

2018

Inland Fisheries Program Notes & Updates (Fall)



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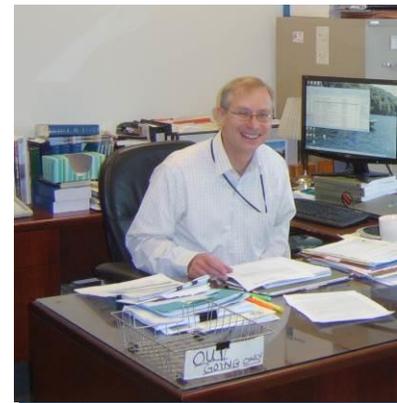
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News & Notes of Interest – Fall Happenings

Bill Hyatt has retired!

We are sad to say that Bill Hyatt has retired after 37 outstanding years with DEEP. He joined DEEP in 1982 as a Senior Fisheries Biologist, became Supervisor of Fisheries Management in 1986, Director of the Inland Fisheries Division in 2001, and finally, Chief of the Bureau of Natural Resources in 2009, overseeing the Inland and Marine Fisheries, Wildlife, and Forestry Divisions. Bill has also held leadership positions with many professional organizations and boards including chair of the CT Invasive Plants Council, chair of the Association of Fish & Wildlife Agencies Invasive Species Committee, chair of the Connecticut River Atlantic Salmon Commission, chair of the Northeast Fisheries Administrators Association, treasurer of the Northeast Association of Fish & Wildlife Agencies, and President of the Southern New England Chapter and the Northeast Division of the American Fisheries Society. Bill is currently a member of the Federal Invasive Species Advisory Council and is a Commissioner on the Atlantic States Marine Fisheries Commission. Bill did his undergraduate studies at the University of Connecticut and his graduate work at UConn and at the Institute of Ecosystem Studies in Millbrook, NY, where he did his thesis research on the “Selection and evaluation of alternative management strategies for a wild Brown Trout fishery in southern New York State (interestingly, his favorite fish is the Brown Trout).

Bill’s enthusiasm for the work of natural resource conservation and his abilities as a leader gave him the skills to work collaboratively with his DEEP colleagues, other states, agencies and federal partners for successful conservation outcomes. Probably his happiest days were spent in the field, whether tagging and measuring wild brook trout, assisting staff in a winter bear den trip, or holding a large, sleepy bobcat that would become part of the ongoing study of bobcat distribution in the state. Bill also had the knack of making everyone else better at their jobs. His intelligence, keen insights, patience (infinite), calmness and gentle humor will be missed by all. We wish Bill all the best in his retirement from DEEP.



Bill Hyatt through his 37 years at DEEP, from Fisheries Biologist through Bureau Chief.

Cover: *Bill Hyatt, chief of the Bureau of Natural Resources, recently retired. See this page for more on Bill’s exceptional career at DEEP.*

2018 CONNECTICUT CARP OPEN.

The CT Carp Open returned to the CT River this past October for a four day tournament, which ran from 8:00 am on Oct 11 through 3:00 pm on October 14. Known as the **Fishin' Factory 3 CT Carp Open 2018**, this event was organized by local carp angler Kyle Carlson with support from Fishing Factory 3 of Middletown. This year, a total of 39 pegs was made available on DEEP and municipally owned shoreline properties between Hartford and East Haddam. A total of 41 anglers participated. Of these, 32 participated on teams of two and 9 participated as solo anglers. The entry fee was \$400. The most recent CT Carp Open prior to this one, organized by David Moore and held on the CT River in October of 2016.

The payouts for the Fishin' Factory 3 2018 CT Carp Open were as follows:

- Big Four 1st Place: \$4,500
- Big Four 2nd Place: \$3,500
- Big Four 3rd Place: \$1,900
- Big Fish: \$3,800
- Big Mirror: \$500 + Trophy
- Big Fantail: \$100 Fishin' Factory 3 Gift Card
- New State Record: \$25,000 (not broken in this tournament)

Mike Hudak and Chris Gastringer (fishing at Harbor Park in Middletown) took first place in the Big Four with a total weight of 109 lbs, 4 oz. Norbert Samok and Laszlo Kovacs (fishing at the confluence of the entrance channel to Wethersfield Cove and the CT River) took second place in the Big Four with a total weight of 106 lbs, 1 oz, and Ray Chagnon Jr. and Ray Strong (also fishing at Harbor Park) took third with a total weight of 100 lbs, 9 oz. The Big fish winner was Shawn Rafter with a 34.0 lb Common Carp at the Salmon River Boat Launch. The biggest Mirror Carp (22 lbs, 9 oz.) was caught by the team of Norbert and Laszlo, and the biggest Fantail Carp (18 lbs, 7 oz.) went to Iain Sorrell fishing at Crowell Landing in Cromwell.

