

DEP VIA ES

DEP Stream Code: 29706 PA FISH AND BOAT COMMISSION
COMMENTS AND RECOMMENDATIONS
August 24, 2001

Gaylord Creek

WATER: Wyalusing Creek, North Branch Basin (404D)

Susquehanna County

EXAMINED: July and August 2000

BY: Moase, Wnuk, and Hauck

Bureau Director Action: Approval - Delano R. M.

Date: 8-28-01
PA Fish & Boat Commission
Division of Environmental Services

Division Chief Action: Richard A. Snyder - concurs

Date: 8-28-01

WW Unit Leader Action: _____

Date: _____

CW Unit Leader Action: R. Thomas Greene

Date: 8/27/01

=====

CWU COMMENTS:

The Wyalusing Creek, North Branch Basin (404D), was examined during July and August to conduct a routine reinventory of Wyalusing Creek, North Branch, Sections 01-03 and Gaylord Creek, Sections 01 and 02, and to collect baseline inventory information on five tributary streams.

Wyalusing Creek, North Branch

Section 01

Section 01 can be characterized as a small freestone stream. The 2000 examination recorded the presence of eight fish species typical of a fish assemblage found in transitional streams.

Section 02

This segment can be characterized as a small freestone stream. A total of 18 fish species were captured typical of a fish assemblage found in transitional streams.

Section 03

Section 03 can be characterized as a moderate size freestone stream. Historically, this segment has been managed with the planting of Pennsylvania Fish and Boat Commission (PFBC) catchable trout. The 2000 examination (conducted at two sample sites) recorded the presence of 24 fish species, including brown trout of hatchery origin and a sparse population of smallmouth bass.

Section 01

Section 01 can be characterized as a small coldwater stream. The 2000 examination recorded the presence of 12 fish species, including an excellent Class A wild brook trout fishery estimated in excess of 35 kg/ha.

Section 02

Section 02 can be characterized as a small freestone stream. Historically, this section has been managed with the planting of PFBC catchable trout. The 2000 examination (conducted at three sample sites) recorded the presence of 22 fish species, including a sparse number of hatchery brown trout.

Tributary Streams

The five tributary streams can be characterized as small freestone streams. Electrofishing sampling conducted on Baldwin Creek and Williams Creek recorded the presence of 11 fish species typical of fish communities found on transitional streams.

CWU RECOMMENDATIONS:

1. Wyalusing Creek, North Branch (404D), Section 03 and Gaylord Creek, Section 02, should continue to be managed with the planting of PFBC catchable trout. Stocking rate and frequency should be determined by classification according to program guidelines.
2. Gaylord Creek (404D), Section 01, should be managed as a Class A wild brook trout fishery. Conventional statewide regulations should apply with no stocking.
3. Wyalusing Creek, North Branch (404D), Sections 01 and 02 and the five tributary streams should be managed as biomass Class D fisheries under the Natural Yield option. Conventional statewide regulations should apply with no stocking.
4. Due to the presence of a Class A wild brook trout fishery, the Department of Environmental Protection (DEP) Water Quality Standards should be upgraded to HQ-CWF for Gaylord Creek, Section 01. The special protected use classification should be applied to the Gaylord Creek basin from the headwaters downstream to a point located 0.9 miles upstream of SR 4017. A copy of this report should be forwarded to DEP via Environmental Services.

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

Wyalusing Creek, North Branch Basin (404D)
Fisheries Management Report

Prepared by:
Robert Wnuk, Robert Moase, and Keith Hauck

Fisheries Management Database Name: Wyalusing Ck N Br
Lat/Lon: 414725760641

Date Sampled: July/August 2000 Date Prepared: December 2000

Introduction

There is a substantial fishery resource in the 40,000+ miles of flowing water throughout Pennsylvania. To realize the potential of this resource the Pennsylvania Fish and Boat Commission (PFBC) has established a policy of resource examination and classification. The primary objectives of the examination are the documentation of the state of the fishery and the collection of social, physical, and chemical data that influence how the fishery can be utilized. Establishing relationships among these parameters allows each individual stream section to be classified and placed into a resource category. Once assignment to a resource category has been completed a management program that is consistent with statewide goals and objectives can be implemented.

The Area 4 fisheries management office has been conducting stream examinations on a drainage basin level to facilitate management by resource classification. We selected the North Branch Wyalusing Creek basin for investigation in 2000 as part of our survey of the entire Wyalusing Creek watershed. The Wyalusing Creek drainage is relatively large and the fisheries in many of its streams have never been documented. Additionally, the information we had on previously surveyed streams was fairly dated. Thus, the objectives of this examination were: 1) to collect baseline data on the fishery in those streams which had never been surveyed so that they could be assigned to a resource category and 2) to evaluate past management practices on previously surveyed streams and implement new management strategies where appropriate.

Study Area

The North Branch of Wyalusing Creek originates at the confluence of two unnamed tributaries on State Game Lands # 140. The stream flows generally south for 20 km to its confluence with Wyalusing Creek at River Mile (RM) 17.10, 41°47'25" Latitude and 76°06'41" Longitude (Figure 1). The North Branch of Wyalusing Creek drains an area of approximately 120 km² in Susquehanna and Bradford Counties. The drainage basin can be located on the Friendsville, Lawton, Le Raysville, and Little Meadows United States Geological Survey (USGS) 7.5 minute Quadrangles. Major roads that provide access to the basin include Routes 706 and 858.

