



CT DEEP INLAND FISHERIES DIVISION

QUARTERLY REPORT

December 2011

Winter Storm Alfred update

Fish Hatcheries. Hats off once again to our fish hatchery managers and staff for their hard work and dedication in avoiding or greatly minimizing potentially large scale losses of trout and salmon at our facilities. It wasn't that long ago (refer to reports associated with tropical Storm Irene in our September 2011 Quarterly Report) when we had very similar large scale power outages at our facilities:

Quinebaug – Never lost power.

Burlington - This facility experienced a power outage for ~216 hrs (9 days) with power lost in the late afternoon/early evening on Saturday, October 29 and restored at ~4:00 pm on Monday, November 7. As Burlington is a surface water hatchery, the power outage was not a major concern. There were, however, numerous downed trees that needed to be removed from ponds. Our thanks to Agency Support Services staff for assisting hatchery staff with post-storm cleanup.

Kensington – Power was lost at ~4:00 pm on Saturday Oct. 29. The backup generator was operating but voltage output was fluctuating and we lost the use of the largest capacity well (Well # 4) but were able to operate the other three wells. The periodic voltage fluctuations resulted in staff becoming increasingly concerned that power output could cease completely. Arrangements were made through the Emergency Operations Center with the CT National Guard, who brought in two 60 KW generators on Tuesday, November 1. One of the generators was installed and made operational in the nick of time at around 12:30 a.m. on November 2, shortly after the hatchery generator failed (wells were not pumping for ~1 hour). We lost (mortality) fifty large (Age 4+) male brood stock Atlantic salmon as result of power interruption or related conditions that occurred during activation of the National Guard generator. Without the backup generator, all trout and salmon at the hatchery would have been lost. Commercial power was restored at ~4:15 pm on Wednesday, November 2. In total, the facility operated on backup generators for about 96 hours.

Whittemore Fish Holding facility - Designed and constructed to hold sea-run Atlantic salmon broodstock, this facility was deactivated in 2003 for budgetary reasons. In March, 2011, the presence of didymo (an invasive alga) was confirmed in portions of the West Branch Farmington River. To ensure that river water possibly containing didymo would not be brought into Burlington Hatchery, the Whittemore facility was temporarily reactivated this fall to hold Farmington River Survivor strain brown trout broodstock that were collected (September 22) from the West Branch Farmington River TMA. Power was lost between 4:00 pm and 6:00 pm on Saturday October 29 and was restored 10 days later at about 4:10 pm on Nov 8. Fortunately the backup generator kicked in automatically and no trout were lost. Staff were unable to access the site until Monday afternoon (October 31) when Rick Van Nostrand (Supervisor of Fish Culture Program) and Joe Ravita (Maintainer at Burlington Hatchery) did so on foot. They then cleared East River Road with chain saws from the north so that fuel could be delivered for the generator. Had they not taken this action, the generator would have run out of fuel by the next morning and all trout on station would have been lost. Upon completion of a successful egg take process, the Survivor strain broodstock brown trout were returned to the West Branch Farmington River TMA on November 30.

Inland Fish Management & Fish Culture

- **Completed fall trout stocking.** A total of 82,100 trout were stocked this fall, including 18,100 trophy-size brown trout (greater than 12 inches in length), 15,000 standard-size (10 inch) rainbows and 49,000 yearling (6-9 inch) brown trout. Due to tropical storm Irene, the annual pre-Labor Day stocking West Branch Farmington River (Goodwin Dam to West Branch TMA) was postponed. This area was later stocked with 1,200 large brown trout on October 3rd and the lower Farmington River TMA was stocked with 550 large browns. Stocking also occurred in most other TMAs, Trout Parks, and important lakes and ponds. The yearling brown trout were stocked into 10 streams; Roaring Brook, (Stafford); Hockanum River, Moosup River, Quinebaug River, Blackberry River, Pequabuck River, Coppermine Brook, Mill River (Hamden), Norwalk River and East Branch Salmon Brook (Granby). The standard fall

stocking regime for the Housatonic River TMA was continued (3,000 yearlings Survivor brown trout, 1,000 large brown trout, and 7,500 adult rainbows).

