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PA FISH AND BOAT COMMISSION
COMMENTS AND RECOMMENDATIONS
February 22, 2018~~January 10, 2017~~~~October 21, 2015~~

WATER: Water Tank Run (217A) Elk County

EXAMINED: July 24, 2014

BY: K. Anderson, G. Smith, G. Lech, and B. Kline

Bureau Director Action: _____ Date: _____

Division Chief Action: _____ Date: _____

CW Unit Leader Action: _____ Date: _____

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DES COMMENTS:

Water Tank Run is a small, remote, first order coldwater stream that flows through State Game Lands 25 and is located east of Daguscahonda in Benzinger Township, Elk County. During unassessed waters surveys in the Elk Creek watershed we found the stream to support a very good, allopatric wild Brook Trout population. Multiple age-classes of trout were present including a good abundance of legal-size fish. Results of the survey estimated the total biomass of wild Brook Trout was 57.27 kg/ha at site RM 0.07. The biomass met the minimum biomass criteria for listing as a Class A wild brook trout stream. Ten percent of the stream was sampled.

MANAGEMENT RECOMMENDATIONS:

1. Add Water Tank Run (17A), Section 01, from the headwaters downstream to the mouth on the PFBC's list of stream sections that support natural reproduction of trout.

2. Add Water Tank Run (17A), Section 01, (from the headwaters to the mouth) to the Commission's Class A Wild Trout Streams program.

3. Manage Water Tank Run, Section 01, as a Class A Wild Trout Stream under Commonwealth Inland Waters regulations with no stocking.

4. Request the Department of Environmental Protection designate Water Tank Run as High Quality-Cold Water Fishes and Migratory Fishes (HQ-CWF, MF) under 25 PA Code Chapter 93 based on the Class A qualifier found in 93.4b(2)(ii).

5. Encourage DEP to monitor this watershed for possible future acid deposition related impairments.

This work made possible by funding from Act 13..

PENNSYLVANIA FISH & BOAT COMMISSION
BUREAU OF FISHERIES
ENVIRONMENTAL SERVICES DIVISION

Water Tank Run (17A)
Section 01
Fisheries Management Report
Unassessed Water

Prepared by
Ken Anderson and Gary Smith

Fisheries Management Database Name: Water Tank Run
Lat/Lon: 41°25'20"/78°37'04"

Date Sampled: July 24, 2014 Date Prepared: November 14, 2014

Introduction

Water Tank Run is a small coldwater stream located in Elk County that flows south from its source in State Game Lands 25 to its confluence with Elk Creek at River Mile (RM) 8.63, 41°25'20" latitude and 78°37'04" longitude. The stream has a total length of 4.94 km (3.07 mi) and a drainage area of 5.10 km^2 (1.97 mi^2). Water Tank Run can be found on the Saint Marys, PA United States Geological Survey 7.5 minute quadrangle (Figure 1).

Water Tank Run was surveyed as part of the Unassessed Waters Program to gather baseline information on the resource for management purposes and to verify and document the presence of a reproducing population of trout. Knowledge of the presence of wild trout in streams is important in the proper permitting of land use activities and in the long-term restoration projects such as the Eastern Brook Trout Joint Venture. The majority of the watershed is forested. Approximately twenty percent of the riparian land along Water Tank Run is publically owned by the Commonwealth of Pennsylvania as part of State Game Lands 25 and most of the balance of land in the watershed is privately owned by Seneca Resources. Water Tank Run is managed as one section from the headwaters downstream to the mouth.

Methods

The examination of Water Tank Run was conducted on July 24, 2014. Procedures were carried out according to those outlined by Detar et al. (2011). One sampling station was chosen to be representative of Section 01.

Physical characteristics, water chemistry, 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 Smith-Root LR20 variable voltage electrofisher set at 300 volts Pulsed-DC (Battery Backpack). Wild trout were measured and recorded in 25 mm (1.0 inch) 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 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: 0.07

Sample site RM 0.07 was located immediately upstream of the Railroad tracks that parallel Elk Creek between Dagusgahonda and Saint Marys and extended upstream to a small forest service road culvert 41°25′23″ latitude and 78°37′04″ longitude. The 500 m long station averaged 2.79 m in width and covered 10 percent of the section length (Table 1). This portion of the stream primarily flowed through a forest. The stream banks were occupied by many alder and willows. Bank erosion was light and the stream substrate consisted primarily of stone and gravel with an adequate amount of woody debris and undercut root of trees lining the banks and providing habitat. A large beaver pond complex existed between the mouth and the railroad tracks noted above. The RBP analysis yielded a final score of 190, or within the optimal range (Table 2).

Physical-chemical parameters and their associated values measured under normal flow conditions were as follows: air temperature 24°C, water temperature 17.4°C, specific conductance 46 umhos, pH 6.2 standard units, total alkalinity 8 mg/l, and total hardness 12 mg/l (Table 3). Stream water in the basin is dilute. The low solute concentrations, particularly alkalinity at 8 mg/l, indicated that the watershed and ecosystem maybe very sensitive to acid deposition.

