



## **BUREAU OF FRESHWATER FISHERIES MONTHLY REPORT**



**February 16, 2022 – March 15, 2023**

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, WW  
Nicholas Healy, Crew Supervisor, WMA

Scott Collenburg, Sr. Fisheries Biologist  
Eric Boehm, Sr. Fisheries Biologist

Maria Berezin Dowling, Assistant Biologist  
Justin Rozema, Assistant Biologist

Thomas Bissonnette, Technician II  
Ron Jacobsen, Technician II  
Charles Sedor, Technician II

Matthew Gadek, Sr. Wildlife Worker  
Jonathan Kline, Sr. Wildlife Worker  
Shaun Young, Sr. Wildlife Worker  
Doug Cutler, Sr. Wildlife Worker  
Kyle Civalier, Sr. Wildlife Worker  
Nick Ruberto, Sr. Wildlife Worker  
Brad Duckworth, Sr. Wildlife Worker

Andrew Hutnik, Wildlife Worker  
Travis Nitko, Wildlife Worker  
Scott Bentley, Wildlife Worker  
Chris Sherwood, Wildlife Worker

Steve Jeffries, Repairer

Nancy Geiger, Agency Services Rep 3

Seasonals: Nicole Franchino, Thomas Goetschkes, Kaitlin Kolakowski, Karl Lightner, Yanni Paredes-Moreira, Fabiana Popolla, Jesse Tyther, Brooke Wakefoose, and Cheryl Weeks

## **FISHERIES MANAGEMENT**

**Spring Trout Stocking 2023** – Preparation for spring trout stocking continues, with trout stocking beginning 3/2/2023. The schedule has been finalized, drivers and helpers have been assigned to each run, and Freshwater Fisheries biologists have selected which runs they will be helping with. The allocations and trout stocking plan have been presented to the public at the Annual Trout Meeting. The meeting also helped to drum up questions for an upcoming Online Trout Stocking Survey that the Bureau will be putting out in June 2023. Additionally, a trout angler use study is being designed to run during the 2023 spring trout stocking season. The format for this survey is being finalized. The Spring Trout Stocking Hotline has been updated and should go live prior to the start of the season. (Berezin-Dowling and Shramko)

**Sportfish Restoration Grant (Federal Aid)** – Wrote and compiled information for inclusion in the 2018-2022 Sportfish Restoration Grant Final Report. The report will be finalized and submitted in early April. (Smith and staff)

**Temperature Reports** – Continuous stream temperature data collected from 2018-2022 is being compiled into a report and visualizations are being produced for use by biologists making management decisions related to coldwater habitat and species. (Collenburg, F-48-R)

**Coolwater Fisheries Surveys** - Additional time was spent coordinating and planning for upcoming surveys on Swartwood Lake (Walleye Night Electrofishing) and Little Swartwood Lake (Muskellunge Trap Netting). (Rozema, F-48-R)

**Work Plan Meeting** (Federal Aid) – Met virtually with regional biologists to discuss potential projects and field sampling for 2023. These projects will be prioritized and implemented in 2023. (staff, F-48-R)

### **Assessment and Management of New Jersey's Stocked Coolwater Fishes**

**Farrington Lake (Middlesex) Northern Pike Trap Netting** - Three trap nets were concurrently deployed on Farrington Lake from 2/20 through 3/3 to monitor the population of Northern Pike in this lake. 12 trap nights of randomized sampling of historical net locations plus an additional 21 trap nights of supplemental data collection targeting productive Northern Pike locations on the lake occurred. Supplemental sampling was aimed at increasing sample sizes for Northern Pike and Yellow Perch, a primary forage species for Northern Pike.

