

DEP Stream Code: 23210 PA FISH AND BOAT COMMISSION Laurel Run (Port Matilda)  
COMMENTS AND RECOMMENDATIONS  
April 13, 2000

WATER: Laurel Run (309C) Centre County

EXAMINED: August 1999

BY: Dave Kristine and Bruce Hollender

Bureau Director Action: Approved - Deborah R. Fryff Date: 4-14-00

Division Chief Action: Richard A. Snyder Date: 4-14-00

WW Unit Leader Action: \_\_\_\_\_ Date: \_\_\_\_\_

CW Unit Leader Action: R. Thomas Greene Date: 4/13/00

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**CWU COMMENTS:**

Laurel Run (309C), Section 02, was examined during August 1999 as part of a follow-up inventory to confirm the status of the wild trout fishery.

Section 02 can be characterized as a small coldwater stream. The 1999 examination (conducted at three sample sites) recorded the presence of 14 fish species, including a biomass Class B wild brown trout fishery estimated in excess of 20 kg/ha.

**CWU RECOMMENDATIONS:**

1. Laurel Run (309C), Section 02, should continue to be managed with the planting of PFBC catchable size brook trout. Stocking rate and frequency should be determined by classification according to program guidelines.
2. I concur with the Area 3 recommendations stating that Laurel Run should be resectioned. This will provide for better management of the resource, as the dense wild trout population identified at site River Mile 3.80 will be included as part of Section 01 and managed for wild trout. The revised Section 02 will extend from Black Oak Church (RM 3.24) downstream to the mouth. This sparsely populated section of stream will continue to be managed with the planting of catchable trout. The Area 3 staff should submit these changes to the Fisheries Management database and during the fall planning period for changes to the catchable trout program.

**PENNSYLVANIA FISH AND BOAT COMMISSION  
BUREAU OF FISHERIES  
FISHERIES MANAGEMENT DIVISION AREA 3**

Laurel Run (Port Matilda) (309C), Section 02  
Management Report

Prepared by Dave Kristine and Bruce Hollender

Sampled: August 1999

Reported: December 1999

### **Introduction**

Laurel Run is a 11 km long stream located in southwestern Centre County. Fisheries Management Section 02 extends for 7.2 km from the first unnamed tributary downstream of the SGL #33 boundary downstream to the mouth. This section is currently managed as an Approved Trout Water in the Hatchery Trout Program and is stocked with legal size trout under the Low Yield Subprogram (Class BGR4). Membership in this subprogram allows for stocking during pre or inseason only and this section currently is stocked with 500 brook trout during the preseason stocking period with no inseason plants. Seasons, sizes, and creel limits for Commonwealth Inland Waters which are an approved trout stream apply to all species.

Because Section 02 had been initially found to harbor a Class B wild brook and brown trout biomass (28.9 kg/ha) by Snyder et al. (1979), the section was reinventoried in 1998 to assess the potential for wild trout management and to gather data for a potential statewide study of responses of wild trout in Class B waters after termination of stocking (Weber and Greene 1999). They found a Class A wild brown trout biomass at 43.6 kg/ha. We reinventoried Section 02 during 1999 based on the recommendations of Weber and Greene (1999) to confirm Class A status for this section.

### **Methods**

On August 10-11, 1999, we evaluated Section 02 at two historical sites and one new site using standard PFBC techniques (Marcinko et al. 1986) and entered all data into the statewide Fisheries Management Database. The uppermost historic site (0201) was located 164 m downstream of the SR 3023 bridge while the lower historic site (0202) was located 417 m downstream of the SR 0322 bridge at the junction with T-313. We added an additional site (0201A) between these two historical sites located at the T-312 bridge. We sampled fish with a backpack electrofisher utilizing

pulsed DC current. The crew enumerated and measured all trout captured and weighed up to ten fish per 25 mm size group. We differentiated wild trout from hatchery trout based on external physical features and also all hatchery trout had their adipose fin removed prior to stocking in 1999 for positive identification in the field. We captured other fish and identified them to species for occurrence but did not attempt to enumerate them. Trout densities were estimated by the removal method utilizing three passes at site 0201. We only made two passes at site 0202 due to the low population of wild trout and made one pass through 100 m at site 0201A. Physical and chemical data were also collected.

### Results and Discussion

Water quality remains good in this section with well buffered water (Table 1). Total alkalinity and hardness are appreciably higher than when measured in 1979. The 1999 samples were taken when the region was undergoing a severe and widespread drought and drought conditions could explain some of this difference.

We found a total of 14 fish species in Section 02 over three sample sites (Table 2). Species composition appears similar to previous surveys with the exception of the presence of mottled sculpin, largemouth bass, and smallmouth bass at site 0202 in 1999. Species composition at site 0201A was similar to the composition found at the lowermost site.