Three fish species were captured at the site, including wild Brook Trout *Salvelinus fontinalis.* The other species captured were Blacknose Dace *Rhinichthys atratulus* and Mottled Sculpin *Cottus bairdii* which are common community associates with Brook

Trout in coldwater streams. The water exhibited poor species composition and low relative abundance of cohort fishes (Table 4).

Brook Trout

Two hundred and sixty-two wild Brook Trout ranging from 25 mm to 299 mm in total length (TL) were captured during the survey with forty-four (17 percent) being greater than or equal to the legal harvestable length (175 mm: 7 in). Total Brook Trout biomass was estimated to be 57.27 kg/ha. Brook Trout abundance was estimated at 580 trout/km (933 trout/mi) with 98 trout/km (158 trout/mi) being of legal length or longer (Table 5).

Discussion

Water Tank Run was found to support an excellent allopatric wild Brook Trout population. Based on the presence of both young-of-the-year and multiple year classes this stream should be listed on the PFBC's list of stream sections that support natural reproduction of trout, as outlined in 58 PA Code §57.11., Listing of Wild Trout Streams. The Brook Trout biomass determined from the survey met the Pennsylvania Fish and Boat Commission's minimum biomass criteria for a Class A wild trout population, as outlined in 58 PA Code §57.8a., Class A Wild Trout Streams.

Thus, based on the wild trout biomass and sampling 10 percent of the total stream length, the stream should be managed as one section from the headwaters downstream to the mouth as a Class A wild trout stream under Commonwealth Inland Waters regulations with no stocking.

As noted above, the streams water is dilute. The low solute concentrations, particularly alkalinity at 8 mg/l, indicated that the watershed and ecosystem may be very sensitive to acid deposition.

The current 25 PA Code Chapter 93 Water Quality Standards listing of Cold Water Fishes (CWF) for the Water Tank Run basin does not adequately protect the existing flora and fauna present within the basin. The stream should be upgraded to High Quality-Cold Water Fishes and Migratory Fishes (HQ-CWF, MF) under 25 PA Code Chapter 93 based on the Class A qualifier found in 93.4b(2)(ii) and measures should be taken to assure Acid Deposition impairments do not degrade this resource.

Management Recommendations

1. Add Water Tank Run (17A), Section 01, from the headwaters downstream to the mouth on the PFBC's list of stream sections that support natural reproduction of trout.

2. Add Water Tank Run (17A), Section 01, (from the headwaters to the mouth) to the Commission's Class A Wild Trout Streams program.

3. Manage Water Tank Run, Section 01, as a Class A Wild Trout Stream under Commonwealth Inland Waters regulations with no stocking.

4. Request the Department of Environmental Protection designate Water Tank Run as High Quality-Cold Water Fishes and Migratory Fishes (HQ-CWF, MF) under 25 PA Code Chapter 93 based on the Class A qualifier found in 93.4b(2)(ii).

5. Encourage DEP to monitor this watershed for possible future acid deposition related impairments.

Literature Cited

Barbour, M.T., J. Gerritsen, B.D. Snyder, and J.B. Stribling. 1999. Rapid bioassessment protocols for use in wadeable streams and Rivers. USEPA. Report 814-99-002 Washington, DC.

Detar, J., R. Wnuk, R.T. Greene, and M. Kaufmann. 2011. Standard electrofishing protocols for sampling Pennsylvania wadeable streams. Pages 5-24 in D. Miko, editor. Sampling protocols for Pennsylvania's wadeable streams. Pennsylvania Fish and Boat Commission. Harrisburg, PA.

Table 1. Water Tank Run (17A), Elk 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)
07/24/14	0.07	Surveyed section from RR track to forest road crossing	500	2.79	0.14

Table 2. High Gradient Rapid Bioassessment Protocol ratings for Water Tank Run (17A), Elk County.

Habitat Parameter Reported	Score	Habitat Parameter Reported	Score
1. Epifaunal Substrate / Available Cover:	20	8. (LB) Left Bank Stability (LB):	9
2. Embeddedness:	18	8. (RB) Right Bank Stability (RB):	9
3. Velocity / Depth Regime:	19	9. (LB) Left Bank Vegetative Protection:	10
4. Sediment Deposition:	18	9. (RB) Right Bank Vegetative Protection:	10
5. Channel Flow Status:	19	10. (LB) Left Bank Riparian Vegetative Width:	10
6. Channel Alteration:	19	10. (RB) Right Bank Riparian Vegetative Width:	10
7. Frequency of Riffles (or bends):	19		

Total Score: 190

Entered Comments:

Many quality pools in lower reaches, connectivity to beaver pond and much overhanging vegetation made for optimal Brook Trout habitat. The low abundance of minnows may be a result of depredation by Brook Trout.

Table 3. Chemistries collected in Water Tank Run (17A), Elk County. Sample site(s) are within Section 01 in 2014 sample year.

Parameter	Site 1
Site RM	0.07
Sample Date	07/24/2014
Time (24 hour)	1430
Air Temperature	24.0
pH Field Electrometric	6.2
Specific Conductance	46
Total Alkalinity Field Mixed Indicator	8
Total Dissolved Solids	23
Total Hardness Field EDTA	12
Water Temperature	17.4

Table 4. Fish species occurrence from Water Tank Run (17A), Elk County.