Overall, a total of 11 Northern Pike ranging from 595 mm (23.4") to an impressive 1,016 mm (40") female were captured. Most female Northern Pike captured were utilized by Hackettstown Hatchery staff to supplement their broodstock collection efforts that were occurring simultaneously. Bluegill were consistently present in high numbers and Yellow Perch, Chain Pickerel, Brown Bullhead, and Black Crappie comprised the majority of the remainder of the catch. Catch per unit effort (CPUE) of Northern Pike for the primary sampling period was calculated at 0.5 fish/net, which is relatively low. This compares to a similar CPUE of 0.4 fish/net observed during a 2014 assessment on Farrington Lake, suggesting that Northern Pike abundance remains similar to what was observed in 2014. PSD and RSD<sub>p</sub> values of 100 and 64 ( $\pm 9$ ) respectively suggest that the population of Northern Pike is composed of primarily large individuals. Additional data analysis is ongoing and a full write-up will be available in BFF's 2023 Annual Field Report. (Rozema, F-48-R)



1,016 mm (40") female Northern Pike captured from Farrington Lake.

**Lake Musconetcong (Sussex) Trap Netting Scouting** - Lake Musconetcong was scouted for potential trap net locations on March 8 for an upcoming Tiger Muskellunge survey. A standardized 0.25 km grid was laid over the lake's profile using GIS software, and each grid intersecting the lake's shoreline was visually assessed for suitability of setting a trap net within it. A total of 20 out of 23 potential locations along the lake's shoreline were determined to be suitable. The trap netting survey is currently scheduled to take place in April when water temperatures raise to a consistent 10°C. (Rozema, F-48-R)

**Invasive Species Management Plan Development** - Participated in two meetings with the NJAISMP (NJ Aquatic Invasive Species Management Plan) development team on 2/24/23 and 2/28/23. The 2/24/23 was held to review information that would be presented at the 2/28 meeting, which was the kickoff meeting for the NJ AISMP Work Group. The work group meeting was well attended by NJDEP staff and outside agencies. The Bureau will provide revisions to the proposed Invasive Species Fish List by March 23<sup>rd</sup>. (Smith)

## **TECHNICAL ASSISTANCE**

**Biotics Database** – Significant time was spent compiling documented occurrences of rare fishes by other organizations with the goal of incorporating their data into the Biotics database managed by the Endangered and Nongame Species Program. Currently, NJDEP's Bureau of Biological Monitoring, NJDEP's Pinelands Commission, and The Academy of Natural Sciences of Drexel University have agreed to share and provide data for the Biotics database. (Collenburg)

**Assunpink Lake Dredging Feasibility Study** – Assisted Land Management in the preparation of a preliminary dredging plan for Assunpink Lake, highlighting important spawning and foraging areas utilized by warmwater species. (Smith)

**Private Hatchery Certification Process** – Continued certifying and updating the Private Hatchery Certifications for the Division’s Office of Fish and Wildlife Health and Forensics as is not currently staffed. Several private hatcheries have not sent in the certifications requested and needed follow up calls. (Shramko)

**Delaware River Flow Management workgroup** – Attended several meetings on the Delaware River Flow Management with members from the Delaware River Basin Commission and The Academy of Natural Sciences of Drexel University. (Shramko)

**Freshwater Fisheries Applications** - Meeting with Office of Fish and Wildlife Information Systems about current and future freshwater fisheries applications on the website. (Shramko)

**Freshwater Permits** - Reviewed Land Management Reviews (LMR’s), water lowering permits, fish stocking applications and Trout in Classroom applications and contacted applicants as necessary to obtain required information. Responded to requests from the public for information on fish stocking and water lowering permit programs. Assisted Kelly Davis with the review of several projects on the Delaware River that were requesting Anadromous timing restriction waivers. (staff)

**WMA Fishing Tournament Permits** – Fishing organizations began submitting applications for the 2023 season. A total of 150 applications have been received and all conflicts were resolved. Permits were distributed for early March tournaments and the remaining tournament permits will be issued by the end of March. A summary of the 2022 WMA Fishing Tournament reports was presented at the February Fisheries Forum. (Smith)

**eDNA** – Correspondence with Rutgers University’s Lockwood Lab about setting up payment protocols for eDNA analysis of samples the Bureau of Freshwater Fisheries will be collecting this year. (Shramko)