- **Stocked 906 Atlantic salmon broodstock** this fall into the Beacon Falls sections of the Naugatuck (335 fish), the Scotland Dam to Occum Dam section of the Shetucket River (355 fish), Mt Tom Pond (116 fish), and Crystal Lake-Ellington (100 fish). Due to flood damage caused by Tropical storm Irene, the U.S. Army Corps of Engineers closed the Thomaston Dam recreation area that includes the Campville stretch of the Naugatuck River, and no salmon were stocked there in 2011.
- **Stocked walleye fingerlings** into Batterson Park Pond (2,100), Beach Pond (5,600), Coventry Lake (1,500), Gardner Lake (5,300), Mashapaug Lake (4,300), Squantz Pond (4,100) and Lake Zoar (6,500). This was the first year that Lake Zoar was stocked. Staff also stocked walleye fingerlings into Saugatuck Reservoir (7,000, purchased by Aquarion Water Company) and Lake Saltonstall (3,360, purchased by South Central Regional Water Authority). The fingerlings averaged over 5 inches in length.
- **Completed kokanee sampling** at West Hill Pond and East Twin Lake. This October at West Hill Pond, a total of 886 adult kokanee (12-14 inch fish) were collected in trap nets over a ten day period. Of these fish, 812 salmon were taken as broodstock, providing 204,935 eggs. At the current eye-up rate of 85%, it is anticipated that this year's spawning will produce approximately 174,000 eyed eggs. This number of eyed-eggs should provide the target number of fry for West Hill Pond (50,000) and East Twin Lake (50,000) in the spring/early summer of 2012. Adult kokanee at West Hill were similarly sized to fish captured in 2010, but approximately an inch smaller than those captured in the fall of 2009.

At East Twin Lake, a total of 56 adult kokanee salmon (average length 17.5 inches) were captured during netting operations for brown trout. This was the fourth consecutive year in which adult kokanee have been sampled at East Twin Lake, but overall numbers appear to be down (811 and 208 were captured in 2009 and 2010, respectively), possibly because fry were not stocked in 2008. East Twin fish sampled in 2011 averaged an inch smaller than those captured in 2010, but the largest fish captured in 2011 was a male measuring a giant 22.5 inches.



Large male kokanee sampled at East Twin Lake, fall 2011.

Kokanee in Connecticut waters commonly grow to 11-13 inches. The return of kokanee to East Twin Lake, which has generated interest amongst anglers, is most likely related to the concurrent collapse of alewife in the lake.

- **Assessed holdover brown trout** populations in three Trout Management Lakes (TMLs) by electrofishing in October/November (Highland Lake, Crystal Lake) and by trap nets October/November (East Twin Lake). The majority of brown trout sampled from Crystal and Highland lakes were 2011-stocked fish. No large holdovers (>16") were sampled at Crystal Lake, while only six large fish were sampled at Highland. Holdover brown trout were assessed in East Twin Lake by mark-recapture sampling. A total of 40 brown trout were captured over a 35-day period using two trap nets set in standard locations. Size and body condition of brown trout continued to decline (average TL = 13 inches) with only four fish exceeding 16 inches and one exceeding 20 inches. Many of the brown trout at East Twin Lake, regardless of size, appeared emaciated. Vertical gillnet sampling at East Twin Lake failed to capture a single landlocked alewife for the third year in a row, indicating a collapse of the brown trout's main forage base.

Due to the current status of brown trout in East Twin Lake, a regulation change may be proposed that would change the current regulation (5 trout/day, only one of which can be a brown trout, plus a 20 inch minimum length for brown trout) to a standard statewide trout regulation (5 trout/day, no minimum

length). This would allow better use of trout stocked into the lake, while reducing competition for limited forage by holdover trout. In addition, the lake would be open to fishing during the month of March. This change would: 1) maintain the lake's TML status, 2) provide additional fishing opportunities and 3) standardize East Twin's regulations with other TMLs.