The North Branch Wyalusing Creek watershed contains 7 named streams (Table 1) and numerous unnamed tributaries, wetlands, farm ponds, and small glacial lakes. The underlying geology of the area is a mixture of Devonian Age shales, siltstones, and sandstones from the Catskill and Lock Haven Formations (Woods and Omernik 1996). Land use is a mixture of Appalachian oak forest, agriculture, and single family rural residences. Additionally, some vacation home development is present along the shores of Highland Lake. State Game Lands # 140 is the only major piece of public land in the basin.

Historic Perspective

The PFBC has conducted two previous surveys in the North Branch Wyalusing Creek basin. Daniels et al. (1978a) documented that the North Branch of Wyalusing Creek supported warmwater and transitional fish communities throughout its length and recommended the removal of Section 02 from the statewide trout stocking program. The PFBC subsequently removed this section because numerous beaver dams resulted in very little, if any, flowing water. Daniels et al. (1978b) documented a Class B wild brook trout population in Section 01 of Gaylord Creek where the stream gradient was relatively high. In Section 02, where the gradient became much lower, the stream supported transitional and warmwater fish communities. Both of the above surveys were conducted as part of the statewide inventory of trout stocked waters.

Current Management Strategies

The Pennsylvania Department of Environmental Protection (DEP) classifies the entire North Branch Wyalusing Creek basin as a coldwater fishery (CWF) in its Chapter 93 water quality standards. The PFBC manages all of the basin streams as a single section extending from the headwaters downstream to the mouth with the exceptions of the North Branch of Wyalusing and Gaylord Creeks. We manage the North Branch of Wyalusing Creek as three separate sections and Gaylord Creek as two. The sectioning strategies for these streams are as follows:

North Branch of Wyalusing Creek:

Section 01: From the headwaters downstream to SR 4022
Section 02: From SR 4022 downstream to the first major tributary upstream from Gaylord Creek
Section 03: From the first major tributary upstream from Gaylord Creek downstream to the mouth

Gaylord Creek:

Section 01: From the headwaters downstream to a point located 0.9 miles upstream from SR 4017
Section 02: From a point located 0.9 miles upstream from SR 4017 downstream to the mouth

We manage Section 03 of the North Branch of Wyalusing Creek and Section 02 of Gaylord Creek for hatchery trout under the Optimum Yield 2 - Rural program with statewide angling regulations. Special remarks for Gaylord Creek prohibit stocking brood trout because of this stream's relatively small size. We manage all of the other basin streams for their natural fish populations under the natural yield program.

Methods

We examined the North Branch Wyalusing Creek basin between July 26 and August 29, 2000. All procedures of the survey were carried out according to Marcinko et al. (1986). We surveyed all of the named streams in the basin and collected physical and some social data for all stream sections. We did not evaluate parking or ownership characteristics.

We assessed physical, chemical, and biological characteristics at 13 sampling stations (Table 2). Physical characteristics were assessed visually. Chemical characteristics were assessed in the field using a mixed indicator for alkalinity, a colorimetric method for pH, and EDTA titration for hardness. Biological characteristics were assessed with backpack electrofishing gear. We used a Coffelt backpack electrofisher (Model BP 1C, alternating current) to capture fish at 6 sites and a Smith-Root backpack electrofisher (Model 12-A POW, pulsed direct current) with a single anode and a rat-tail cathode to capture fish at 4 sites. We did not electrofish at 3 of our sites because of low stream flow. We identified the fish we captured at each site to species with the exception of sculpins. Sculpins were only identified to genus because it was difficult to accurately separate mottled from slimy sculpins in the field. The scientific and common names of the fish species we captured follow Robins et al. (1991).

We classified all of the trout we captured as being of wild or hatchery origin based on species, coloration, size, and fin wear. Wild trout were measured to 25 mm length groups and given an

upper caudal fin clip while hatchery trout were noted but excluded from further analysis. At sites where we captured ≥ 30 wild trout we made a second electrofishing pass to obtain a Chapman modified Petersen population estimate (Ricker 1975). At all other sites we considered the number of wild trout captured to be the total population present. Wild trout population abundance and biomass estimates for stream sections were derived by expanding the estimated number and weight of trout at a site to number and kilograms per hectare using state average weights. We calculated angler expectation rankings for stream sections according to the procedures developed by Moase et al. (1993).

Results and Discussion

The streams of the North Branch Wyalusing Creek basin possessed low to moderate gradients and flowed through rural areas (Table 3). Chemically they were moderately fertile and possessed sufficient buffering capacity against the effects of acid precipitation. According to the criteria established by Johnson (1983), streams become vulnerable to acid precipitation when total alkalinity drops below 10 mg/l. Total alkalinity values in the North Branch Wyalusing Creek basin, however, ranged from 14 to 32 mg/l during our work (Table 4). The basin's fertility resulted from its underlying geology in combination with agricultural and other human activities.