## **INFORMATION & EDUCATION/PUBLIC OUTREACH**

### **Freshwater Fisheries Forum (Saturday, February 25<sup>th</sup>)**

BFF staff, along with support from several Bureaus (Information & Education, Law Enforcement, and Land Management) planned for and conducted this annual meeting virtually. A total of 156 public attendees participated in the meeting. Presentations included a Fish and Wildlife update by Assistant Director Barno, a Bureau of Freshwater Fisheries Update by Chief Crouse, Warmwater Fish Production activities by Hackettstown Hatchery Superintendent Lemon, and Largemouth Bass and Invasive Species updates by Principle Biologist Smith. Live virtual polls were conducted throughout the meeting to encourage participant engagement and get program feedback. (staff, F-48-R)

### **Annual Trout Stocking Meeting (Saturday, March 4<sup>th</sup>)**

BFF staff, along with support from several Bureaus (Information & Education, Law Enforcement, and Land Management) planned for and conducted this annual meeting virtually. A total of 229 public attendees participated in the meeting. Presentations included a Fish and

Wildlife update by Assistant Director Barno, a Bureau of Freshwater Fisheries Update by Chief Crouse, 2023 Hatchery Production by Pequest Hatchery Superintendent Conley, and Trout Stocking Allocations by Assistant Biologist Berezin-Dowling. Live virtual polls were conducted throughout the meeting to encourage participant engagement and get program feedback. (staff, F-48-R)

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## **PEQUEST TROUT HATCHERY** (Ed Conley)

### **Inventory Data**

<u>Stocking Program</u>	<u>Length</u>	<u>Average Daily Length Increase</u>	<u>Conversion</u>
Spring 2024 RBT (5 months old)	3.7"	0.027	0.98
Spring 2023 RBT (17 months old)	10.7"	0.019	2.10
Fall 2023 RBT (17 months old)	11.2"	0.023	1.33

### **Flow Rates – February 2023**

1.33 inches of precipitation fell during the month of February.

Pumping Rate Average for February was 6,473 gpm. An average of 9.32 million gallons per day was pumped during the month of February.

The potable well pumped 3,543 gallons for the month of February.

### **Individual Well Reading: (gallons per minute)**

Well #1	570 gpm
Well #2	360 gpm
Well #3	1,530 gpm
Well #4	650 gpm
Well #5	3,200 gpm
Well #6	200 gpm
Well #7	Off

### **Fish Culture Activities**

Inventory of the 2024 production stock in the nursery was completed at this time. All fish in the nursey are fed by automatic feeder twice every hour for about 10 hours a day. The feeders are

being filled daily with 2.0 and 2.5 mm feed. All tanks are cleaned by all shifts and flows were adjusted. They are currently being fed by feed truck 4 times a day 2.0 mm feed.

Monthly inventories of the Spring 2023 production stock (48 pools) and the 2023 Fall Program fish (2 pools) were also completed during this time. Feed quantities have been adjusted to regulate growth rates to reach and maintain our final goal for the Spring Stocking. These fish are being fed by the feed truck 4 times a day with 5.0 mm feed. Screens are cleaned twice a day and basins weekly.

1,000 fish were tagged for the Hook-A-Winner Program which will be stocked during pre-season stocking beginning on March 20<sup>th</sup>, 2023.

Approximately 50,000 pounds of feed was fed during this time.

Hatchery flows were adjusted during this period and dissolved oxygen levels are being monitored.

### **Hygiene**

The iodine net/brush dip buckets were changed every 3 days or so to keep up with the hatchery hygiene plan. Weekly catch basin and aerator building cleaning was completed as scheduled. Head ends as well as lower ends of the raceways were vacuumed and scraped to remove a buildup of algae and moss. The aerator wheel area of the I-line was vacuumed to remove built up fish waste and decomposing algae. Floor disinfectant baths were changed on a regular weekly schedule or as needed.

### **Treatment Plant**

Submitted monthly discharge reports, filed any applicable paperwork, and met with the treatment plant operator.