Special signs (*see next page*) were posted at all locations with active tournament anglers to help address some minor space conflicts between carp tournament anglers and other anglers that occurred in previous tournaments, and to help



Mike Hudak with a 30 lb. 8 ounce carp caught with about 6 hours remaining in the tournament. This fish put Mike and partner Chris Gastringer in the lead for the Big Four, which they won with a total weight of 109 lbs. 4 oz. Mike and Chris were fishing at Peg # 21 at Harbor Park in Middletown.



The largest fantail carp of the tournament, an 18 lb. 7 oz. beauty taken by Iain Sorrell while fishing at Peg # 12, located at Cromwell Landing in Cromwell.

inform the general public about the tournament.

Special thanks go to DEEP's Parks and Boating Divisions, the riverside municipalities of Hartford, East Hartford, Wethersfield, Rocky Hill, Cromwell, Middletown and East Haddam, Riverfront Recapture, and the CT DOT for allowing anglers to fish 24/7 on the lands under their control during this four-day event, and to Kyle Carlson and the Fishin' Factory 3 for bringing back the CT Carp Open. The event was deemed successful by the organizers, participants, and the DEEP, and plans are already under way by Kyle to hold the CT Carp Open in 2019. It will run from 8am on October 15 and end at 12 noon on October 18, with the peg draw on October 14 (Columbus Day).



These signs were posted at all carp angler fishing locations



Dean Casella Jr. fishing at Peg 26 at Hurd State Park with a 24 lb 2oz Common Carp.

Inland Fish Management & Fish Culture

TROUT AND SALMON STOCKING

BROODSTOCK ATLANTIC SALMON. Salmon stocking began during the first week of October (in Mount Tom Pond in the west and Crystal Lake in the east); later than anticipated because water temperatures were too warm during September and flows were much higher than is typical during the early fall season. This fall, the Fisheries Division stocked 852 Atlantic Salmon broodstock. Salmon production numbers are down this year (~1,120 were stocked last year) in part due to increased bird predation at the Kensington hatchery. The last 236 salmon were stocked into the Naugatuck and Shetucket rivers earlier this month (December 5 & 11 respectively). These December stocked fish 7-10 lb fish with some even larger (up to 15 lbs) while the 616 salmon stocked earlier this fall were age 2+ weighing between 2-5 lbs. each.. In total this fall, Crystal Lake (Ellington) and Mount Tom Pond each received 115 fish; 317 fish were stocked into the Naugatuck River, and 305 stocked into the Shetucket River.

*Locations and numbers of trout and salmon stocked this fall can be found on the fisheries website by going to www.ct.gov/deep/fishing and clicking the **Current Stocking Reports** link.*

TROUT STOCKING. Exceptionally high flows and warm early fall water temperatures, along with CT OSHA required modifications/updates to stocking trucks, severely hampered trout stocking efforts in rivers, streams lakes, and ponds throughout the State. Nonetheless, approximately 55,700 trout were stocked this fall; including 1,000 trophy-size Survivor Brown Trout, 2,200 trophy-size Cortland Brown Trout, 11,850 trophy-size Rainbow Trout, 20,400 fingerling (7 inch) Cortland Brown Trout, 660 trophy-size and broodstock Brook Trout (average 3 lbs.), 3,000 adult Survivor Brown Trout, 12,900 adult Rainbow Trout and 4,000 fingerling (< 6 inch) Survivor Brown Trout. Stocking occurred in Trout Management Areas (TMA), Trout Parks, Trophy Trout Areas (TTA), Trout Management Lakes (TML) and heavily utilized lakes and ponds.

Additionally, Brown Trout fingerlings were stocked into 7 areas: Blackberry River (4,000); East Branch Salmon Brook (4,000); Hockanum River (4,000); the Housatonic River Bull's Bridge TMA (2,000); Pequabuck River (4,000); Roaring Brook, Glastonbury (4,400); and the Shepaug River (2,000).



A nice Rainbow Trout just after stocking.

A special acknowledgement to over 30 students from Housatonic Valley Regional High School (HVRHS). These students and their teachers have volunteered for several years to help stock the Housatonic River. This fall they needed to be extra patient and flexible as we were forced to reschedule several times due to high flows. The students assisted on two of the five dates we stocked the Housatonic River and many indicated that it was a highlight of the environmental stewardship program offered at HVRHS.