We documented the presence of 31 fish species in the North Branch Wyalusing Creek basin (Table 5). Blacknose dace were the most common fish we encountered as we captured this species at all 10 sites we electrofished (Table 6). The next most common species were cutlips minnows, white suckers, and sculpins (9 sites each). The gamefish species we captured were brook trout (2 sites), brown trout (3 sites), chain pickerel (3 sites), smallmouth bass (1 site), and largemouth bass (3 sites). Wild brook trout were abundant enough at RM 8.02 of Gaylord Creek to conduct a population estimate (Table 7).

Historically we had documented the presence of 33 fish species in the North Branch Wyalusing Creek basin. Those species present historically but absent during the 2000 work were rainbow trout, common carp, spotfin shiners, shorthead redhorse, green sunfish, and shield darters. Additionally, although fallfish were present in 2000, it appeared that they had decreased in abundance. Daniels et al. (1978a) captured fallfish at 4 of their 5 electrofishing sites on the North Branch of Wyalusing Creek, and Daniels et al. (1978b) captured fallfish at 3 of their 4 electrofishing sites on Gaylord Creek. We captured fallfish at 1 of our 4 electrofishing sites on the North Branch of Wyalusing Creek and they were absent from all 4 of our electrofishing sites on Gaylord Creek. Wnuk et al. (2000a, 2000b) documented a similar pattern of fallfish decline in the Sugar Creek and East Branch Wyalusing Creek basins, and anecdotal evidence from recent basin surveys throughout the Area 4 fisheries management region

suggested that fallfish were declining from most of our larger warmwater streams.

Those fish species present in the North Branch Wyalusing Creek basin during the 2000 work but not documented historically were swallowtail shiners, largemouth bass, greenside darters, and banded darters. The largemouth bass we captured in 2000 had escaped from local ponds while the presence of swallowtail shiners, greenside darters, and banded darters in the North Branch Wyalusing Creek basin probably represented a range expansion for these species.

Water quality and fish species occurrence varied among the North Branch Wyalusing Creek basin streams. We will next discuss specific findings for each stream and section individually, as the PFBC currently manages on a stream/section basis. This approach will facilitate presenting the resource classifications (Table 8) needed to generate management plans (PFBC 1987).

North Branch of Wyalusing Creek

We divided the North Branch of Wyalusing Creek into three sections for fisheries management purposes. These sections are described below.

Section 01

Section 01 of the North Branch of Wyalusing Creek extended 7.2 km from the headwaters downstream to SR 4022. Access to the section was excellent as 100% of its length was within 300 m of a road.

We sampled at a single station in Section 01 that was approximately the same station as that sampled by Daniels et al. (1978a). Total alkalinity at RM 10.50 was 28 mg/l and pH was 7.0. Daniels et al. (1978a) documented a total alkalinity of 18 mg/l and a pH of 6.8 at this site.

We captured 8 species at RM 10.50 but the gamefish community was limited to a single chain pickerel. Daniels et al. (1978a) captured 11 species at this station including 20 chain pickerel ranging from 100 to 249 mm. Those species present in 1978 but absent in 2000 were cutlips minnows, longnose dace, creek chubs, creek chubsuckers, and sculpins. Those species present in 2000 but absent in 1978 were brown bullheads and bluegills.

Section 02

Section 02 of the North Branch of Wyalusing Creek extended 7.5 km from SR 4022 downstream to the first major tributary upstream from Gaylord Creek. Access to the section was very good as 80% of its length was within 300 m of a road.

We sampled at a single station in Section 02 that was approximately the same station as that sampled by Daniels et al. (1978a). Daniels et al. (1978a) also sampled at RM 4.60 in Section 02 but we were unable to sample here because of on-going bridge repairs and because beavers had dammed the stream in this area. Total alkalinity at RM 8.40 was 22 mg/l and pH was 7.6. Daniels et al. (1978a) documented a total alkalinity of 18 mg/l and a pH of 7.2 at this site.

We captured 18 species at RM 8.40 but the gamefish community was limited to a single chain pickerel measuring between 150 and 174 mm and a single largemouth bass measuring between 50 and 74 mm. Daniels et al. (1978a) captured 15 species at this station including 23 chain pickerel ranging from 125 to 299 mm and a single hatchery rainbow trout measuring between 300 and 324 mm. Those species present in 1978 but absent in 2000 were rainbow trout, rosyface shiners, fallfish, and margined madtoms. Those species present in 2000 but absent in 1978 were spottail shiners, creek chubsuckers, rock bass, pumpkinseeds, bluegills, largemouth bass, and greenside darters.

Chain pickerel were much less numerous in Sections 01 and 02 of the North Branch of Wyalusing Creek during the 2000 survey than in the 1978 survey. Daniels et al. (1978a) captured a total of 43 chain pickerel in the two sections for a catch rate of 72.0/hr, while we captured a total of 2 chain pickerel in the two sections for a catch rate of 3.4/hr. We were unable to explain the low chain pickerel population density in 2000. Physically, much of Sections 01 and 02 seemed to provide suitable habitat for this species as gradient was low and numerous beaver dams were present.

Section 03

Section 03 of the North Branch of Wyalusing Creek extended 5.6 km from the first major tributary upstream from Gaylord Creek downstream to the mouth. Access to the section was very good as 80% of its length was within 300 m of a road.