- **Assessed forage fish (landlocked alewife)** by vertical gill nets in nine Trout Management Lakes (TMLs) and in one non-TML (Mount Tom Pond). This is the first time in many years that multiple lakes around the state have been sampled using this gear type (data is being assessed as to the gears' effectiveness in sampling forage fish). These data will help to assess each lake's ability to grow holdover trout, and also help direct future management for all TMLs. Nets were set in Mount Tom Pond to determine presence/absence of alewife. Anglers previously reported seeing alewives in the pond, and our netting confirmed the fish's presence. A total of 120 alewives were sampled, and based on their length frequency, multiple age classes were found indicating that alewives have been in the lake for the past 3-4 years. Summer water temperature/oxygen data were also collected in each of the lakes.
- Completed the open water portion of **angler surveys** at nine lakes, Beach Pond, East Twin Lake, Highland Lake, Maltby Lakes 2 and 3, Mohegan Park Pond, Pachaug Pond, Lake Saltonstall and Wonoskopomuc Lake. These surveys assessed angler catch, effort and attitudes and provided data relevant to the Bass, Walleye, Pike, Trout and Channel Catfish Management programs. Ice-fishing surveys will be conducted at four of these lakes during winter 2011-12. Preliminary results of the open water fishing period indicate good numbers of trout having been caught by anglers, along with good numbers of holdover trout from both Highland and Wonoskopomuc lakes. The survey at East Twin Lake showed that most trout caught by anglers were recently-stocked fish. No legal-size brown trout (≥ 20 inches) were recorded as being caught during the survey.
- **Retrieved 77 temperature recorders** that had been deployed in streams throughout the State. Data showed average to mild temperatures during the early part of the summer and mild to cool temperatures in August and September. However, the mild temperatures recorded during the early and late summer were punctuated by a short but extremely hot three-day period in mid-summer (July 21-23). Of particular note, the Housatonic River in Cornwall reached 88.3°F on July 22. Anglers reported some dead trout floating down the river, but sampling showed that trout, which had entered thermal refuges at tributary mouths, survived well through the extreme heat wave. Smallmouth bass in the Housatonic River produced a moderately strong year class, despite the extreme heat.
- Completed annual fall monitoring of fish populations by **night boat electrofishing** in 31 lakes during October and November. Sampling was done to collect information on growth rates and relative abundance of fish populations.
- **Renovation of the Wyantenock pike spawning marshes has been completed.** Two managed marshes located in Wyantenock State Forest had been used to raise fingerling pike from 2001 to 2006. Since that time, both locations have been "offline" due to aging/leaking control structures. The marsh renovation work was mitigation for a CTDOT roadway project. The dam height was raised at both marshes to allow for more extensive flooding of spawning habitat and control structures and pipes were lowered to facilitate complete draining of each marsh, which will greatly help during fingerling collection. Water will be retained in each marsh beginning in early winter (2011) to prepare them for the introduction of broodstock northern pike in early spring, 2012.
- Initiated first stages of the "**Bass Supplemental Stocking**" project, a cooperative research venture with the University of Connecticut Department of Natural Resources and the Environment. This project will assess the feasibility of improving bass fishing in public lakes via introduction of **naïve**, aggressive bass from unfished water supply reservoirs. IFD sought cooperation from various water companies in the state during 2011 and were pleased when Aquarion Water Company, recognizing an opportunity to provide forward-thinking stewardship of the state's aquatic resources, agreed to become a cooperative partner. As a first step, bass fin clip samples were taken from **a public lake** and an Aquarion water supply reservoir during spring 2011 to identify genetic differences between fished and unfished largemouth bass populations. Plans for spring 2012 include stocking bass from an unfished population into a public lake to assess their performance (survival, growth, catchability, contribution to gene pool) and efficacy as a management tool.