RIVERS & STREAMS

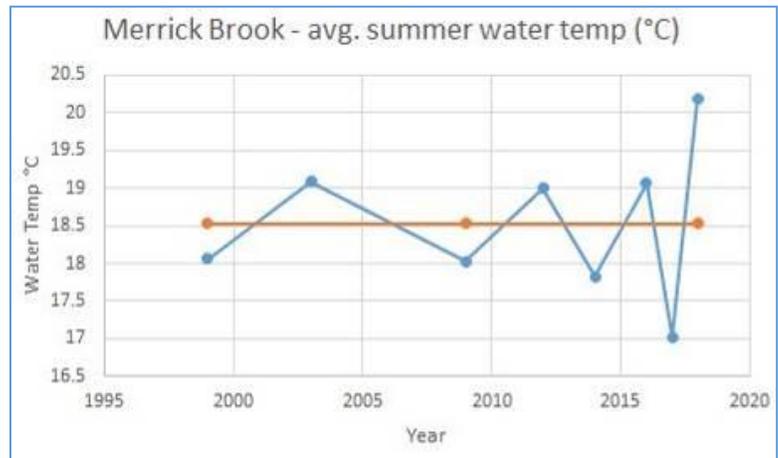
STREAM MONITORING. Summer fish population sampling was completed and the data for 180 sample locations (Fish management sites: 73, Habitat Conservation sites: 11, and wild trout: 96) was entered into a new Fisheries database (Microsoft Access). The new data management system will house all Inland Fisheries data, which will make dissemination of data quick and efficient. Once this new data management system is fully operational, historical, current, and future sampling records will be easier for other groups within and outside of the DEEP to access.

Stream shocking with a backpack electroshocker – waiting for fish to roll up after being stunned.



GENERAL WATER TEMPERATURE MONITORING. Water temperature loggers from 36 locations throughout the state are being retrieved. Water Temperature data collections focused on long term reference (LTR) streams (29 loggers), stream locations to support Thames Valley Chapter of Trout Unlimited’s study of the Merrick Brook system (5 loggers) funded by a Trout Unlimited (TU) “Embrace-a-Stream” grant, and gathering information on the Eight Mile River (Lyme) system after removal of the Ed Bill’s Pond Dam (2 loggers). All temperature data will be proofed and uploaded into the ECOSHEDS.org website for easy public access.

One location where data has already been processed, Merrick Brook, showed that average summer water temperatures in this coldwater stream were well above normal despite good flow conditions. This summer large volumes of warm “runoff” water likely overwhelmed the effects of cold groundwater input, and because of this, conditions may have been unfavorable for some wild trout populations around the state.



Average water summer temperatures observed in Merrick Brook since 1999. The blue dots indicate average summer temperature observed in a given year. The orange line indicates the average temperature (18.5 °C) over the entire time period. Note that 2017 was a dry period and groundwater input dominated as average summer water temperature that summer was 17 °C. This year, a rainy period, runoff water dominated and average summer water temperature was 20.2 °C.

temperature fluctuations, with several consecutive days of severely warm temperatures during a heat wave and low flows in early July, followed by cooler more trout-friendly water temperatures coinciding with higher flows during the rest of the summer. However, a few of the coldest streams actually ran warmer during the high-flow periods due to larger volumes of warmer run-off and smaller proportional contributions from groundwater or tailwater releases. In the Housatonic Trout Management Areas, water temperatures spiked as high as 30.4°C during the first week of July, before cooling back down with the higher flows. The upper Shepaug River tailwater, above the Bantam River confluence, remained in the 17.2-23.3°C range through July, but warmed during August and early September, peaking at 25.6°C on August 30. The lower Shepaug got much warmer, reaching 30.2°C on July 5th. The Mill River (Fairfield) tailwater generally remained in the teens (°C) until July 17, when high flows brought warmer temperatures. Overall, the early summer temperatures were stressful, or possibly lethal to some trout in the warmest of our trout streams, but trout stream temperatures remained below critical levels in a number of our larger warmer rivers, especially the Housatonic, these higher mid to late summer flows may have had beneficial effects on trout by not allowing these waters to warm to typical summer levels.

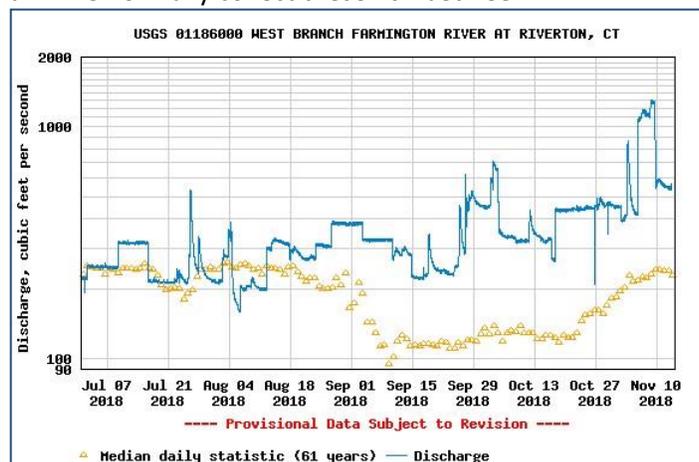
FARMINGTON RIVER

- **Fall Stocking.** This fall has been a story of high water and warm water. To prevent adverse impacts from putting too many adult-size fish into any one section of the river (too much biomass to support), fall stocking of the river consisted of:
 - The Metropolitan District Commission (MDC) stocking 1,700 rainbow trout (12 inches and larger) between Goodwin Dam and the Year-round TMA.
 - The Farmington River Angler’s Association (FRAA) stocking a mix of rainbow trout and brook trout from below Route 219 Bridge down to Satan’s Kingdom .
 - DEEP Fisheries stocking from Satan’s Kingdom down to the Farmington Gardens in the lower river with large rainbow trout.