We sampled at two stations (RM 1.70 and RM 0.50) in Section 03. These stations were approximately the same as those sampled by Daniels et al. (1978a). Total alkalinity at our stations ranged from 30 to 32 mg/l and pH was 7.1. Our total alkalinity values were higher than those documented by Daniels et al. (1978a) but our pH values were lower.

We captured a total of 24 species in Section 03 and the gamefish community consisted of hatchery brown trout, smallmouth bass, chain pickerel, and largemouth bass. We collected 12 hatchery brown trout ranging from 225 to 524 mm and 5 smallmouth bass ranging from 125 to 249 mm. We did not measure or enumerate the chain pickerel and largemouth bass. Daniels et al. (1978a) captured a total of 23 species in Section 03 including a single

hatchery brown trout measuring between 225 and 249 mm and 36 smallmouth bass ranging from 50 to 199 mm. Those species present in 1978 but absent in 2000 were spotfin shiners, spottail shiners, redbreast sunfish, and shield darters. Those species present in 2000 but absent in 1978 were chain pickerel, swallowtail shiners, largemouth bass, greenside darters, and banded darters.

As was the case with chain pickerel in Sections 01 and 02, we were unable to explain the population decline of smallmouth bass in Section 03. The 2000 smallmouth bass catch rate in Section 03 was 7.4/hr while the 1978 catch rate was 45.0/hr. One potential reason for the lower catch in 2000 was that we only electrofished for 310 m in the section while Daniels et al. (1978a) electrofished for 700 m. Nevertheless, we electrofished through several areas of suitable habitat without finding many bass.

Lee Creek

Lee Creek is a 5.8 km long, moderate gradient tributary to the North Branch of Wyalusing Creek. Lee Creek originates from wetlands in Apolacon Township and flows generally southwest. Land use in the drainage is a mixture of agriculture and woodlots. Access to Lee Creek is very good as 76% of its length is within 300 m of a road.

We sampled at a single station on Lee Creek. Total alkalinity at RM 2.13 was 21 mg/l and pH was 6.6. We did not electrofish at RM 2.13 because of low stream flow.

Baldwin Creek

Baldwin Creek is an 8.1 km long, moderate gradient tributary to the North Branch of Wyalusing Creek. Baldwin Creek originates from the outlet of an unnamed pond within the corporate boundary of Friendsville and flows generally southwest. Land use in the drainage is a mixture of agriculture and woodlots. Access to Baldwin Creek is good as 66% of its length is within 300 m of a road.

We sampled at two stations (RM 4.78 and RM 0.18) on Baldwin Creek. Total alkalinity at our stations ranged from 22 to 24 mg/l and pH ranged from 6.8 to 7.2. We did not electrofish at RM 4.78 because of low stream flow. We electrofished for 170 m at RM 0.18 and captured 9 fish species. The gamefish community here was limited to 4 wild brook trout ranging from 75 to 124 mm. Curiously, all four of these trout were captured in the same area of the station.

Summers Creek

Summers Creek is a 6.9 km long, moderate gradient tributary to the North Branch of Wyalusing Creek. Summers Creek originates at

the confluence of two unnamed tributaries in Middletown Township and flows generally south. Land use in the drainage is a mixture of agriculture and woodlots. Access to Summers Creek is good as 60% of its length is within 300 m of a road.

Summers Creek was completely dry when we examined it in August 2000.

Gaylord Creek

Gaylord Creek is an 17.7 km long tributary to the North Branch of Wyalusing Creek. Gaylord Creek originates from the outlet of Carmault Lake and flows generally south. Land use in the drainage is a mixture of agriculture and woodlots. Additionally, a portion of State Game Lands # 140 is contained within the Gaylord Creek basin. There are two named tributaries to Gaylord Creek: Southwick Creek and Williams Creek. We divided Gaylord Creek into two separate sections for fisheries management purposes. These sections are described below.

Section 01

Section 01 of Gaylord Creek extended 6.9 km from the headwaters downstream to a point located 0.9 miles upstream from SR 4017. Access to the section was fair as 36% of its length was within 300 m of a road.

We sampled at a single station in Section 01. Our station was located at RM 8.02 while Daniels et al. (1978b) sampled at RM 9.10 and RM 7.80 in the section. Total alkalinity at RM 8.02 was 18 mg/l and pH was 7.0. These values were similar to those documented by Daniels et al. (1978b) at RM 7.80.

We captured 12 species at RM 8.02 and the gamefish community consisted of wild brook trout and some largemouth bass that had escaped from local ponds. We captured a total of 161 wild brook trout in 300 m of electrofishing. Wild brook trout biomass was 35.09 kg/ha (Class A) with fish ranging from 50 to 299 mm (Figure 2). The angler expectation rating was excellent. Daniels et al. (1978b) did not electrofish at RM 9.10. At RM 7.80 they documented 25.89 kg/ha (Class B) of wild brook trout.

Section 02

Section 02 of Gaylord Creek extended 10.8 km from a point located 0.9 miles upstream from SR 4017 downstream to the mouth. Access to the section was very good as 84% of its length was within 300 m of a road.

We sampled at three stations (RM 5.10, RM 3.40, and RM 0.40) in Section 02. These stations were approximately the same as those sampled by Daniels et al. (1978b). Total alkalinity at our stations ranged from 22 to 29 mg/l and pH ranged from 7.0 to 7.2.