Weekly treatment plant checks including wastewater testing, chlorine levels, and domestic pit flow were performed. Set-up and collected composite sample for pick up on the 3<sup>rd</sup> Wednesday of the month.

Coordinated the pumping, loading, and spreading of 11,500 gals of fish waste to the Pequest WMA. A total of 11.5 loads were spread to fields #16 and #19 during the period of report.

Performed preventative maintenance on treatment plant pumps, motors, greased bearings, and gears, and changed oil in blower motors.

### **Minor Vehicle and Equipment Maintenance**

Coordinated and assisted in the maintenance of 6 in-hatchery vehicles, performed minor vehicle maintenance.

Maintained and submitted monthly mileage report for 16 hatchery vehicles.

Performed weekly site check of both gasoline and diesel fuel levels. Extra fuel deliveries have been set up for stocking.

Finished repairing nets and equipment for the upcoming stocking season.

Trucks are being prepared for the upcoming stocking season which will begin on March 20, 2023. Oxygen has been ordered and delivered for stocking trucks. Staff are making sure tanks and oxygen set-ups are in good working order.

Installed distribution tank on Lands Management's F-450 for stocking.

Repairs were performed 682 (steering) and 145 (battery code reset) for upcoming stocking at local mechanic. A couple of tires were purchased for the feed truck.

### **Miscellaneous Activities**

Well #5 was re-built by Stothoff Inc. through CBT funding. The impellers were ready to disintegrate. They also found copper tubing debris/wire in the well when they ran the inspection camera down that could have been sucked up and damaged the pump further. They had to put in an additional day to flush and remove this debris from the well so they would not harm the new equipment being installed. This extra day flushing and inspecting was an additional \$5,000 dollars bringing the total cost to \$85,900. We will let Well #5 continue to run with other wells now and shut #7 off for a while.

Working on getting a preliminary quote for Well #7 that has been running without a major re-build since 2012. It is now due to be re-built and is the largest producing well that is usually alternated with Well #5 throughout the year. Even though Well #7 is off now, it still needs to be ready for emergency use. Also, Wells #7 and #5 are in different aquifers so it is beneficial to switch them around due to water level conditions.

Contractor returned to take additional measurements and information for the AC Chiller and provided a quote of \$99,495.00 in which AD Lisa Barno approved. Provided information to Ed Mulvan to start processing a PO through CBT funding.

Well# 3 continues to run with no issues after removed old redundant breaker. The old breaker kept tripping, but there were two more additional breakers on that main line.

New tractor with a cab was delivered which will be used for fish waste spreading, projects and snow removal around the hatchery. The cost was \$74,904.00 and we are currently trying to secure attachments.

Had meeting with Safe Drinking Water on 3/9/23 regarding testing and information on UV requirements. It was determined to replace the failing current unit with two new units piped in parallel. In the process of finding a new vendor and equipment.

Picked up supplies for the upcoming CBT-m Relief Joint Project that were on order.

Plowed and cleaned-up from a couple of winter storms during this time.

The Pequest TCA was cleared of debris in anticipation of stocking.

Spring Stocking schedules and cards were received and printed for hatchery staff.

There were no reported problems with trespassers by the night watchmen. They did assist the Information & Education Unit with opening and closing gates and doors when there was an evening program occurring.

### **Pequest Maintenance and Repair**

There was one alarm call for production Well #5. The main knife switch disconnect was tripped due to tree damaging power line. One new heat fan motor was installed in the nursery building. The new radiator was picked up for production Well #7. Installation should take place mid-April. A new heating motor bearing assembly was ordered for the maintenance building.

Several trips to hardware store were made to purchase supplies for daily fisheries operations, along with several orders.

Did full diesel run test of the whole facility. All diesels were run during this period to simulate a full power outage. All the alarm and control computers were rebooted. Did all monthly production well numbers, along with potable UV water numbers, well levels, monthly gallons pumped, rain fall etc. Monthly vehicle mileage reports were also completed.

