Enforcement to discuss potential environmental concerns and mitigation strategies to either move the stream back into its original channel or stabilize the newly formed channel from further erosion. More discussion is needed and a field visit should be scheduled. (Shramko)

Anadromous Fish GIS Layer - Worked with staff from the Office of Fish and Wildlife Information Systems to provide additional technical review (Boehm)

Fishing Regulations GIS Application – Worked with staff from the Office of Fish and Wildlife Information Systems to provide additional technical review. (Rozema and Boehm)

Freshwater Fisheries Permits – Reviewed water lowering and fish stocking applications and contacted applicants to obtain necessary information. Reviewed LMRs from a freshwater fisheries perspective for upcoming projects. (Staff)

WMA Fishing Tournament Permits – Issued fishing tournament permits to local fishing organizations. The bass closed season ended on June 15th. Anglers began holding events on 6/16/24. (Smith)

PEQUEST TROUT HATCHERY (Ed Conley)

Inventory Data

<u>Stocking Program</u>	<u>Length</u>	<u>Average Daily Length Increase</u>	<u>Conversion</u>
Spring 2025 RBT (8 months old)	5.6"	0.018	1.61
Fall 2025 RBT (8 months old)	6.0"	0.027	1.27
Fall/Winter 2024 RBT (20 months old)	12.3"	0.022	1.02

Flow Rates – April 2024

3.87 inches of precipitation fell during the month of May.

Production Well Pumping Rate Average for May was 6,510 gpm with an average 9.38 million gallons per day pumped during the month.

The potable well pumped 29,436 gallons for the month of May.

Fish Culture Activities

592,700 production sized Rainbow Trout along with 7,840 Broodstock were stocked this year during a typical 10-week season (3 Pre-season and 7 In-season) that started on 03/18/24 and was completed 05/24/24. Goals were met and exceeded the typical 570,000 baseline with additional production sized Rainbows that were added to the stocking truck loads since 05/03/24, bringing the total to 600,540 Rainbow Trout that were loaded and stocked into public rivers, lakes, and ponds throughout New Jersey this Spring. These extra fish combined with nice weather should provide excellent angler opportunities to come. The production summary is below.

PEQUEST TROUT HATCHERY **2024 SPRING TROUT STOCKING SUMMARY**

<u>#FISH</u>	<u>#LBS.</u>	<u>AVERAGE LENGTH</u>
RBT Production - 592,700	301,438	11.3"
RBT Broodstock - 7,840	18,952	RBT II - 15.9" RBT III - 21.2"

TOTAL RAINBOW TROUT - 600,540
TOTAL LBS. - 320,390

The H-line was emptied, sterilized, and reset. All power washing and sterilization of the remaining empty outside pools has now been completed and have been reset.

The Nursery Building was emptied, cleaned, and sterilized. The inventory was completed on the Spring 2025 production stock and feed quantities have been adjusted to regulate growth rates to reach our final goals for stocking. These fish are being fed by the feed truck 4 times a day with 3.0 mm feed. Screens are cleaned twice a day and basins weekly. 65,870 four-inch Rainbow Trout surplus were given to Hackettstown Hatchery for forage during this time.

The fish for the 2025 Fall Program fish were inventoried. Feed quantities have been adjusted to regulate growth rates to reach our final goals for stocking. These fish are being fed by the feed truck 4 times a day with 3.0 mm feed as well.



The 2024 Fall/Winter Program fish were also inventoried at this time. Feed quantities have been adjusted to regulate growth rates to reach our final goals for stocking. These fish are being fed by the feed truck 4 times a day with 5.0 mm feed. Pictured to the left are staff performing monthly inventories.

Coordinated daily load assignments of Spring Stocking Trout runs to various water bodies onto selected distribution trucks. Hatchery Staff stocked all of the Pequest River runs. All the Oxygen bottles were stripped off the truck at the end of stocking. Trucks were also cleaned and sterilized during this time period.

Pequest Maintenance

Around 11pm on 6/14/24 we had a power outage that went into 6/15/24 lasting around 5 hours. The cause was a wire that broke on Pequest Road believed to be caused by earlier severe thunderstorms that went through the area according to JCP&L staff. It caused some voltage irregularities initially and then was completely out. When power was restored, a contact burned up in Well#1 and caused Wells #2 and #6 breakers to trip that needed to be restarted manually. Well#1 was taken offline until an electrical vendor could make repairs. Staff responded, checked on fish, checked diesel backups, and maintained flows during the outage.

Core Mechanical installed a three-way valve and finally started the chiller system after an isolation valve was installed going to it. Ground penetrating radar did not show an isolation valve in the ground, so production wells feeding the line had to be shut off briefly to reduce the pressure and the valve was installed with the water flowing. The strainer was then able to be cleaned to increase water pressure to the system. The shut off valve was installed by TGM Services.

We have continued to have issues on the new UV domestic system with programming and operation that the vendor is still trying to figure out. They have been out several times since the installation making changes. Water Resource Management also looked at the system and thinks there may be an error in the programming as well. We sent an email to DEP Water Supply requesting a 3-month extension to rectify the issues before going on-line.