These values were similar to those documented by Daniels et al. (1978b).

We captured a total of 22 species in Section 02 but the gamefish community was limited to 4 hatchery brown trout ranging from 225 to 324 mm. Daniels et al. (1978b) captured 23 species in the section including a single hatchery brook trout, a single chain pickerel, and 3 smallmouth bass. The hatchery brook trout measured between 225 and 249 mm, the chain pickerel measured between 275 and 299 mm, and the smallmouth bass ranged from 25 to 174 mm. Those species present in 1978 but absent in 2000 were brook trout, chain pickerel, fallfish, shorthead redhorse, smallmouth bass, and shield darters. Those species present in 2000 but absent in 1978 were brown trout, swallowtail shiners, rosyface shiners, pumpkinseeds, and greenside darters.

Southwick Creek

Southwick Creek is a 4.6 km long, moderate gradient tributary to Gaylord Creek. Southwick Creek originates from the outlet of Highland Lake and flows generally southeast. Land use in the drainage is a mixture of agriculture, woodlots, and vacation home development. Access to the Southwick Creek is excellent as 100% of its length is within 300 m of a road.

We sampled at a single station on Southwick Creek. Total alkalinity at RM 1.56 was 14 mg/l and pH was 7.0. We did not electrofish at this station because of low stream flow.

Williams Creek

Williams Creek is a 4.0 km long, moderate gradient tributary to Gaylord Creek. Williams Creek originates at the confluence of two unnamed tributaries in Pike Township and flows generally east. Land use in the drainage is a mixture of agriculture and woodlots. Access to Williams Creek is good as 54% of its length is within 300 m of a road.

We sampled at a single station on Williams Creek. Total alkalinity at RM 0.73 was 17 mg/l and pH was 7.0. We captured 5 species in 150 m of electrofishing at this station but gamefish were absent.

Summary

Section 01 of Gaylord Creek was the only stream in the North Branch Wyalusing Creek basin that was able to support a substantial recreational fishery based on its natural fish population. The remaining streams in the basin were generally too warm to support wild trout and, with the exception of Section 03 of the North Branch of Wyalusing Creek, did not possess suitable habitat for smallmouth bass. Our trout stocking programs in Section 02 of Gaylord Creek and Section 03 of the North Branch of

DEP Stream Code: 29706

Gaylord Creek

Wyalusing Creek were the best means to provide recreational angling opportunities in the basin. The other basin streams were unsuitable for trout stocking and should continue to be managed under the natural yield program. The current DEP classifications in the basin provided adequate water quality protection for its streams except for Section 01 of Gaylord Creek. This section should be upgraded to high quality coldwater fishery because it supported a Class A wild brook trout population.

MANAGEMENT RECOMMENDATIONS

1. The Pennsylvania Fish and Boat Commission should continue to stock adult trout in Section 02 of Gaylord Creek and Section 03 of the North Branch of Wyalusing Creek under the Optimum Yield 2 - Rural program. Stocking rates should be determined according to program guidelines.
2. The Pennsylvania Fish and Boat Commission should manage Section 01 of Gaylord Creek with conventional, statewide angling regulations under the wild trout waters option. This section supported a Class A wild brook trout population.
3. The Pennsylvania Department of Environmental Protection should upgrade the Chapter 93 water quality classification of Section 01 of Gaylord Creek from coldwater fishery to high quality coldwater fishery.
4. The Pennsylvania Fish and Boat Commission should continue to manage Sections 01 and 02 of the North Branch of Wyalusing Creek, Lee Creek, Baldwin Creek, Summers Creek, Southwick Creek, and Williams Creek for their natural fish populations under statewide angling regulations.

LITERATURE CITED

- Daniels, D., R. Moase, and M. Kaufmann. 1978a. North Branch Wyalusing Creek stream examination report. Pennsylvania Fish and Boat Commission files, 450 Robinson Lane, Bellefonte, PA.
- Daniels, D., R. Moase, M. Kaufmann, and R. Roberts. 1978b. Gaylord Creek (404D) management report. Pennsylvania Fish and Boat Commission files, 450 Robinson Lane, Bellefonte, PA.
- Johnson, F.W. 1983. Trends of alkalinity and pH in Pennsylvania's low order stocked mountain trout streams, and potential economic implications. Pennsylvania Fish and Boat Commission files, 450 Robinson Lane, Bellefonte, PA.
- Marcinko, M., R. Lorson, and R. Hoopes. 1986. Procedures for stream and river inventory information input. Pennsylvania Fish and Boat Commission files, 450 Robinson Lane, Bellefonte, PA.
- Moase, R.E., T. Copeland, and T. Gensel. 1993. Spring Brook basin (405A) management report. Pennsylvania Fish and Boat Commission files, 450 Robinson Lane, Bellefonte, PA.
- Pennsylvania Fish and Boat Commission. 1987. Management of trout fisheries in Pennsylvania waters 2nd edition - May 1987. Pennsylvania Fish and Boat Commission files, 450 Robinson Lane, Bellefonte, PA.
- Ricker, W.E. 1975. Computation and interpretation of biological statistics of fish populations. Fisheries Research Board of Canada Bulletin 191.
- Robins, C.R., R.M. Bailey, C.E. Bond, J.R. Brooker, E.A. Lachner, R.W. Lea, and W.B. Scott. 1991. A list of common and scientific names of fishes from the United States and Canada, 5th edition. American Fisheries Society Special Publication # 20. Bethesda, MD.
- Wnuk, R., R. Moase, and K. Hauck. 2000a. Sugar Creek basin fisheries management report. Pennsylvania Fish and Boat Commission files, 450 Robinson Lane, Bellefonte, PA.
- Wnuk, R., R. Moase, and K. Hauck. 2000b. East Branch Wyalusing Creek basin fisheries management report. Pennsylvania Fish and Boat Commission files, 450 Robinson Lane, Bellefonte, PA.
- Woods, A.J., and J.M. Omernik. 1996. Ecoregions of Pennsylvania. The Pennsylvania Geographer. Volume XXXIV, No. 2, Fall/Winter 1996.