- **“Survivor” Broodstock Collection:** We were unable to use electrofishing gear to collect broodstock given the high flows resulting from frequent rain. We normally collect these fish between September 9th and 15th of each year. The flows were consistently above our effective and safe threshold of 200 CFS (Figure 1). The Still River remained very high and as such, there was no way to reduce the amount of flow in our sample zone (MDC can reduce flow from the West Branch to 50 CFS upon request to support our collection efforts).

Being Creative: We tried a couple of alternative options to get broodstock for the production of the Survivor Browns.

- We considered setting traps/nets in the river (flows were too high).
- We recruited a group of anglers for a day of targeted fishing for the large



West Branch Farmington River flows for July through November at Riverton. The blue line shows the 2018 flow and the yellow triangles are the median daily flow over the past 61 years.

browns. MDC was able to drop the water level down to 500 CFS for most of the day. Unfortunately, through no lack of effort on our volunteer anglers, we were only able to get three fish that were usable as broodstock. Again, anglers were still hampered by high flows below the Still River.

- We evaluated captive two-year-old survivor trout and found 300 out of 1,700 that could produce gametes.
- Joe Ravita and Rick VanNostrand started spawning these two-year old fish in mid-October and anticipate getting enough eggs to produce the 2020 yearlings and 2021 age-2 survivors for the Farmington and Housatonic rivers.

While not as good a genetic composition as having river raised fish, they will be superior to standard production Cortland Browns. The spawning was completed by mid-November and the fish returned to the pond for additional growth opportunity.

Burlington State Fish Hatchery's F1 pond with age-2 survivor strain Brown Trout.



LAKES & PONDS

LAKE AND POND MONITORING. Fall monitoring of fish populations by night boat electrofishing was conducted during October and November on nine waterbodies: Amos Lake (Preston), Amston Lake (Amston), Bantam Lake (Litchfield/Morris), Foster Pond (Killingworth), Long Pond, (North Stonington), Roseland Lake (Woodstock), Shaker Pond (Enfield), Somersville Mill Pond (Somers), and Taunton Lake (Newtown). Sampling was done to collect information on relative abundance and growth rates of fish populations. One location (Bantam Lake) was added into the schedule part way through the season just for the collection of fish for the Water Planning and Management Bureau for fish tissue analysis. One location originally scheduled for sampling (Staffordville Reservoir, Stafford) had to be cancelled as permission to gain access to the waterbody was never received. Additionally, two locations we had scheduled, Powers Lake (East Lyme) and Halls Pond (Eastford), were cancelled due to poor weather conditions and were unable to be rescheduled.

Kokanee Salmon. Fall trap netting for the collection of broodstock salmon was completed during October/November, 2018 at both West Hill Pond and East Twin Lake. Nets were fished in West Hill from 10/9 through 10/26 and captured a total of 232 adult salmon. Some of these fish had already spawned in the lake and were not usable as broodstock, resulting in a shortage of our target number of spawning pairs (~225 pairs). Therefore, nets were set in East Twin Lake from 10/30 through 11/2, capturing a total of 447 additional adult salmon. The average size of adult Kokanee between the two lakes was quite disparate. West Hill Pond salmon averaged 18 inches for both males and females combined with some of the males exceeding 20 inches! While the East Twin salmon were very abundant in the lake, the average size for both sexes combined was 12 inches; substantially different from their West Hill counterparts. It is possible that the smaller size of the salmon in East Twin Lake could be due to intraspecific competition. A total of 679 (356 females and 323 males) salmon were transported to the Burlington Fish Hatchery of

which 646 were spawned, producing 305,000 green eggs. The percent eye-up of the eggs at Burlington Hatchery is not yet known as all batches of eggs have not completed development, but to date it appears that eye-up should be approximately 75% which will result in a sufficient number of fry for stocking in the spring of 2019.

One of the adult male kokanee salmon captured at West Hill Pond in October 2018.