Installed new switch on the video camera system after it was burned out by a power fluctuation during severe thunderstorms that set off alarms. Completed monthly diesel test and replaced belts on Well #5 backup diesel. Also, fixed a toilet in the main lobby and repaired gash on flat roof awning upstairs in the main building.

Miscellaneous Activities

Continued CBT project meetings. Preliminary write-ups on Production Well Upgrades and the New fueling station have been completed. More information is being determined on tank replacement in the Nursery building.

Hackettstown State Fish Hatchery (Craig Lemon)

Intensive Culture (Inventory)

<u>Species</u>	<u># Fish</u>	<u>Avg."</u>
Landlocked Salmon	3,200	8.0"
Muskellunge	30,000	2.0"
Northern Pike	9,686	6.8"
Tiger Muskellunge	2,808	6.0"
Largemouth Bass	10,000	1.5"
Channel Catfish	100,000	0.8"

Stocking Totals (May 16 – June 15)

<u>Date</u>	<u>Species</u>	<u>Location</u>	<u>#Fish</u>	<u>Pounds</u>	<u>Length</u>
5/16	Np	Deal Lake	4,371	122	5.0"
5/31	Np	Budd Lake	2,100	91.2	5.8"
6/3	Np	Spruce Run Reservoir	6,461	421	6.7"
6/5	Np	Farrington Lake	2,902	186	6.6"
6/7	Np	Pompton River	2,472	161	6.7"
6/7	Np	Passaic River	3,061	200	6.7"
6/11	Np	Virginia DNR	796	54.8	6.8"
6/12	Np	Pompton Lake	3,076	170	6.3"
5/23	Tm	Delaware River Pburg	3,261	66	4.8"
6/6	Tm	Manasquan Reservoir	1,200	415	12.0"
5/29	Wa	Swartswood Lake	7904	6.64	1.5"
5/29	Wa	Lake Hopatcong	36,603	25	1.5"
5/30	Wa	Lake Hopatcong	8,520	8.52	1.5"
5/30	Wa	Delaware River-Belvidere	34,230	34.2	1.5"
5/30	Wa	Canistear Reservoir	5,600	5.6	1.5"
5/30	Wa	Greenwood Lake	30,720	28	1.5"
5/30	Wa	Monksville Reservoir	8,080	20	1.5"
5/31	Wa	Delaware River-Belvidere	25,000	25	1.5"
6/4	Lmb	Merrill Creek Reservoir	10,000	5	1.0"
6/11	Lmb	Assunpink Lake	11,350	2.8	1.0"
6/11	Lmb	Elmer Lake	5,425	1.3	1.0"
6/11	Lmb	Parvin Lake	8,835	2.2	1.0"
6/11	Lmb	Union Lake	50,000	12.2	1.0"
6/11	Lmb	Lake Audrey	11,400	2.8	1.0"
6/11	Lmb	Sunset Lake	8,265	2.0	1.0"
6/11	Lmb	Davis Mill Pond	6,460	1.6	1.0"
6/11	Lmb	Alloway Lake	11,400	2.8	1.0"
6/13	Lmb	Mountain Lake	2,900	6.9	1.8"
6/13	Lmb	Furnace Lake	1,400	3.33	1.8"
6/13	Lmb	Delaware Lake	950	2.26	1.8"
6/13	Lmb	Swartswood Lake	13,025	31	1.8"
6/14	Lmb	Lake Musconetcong	1,850	4.4	1.8"

Lmb -. Largemouth Bass
Wa – Walleye

Np – Northern Pike

Tm – Tiger Muskellunge

Intensive Culture

Landlocked Salmon

Currently culturing 3,200 fish about 8.0” in three 2,000-gallon tanks. Staff clean and feed them daily. All fish were clipped, and hand counted into three 2,000-gallon rectangular tanks.

Muskellunge

70,000 eyed Muskie eggs were obtained from the PA Fish & Boat Commission on 4/25. Fry hatched on 5/3 and are being cultured in five 350-gallon circular tanks. Brine shrimping ended and the dry feed conversion rate seems good. Staff are doing inventories currently.

Northern Pike

The pike are doing great this year. Connecticut, Rhode Island, and Virginia all were here to pick up surplus fry/small fingerlings. All production lakes and rivers were stocked between 5/31 – 6/12. A total of 20,072 fingerlings weighing 1,229 pounds were stocked in 6 waters. Currently culturing about 10,000 seven-inch fingerlings in three 2,000-gallon tanks. Staff are sampling and doing inventories a couple of days a week. Assessing feed size and making changes weekly. Provided 60 specimens to Fisheries Pathologist Groff for fish health inspection.

Tiger Muskellunge

Tiger fingerlings are doing very well. Currently culturing 2,800 six-inch fingerlings in one 2,000-gallon tank. Growth rates are good seems hard to keep enough feed on them. We have stocked surplus fish for the past few weeks and have the production number good for now.

Channel Catfish

The first egg masses of the year were collected from Pond 90 on 5/31. A total of 37 egg masses have been collected to date. Currently culturing 100,000 one-inch fish in four 2,000-gallon tanks. An additional 200,000 surplus fry are growing in two 2,000-gallon tanks. The PA Fish & Boat Commission pick up 100,000 eggs in trade of Muskellunge eggs.