Table 1. Named streams of the North Branch Wyalusing Creek basin
(404D) listed in hierarchical order.

North Branch Wyalusing Creek Section 01
 Lee Creek
 Baldwin Creek
North Branch Wyalusing Creek Section 02
 Summers Creek
North Branch Wyalusing Creek Section 03
 Gaylord Creek Section 01
 Gaylord Creek Section 02
 Southwick Creek
 Williams Creek

Table 2. Station number, river mile, downstream limit, length electrofished, and voltage for stations sampled during 2000 in the North Branch Wyalusing Creek basin (404D).

Stream	Station Number	River Mile	Downstream Limit	Length (m)	Voltage
North Branch Wyalusing Creek	0101	10.50	T-623	150	200 AC
	0201	8.40	360 m dnst Middletown Center bridge	300	200 AC
	0301	1.70	Confluence Gaylord Creek	160	150 AC
	0302	0.50	Gravel pit	150	150 AC
Lee Creek	0101	2.13	First bridge upstream from mouth	NA	NA
Baldwin Creek	0101	4.78	SR 4014	NA	NA
	0102	0.18	Middletown Township Park	170	200 DC
Gaylord Creek	0101	8.02	T-612 (Argus Jones Road)	300	200 AC
	0201	5.10	300 m downstream from T-399	150	150 AC
	0202	3.40	150 m downstream from T-541	150	200 AC
	0203	0.40	SR 858	150	250 AC
Southwick Creek	0101	1.56	Third bridge upstream from mouth	NA	NA
Williams Creek	0101	0.73	First bridge upstream from mouth	150	200 DC

NA = Not Available.

Table 3. Physical and social data for stream sections in the North Branch Wyalusing Creek basin (404D).

Stream (Section)	Length (km)	Width (m)	Gradient (m/km)	USGS Quadrangle(s)	Road Access			1990 Human Population Density (# Persons/km ²)
					% of Section Within:			
					100 m	300 m	500 m	
North Br Wyalusing Creek (01)	7.2	3.0	10.3	C37	53	100	100	6
North Br Wyalusing Creek (02)	7.5	6.1	2.5	C37, D37	26	80	100	9
North Br Wyalusing Creek (03)	5.6	9.3	3.3	D37	48	80	100	9
Lee Creek (01)	5.8	NA	36.3	C37	27	76	93	7
Baldwin Creek (01)	8.1	3.4	17.8	C37	27	66	92	6
Summers Creek (01)	6.9	NA	16.3	C37, D37	23	60	89	5
Gaylord Creek (01)	6.9	3.2	23.4	C36, C37	7	36	47	9
Gaylord Creek (02)	10.8	6.2	6.9	C36, D36, D37	50	84	100	13
Southwick Creek (01)	4.6	NA	36.1	C36	56	100	100	11
Williams Creek (01)	4.0	2.2	23.1	D36	19	54	91	13

USGS Quadrangles: C36 = Little Meadows; C37 = Friendsville; D36 = Le Raysville; D37 = Lawton.

NA = Not Available.

Table 4. Physical-chemical data collected at sampling stations in the North Branch Wyalusing Creek basin (404D) during 2000.

Stream	River Mile	Date	Time	Air Temp. °C	Water Temp. °C	pH	Total Alkalinity (mg/l)	Total Hardness (mg/l)	Specific Conductance (umhos)
North Branch Wyalusing Creek	10.50	8/29	1245	24.0	21.3	7.0	28	28	104
	8.40	8/29	1120	25.0	20.1	7.6	22	27	96
	1.70	8/14	1050	23.0	18.8	7.1	30	46	121
	0.50	8/11	1020	22.0	19.6	7.1	32	40	118
Lee Creek	2.13	8/29	1355	25.0	15.9	6.6	21	30	68
Baldwin Creek	4.78	8/29	1410	26.0	18.5	6.8	22	28	81
	0.18	8/29	1450	26.0	20.0	7.2	24	24	91
Gaylord Creek	8.02	7/27	1030	22.0	16.7	7.0	18	22	61
	5.10	7/27	1230	25.0	19.4	7.0	22	32	89
	3.40	7/27	1320	27.0	20.2	7.2	25	34	88
	0.40	7/27	1400	28.0	18.2	7.2	29	35	93
Southwick Creek	1.56	7/26	1445	24.0	15.4	7.0	14	26	86
Williams Creek	0.73	7/26	1345	24.0	17.2	7.0	17	26	68

Table 5. Scientific and common names of fish species captured in the North Branch Wyalusing Creek basin (404D) during the 2000 and historic surveys.