WALLEYE STOCKING A total of 26,265 Walleye fingerlings (22,765 “small” 4-6 inch and 3,500 “large” 6-8 inch) were stocked into state-owned management waters on October 29, 2018. Additionally, 11,180 “small” (4-8 inch) Walleye fingerlings that were purchased by three private entities (two water companies [the South Central Connecticut Regional Water Authority and Aquarion Water Company] and one town [East Hampton]) were delivered on the same truck and distributed to them by DEEP FD staff. Similar to last year, 13% of the fingerlings the Fisheries Division (FD) purchased were larger than the typical size fingerlings (averaging 7 inches instead of the typical 5 inches in length). These larger fingerlings have been stocked into Mashapaug and Gardner lakes for the last four years as part of an ongoing experiment to see if stocking larger sized Walleye will create more adults in future years because in both these lakes the adult Walleye populations had been in decline since 2009. Due to staff shortages from retirements, we were unable to sample these two lakes during the spring of 2018 to see if a similar finding of increased overwinter survival and therefore increased yearling Walleye present in each lake had continued. Depending on staff availability we may be able to sample these two lakes through night time boat electrofishing in April 2019.

The remaining standard 5-inch size fingerlings were stocked into Batterson Park Pond, Beach Pond, Cedar Lake (Chester), Coventry Lake, Lake Zoar, Mount Tom Pond, Squantz Pond, and Long Pond (North Stonington). The “small” size fingerlings purchased by the three private entities were stocked into Saugatuck Reservoir, Lake Saltonstall and Lake Pocotopaug.



One of the large Walleye fingerlings stocked into Gardner Lake and Mashapaug Lake this fall.



Loading the tank for boat stocking “small” fingerlings.

Diadromous Fisheries Restoration

FISHWAY OPERATIONS

- The **Rainbow Dam Fishway** (Farmington River, Windsor) was operated during the fall from October 19 to November 19. Extremely high flows occurred throughout the fall operational period, reducing the effectiveness of the fishway. Small numbers of juvenile river herring were documented passing down the fishway, but no silver eels were observed.

FISHWAY REPAIR AND MAINTENANCE / FISH PASSAGE ENHANCEMENT

- Replaced ten of the 28 wooden baffles in the **Leesville Fishway** (Salmon River, East Haddam). The remaining 18 baffles will be replaced in 2019.
- Repaired the wooden headwall and baffles in the **Sandy Brook Fishway** (Sandy Brook, Colebrook). The fishway suffered storm damage in early spring, but due to high stream flows was not repairable until summer/fall.
- Replaced a wooden low flow gate in the **Rainbow Fishway**.
- Replaced the failing wooden baffles in the **Gorton Pond Fishway** (Pattagansett River, East Lyme) with new aluminum baffles constructed by students at Asnuntuck Community College. The new aluminum baffles are expected to have a 50+ year life expectancy and will reduce the long-term maintenance responsibilities at the fishway.

The Gorton Pond Fishway (with protective grating removed) showing the new aluminum baffles.



- Completed maintenance on existing fishways, including replacing failing weir boards on the **Upper Mill Fishway** (Mill Brook, Old Lyme).

Newly installed oak shiplap weir boards (constructed utilizing material from our state saw mill) on the Upper Mill fishway on Mill Brook (Old Lyme).



- **Heminway Pond Dam Removal** (Steele Brook, Watertown) – After many years of planning, the Town of Watertown removed this aging dam and restored a single stream channel through the former heavily degraded impoundment. This is the third barrier on this Naugatuck River tributary so diadromous species will not immediately benefit from its removal but there are hopes that the lower barriers will someday be removed to open this entire stream to migratory fish. The Fisheries Division was not the lead DEEP group for this project, which was spearheaded by the Water Planning and Management Division.

After the Heminway Dam was removed, decades of accumulated sediment was removed to create a new channel through the old pond bed. Rocks were added for the streambed. This was done while the streamflow was diverted, to the north. In this photo, the water had been recently sent down the new channel.



- **Other projects** were stalled due to high water. There were plans to build the **Dolan Pond Fishway** (Falls River, Essex) and remove the **Old Papermill Pond Dam** (East Aspetuck River, New Milford) and the **abandoned water pipe across the Quinnipiac River** in Meriden and Cheshire but persistently high water this fall has prevented these projects from happening. There are still hopes that the last two projects can occur over the winter but the Dolan Pond Fishway will likely be delayed until the summer of 2019.

This abandoned water main used to be mostly submerged when the Carpenters Dam created a pond on the Quinnipiac River. When Save the Sound (STS) removed the dam, the pipe became an impediment to passage, and is now targeted for removal by STS.



FUTURE FISH PASSAGE PROJECTS

- Staff continued to work on the development of new fish passage projects including: modifications to the **Tingue Fish Bypass Channel** (Naugatuck River, Seymour), design of a fishlift at the **Rainbow Dam** (Farmington River, Windsor), **Aspinook Dam** (Quinebaug River, Griswold) fish passage as part of an upcoming FERC relicensing, **Upper Collinsville Dam** (Farmington River, Canton) fish passage as part of an upcoming FERC relicensing, and **Picker Pond Dam Removal** (Oxoboxo Brook, Montville).

