

Distribution

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WATER: Catasauqua Creek (502C) Northampton County

EXAMINED: October 01, 2009

BY: Fisheries Management Area 5

Bureau Director Action: _____ Date: _____

Division Chief Action: _____ Date: _____

CW Unit Leader Action: _____ Date: _____

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AREA COMMENTS:

Section 03 of Catasauqua Creek supported natural reproduction of brown trout. The brown trout density determined from the survey exceeded the Pennsylvania Fish and Boat Commission's minimum biomass criteria (≥ 40.00 kg/ha) for consideration as a Class A population with an estimated biomass of 94.90 kg/ha. The ability of this section to hold a substantial wild brown trout population may be influenced by the presence of a spring at the upstream limit of the section.

In addition to the wild brown trout, five catchable size hatchery trout were also caught at the site. The hatchery trout were comprised of three brown trout and two rainbow trout. Catasauqua Creek is not stocked with catchable trout by the PFBC; however, other streams within this reach of the Lehigh River are stocked by the PFBC, this may account as a possible source of these hatchery trout.

The current 25 PA Code Chapter 93 water quality standards listing of Cold Water Fishes, Migratory Fishes (CWF, MF) for the Catasauqua Creek basin does not adequately protect the existing flora and fauna present within the basin. Based on the presence of a Class A wild brown trout population the classification that best protects the aquatic flora and fauna is High Quality Cold Water Fishes, Migratory Fishes (HQ-CWF, MF). It is recommended that the water quality designation of the Catasauqua Creek basin change to HQ-CWF, MF, as it offers no real protection in this short reach of Section 03 if the water quality upstream is allowed to be degraded due to a lower designated classification.

AREA RECOMMENDATIONS:

1. Add Catasauqua Creek to the list of stream supporting natural reproduction of wild trout from the mouth upstream to the headwaters at the April 2010 Commission Meeting.
2. Officially add Section 03 of Catasauqua Creek to the list of streams sections supporting a Class A wild brown trout population at the July 2010 Commission Meeting.

3. Water quality designation for the Catasauqua Creek basin should be upgraded to High Quality Cold Water Fishes, Migratory Fishes from its current designation of Cold Water Fishes, Migratory Fishes due to the presence of a Class A wild brown trout fishery in Section 03.
4. The Habitat Management Section should conduct an onsite review of Section 03 in order to determine best methods to increase bank stability and mitigate the effects of stormwater runoff.
5. Continue assessment of Catasauqua Creek to document the extent of the wild brown trout population by 2014.

**PENNSYLVANIA FISH & BOAT COMMISSION
BUREAU OF FISHERIES
FISHERIES MANAGEMENT DIVISION**

Catasauqua Creek (502C)
Section 03
Fisheries Management Report

Prepared by
David Arnold

Fisheries Management Database Name: Catasauqua Creek
Lat/Lon: 40°38'40"/75°27'56"

Date Sampled: October 01, 2009 Date Prepared: March 15, 2010

Introduction

Catasauqua Creek is located in Northampton County and is a 12 km (7.46 mi) long tributary to the Lehigh River at River Mile (RM) 20, 40°38'40" latitude and 75°27'56" longitude. This stream has a drainage area of 41 km² (15.83 mi²) and flows southeast to its confluence with the Lehigh River. Catasauqua Creek can be found on the Catasauqua, PA United States Geological Survey 7.5 minute quadrangle.

Catasauqua Creek was surveyed as part of a statewide effort to document the presence of natural reproduction of wild trout in unsurveyed streams/stream sections (Anonymous 2009).

Methods

The examination of Catasauqua Creek was conducted on October 01, 2009. All procedures were carried out according to those outlined by Marcinko et al. (1986). One representative sampling station totaling 34 percent of the section length was sampled in Section 03.

Physical characteristics, physical-chemical values, and fish communities were examined. Rapid bioassessment protocols (RBP) were used to assess the habitat in this stream (Barbour et al. 1999). The fish communities were sampled using an electrobackpack equipped with a Coffelt Model BP-1C variable voltage electrofisher set at 50 volts AC-Alternating Current (generator w/shockbox). Wild trout were measured and recorded in 25 mm (1.0 in) length groups. Statewide average weights calculated for each length group were used to generate the biomass estimate. Wild trout were given an

identifying upper caudal fin clip during the initial electrofishing pass to facilitate a mark-recapture population estimate. Trout densities were determined using the Chapman modification of the Petersen estimator or M+C-R when R was less than three. Scientific and common fish names reference the Integrated Taxonomic Information System (<http://www.itis.gov>).

Results

Site River Mile: 0.44

Sample site RM 0.44 was located 285 meters downstream Race Street Bridge and ends 19 meters upstream from bridge at a shallow riffle; 40°38'54" latitude and 75°28'04" longitude. The 304 m long station averaged 6.4 m in width (Table 1). This portion of the stream primarily flowed through an urban city setting. Bank erosion was moderate but stabilized by shoring structures, and stream substrate consisted primarily of silt, rubble and cobble. In stream habitat was degraded by stormwater runoff as evident by excessive street litter instream and on the banks. The RBP analysis yielded a final score of 121 (Table 2).