Diadromous Fisheries Restoration

- Conducted the annual electrofishing surveys of stocked juvenile Atlantic salmon populations within the Farmington, Salmon, and Eightmile River watersheds. High river flows hampered the effort and only 40 sites were sampled compared to 73 sites in 2010. Only small streams were sampled. Juvenile survival in sampled streams was found to be lower than the long-term average, but growth rates were higher.
- Electrofished three coastal streams to assess survival of sea-run brown trout fry stocked earlier in the year (spring, 2011). Survival was lower in all three stream sampled when compared to survival in previous years, perhaps due to frequent high stream flow events.
- Operated the Rainbow Dam Fishway and downstream bypass from October 3rd – November 3rd. One adult salmon was observed on video in the fishway, but was not captured. The Leesville Dam Fishway was operated from September 11th – November 10th. Two adult salmon were observed downstream of the fishway, but were not captured.

A sea-run brown trout resting in the Leesville Fishway trap prior to release.



- Stocked 9,510 salmon parr from the Eisenhower National Fish Hatchery (Pittsford, VT) into the Farmington River in Farmington. It is expected that these fish will emigrate to sea during the spring of 2013.
- Stocked 24,000 sea run brown trout parr in six coastal streams. It is hoped that most of these parr will emigrate to salt water in the spring of 2012.
- Assisted the U.S. Fish & Wildlife Service (USFWS), the U.S. Forest Service, and others in fin clipping and vaccinating approximately 73,000 Atlantic salmon pre-smolts being raised in the Eisenhower National Fish Hatchery (Pittsford, VT). Approximately half of these fish will be released into the Farmington River in March of 2012.
- Fin clipped 6,000 brown trout at Quinebaug Valley Trout Hatchery prior to transfer to the Burlington State Trout Hatchery. These trout will be stocked into five sea-run trout streams during spring 2012.
- Assisted the USFWS during spawning operations at the White River National Fish Hatchery (Bethel, VT). Approximately 1.3 million eggs were taken over a two day period and transported to the Roger Reed State Fish Hatchery in Palmer, MA for incubation. The broodstock were offspring from salmon that returned to the river in previous years.

The Connecticut DEEP crew that helped spawn salmon in Vermont this fall.

- Assisted the USFWS and other member agencies of CRASC during spawning operations at the Richard Cronin National Salmon Station (Sunderland, MA). The broodstock were salmon that had returned to the Connecticut River this spring.



- Spawned Atlantic salmon broodstock at the Kensington State Fish Hatchery (Berlin). A total of 1,809,121 eggs were taken, of which 1,264,909 are being incubated at Kensington and 544,212 were shipped to Roxbury State Fish Hatchery in Roxbury, VT.
- Continued cooperative efforts with The Nature Conservancy and Aquarion Water Company to improve survival of down-running 'silver' eels at the Aspetuck Reservoir Dam. An underwater camera/video system was installed in cooperation with the Silvio O. Conte Anadromous Fish Research Center to monitor the behavior and movement of eels in the vicinity of the water intakes. In a related effort, staff worked with other programs within the Division to electrofish the Hemlock Reservoir to ascertain the number of eels living in that body of water as a means of evaluating the methods used at the Aspetuck Reservoir. Few eels were observed, indicating that the strategy at Aspetuck is valid.
- Continued to work with a variety of partners on a fish passage projects, including these dams: Tingle (Naugatuck river), Norton Mill (Jeremy River), Wood (Saugatuck River), White Rock (Pawcatuck), Pond Lily (West River), Ed Bills (East Branch Eightmile River), and a number of barrier culverts including the I-95 culvert for the Noroton River in Darien and nearly 30 culverts statewide scheduled to be modified by CT DOT.

Culverts like this may currently allow fish passage. Staff need to review plans for repairs to ensure that modified culverts are still able to pass fish.



- Construction began on the Wallace Dam Fishway (Quinnipiac River, Wallingford) by Save the Sound and the Town of Wallingford, which will own the fishway. Staff continued to provide technical support to the project. It is expected that the fishway will be operational by April of 2012.

A temporary cofferdam allows the contractor to de-water a portion of the streambed below the Wallace Dam where the entrance to the concrete fishway will be located.



