

DEP Stream Code: 55194

PA FISH AND BOAT COMMISSION
COMMENTS AND RECOMMENDATIONS

July 18, 2002

DEP via ES

Logan Run

RECEIVED

WATER: Logan Run (216F)

Forest County

EXAMINED: August 15, 2001

AUG 12 2002

BY: Allen Woomer and Ron Lee

PA Fish & Boat Commission
Division of Environmental Services

Bureau Director Action: *PA Woomer* Date: *7/23/02*

Division Chief Action: *Richard A. Suter - concurs* Date: *7-18-02*

WW Unit Leader Action: _____ Date: _____

CW Unit Leader Action: *R. Thomas Greene* Date: *7/18/02*

=====
AREA COMMENTS:

Logan Run was resurveyed to assess the wild brook trout population. A Class A brook trout population was estimated with a biomass of 51.48 kg/ha.

AREA RECOMMENDATIONS:

1. Manage as a Class A wild brook trout stream under statewide regulations.
2. Recommend PA DEP upgrade Logan Run from Coldwater Fishery to High Quality Coldwater Fishery based on Class A wild brook trout population.
3. Provide a copy of this report to Brent Pence, Allegheny National Forest, Fisheries Biologist.

CWU COMMENTS:

During the 2001 survey the estimated abundance of legal size (≥ 7 inches) wild brook trout was 17/km in Section 01. Based on a section length of 1.8 miles (2.9 km) this translated into an estimated total of 49 legal size wild brook trout ranging from seven to eight inches in Logan Run, Section 01.

PENNSYLVANIA FISH AND BOAT COMMISSION
BUREAU OF FISHERIES
DIVISION OF FISHERIES MANAGEMENT

Logan Run (216F)
Management Report
Section 01

Prepared by
Allen Woomer and Ron Lee

Fisheries Management Database Name: Logan Rn
Lat/Lon: 413554/791016

Date Sampled: August 15, 2001

Date Prepared: December 2001

Abstract

Logan Run (216F) is a small headwater stream located in the Allegheny National Forest (ANF) Forest County. It flows into Tionesta Creek at River Mile (RM) 24.38 at Balltown. It has a length of 3 km, a drainage area of 8 km² and may be located on the Mayburg 7.5 minute USGS quadrangle. The basin and riparian lands are 100% publicly owned by the USDA Forest Service.

The purpose of the 2001 survey was to further evaluate the brook trout population of this small stream. A previous survey was conducted in 1999 to verify reproduction of trout and a biomass estimate of 20.40 kg/ha was obtained in a 103 m single pass (Woomer and Lee 2000). In 2001 a 294 m site was backpack electrofished by a PFBC Area Two crew led by Fisheries Technician Allen Woomer. The biomass estimate was obtained using a modified Petersen catch and release estimate. A single site (421 m upstream of the mouth at RM 0.26) was sampled in 2001 and this location matched the 1999 site (Figure 1). ANF Forest Technician Nancy Rudolph assisted with sampling and took a water sample on August 16, 2001 for laboratory analysis.

Water chemistry results from PFBC field tests (Table 1) indicate a slightly acidic pH and low levels of total alkalinity typical of most headwater streams in this region of Pennsylvania. Water levels were quite low during the survey. Table 2 lists the laboratory analysis of the ANF water sample. On the whole, water chemistry results were indicative of excellent water quality. The pH result was 7.33 compared to 6.8 obtained by PFBC field tests. Interestingly, the total phosphate result of 0.80 mg/l and total suspended solids of 101 mg/l are high for a headwaters

stream. This despite the fact the basin is remote and undeveloped. The higher fertility could account for the abundance of brook trout sampled in the stream.

Four fish species were sampled (Table 3) including brook trout. Brook trout ranged in size from 25 to 199 mm and biomass was estimated at 51.48 kg/ha (Table 4). Young of the year brook trout were abundant as were age 1+ trout. In contrast to the 1999 survey, several legal size brook trout were sampled. The estimate of 51.48 kg/ha far exceeds the 30 kg/ha threshold necessary to qualify as a Class A wild brook trout stream. It is recommended that Logan Run be managed as a Class A wild brook trout stream under statewide regulations. The current PA DEP Chapter 93 water quality standards lists Logan Run as Cold Water Fishery. This should be upgraded to High Quality Cold Water Fishery based on the excellent brook trout population present.

Woomer, A. and R. Lee. 2000. Logan Run (216F) Management Report. PFBC files, 450 Robinson Lane, Bellefonte, PA.

Table 1. Chemical-thermal analyses of Logan Run (216F) Site RM 0.26 on August 15, 2001.

| | |
|------------|------|
| Air Temp | 24 |
| Water Temp | 16.1 |
| pH | 6.8 |
| Spec Cond | 50 |
| Tot Alk | 7 |
| Tot Hard | 11 |

Table 2. Laboratory analysis report of ANF water sample for Logan Run (216F) Site RM 0.26 on August 16, 2000.

| Parameter | Result |
|-------------------------------|-----------------|
| pH | 7.33 |
| Alkalinity | 11 mg/L |
| Conductivity | 57.0 μ mhos |
| Acidity | < 1 mg/L |
| Sulfate | 21 mg/L |
| Nitrate-Nitrogen | 0.05 mg/L |
| Aluminum | 59 μ g/L |
| Iron | < 30 μ g/L |
| Tot. Dissolved Solids | 40 mg/L |
| Tot. Suspended Solids | 101 mg/L |
| Chloride | 8 mg/L |
| Calcium | 2.0 mg/L |
| Magnesium | 1.0 mg/L |
| Hardness as CaCO ₃ | 9.0 mg/L |
| Manganese | < 0.04 mg/L |
| Tot. Phosphate as P | 0.80 mg/L |
| Net Alkalinity | 11 mg/L |

Table 3. Fish species occurrence in Logan Run (216F) Site
RM 0.26 on August 15, 2001.

| Common Name | Scientific Name |
|------------------|--------------------------------|
| Brook trout | <i>Salvelinus fontinalis</i> |
| Blacknose dace | <i>Rhinichthys atratulus</i> |
| Longnose dace | <i>Rhinichthys cataractae</i> |
| Creek chub | <i>Semotilus atromaculatus</i> |
| Species Total: 4 | |

Table 4. Estimated abundance and biomass of brook trout in
Logan Run (216F) Site RM 0.26 Lat/Lon 413545/791013
on August 15, 2001.

| LENGTH GROUP (mm) | AVE. POP. EST. | LOW CI | HIGH CI | #/HA | KG/HA | #/KM |
|----------------------|-------------------|--------|---------|-------|-------|------|
| 25 | 56 | 33 | 101 | 800 | 0.80 | 190 |
| 50 | 547 | 477 | 629 | 7820 | 15.64 | 1862 |
| 75 | 31 | 19 | 51 | 437 | 2.62 | 104 |
| 100 | 66 | 48 | 95 | 949 | 13.29 | 226 |
| 125 | 25 | 14 | 48 | 353 | 8.48 | 84 |
| 150 | 11 | 4 | 26 | 150 | 6.15 | 36 |
| 175 | 5 | NA | NA | 71 | 4.50 | 17 |
| TOTALS | 741 | | | 10580 | 51.48 | 2519 |