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## **HACKETTSTOWN STATE FISH HATCHERY** (Craig Lemon)

### **Intensive Culture** (Inventory)

<b><u>Species</u></b>	<b><u># Fish</u></b>	<b><u>Avg.”</u></b>
Landlocked Salmon	3,200	8.5”
Hybrid Striped Bass	1,400	9.0”
Mosquitofish	60,000	1.5”
Muskellunge	4,200	10.7”
Largemouth Bass	5,000	3.2”

### **Stocking Totals** (February 16 – March 15)

No stocking during this period.

### **Intensive Culture**

#### **Muskellunge**

Currently culturing 4,200 10.7-inch fingerlings in two 2,000-gallon rectangular tanks. Inventoried all Muskellunge. These fish are being fed live forage and will be held over the



winter. Muskies Inc. Chapter 22 purchased the hatchery 250 pounds of Fathead Minnows/Golden Shiners to use as forage for this year's holdover Muskies.

#### Landlocked Salmon

Currently culturing 3,200 fish about 8.5-inches in three 2,000-gallon tanks. Staff are cleaning and feeding them daily. Staff fin clipped 3,000 salmon on March 2<sup>nd</sup> and 3<sup>rd</sup> and split them into a third tank.

#### Hybrid Striped Bass

Currently culturing 1,400 fish about 9.0 inches. Due to space conformities as this year's Northern Pike eggs were hatching, staff moved the four 350-gallon round tanks into one 2,000-gallon tank. Recirculated water has been turned off and they are being cultured in 52°F spring water. If they over winter well, they will be moved to an outside pond in the Spring for grow out.

#### Northern Pike

Staff hatched the first five hatching jars into eight 350-gallon round tanks. The first six tanks are on dry food and tanks 7 & 8 are being held for Connecticut and Rhode Island. There is still one jar remaining to hatch. Splits and inventories upcoming.

#### Intensive Production Work

We are currently pumping 610 gpm of 52°F water and 150 gpm of 68°F water. Staff turned on the 68°F system on 2/13 preparing for incoming Northern Pike eggs. The new alarm system is up and running and we are enjoying its capabilities. Staff are cleaning all tanks in the morning. Feeders are being filled daily. Weight counts and inventories are being performed weekly to measure fish growth.

#### Extensive Culture

##### Largemouth Bass/Smallmouth Bass

All bass broodstock are in ponds for the winter. Largemouths are in pond 27 and Smallmouths are in pond 50. They are being fed twice a month with live forage.

##### 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 two to three times a week if the weather is nice and the ponds are not iced over.

#### Extensive Culture Work

Screens are being brushed daily, and water levels and flows are being adjusted. Dissolved oxygen and temperature data are being collected. Water flows are being set for ponds that will be held up over the winter. Beginning to fill ponds 36-40 in the East Hatchery. Staff plugged and boarded up the Spring Hole Pond and 40 broodstock Northern Pike were moved into there to do their 30-day Tricaine withdrawal.

#### Northern Pike Broodstock Collection (Budd Lake)

Hatchery staff set three South Dakota style trap nets in Budd Lake on February 13th to capture Northern Pike broodfish. This was 13 days earlier than ever before in the 28-year history of Trap netting Budd Lake. The nets fished for 14 days capturing 46 pike.

The catch was made up of 25 males and 21 females. The largest pike was a female weighing 9.37 pounds and measuring 35.2 inches. Nine female pike were spawned producing 335,000 eggs. Large numbers of Yellow Perch (2,389), Bluegill (2,319), Black Crappie (1,377), and White Perch (1,217) were also captured and returned to the lake. Sixteen different species were captured in all. Lake water temperatures ranged from 37-45°F.

### **Tiger Muskellunge Egg Take**

The crew seined pond 44 on March 10 and brought 15 female and 38 male Northern Pike into the Intensive Rearing Building. None of the females were ripe at the time. 18 males were returned to the pond the same day as they would not be needed in 2023. Staff seined pond 45 on March 13 and brought 16 males and 8 females Muskies in the Intensive Building. None of the female Muskies were ripe. Staff checked all the female Pike on March 13 and 2 were ripe. Staff spawned 2 female Pike with 5 male Muskies and made the first bowl of Tiger Muskies.

