



BUREAU OF FRESHWATER FISHERIES MONTHLY REPORT



December 14, 2020 – January 13, 2021

Lisa Barno, Chief
Craig Lemon, Superintendent
Edward Conley, Superintendent
Shawn Crouse, Supervising Biologist

Christopher Smith, Principal Fisheries Biologist

Dominick Mercurio, Crew Supervisor Bldg. Maintenance
Tyler Tresslar, Crew Supervisor, WW

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

Thomas Bissonnette, Technician II
Nicholas Healy, 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

Robert Nowatnick, Wildlife Worker
Grace Johnson, Wildlife Worker

Nancy Geiger, Agency Services Rep
Elizabeth O'Neill, Administrative Analyst

Seasonals: Steve Jefferies, Kate Ayers, Karl Lightner, Jordan Allen, Joseph Citro, Justin Rozema, Nick Cornine, Travis Nitko, and Christian Nitko.

FISHERIES MANAGEMENT

2021 Spring Trout Stocking - Continued making database changes for the 2021 Spring Trout Stocking Season. Each year, the regional biologists may have changes to the trout stocking program that will have an effect on stocking allocations or stocking locations for the following season. These changes are then updated in the trout stocking database and the program is run with these updates and a new allocation is created. Several staff meetings occurred this period to discuss the 2021 spring trout stocking season with regards to the ongoing COVID-19 Pandemic. (Shramko)

Warmwater Fisheries Management Plan –

- Staff continued to work on assigned portions of the Warmwater Fisheries Management Plan. (Smith, Boehm, and Crouse)
- Warmwater Habitat chapter draft was completed and reviewed, with minor edits remaining. (Boehm and Crouse)
- Muskellunge Management chapter was drafted. (Collenburg)
- Continued to make GIS maps for plan. (Shramko)

Coldwater Fisheries Management Plan -

- Staff continued to work on assigned portions of the Coldwater Fisheries Management Plan. (Shramko and Collenburg)
- Continued to make GIS maps for plan. (Shramko)

Freshwater Fisheries Data and Biotics Database- Additional GIS work was necessary to modify existing GIS layers so they could be utilized to create source features and SOAs. Progress was made reviewing and applying methodology used in other states to determine most appropriate Species Occurrence Areas (SOAs). (Shramko and Crouse)

Identifying point sources of stormwater impacts using thermal imaging – The BFFs continuous stream temperature monitoring network has identified locations, often on classified *Trout Production* streams, with significant thermal surges in temperature during rainstorm events. However, the source of warm temperature input is not always apparent. Time was invested on developing methodology to determine sources of stormwater impacts on *Trout Production* streams using thermal infrared (TIR) images. TIR imaging is a useful tool for detecting and quantifying warm and cool water sources. (Collenburg)

Stream Temperature Monitoring – This program was initiated in 2012 to monitor stream temperature in our major rivers that are currently regulated as Trout Maintenance. The continuous temperature monitoring program is designed to closely monitor stream temperature in areas that have marginal thermal habitat for the purpose of trout stocking, understanding thermal regimes in our major river systems, and expand the program to Trout Production streams to gain a deeper understanding of stream temperature's role on the entire life cycle of wild trout in New Jersey and assist in guiding management of these streams. This reporting period effort focused on collecting and managing stream temperature data that are of the Brook Trout Strongholds Project. (Collenburg)

Brook Trout Strongholds - Time was spent developing results and creating reports for Federal Aid and the Management of New Jersey's Freshwater Fisheries Resources annual report and Sport Fish Restoration Grant NJ F-48-R-29 interim report (federal aid). This project was initiated in 2018 and 94 sites with continuous stream temperature monitors are being analyzed and modeled in 2020 and primarily focused on the Delaware River drainage. The catalyst for this project was the idea that as air temperature increases due to climate change, stream temperature response will vary spatially and temporally depending on Groundwater Influence (GWI) and several other factors. This idea is more pronounced in headwater streams where GWI may be stronger. Still, GWI is largely unknown, unless measured. The developed models can be used to estimate GWI using direct measurements of air and stream temperature. Models have been developed in the past to determine stream temperature sensitivity and vulnerability to climate change but are scaled too large and do not consider small scale differences in GWI. (Collenburg)

Data Share – In collaboration with Trout Unlimited, The Nature Conservancy, and Musconetcong Watershed Association, we will be providing continuous stream temperature data to the USGS Ecosheds platform. USGS has been involved in the Eastern Brook Trout Joint Venture providing predictive models for Brook Trout occurrence and suitable habitat. Modeling in NJ based on preliminary observed-predicted comparisons of stream temperature has been inaccurate and usefulness of the regional models for persistence of Brook Trout may not prove useful because of the highly fragmented nature of their populations. However, USGS provides modeling and results and supplying our data may improve model calibration. The Ecosheds platform is a very user-friendly interface to share data as well. (Collenburg)