- Sometimes Mother Nature intervenes. Heavy rains this fall damaged several dams throughout the state and breached the **Buckley Pond Dam** (Sasco Brook, Westport-Fairfield). This dam had long been targeted for fish passage due to the strong runs of river herring to its base. It is unclear whether or not the dam is now passable to fish but the Division expects to join the conversation between the dam owner, the Town and local NGO partners to discuss the future of the site.

The Buckley Pond Dam is located just upstream of US Route 1 and the head-of-tide. The recent breach may allow fish to continue upstream to spawn.



RIVER HERRING

- In September, the New England Fisheries Management Council made a decision to reduce the landings of Atlantic Herring and close all federal waters within 12 nautical miles of land to mid-water trawlers. This was done to reduce gear conflicts and the catch of Atlantic Herring, the population of which is suddenly declining. However, the area closure had been advocated for some time by parties seeking to reduce the bycatch of river herring in the fishery. For example, there was a focused fishery for Atlantic Herring off of Block Island in the late winter, the time and place that river herring destined to spawn in Connecticut waters congregate. While difficult to confirm, the bycatch of these river herring was suspected to be high. The increase of Atlantic Herring landings since the mid-1980s correspond to the decline of river herring in our streams. Hopefully this recent decision may lead a slow recovery of river herring runs throughout southern New England.

SEA-RUN TROUT

- Clipped the right pelvic fin off of 12,494 sea-run Brown Trout being raised at the Burlington State Fish Hatchery (BSFH). All of these fish were then moved into the three smolt ponds where they will reside until they are stocked in March, 2019 as two-year old smolts. The purpose of the fin clip is to allow identification of the fish when they return as adults in the future. This allows evaluation of the program.

Clipping pelvic fins is cold, tedious work but it allows the identification of these special sea-run trout when they return from Long Island Sound. Anglers who catch sea-run trout should examine their catch for clips and call the Fisheries Division.



- Electrofished the Farm and Shunock rivers to assess sea-run Brown Trout stockings. Survival of sea-run Brown Trout 0+ parr stocked in Shunock and Farm rivers in the fall of 2017 was estimated to be 1.0% and 1.6%, respectively. Less than 1% of the Sea-Run Brown Trout 0+ parr stocked in the fall of 2016 remained in either Shunock or Farm rivers suggesting that perhaps some of that age class emigrated to salt water.
- Stocked 12,494 sea-run Brown Trout parr into the lower sections of the Farm River. These fish were graded-out of the group of fish imported as eggs in 2017 and expected to be smolts in 2019. Half of these parr were intended to be released into the Shunock River but the brake line on the stocking truck failed at the Farm River release site, necessitating the release of the all remaining parr.
- Fishway traps at Chapmans Pond Fishway and Latimer Brook Fishway continue to be operated for sea-returning trout. To date, no returning trout have been captured.
- Deployed a hoop net in the tidal section of Latimer Brook to trap any returning sea-run Brown Trout. Trout from the first smolt stocking (3,000 in 2016) are expected to return sometime after Thanksgiving, 2018. All Iijoki strain trout (ventral fin clip) will be tagged and released upstream of the net. This will allow staff to identify recaptures at the upstream Latimer Brook Fishway Trap. The data will also provide valuable details to the life history of this Finnish strain of sea trout including run timing, growth rates, return rate, etc. To date, no trout have been captured.

Hoop net fishing for sea-run Brown Trout in lower Latimer Brook. The yellow rope is a safety line to allow easier access to the net for staff.



ATLANTIC SALMON

- Provided 1,000 Atlantic Salmon parr from Kensington State Fish Hatchery (KSFH) to the Silvio Conte Anadromous Fish Research Center U.S. Geological Survey (USGS) in Turners Falls, MA as part of the ongoing effort to support Atlantic Salmon research and promote restoration throughout New England.
- Stocked 8,492 surplus salmon parr from KSFH into the Farmington River in Barkhamsted and New Hartford. These fish are not expected to emigrate to sea until the spring of 2020 due to their small size.

- Staff assisted in the spawning of Atlantic Salmon at KSFH. Between October 30 and November 13, approximately 738,071 eggs were taken. The eggs will be 'eyed' at KSFH and used for the Connecticut River Salmon Association's Salmon-in-Schools program, future broodstock at KSFH, production of fish for the recreational salmon fishery, streamside incubators at the Tributary Mill Conservancy, and fry to be stocked for the Legacy Salmon program.

AMERICAN EEL

- Closed eel passes across the state for the season (i.e. Occum, Greeneville, Hallville, Fishing Brook, Chapmans Pond, Mill River, Wyassup, and Kinneytown).
- For the third season, staff helped operate the Silver Eel Airlift system for downstream passage at the entrance of the Groton water supply treatment plant, in partnership with Groton Utilities and the USGS- Conte Lab. The trap is checked daily and any trapped eels are documented and released downstream of the dam. To date (11/30), the airlift has captured 553 silver eels.