- Attended the "Salmon Summit" in LaRoche, France, co-sponsored by NASCO and ICES. The purpose of the conference was for researchers to present preliminary findings of studies conducted over the past five years relating to increased mortality of Atlantic salmon in the ocean.
- Staff participated as a 'guest' in a LEAN process for the Dam Safety program of the Inland Water Resources Division. Objectives included making the permitting program more efficient and issuing permits in a more timely manner. The Inland Fisheries Division has statutory roles in the process; staff recommends certain conditions for permits, such as building a fishway, limiting the time frame for construction, and limiting the extent of lake drawdowns. The results of the LEAN process (ongoing) will not only speed up the process but improve communications between the two divisions.
- Public outreach activities including participation in the annual Teachers Orientation for the Salmon-in-the-Classroom program sponsored by the Connecticut River Salmon Association, a talk to the Essex Land Trust, and a talk to the Nutmeg Chapter of Trout Unlimited.
- Closed fishways and eel passes throughout the state for the winter.

Habitat Conservation and Enhancement

- Assisted the Connecticut Department of Transportation with the installation of habitat enhancement features within a number of watercourses following emergency repairs of bridges and/or roadways damaged by flood events associated with Tropical Storm Irene and Lee. Of note were:
 - Installation of rock vanes and bank placed boulders at three locations along the Pequabuck River in Bristol (ConnDOT project).
 - Installation of a rock weir across Lake Waramaug Brook (Warren) to backwater a roadway culvert for fish passage (ConnDOT project).
 - Excavation of a well-defined channel in Mill Brook at the Housatonic River confluence to improve the confluence as a thermal refuge for trout during the summer months (Town of Cornwall sponsored).



Perched twin culverts on Lake Waramaug (Sucker) Brook. Installation of a vortex rock weir immediately downstream of the Town Hill Road bridge increased water surface elevation, providing upstream fish passage by backflooding the culverts.



The enhanced channelization at the mouth of Mill Brook is intended to redirect and concentrate cool water inflow to improve the thermal refuge at the confluence with the Housatonic River in Cornwall.

- Reviewed the City of Bridgeport's Feasibility Study and Master Plan for the future Pleasure Beach Park. The document provides information about the natural resources associated with the peninsula, and presents a concept plan describing the potential recreational facilities and uses that could be developed while also protecting certain natural resources. Although recreational fishing was listed as a potential activity, there was no further discussion in the plan. Therefore staff recommended that additional consideration be given to fishing in the plan, particularly as to how fishing could be provided on the existing pier on the harbor side of the peninsula.
- The Town of Ashford in partnership with the Inland Fisheries Division and Yale University completed work on the Leadmine Brook Fish Passage and Restoration Project, which has been funded by the Eastern Brook Trout Joint Venture Program. Project objectives were to remove and replace existing twin culverts that blocked upstream fish passage at the Axe Factory Road Crossing with a clear span timber bridge and restore instream habitats. The project will restore upstream passage to over 2.9 miles of stream habitat for the native brook trout population.



Crossvane weir installed below bridge to create pool habitat for brook trout.

- HCE staff completed annual cross-section monitoring survey at the Mount Hope River Restoration Project, Ashford that was completed in 2006. Main survey objectives are to 1) assess channel stability within 1,200 feet of restored channel and 2) assess stability of grade control structures to redirect streamflow away from streambanks and to provide holding pools for the resident fish population. The Mount Hope River has experienced a total of 14 bankfull events or greater since project completion. Despite the unusually high frequency of flood events, stream banks and channel are stable and all pools have maintained designed scour pool depths.
- Attended a two-day Long Island Sound Seafloor Mapping Workshop. This workshop is part of the process of administering a fund dedicated to seafloor mapping that resulted from a 2004 settlement between the states of Connecticut and New York and three power companies that operate cable systems in Long Island Sound. The workshop was organized and facilitated by DEEP's Office of Long Island Sound Programs among others, and attended by government and academic research consortia interested in conducting the mapping. Staff offered advice on where to conduct a pilot project and the type of habitat mapping and products that would be useful for the review of marine infrastructure proposals and marine resource management.