Intensive Production Work

We are currently pumping 780 gpm of 52°F spring water and 280-gpm of 68°F recirculated water, and 150 gpm of 80°F recirculated water. Bumping up 68°F flows to keep up with fish growth. Added external oxygen stones to keep up with DO's in 68°F system. Started the 80°F system on Tuesday 5/21 in prep for Channel Catfish egg take starting in early June. Both the 68- and 80°F system drum filters were repaired by staff.

Extensive Culture

Largemouth Bass/Smallmouth Bass

The three Largemouth Bass fingerling production ponds were harvested with results as follows:

Pond 54 – 100,820 fingerlings	24.59 pounds	4,100 fish/pound
Pond 57 – 19,093 fingerlings	45.46 pounds	420 fish/pound
Pond 18 – 46,927 fingerlings	66.41 pounds	706 fish/pound

Broodstock Lmb are being collected and returned to holding ponds.

The Smallmouth Bass production pond is currently being harvested.

Channel Catfish

The Arkansas Channel Catfish in ponds 16 and 78 are feeding excellent. The first egg masses of the year were collected from Pond 90 on 5/31. This seems like a week or two earlier than normal. A total of 37 egg masses have been collected to date. Air temperatures are heating up into the 90°F's. We are going to keep spawning barrels in for another week to see if spawning activity picks up.

Hybrid Striped Bass

The Hybrid two-year olds are feeding aggressively in Pond 77 now that water temperatures have risen to 75°F. Staff moved this year's holdover fingerlings to Pond 30. They are going to be cultured with Largemouth Bass fingerlings as we do not have pond space to keep them separate. The bass mix in Pond 30 are being fed twice daily and looks like it's going to do great. Keo fish farms in Arkansas shipped six boxes of Hybrid fry via FedEx overnight priority on 6/5. Staff picked up the boxes at 9 am in Budd Lake at the FedEx Center. Staff spent 45 minutes tempering the fry into pond 60 and said they looked good. The pond is being fertilized regularly and dissolved oxygen readings are monitored daily.

Fathead Minnows

500 pounds of minnows were purchased from Keo Fish Farms in Arkansas. Staff split them between Ponds 85 and 5-Acre for spawning. They are being fed daily. Fry are visible along the shorelines. Staff seined each feeding station once. Fry production is off to a slow start.

Walleye

Fry were set up in the 4-Acre Pond from 4/13-4/15. A total of 2,400 mls x 215 fry/ml = 516,000 fry. The pond was harvested beginning day 47 on 5/29-5/31. A total of 220,945 fingerlings weighing 2023 pounds were harvested. Staff setup the following fingerlings for Phase II grow out:

Pond 31 – 20,260 fish	1,000 fish/pound	20.26 pounds
Pond 32 – 19,780 fish	1,000 fish/pound	19.78 pounds

Staff seined the minnow ponds once and production was low. Made the decision to drain Pond 83 Golden Shiners to supplement.

Golden Shiners

Shiner fry ponds look great. Lots of fry visible and growing. Pond 83 was harvested and fed to the Phase II Walleyes in Ponds 31 and 32. Pond 82 is being fed daily and will be harvested later in the season and stocked in RVR.

Hatchery Extensive Pond Work

All the extensive ponds have been filled in the West Hatchery. Hot weather water flow adjustments are being done daily. Fry production ponds are being fertilized. Broodstock ponds are being dyed to keep weeds and algae in check. Staff continue working on creating one big pond out of ponds 87a, 87b, and 87c. Staff are using both excavators, bulldozer, dump truck,

skid steer and tractor to remove brush and dirt. They are doing a great job, and we hope to have the pond filled by early fall.

Information & Education

Provided information and photos for five GoFishFriday's posts 155-159.

1,429 likes, 24 comments, and 58 shares. Answered as many questions as possible on these posts. Tyler and Matt participated in the Trenton Fishing Derby at Log Basin Pond in Stacy Park on 6/1. They stocked fish and gave a presentation to participants and stayed for the event to assist with fishing activities. Muskies Inc. Chapter 22 hosted 25 Big Brother/Mentors for a day of fishing instruction and fishing on 6/8. I & E hosted a First Catch Center event for Women on 6/14. I&E's John Carlucci spent a day with staff documenting Channel Catfish egg mass collection in Pond 90 using a drone and camera also taking some underwater videos.

Purchasing and Budget

Working on purchases for the 2024 season. Working with Sarah/Ross to get as many vendors as possible to prepare their DPA paperwork for upcoming purchases. Earlier issues getting PO's, and PV's back from Purchasing/Procurement in Trenton has improved. Working on purchases for fish and fish food. Thanks to the Procurement staff for putting together a couple of online training courses for staff.

CBT/CBTM Projects

Had an initial meeting with Construction Management Specialist to address removal of existing Intensive Recirculation System boilers and installation of new ones. Met with them again to show and discuss issues with crumbling concrete structures connecting Ponds 56 & 57. Working on completing a CBTM project from 2023 involving creating a drainage ditch alongside the new garage.