Graduate Student Project on Cormorant Predation on Small Trout Stocked Ponds in NJ – The Division of Fish and Wildlife is partnering with a graduate student and seasonal employee, Justin Rozema on his graduate school project with Paul Smiths College in New York. Justin will be researching the effects of Double-crested Cormorant Predation on Small Trout Stocked Ponds in New Jersey. The Division will gain important insight on impacts to the spring trout stocking program on small waterbodies with known cormorant populations. This project will take place during the pre-season stocking period in March and run through April. (Rozema and Shramko)

TECHNICAL ASSISTANCE

Statewide Dam Removal Partnership – Biologists Smith and Boehm participated in Zoom meetings on 12/14 and 12/15. The focus of the 12/14 presentation was to inform constituents of all required permits associated with dam removals. Division-issued water lowering permits are one such permit. Boehm discussed and answered questions related to those permits. The 12/15 presentation was about funding and the various avenues and agencies available that provide funding for dam removal projects. We were also tasked with creating a fish monitoring general information page and a "splash page" for the SDRP which will go up on their website in the future. (Boehm and Smith)

Smith and Boehm participated in a third meeting with the Statewide Dam Removal Partnership monitoring sub-committee workgroup, on January 7th. The group reviewed summary documents

that will eventually be used to create a webpage and resource for dam removal project managers. BFF biologists prepared the fish monitoring summary documented and shared with other members of the committed for review. These summary documents were prepared by smaller sub-committees within the workgroup. The individual monitoring parameters were identified during previous workgroup meetings. The next meeting is planned for March 2021. (Smith and Boehm)

Developed in coordination with bureau biologists, fish monitoring information pages for the SDRP website. The pages contain basic information on how existing dams impact fisheries, pre/post removal monitoring considerations, appropriate methods used to evaluate and collect data, required DFW permits, and who to contact for fisheries related guidance/questions. (Boehm, Smith, Crouse)

GIS Lake Mapping - Worked with OFWIS (Office of Fish and Wildlife Information Systems) staff to determine accurate water body boundaries, and acreage as part of their GIS lake mapping project. (staff)

Bear Swamp Lake Dam – Discussions about the removal of Bear Swamp Lake dam continued. This dam impounds the water of Bear Swamp Brook that contains a native Brook Trout population downstream. The dam and property were privately owned until the 1970's when the state bought it, took down the 13 or 14 houses/cabins surrounding the lake, and it has been in state control since. The recreational value of the lake is low primarily due to limited access. Furthermore, evaluation of temperature impacts show that the population is being stressed from the dam impacts. In the summer of 2019, the maximum weekly average temperature 1.6 miles downstream from the dam was 22.37°C (Figure 1). This was the highest of any Brook Trout stream evaluated and nearing critical maximum of 23.3°C for Brook Trout. This Brook Trout catchment has heightened significance as a stronghold considering other nearby Brook Trout catchments: Havemeyer Brook, Stag Brook, Fox Brook, Ramapo River (trib.) (Oakland), and Little Pond Brook. All of these catchments are within 5 miles of the confluence of Bear Swamp Brook with the Ramapo River. Removal of