Physical-chemical parameters and their associated values were not measures at the time of the survey.

Five fish species were collected at the site, including wild brown trout (Table 3). Species composition included fish from a cold to cool water environment. Fish common to a coldwater environment were collected in the greatest density.

Brown Trout

Two hundred eighty-four wild brown trout ranging in length from 50 mm to 449 mm total length (TL) were collected during the survey. Eighty-one (29 percent) were greater than or equal to the legal harvestable length (175 mm: 7 in). Total brown trout biomass was estimated to be 94.9 kg/ha. Brown trout abundance was estimated at 1789 brown trout/km (2880 trout/mi) with 375 trout/km (604 trout/mi) being of legal length or longer (Table 4).

Discussion

Section 03 of Catasauqua Creek supported natural reproduction of brown trout. The brown trout density determined from the survey exceeded the Pennsylvania Fish and Boat Commission's minimum biomass criteria (> 40.00 kg/ha) for consideration as a Class A population with an estimated biomass of 94.90 kg/ha. The ability of this section to hold a substantial wild brown trout population may be influenced by the presence of a spring at the upstream limit of the section.

In addition to the wild brown trout, five catchable size hatchery trout were also caught at site. The hatchery trout were comprised of three brown trout and two rainbow trout. Catasauqua Creek is not stocked with catchable trout by the PFBC; however, other streams within this reach of the Lehigh River are stocked by the PFBC, this may account as a possible source of these hatchery trout.

The current 25 PA Code Chapter 93 water quality standards listing of Cold Water Fishes, Migratory Fishes (CWF, MF) for the Catasauqua Creek basin does not adequately protect the existing flora and fauna present within the basin. Based on the presence of a Class A wild brown trout population the classification that best protects the aquatic flora and fauna is High Quality Cold Water Fishes, Migratory Fishes (HQ-CWF, MF). It is recommended that the water quality designation for the Catasauqua Creek basin change to HQ-CWF, MF, as it offers no real protection in this short reach of Section 03 if the water quality upstream is allowed to be degraded due to a lower designated classification.

Management Recommendations

1. Add Catasauqua Creek to the list of stream supporting natural reproduction of wild trout from the mouth upstream to the headwaters at the April 2010 Commission Meeting.
2. Officially add Section 03 of Catasauqua Creek to the list of streams sections supporting a Class A wild brown trout population at the July 2010 Commission Meeting.
3. Water quality designation for the Catasauqua Creek basin should be upgraded to High Quality Cold Water Fishes, Migratory Fishes from its current designation of Cold Water Fishes, Migratory Fishes due to the presence of a Class A wild brown trout fishery in Section 03.
4. The Habitat Management Section should conduct an onsite review of Section 03 in order to determine best methods to increase bank stability and mitigate the effects of stormwater runoff.
5. Continue assessment of Catasauqua Creek to document the extent of the wild brown trout population by 2014.

Anonymous, 2009, Strategic Plan for Management of Trout Fisheries in Pennsylvania 2010 - 2014, PFBC Files, 450 Robinson Lane, Bellefonte, PA.

Barbour, et al., 1999, Rapid Bioassessment Protocols in Use in Wadeable Streams and Rivers, 2nd Ed, EPA, Office of Water, 4503F, Washington, DC 20460, EPA 841-B-99-002, www.epa.gov/OWOW/monitoring/techmon.html

Marcinko, M., R. Lorson, and R. Hoopes, 1986, Procedures for stream and river inventory information input. PFBC Files, 450 Robinson Lane, Bellefonte, PA.

Table 1. Catasauqua Creek (02C), Northampton County. Site sampling location, length surveyed, average site width and site area.

Site Date	Rivermile	Downstream limit description	Length (m)	Ave. Width (m)	Site Area (ha)
10/1/2009	0.44	Station begins 285 meters downstream Race Street Bridge and ends 19 meters upstream from bridge @ shallow riffle	304	6.4	0.19

Table 2. High Gradient Rapid Bioassessment Protocol ratings Catasauqua Creek (02C), Northampton County conducted at RM 0.44 on October 01, 2009.

Habitat Parameter	Score	Habitat Parameter	Score
Epifaunal Substrate / Available Cover	13	Left Bank Stability	8
Embeddedness	7	Right Bank Stability	8
Velocity / Depth Regime	19	Left Bank Vegetative Protection	3
Sediment Deposition	10	Right Bank Vegetative Protection	3
Channel Flow Status	20	Left Bank Riparian Vegetative Width	2
Channel Alteration	8	Right Bank Riparian Vegetative Width	2
Frequency of Riffles or bends	18	Total Score	121

Table 3. Fish species occurrence Catasauqua Creek (02C), Northampton County at sample site RM 0.44 on October 01, 2009.