Scientific name	Common name	2000	Historic
<i>Oncorhynchus mykiss</i>	Rainbow trout		X
<i>Salvelinus fontinalis</i>	Brook trout	X	X
<i>Salmo trutta</i>	Brown trout	X	X
<i>Esox niger</i>	Chain pickerel	X	X
<i>Campostoma anomalum</i>	Central stoneroller	X	X
<i>Clinostomus elongatus</i>	Redside dace	X	X
<i>Cyprinus carpio</i>	Common carp		X
<i>Exoglossum maxillingua</i>	Cutlips minnow	X	X
<i>Luxilus cornutus</i>	Common shiner	X	X
<i>Notropis hudsonius</i>	Spottail shiner	X	X
<i>Notropis procne</i>	Swallowtail shiner	X	
<i>Notropis rubellus</i>	Rosyface shiner	X	X
<i>Cyprinella spiloptera</i>	Spotfin shiner		X
<i>Pimephales notatus</i>	Bluntnose minnow	X	X
<i>Rhinichthys atratulus</i>	Blacknose dace	X	X
<i>Rhinichthys cataractae</i>	Longnose dace	X	X
<i>Semotilus atromaculatus</i>	Creek chub	X	X
<i>Semotilus corporalis</i>	Fallfish	X	X
<i>Nocomis micropogon</i>	River chub	X	X
<i>Catostomus commersoni</i>	White sucker	X	X
<i>Erimyzon oblongus</i>	Creek chubsucker	X	X
<i>Hypentelium nigricans</i>	Northern hog sucker	X	X
<i>Moxostoma macrolepidotum</i>	Shorthead redhorse		X
<i>Ameiurus nebulosus</i>	Brown bullhead	X	X
<i>Noturus insignis</i>	Margined madtom	X	X
<i>Ambloplites rupestris</i>	Rock bass	X	X
<i>Lepomis auritus</i>	Redbreast sunfish	X	X
<i>Lepomis cyanellus</i>	Green sunfish		X
<i>Lepomis gibbosus</i>	Pumpkinseed	X	X
<i>Lepomis macrochirus</i>	Bluegill	X	X
<i>Micropterus dolomieu</i>	Smallmouth bass	X	X
<i>Micropterus salmoides</i>	Largemouth bass	X	
<i>Etheostoma olmstedii</i>	Tessellated darter	X	X
<i>Etheostoma blennioides</i>	Greenside darter	X	
<i>Etheostoma zonale</i>	Banded darter	X	
<i>Percina peltata</i>	Shield darter		X
<i>Cottus spp.</i>	Sculpins	X	X

Total Species: 31 33

Table 6. Fish species captured at electrofishing sites in the North Branch Wyalusing Creek basin (404D) during 2000.

Common name	North Branch Wyalusing Creek				Baldwin Creek		Gaylord Creek				Williams Creek	Total Sites
	RM 10.50	RM 8.40	RM 1.70	RM 0.50	RM 0.18		RM 8.02	RM 5.10	RM 3.40	RM 0.40	RM 0.73	
Brook trout					X		X					2
Brown trout			X					X		X		3
Chain pickerel	X	X	X									3
Central stoneroller		X	X	X	X		X	X	X	X		8
Redside dace								X				2
Cutlips minnow		X	X	X			X	X	X	X	X	9
Common shiner		X	X	X			X	X	X	X		8
Spottail shiner		X						X	X			3
Swallowtail shiner				X				X	X			3
Rosyface shiner			X	X					X			3
Bluntnose minnow									X			1
Blacknose dace	X	X	X	X	X		X	X	X	X	X	10
Longnose dace		X	X	X	X		X	X	X	X		7
Creek chub		X		X	X		X		X	X	X	7
Fallfish			X									1
River chub			X	X					X	X		4
White sucker	X	X	X	X		X	X	X	X	X		9
Creek chubsucker		X										1
Northern hog sucker		X		X				X				3
Brown bullhead	X											1
Margined madtom	X		X	X				X	X	X		6
Rock bass		X	X					X	X			4
Redbreast sunfish												1
Pumpkinseed	X	X	X				X	X	X	X	X	8
Bluegill	X	X	X				X					4
Smallmouth bass			X	X								1
Largemouth bass		X	X									3
Tessellated darter	X	X	X	X	X			X	X	X		8
Greenside darter		X	X	X	X					X		5
Banded darter			X	X	X							2
Sculpins		X	X	X	X	X	X	X	X	X	X	9
Total Species:	8	18	21	16	9		12	15	19	14	5	

RM = River Mile.

Table 7. Estimated population abundance and biomass of wild brook trout captured at River Mile 8.02 of Gaylord Creek (404D) in July 2000.

Length Group (mm)	Population Estimate	Number Per Kilometer	Number Per Hectare	Kilograms Per Hectare
0 - 174	209	695	2,319	15.24
175 - 299	13	43	144	19.85
Totals	222	738	2,463	35.09

Table 8. Pennsylvania Fish and Boat Commission (PFBC) and current Pennsylvania Department of Environmental Protection (DEP) classifications, recommended DEP classification upgrades, and recommended PFBC management programs for stream sections in the East Branch Wyalusing Creek basin (404D).