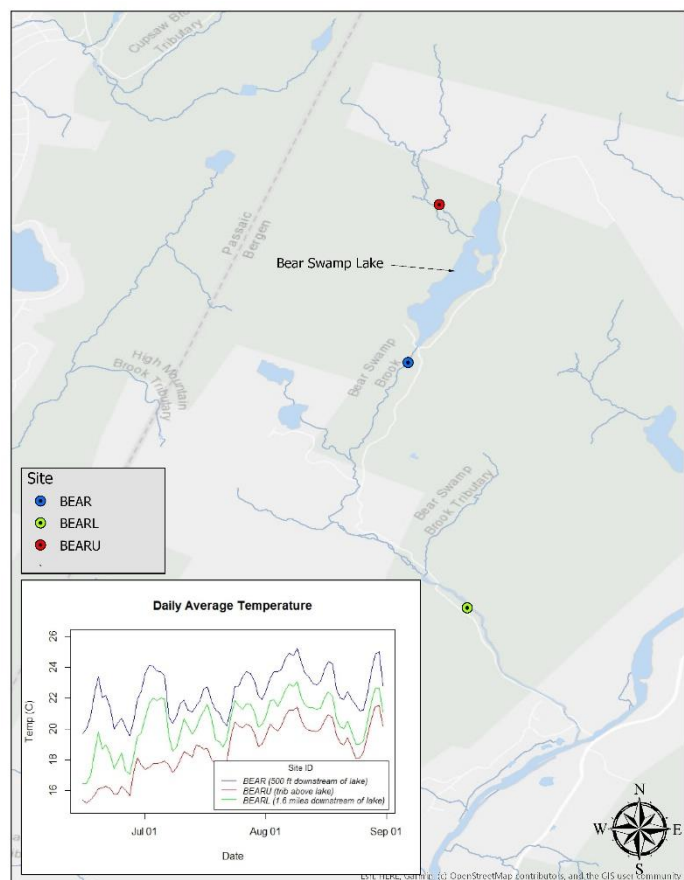


Figure 1. Continuous temperature monitor locations during the summer of 2019 on Bear Swamp Brook. BEARL documented an MWAT of 22.37 Degrees Celsius.

Bear Swamp Lake dam would greatly benefit the native Brook Trout population below and restore the natural hydrology of the system. (Collenburg)

Watergate Wetlands Restoration Project - The National Park Service (NPS) has decided to restore wetlands and the natural function of Van Campens Brook and its floodplain by reversing man-made changes in and near the Watergate Recreation Site in Hardwick Township, Warren County, New Jersey. The project will compensate for temporary and permanent impacts to wetlands, floodplains, and ecosystem function caused by the construction, operation, and maintenance of a high-voltage transmission line and its 200-foot right-of-way within the Delaware Water Gap National Recreation Area. Permits for this project were issued, including 5 Water Lowering, 1 Scientific Collecting, and 2 Fish Stocking. (Shramko)

WMA Fishing Tournament Permits – The Division has received a total of 93 applications for Wildlife Management Area fishing tournament permits for the 2021 fishing season. Permits will be issued in late-February. Coordination also began with tournament organizers to schedule events on popular WMAs throughout the state. (Smith)

Freshwater Permits - Reviewed Land Management Reviews (LMR's), water lowering permits and fish stocking applications and contacted applicants as necessary to obtain required information. Responded to requests from the public for information on general fisheries questions, fish stocking and water lowering permit programs. (Staff)

PEQUEST TROUT HATCHERY (Ed Conley)

Inventory Data

<u>Stocking Program</u>	<u>Length</u>	<u>Average Daily Length Increase</u>	<u>Conversion</u>
Spring 2022 RBT (3 months old)	2.2"	.020	0.62
Spring 2021 RBT (15 months old)	9.9"	.014	1.19
Fall 2021 RBT (15 months old)	10.3"	.041	0.73

Flow Rates - December 2020

5.10 inches of precipitation fell during the month of December.

Pumping Rate Average for December was 6391 gpm. An average of 9.20 million gallons per day was pumped during the month of December.

The potable well pumped 5,139 gallons for the month of December.

Fish Culture Activities

Inventory on 2022 production stock was completed at this time. Approximately 360,000 Rainbow trout were moved out of the nursery into the 8 available B-Line pools. They are currently being fed by hand 8 times a day 1.5 mm feed. The Nursery tanks were also reset at this time with approximately 575,000 Rainbow trout. 224,000, 2.0" surplus fry were given to Hackettstown Hatchery for forage.

Fish are being fed by automatic feeder twice every hour for about 10 hours a day. The feeders are filled daily. Most fish in the nursery are on #2 crumbles feed. All tanks are being cleaned by all shifts.

Monthly inventories of the Spring 2021 production stock (48 pools) and the 2021 Fall Program fish (2 pools) were completed during this time. Feed quantities have been adjusted to regulate growth rates to reach our final goal of 10.5 inches for the Spring Stocking. These fish are being fed by the feed truck 4 times a day with 5.0 mm feed. Screens are being cleaned twice a day and basins weekly.

Approximately 46,000 pounds of feed was fed during this time period.

Hygiene

Weekly catch basin and aerator building cleaning was completed as scheduled.

The iodine net/brush dip buckets were changed every 3 days or so to keep up with the hatchery hygiene plan.

Head ends as well as lower ends of the raceways were vacuumed 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 3rd Wednesday of the month.

Coordinated the pumping, loading and spreading of 9,500 gals of fish waste to the Pequest WMA. A total of 9.5 loads were spread to Field #4 in December.

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.

Miscellaneous Activities

Essential employees continue to maintain all fish production duties keeping the Pequest Hatchery fully operational, during COVID 19. Staff are also maintaining disinfection procedures while operating.

Scheduled personnel to cover various vacant shifts during the Holiday season.

Seasonal position interviews are being conducted for the upcoming Spring Trout stocking season.

On December 22nd, we had a failure of our UV treatment system on the domestic waterline. The proper notifications were posted, and it was reported to Safe Drinking Water. Bottled water is being provided for drinking until we are back online. A vendor has been called in to look at the unit and is trying to assess and determine the issue.