Common Name	Scientific Name
American Eel	<i>Anguilla rostrata</i>
Brown Trout	<i>Salmo trutta</i>
Brown Trout - Hatchery	<i>Salmo trutta</i>
Rainbow Trout - Hatchery	<i>Oncorhynchus mykiss</i>
Rock Bass	<i>Ambloplites rupestris</i>
White Sucker	<i>Catostomus commersonii</i>

Table 4. Wild Brown Trout Petersen abundance and biomass estimate collected at sample site RM 0.44 on Catasauqua Creek (502C), Northampton County collected October 01, 2009.

Size Group	Estimate	low95CI	High95CI	NumHa	KgHa	NumKm
50	2			10	0.03	7
75	193	96	422	992	6.29	635
100	157	96	270	807	11.55	516
125	29	14	68	149	3.91	95
150	49	26	100	252	11.00	161
175	72	40	144	370	24.82	237
200	21	11	47	108	10.48	69
225	6			31	4.16	20
250	7			36	6.57	23
275	3			15	3.66	10
300	1			5	1.56	3
325	2			10	3.95	7
350	1			5	2.45	3
425	1			5	4.47	3
Totals	544			2795	94.90	1789

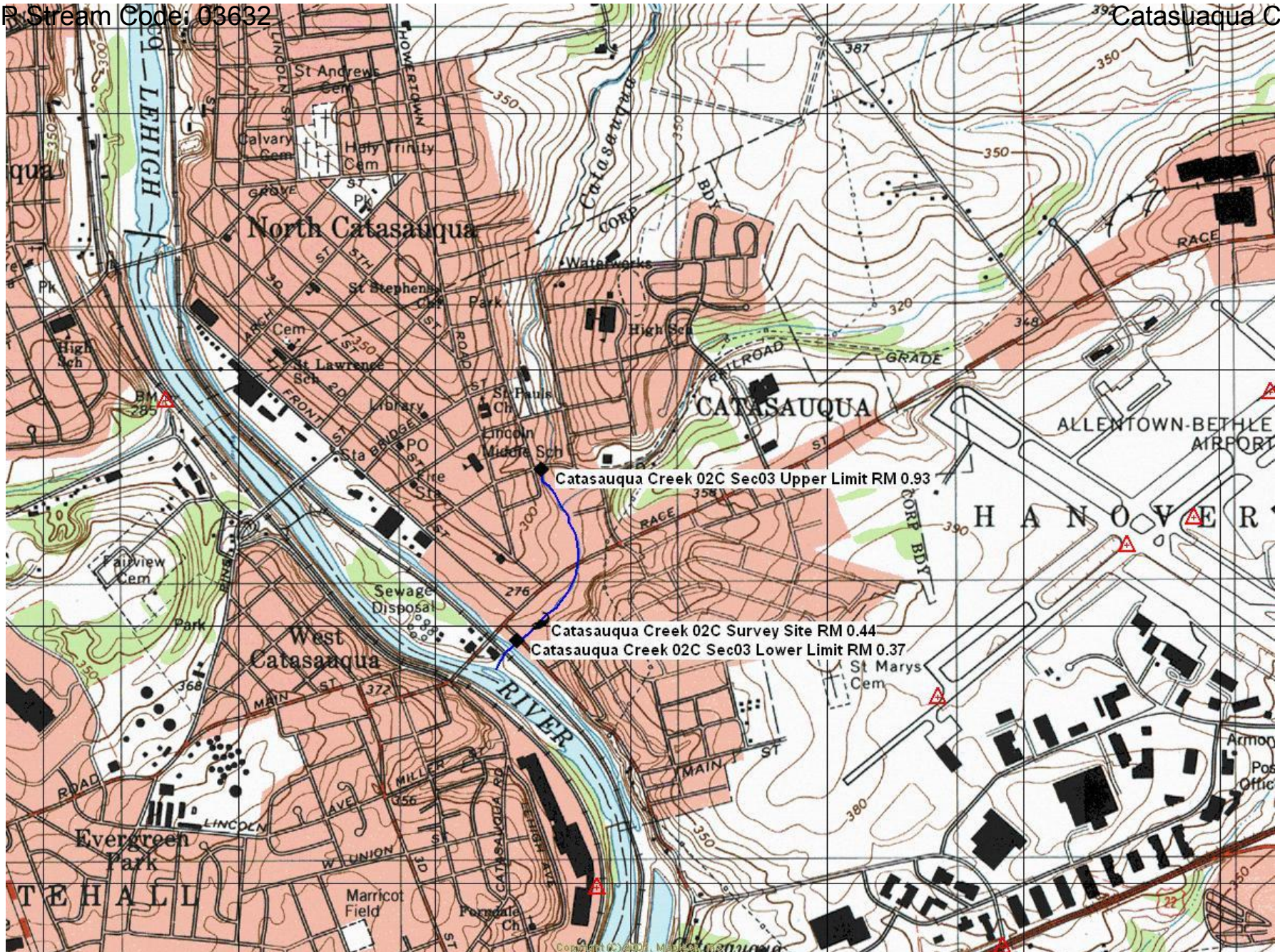


Figure 1. Location map for sample site River Mile 0.44 on Catasauqua Creek (502C), Northampton County, USGS Topographic Map - Catasauqua Quad.