Silver eels awaiting release below the Groton Utilities Water Treatment Plant. These eels were captured by the air lift in a single night. There were numerous nights when over 50 silver eels were captured in the reservoir.



- Assisted Normandeau Associates in an American Eel injury/mortality study at the Hanover Pond Archimedes Screw owned and operated by New England Hydro LLC. Staff provided all the study eels from the Groton Silver Eel Airlift for the tagging study, which utilized Normandeau's HI-Z Turb'N Tag 'balloon' tags. All test eels were individually tagged, introduced into the Archimedes Screw, and recaptured downstream in the tailrace. Staff recaptured and delivered all test eels to Normandeau staff. All eels were then held for 48 hours in a circular tank (provided by DEEP) with a flow-through water system to assess delayed mortality. Preliminary analysis seem to suggest that the eels pass through the Screw without injury.

A silver eel being restrained for tagging. Two yellow balloon tags can be seen in the center of the photo. The water reactive chemical that is held in each balloon with a soft plastic plug is activated prior to the eels release into the Archimedes Screw. The chemical releases a gas inflating the balloon, bringing the eel to the surface of the tailrace where it can be easily retrieved, inspected, and monitored.



MISCELLANEOUS ACTIVITIES AND PUBLIC OUTREACH

- Staff provided educational presentations to the annual New Teacher Orientation of the **Salmon-in-Schools program**, sponsored by the Connecticut River Salmon Association (CRSA). The Division provides eyed Atlantic Salmon eggs to participating schools to support this popular and successful program to teach students about salmon and aquatic conservation.
- Staff also assisted Marine Fisheries staff with the **Long Island Sound Trawl Survey**.
- Staff participated in a kick-off event for the **International Year of the Salmon (IYS)** at the New England Aquarium in Boston. IYS is a global initiative to raise public awareness about both Pacific and Atlantic Salmon and the threats to their existence. The Division hopes to partner with the National Marine Fisheries Service, CRSA, and other local partners throughout the next year to mark this designation.
- Provided assistance, water pumps, and water (shad truck) to the DEEP Water Planning and Management Division and the Natural Resources Conservation Service during their **Farm Brook Dam site safety operations** in Hamden.
- **Changes in staff**- Dave Ellis, a veteran fish biologist with the Diadromous Program, transferred to the Marine Trawl Survey. The Division was fortunate to secure permission to replace him and through a very competitive process hired Kevin Job. Kevin, a native of Norwich, received his BS from UConn and his MS from the University of Maine. He began his career as a seasonal worker with the Fisheries Division at the Eastern District office, then moved to the Diadromous Program in Old Lyme, and next took a job with a hydroelectric company operating fishways in Maine before entering graduate school. Kevin brings a wealth of experience and skills to the program and is already preparing for next spring's runs.

*New Diadromous Program Fisheries Biologist
Kevin Job.*



Habitat Conservation and Enhancement

CTDOT CULVERT PROJECTS, FISH PASSAGE AND INSTREAM HABITAT ENHANCEMENTS

HCE staff review all Connecticut Department of Transportation (DOT) bridge and culvert replacement projects as well as many locally regulated projects. Staff ensure that such projects are designed to allow the unrestricted movement of fish upstream and downstream and do not degrade aquatic and riparian habitats. In addition, instream habitat structures are often recommended to restore/enhance instream habitat features or to mitigate unavoidable habitat losses. Permit conditions require project contractors to be assisted by HCE staff during construction to ensure the proper installation of fish passage and habitat structures. During the last quarter our program reviewed 19 projects for fisheries concerns. One of the highlights included the Hemlock Valley Brook Bridge Replacement Project.

- **HEMLOCK VALLEY BROOK (Route 82, East Haddam) – bridge replacement.** Bridge replacement at this location also involved the removal of a 3 foot high grouted rock sill that blocked upstream fish passage for the fish community comprised of wild brook trout and wild brown trout. Removal of this barrier opened up over 1.2 miles of upstream habitats with streamflow being unobstructed in this area for the first time in 80 years!



(left) *Pre-construction view of sill upstream of Route 82 bridge over Hemlock Valley Brook.*



(Right) *Post-construction view with the sill removed.*

OTHER PERMIT REVIEW

- **COASTAL.** Staff reviewed seven dock construction projects on the Long Island Sound shoreline and the Connecticut River.
- **INLAND.** In addition to the bridge and culvert projects project mentioned above, staff reviewed one water diversion project, one water discharge project, six forest management plans, and one wildlife management plan.