Stream (Section)	Classification		Recommended DEP Upgrade	Recommended PFBC Management Program
	PFBC	DEP		
North Branch Wyalusing Creek (01)	D R4	CWF	None	Natural Yield
North Branch Wyalusing Creek (02)	D R3	CWF	None	Natural Yield
North Branch Wyalusing Creek (03)	DGR3	CWF	None	Optimum Yield 2 - Rural
Lee Creek (01)	D R	CWF	None	Natural Yield
Baldwin Creek (01)	D R4	CWF	None	Natural Yield
Summers Creek (01)	D R	CWF	None	Natural Yield
Gaylord Creek (01)	A R4	CWF	HQ-CWF	Wild Trout Waters
Gaylord Creek (02)	DGR3	CWF	None	Optimum Yield 2 - Rural
Southwick Creek (01)	D R	CWF	None	Natural Yield
Williams Creek (01)	D R4	CWF	None	Natural Yield

CWF = Coldwater Fishery; HQ-CWF = High Quality Coldwater Fishery.

DEP Stream Code: 29706

Figure 1. North Branch Wyalusing Creek Basin (404D). Gaylord Creek

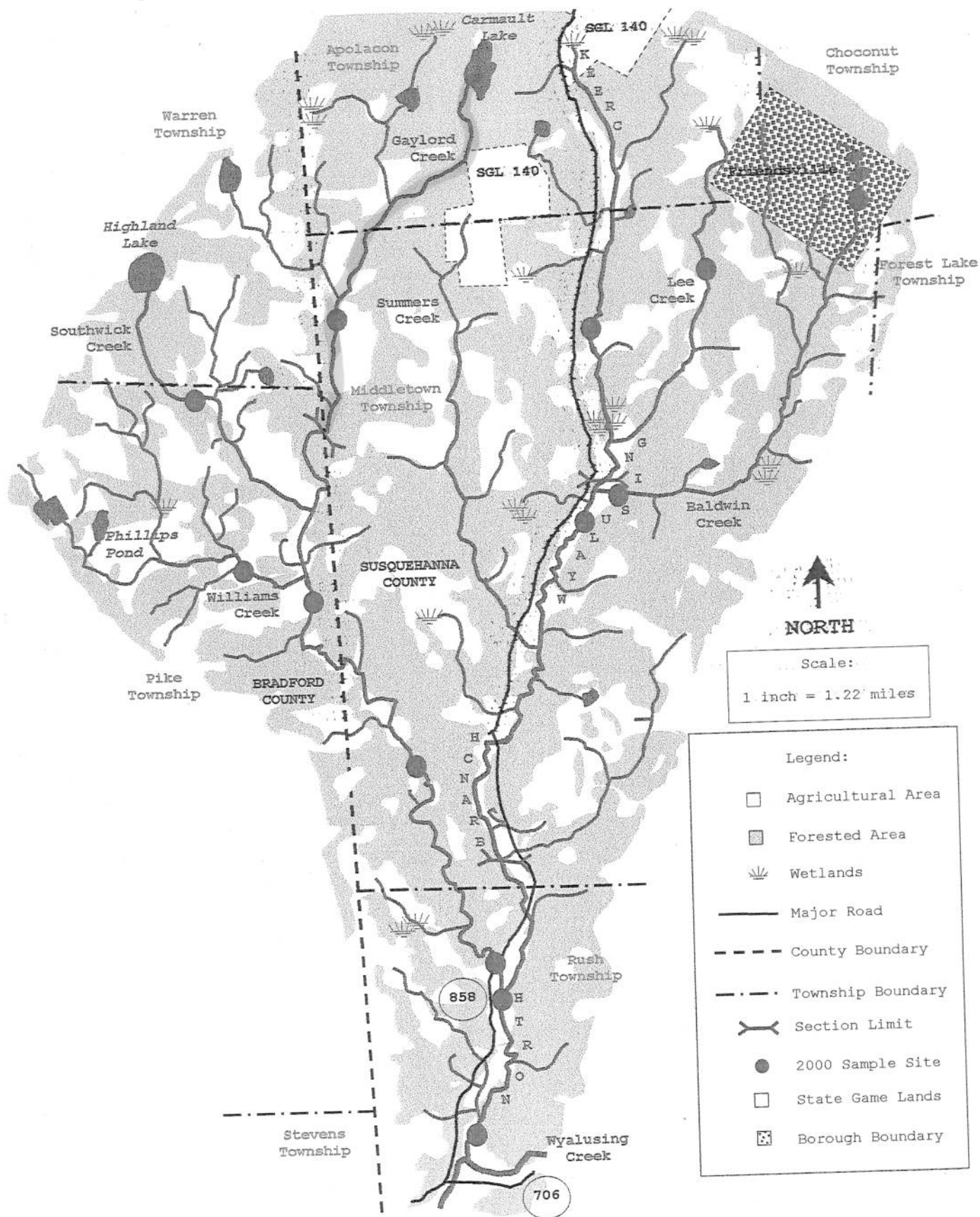


Figure 2. Length-frequency distribution of wild brook trout captured at RM 8.02 of Gaylord Creek in July 2000.