Processed the paperwork for roof repairs on the lower buildings through Ed Mulvan's office in order to receive a purchase order after going through the bid paperwork that was sent out and received in December. The Purchase Order has been received.

Parts were ordered for the diaphragm pump in the treatment plant. Once they are in, the contractor will install them.

January 11th, 2021 there was a pre-construction meeting for the Pequest Domestic Waterline Upgrade with Treasury, Construction and Procurement, and the selected contractor Viersma Inc. Work will begin in February tentatively.

There were no reported problems with trespassers by the night watchmen. The Information & Education Building remains closed due to COVID 19.

HACKETTSTOWN HATCHERY (Craig Lemon)

Intensive Culture (Inventory)

<u>Species</u>	<u># Fish</u>	<u>Avg.”</u>
Muskellunge	4,600	10.5”
Landlocked Salmon	3,200	6.9”

Stocking Totals (December 15 – January 14)

No stocking during this period.

Intensive Culture

Muskellunge

Currently culturing 4,600 Muskellunge in two 2,000-gallon tanks. These fish are averaging 10.5 inches currently. These fish will be grown on forage until next Spring.

Landlocked Salmon

Currently culturing 3,200 fish about 6.9-inches. They are currently being cultured in two 2,000-gallon tanks. Staff are cleaning and feeding them daily. These fish will be grown intensively until November 2021 and stocked when they reach 16-18 inches.

Vacation and XP Time Usage

The first half of this reporting period found most staff off using up benefit time. With the pandemic and lack of seasonal staff for several months many staff members accumulated multiple days of xp time. The months of November and December are generally the least busy, so staff tend to use much of their time off over the holidays. There are always at least two employees at work every day.

Maintenance of Ponds and Ground

Staff cleaned up debris from a large dead ash tree that fell in the East Hatchery. There is still one lead left standing that will require a tree company to come and take out. It is leaning over a neighbor's shed. Staff tore out a wooden bridge that crossed a ditch to the upper dam on Trout Brook. A new wooden dam was built and set in place. Staff pulled dam boards on the main Trout Brook dam over the Christmas holiday as the area received 3 inches of rain coupled with snow melt. Staff cleared debris from the dam and all flow control ditches following the storm.

Maintenance of Buildings and Equipment

Staff have been building and repairing plugs, slides and screens to be used in the extensive ponds next year. New replacement nets have been ordered. The net storage building was cleaned up and seines were brought down to the intensive building to be repaired and inventoried. Boots and raingear were inventoried, and new gear was ordered to fill in missing sizes. Staff replaced all the oxygen lines on the four fish distribution trucks. All the oxygen regulators, flow meters, and diffuser stones were checked and replaced when necessary. Our best Ohaus digital scale was dropped off, repaired and picked up. A date will be set to have all scales certified.

Vehicle maintenance continues all the hatchery vehicles. Oil changes, air filters, grease jobs will be performed on all these vehicles over the winter. Wooden decks on a couple of distribution

trucks and trailers were conditioned with waterproofing stain. Rust on the metal deck frames of two distribution trucks was scraped, primed and painted. The snow blower carburetor was cleaned and replaced.

2021 Fish Culture Season Prep

Orders for equipment are being prepared and placed. Fish food and fertilizer orders are being prepared. Phone calls to neighboring states about surplus fish trades are being made. This was extremely important in 2020 due to pandemic striking in mid-March when broodstock collection season had just begun. Seems it may be equally important in 2021 as the pandemic does not seem to be lightening. Phone calls checking on our new distribution truck were made.

COVID 19 Protocols

Staff continue to follow all protocols-social distancing, checking temps, answering questions upon entering work areas, etc. Common areas and bathrooms are being cleaned often.

ENGINEER IN CHARGE OF MAINTENANCE (Dominick Mercurio)

Pequest Trout Hatchery

This month several days have been spent trying to get our UV potable water treatment system to stay running properly, with no luck. I had a sales representative come out three different times, he spent several hours each time also with no luck. Currently I am awaiting a service tech to show up on site, they feel it's a computer issue causing the problem. Contacted a well contractor for a quote to repair two of our fish production wells. I continue to monitor all Pequest building and well houses to ensure the heat is operating properly during this wintertime period. One new heat circulator motor was ordered for the nursery building. New rope was installed on the two outdoor flag poles, and both flags were replaced. Plows were put on to clear snow from the well road to maintain access to the well houses, one fallen tree was also removed from the roadway.

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 number, along with potable UV water numbers, well levels, monthly gallons pumped, rain fall etc.

Hackettstown State Fish Hatchery

The diesel back-up generator was not running its programmed weekly test run. Did a manual test run everything operated properly. Currently looking for a contract vender to come out to the hatchery and repair the issue.