FISH PASSAGE MONITORING, TRIBUTARY TO LYMAN BROOK, MARLBOROUGH

The last year of a three-year monitoring project has been completed by HCE staff to evaluate wild Brook Trout passage performance at a culvert slipline project that was retrofitted with an outlet fishway and culvert baffles. Fish passage was assessed with the use of a passive integrated transponder (PIT) tag monitoring system. The system monitors Brook Trout movement before, during and after the October spawning period. Study results indicate that Brook Trout can successfully pass upstream through the

fishway and culvert. Upstream movements were often associated with increasing streamflow in October when fish are actively seeking suitable spawning locations. The Memorandum of Agreement with the DOT (which funded the purchase of the PIT equipment) stipulates that a final report of this project is due the spring of 2019.

A wetter than normal fall resulted in several high flow events overtopping the culvert fishway on a Lyman Brook tributary.



INSTREAM FLOW STUDY, WYRE WYND HYDRO PROJECT, QUINEBAUG RIVER

The Wyre Wynd Hydroelectric project located on the Quinebaug River, Jewett City is currently up for relicensing by the Federal Energy Regulatory Commission. Per that regulatory process, an instream flow study was requested by state and federal agencies for the project's 450 foot long bypass reach. The study is based on a Demonstration Flow Assessment approach which is being conducted by the applicant's consultant, Kleinschmidt Associates. The goal of the study is to determine an appropriate bypass flow regime that will protect and enhance aquatic resources by evaluating the relationship between flow and habitat suitability for all life stages of the target fish species that include Fallfish, Longnose Dace and Smallmouth Bass. HCE staff assisted in the development of the study plan and participated in bypass reach transect selection and monitoring of data collection.

View of transect location setup for data collection within the minimum flow turbine release channel.



HABITAT PROGRAM PUBLIC OUTREACH

Loss and degradation of aquatic habitats are important factors contributing to the long-term health and abundance of fishery resources. The HCE Program often fulfills an active role in educating the public, NGOs and students of all ages to help prevent further habitat degradation along with help promote active aquatic habitat restoration efforts in Connecticut. Most recently, presentations regarding the Wild Brook Trout Fish Passage study at Lyman Brook were provided at the Northeast Transportation and Wildlife Conference, UMASS, Amherst September 10th – 12th and at the joint DOT/DEEP Environmental Summit, Hartford, November 20th.

And a thank you from HCE to Diadromous Program Seasonal Resource Assistant Kirk McPherson, who filled in admirably as help to manage the Grass Carp program this summer. As happens with "seasonals" Kirk's time has run out for this year.



CARE & Constituent Services

FALL CLASSES: Conducted thirteen CARE classes for 673 students this fall. Highlights include:

- An “Introduction to Fly Fishing” course, offered in partnership with the Hammonasset Chapter of Trout Unlimited (TU), was held at the CARE Center in Killingworth for 12 students. This course consisted of a two hour classroom and hands-on casting session and concluded with an instructor lead fishing trip to Chatfield Hollow State Park. CARE will be working with Hammonasset TU to offer Fly Fishing courses in 2019.



Introduction to Fly Fishing: The first “Introduction to Fly Fishing” course was offered this fall at the CARE Center in Killingworth. Instructors delivered an hour of lessons on fly fishing equipment (left) prior to heading outside (right) where students received individual attention while learning the basics of casting.

- Hosted four field trips at the CARE Center on Forster Pond for Hamden Hall Academy, Madison High School and Westbrook High School (2).
- Volunteer Instructors participated in two “Take A Vet Fishing” fishing days.
- Family Fishing Courses were conducted in Bristol, Cromwell, Greenwich and Killingworth (CARE Center) for 99 students. All courses consisted of two hour classroom session and an Instructor lead fishing trip.

Family Fishing Courses: This father and daughter team attended a Family Fishing Course at the CARE Center this fall. They were able to put their new knowledge to the test and were rewarded with this beautiful largemouth bass.



DISCOVER OUTDOOR CONNECTICUT DAY was celebrated at Franklin Wildlife Management area this fall. CARE staffed and coordinated fisheries participation which included setup of the Inland Fisheries Outreach

and Education trailer, live fish tank and touch tank, kid's backyard bass casting activity, and fisheries program displays. Over 1,000 people attended this annual event.

ICE FISHING. Scheduled Family Ice Fishing Classes for this January in Glastonbury, West Hartford, Farmington, Coventry, Litchfield, Ansonia, Essex, and Killingworth. The annual *No Child Left Inside*® Winter Festival will be February 2nd from 10am to 3pm at Burr Pond State Park in Torrington.

PROGRAM NUMBERS. Completed data entry for 2018 CARE student and Instructor reports, documenting over 7,250 students taught. A total of 195 volunteer Instructors contributed over 3,800 hours of volunteer time. The monetary equivalent of Instructor volunteer time used as State match for federal dollars has surpassed \$4.8 million dollars over the last 32 years.

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