### **Information & Education**

Provided information and photos for four GoFishFriday's posts 93-96. 2,465 likes, 55 comments, and 78 shares. Answered as many questions as possible on these posts. Prepared and prerecorded a PowerPoint presentation for the 2023 Freshwater Fisheries Forum. Participated in both the Virtual Freshwater Fisheries Forum and the Virtual Trout Meeting. Completed a hatchery survey phone interview with a US Fish and Wildlife Service Representative. Most staff completed eLearning trainings that were due.

### **General Hatchery Operations**

Staff begin the day cleaning all tanks in the Intensive Culture Building. All the fish feeders are filled with proper size feed for the size and species in the tanks and all the feeders are set off to make sure they are feeding the correct amount. Feeders run 24 hours a day, so it is critical to be sure they are functioning correctly. Weight counts are done weekly to measure fish growth and inventories are performed when fish are being moved from tank to tank. Water flows, temperatures, and dissolved oxygen readings are performed weekly to check on water quality. Warren County Division of Weights and Measures were on site and certified a number of our scales. Still waiting for the State certificate. Staff took our boat up to Swartswood Lake to check out the entrance of Neldon Brook to prepare for the upcoming Walleye broodstock collection.

### **Information, Purchasing, and Budget**

Started purchasing supplies for the 2023 season including boots, waders, nets, seines, etc. Completed paperwork for new equipment purchases of Kubota UTV, Kubota track skidsteer, John Deere zero-turn mower, and a power washer. Kubota UTV was picked up. The John Deere Zero Turn mower was delivered. The new power washer was delivered. Just waiting on the new Kubota track skid steer. Nancy completed closeout of 2022 funds and finalized 2022 expenditures. Put out all new logs for 2023. Working on NJStart and DPA paperwork for purchasing fish feed, fertilizer, fish, and pond chemicals. Creating PB119s for these same items.

### **Startup & Maintenance of the Intensive Recirculation Building and Systems**

Assisted contractors with replacement of the 68°F mixing valve prior to startup of the recirculation system. Replaced gaskets in the 68 and 80°F drum filters. Turned on boilers, pumps, and filters on the 68°F loop. Armed the alarm system. The water temperature is currently at 68°F. A technician did our annual parts and maintenance on the boilers. Staff unclogged the oxygen lines (calcium buildup) to the degassing towers and replaced a 3-inch threaded PVC cap on the 52°F tower. Responded to an alarm on a Sunday and found the 69°F sump empty and the variable drive pump kicking on and off. Traced the problem to the cold-water makeup valve not opening when the sump drained. Struck it with a rubber mallet and it opened. It was stuck shut from the system being empty for 5 months.

### **New Garage Project**

Participated in a DPMC meeting on 2/17. The old garage was demolished on March 4<sup>th</sup> and 5<sup>th</sup>. The footings were framed out on March 9-10. Contractor on site pouring footings on March 13-14.

### **Maintenance of Ponds and Grounds**

Met with contractor on 2/20 at the East hatchery to discuss the driveway leading into the facility. The town has passed along numerous complaints from residents and users about the potholes. They will give us a quote for doing some repair. We also contacted the town and alerted them that the hatchery/State does not own a large section of the problem area. Staff set up wooden forms on a couple of flumes for future concrete pours. Moved a pile of large concrete, steel, and PVC pipe on a materials storage area with the excavator.

### **Maintenance of Buildings and Equipment**

Camden County Mosquito Commission dropped off three mosquitofish tanks for hatchery staff to inspect. Worked several days on removing and replacing a blown hydraulic line on the Koehring excavator. Taking apart our oldest zero turn mower to check out an oil leak.

### **CBTM Project – Pond Flume Equipment**

Created a new project for the construction of flume covers, tongue and groove boards, slides, plugs, and screens. Project cost of \$7,000.00. Staff have started to build flume covers, slides and screens. Staff picked up another load of plywood and 2x10's to continue the project.