CARE & Constituent Services

- Taught over 800 students about water, fish and fishing this fall. CARE Instructors held 5 Family Fishing Courses for 110 students and 9 Special Fishing events for over 700 students around the state.
- Completed another successful year by once again reaching more than 7,000 citizens through Family Ice Fishing courses, Family Fishing courses, Forster Pond courses, and Special Fishing events. Family Fishing courses, our premier and most effective course in creating new anglers, reached a milestone in 2011 by introducing 1091 new anglers to water, fish, and fishing, a 24% increase over the 5-year average of 830 students. The increase in participation can be attributed to the condensed agenda (2-meetings) that staff developed last winter in response to learning that families had interest in fishing but were too busy to attend the traditional 4-meeting Family Fishing Course. Additionally, volunteers contributed more than 4,500 hours of their time to the CARE program which, for the 26th consecutive year, easily exceeding the match needed for federal funding. This match enables the CARE program to run without directly expending state funds.
- Scheduled 10 Family Ice Fishing courses for this winter in Farmington, Glastonbury, Litchfield, New Haven, Coventry, Cheshire, Tolland, South Windsor, and Fairfield (2). In addition, we've planned two Family Ice Fishing events: our annual CARE Family Ice Fishing Derby in Coventry, and a *No Child Left Inside®* Winter Festival. CARE has secured two propane power augers through a very generous donation by **CTFISHERMAN.COM** for use during CARE winter ice fishing events.

One of two propane gas augers donated to the CARE program from CTFISHERMAN.COM.



Volunteer instructors teach how to assemble a spincast fishing rod and tie an improved clinch knot at a Family Fishing Course in Stamford in September. Over 1,000 students graduated from CARE Family Fishing Courses this fall!



The augers will save the backs of our volunteer Instructors as well as make on-ice preparation for trout stocking and fishing much more efficient. CARE Instructors have already begun establishing Family Fishing courses for spring 2012, with courses already scheduled for Glastonbury and two in Farmington!

- Completed the preproduction script writing and filming of a new “CARE Family Fishing” video. It will be used for promotion and advertizing of CARE programs. The video introduces topics covered in CARE classes and how to find and register for locally scheduled courses via the DEEP website. The video is being produced in partnership with the Corporate Media Services Department at Middlesex Community College.
- Participated in 5 outreach events: 1) Created and staffed a booth at the *National Hunting and Fishing Appreciation Day* at Sessions Woods Wildlife Management Area 2) Conducted a *Trout in the Classroom* program at Beardsley Zoo partnering with Zoo staff and Trout Unlimited 3) Participated in Career Day workshops at Ledyard High School in Ledyard 4) Created and staffed a fishing education/outreach booth and kid’s casting clinic at the Brooksville Park Fall Festival in Hamden 5) Participated in the Hammonasset Trout Unlimited *Youth Education Day* at Chatfield Hollow State Park in Killingworth.
- Closed a chapter in the history of the CARE program as Coordinator George Babey retired on September 30th. George single-handedly built the CARE program from scratch starting in 1986. He created the federal grant, wrote curriculum, established policies, then recruited and trained qualified volunteers to teach Family Fishing classes. The CARE program is now recognized nationally as one of the preeminent aquatic resources education programs in the United States! As many states struggled to recruit new anglers due to social and cultural changes, George has strived to modify and transform CARE in response to these challenges. In his 25 year career, George saw more than 150,000 students go through the CARE program and has certified 632 volunteer Instructors. **CARE staff bought him a McDonald’s gift certificate worth 12 dollars for his retirement.**

Right. George Babey on his last day of work, bonding one last time with his favorite piece of office equipment, the computer.



Left. The CARE program’s mission is to increase participation in fishing and interest in our natural resources. The core of the program that George helped build is providing an introduction to fishing by teaching people about fish and fishing. Here George is providing some tips on fish identification to a class at the CARE facility in Killingworth.

GEORGE - THANK YOU!

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