Common Name	Scientific Name	Coarse Abundance
Blacknose Dace	*Rhinichthys atratulus*	Present(3-25)
Brook Trout	*Salvelinus fontinalis*	Abundant(>100)
Mottled Sculpin	*Cottus bairdii*	Common(26-100)

Table 5. Wild Brook Trout Petersen abundance and biomass estimates at sample site RM 0.07 on Water Tank Run (17A), Elk County, on July 24, 2014.

Length group (mm)	Population Estimate	Low 95% CI	High 95% CI	Estimated Number/Ha	Estimated Kg/Ha	Estimated Number/Km
25	2			14	0.01	4
50	69	50	99	495	1.22	138
75	31	18	60	222	1.32	62
100	57	40	83	409	5.60	114
125	54	38	79	387	9.46	108
150	28	17	47	201	8.25	56
175	25	16	40	179	11.45	50
200	12	6	25	86	7.96	24
225	11	4	26	79	10.32	22
275	1			7	1.68	2
Totals	290			2,079	57.27	580

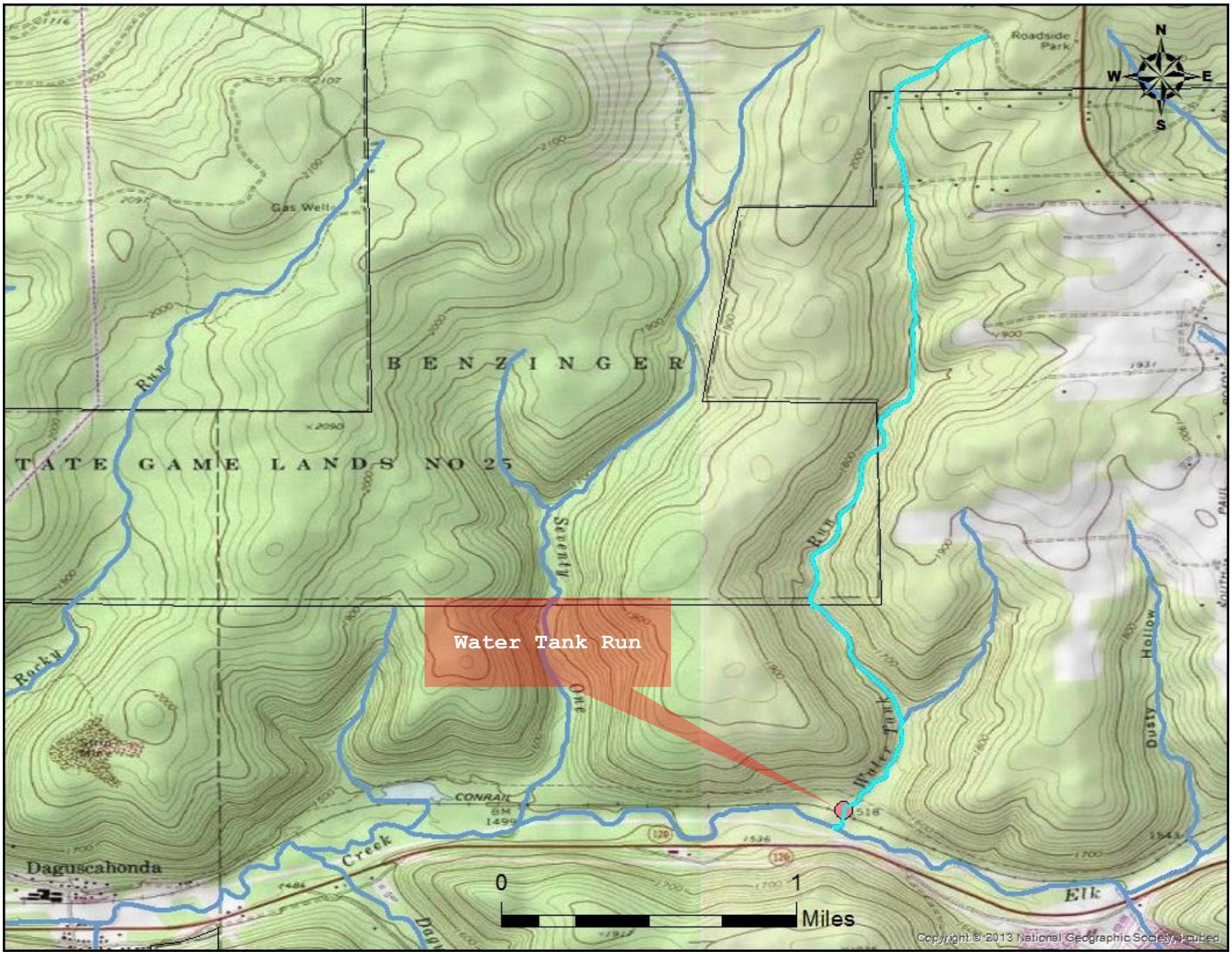

Figure 1. Location map for sample site river mile 0.07 on Water Tank Run (17A), Elk County.