At the uppermost historic site (0201) we estimated abundance of wild brown trout to be 856 fish/ha weighing 37.3 kg/ha and brook trout at 1137 fish/ha weighing 15.2 kg/ha (Table 3). Our one pass evaluation at the new middle site (0201A) resulted in an abundance of 150 wild brown trout/ha and 25 wild brook trout/ha weighing 11.5 kg/ha and 0.6 kg/ha (Table 4). We estimated wild brown trout abundance at the lower most site (0202) to be 205 fish/ha weighing 12.1 kg/ha and wild brook trout 40 fish/ha weighing 0.1 kg/ha (Table 5). Overall the mean wild brown trout density for Section 02 was 20.3 kg/ha and wild brook trout was 5.3 kg/ha and we could not confirm Class A status ( $> 40$  kg/ha) for this section.

Wild brook trout densities at site 0201 were higher than previous surveys while wild brown trout densities at this site were lower than in 1998 but higher than 1979 (Table 3). This site continues to harbor a Class A population of mixed wild brook and brown trout. Wild trout densities at site 0202 were lower than previous years (Table 5). Overall, conditions for wild trout appear to be better in the upper reaches of Section 02. In addition, we captured eight hatchery brook trout, five hatchery rainbow trout, and four hatchery brown trout in this section. Interestingly, the hatchery brown trout captured at site 0201A had stubs of nylon tags sticking out of their backs, presumably marked by sportsmen and/or a cooperative nursery.

Despite severe drought conditions, the upper portion of Section 02 maintained Class A status and this portion of the section could be removed from the stocking program and managed for wild trout. Wild trout were still present in the middle and lower portions of Section 02 but did not maintain Class A status due to topography and land use resulting in marginal trout habitat.

#### **Recommendations**

Resection Laurel Run, Section 01, to include the upper reach of Section 02 and manage this expanded Section 01 for wild trout with no stocking. Section 02 should be revised to include the lower portion of the stream where more marginal conditions for trout prevail and this reach should continue to be stocked. Revised sections are:

Section 01-from the source downstream 5.4 km to the vicinity of Black Oak Church at RM 3.24.

Section 02-from the vicinity of Black Oak Church RM 3.24 downstream 5.2 km to the mouth.

**Literature Cited**

Marcinko, M., R. Lorson, and R. Hoopes. 1986. Procedures for Stream and River Inventory and Information Input. PFBC files. Bellefonte, PA.

Snyder, R. A., M. Kaufmann, J. Harrison, S. Kepler, S. Nicolette, and J. Bindas. 1979. Stream Examination Report. PFBC files. Bellefonte, PA.

Weber, R., and R. T. Greene. 1999. Laurel Run (309C) Management Report. PFBC files. Bellefonte, PA.

Table 1. Water chemistries in Laurel Run (309C), Section 02, at sites 0201 and 0202 during 1979 and 1999 and site 0201A in 1999.

Chemistry	0201	0201A	0202	
	1979	1999	1979	1999
Air Temp (°C)	17	25	21	23
Water Temp (°C)	14	21	18	19
pH (SU)	6.9	7.2	7.1	7.1
Specific Cond ( $\mu$ mhos/cm)		167		175
Total Alkalinity (mg/l)	10	21	12	24
Total Hardness (mg/l)	23	32	26	40



Table 3. Laurel Run (309C) estimated abundance (N/ha) and biomass (kg/ha) for brown and brook trout at site 0201 in Section 02 during 1979 and 1998-99.

## BROWN TROUT

Length Gr. (mm)	1979		1998		1999	
	N/ha	kg/ha	N/ha	kg/ha	N/ha	kg/ha
25						
50	13	< 0.1	15	< 0.1	141	0.3
75			8	0.1	13	< 0.1
100	6	0.1	202	3.6	104	1.5
125	6	0.2	103	2.5	250	6.5
150	25	1.1	23	0.9	128	5.1
175	75	4.5	62	4.7	75	4.7
200	25	2.7	67	6.5	69	7.2
225	13	1.9	38	5.8	63	8.9
250			31	6.5		
275	6	1.6	31	8.5	13	3.1
300			8	1.8		
325						
TOTALS	169	12.1	588	40.9	856	37.3

## BROOK TROUT

Length Gr.	1979		1998		1999	
	N/ha	kg/ha	N/ha	kg/ha	N/ha	kg/ha
25	6	< 0.1	8	< 0.1		
50	359	0.7	62	0.1	391	0.8
75	131	0.5	38	0.2	168	1.0
100	31	0.4	87	1.5	279	3.9
125	118	2.4	92	2.3	163	3.4
150	78	3.1	38	1.7	95	3.8
175			46	3.1	41	2.3
200			15	1.2		
225	6	0.7				
250			23	4.8		
TOTALS	729	7.9	409	14.9	1137	15.2



Table 4. Abundance Index and Biomass of Brown Trout Laurel Run,  
9C Site R.M. 2.57 Lat/Lon 404847/780522 Survey date:  
August 11, 1999 Species was found at all CATCH Sites: 1  
site.

LENGTH GROUP (mm)	POP. EST.	N / ha	kg / HA	N /km
50	1	25	0.08	10
100	1	25	0.35	10
175	1	25	1.68	10
200	2	50	4.85	20
250	1	25	4.58	10
TOTALS	6	150	11.54	60

Table 4. Brook Trout

LENGTH GROUP (mm)	POP. EST.	N / ha	kg / HA	N /km
125	1	25	0.60	10
TOTALS	1	25	0.60	10

Table 5. Laurel Run (309C) estimated abundance (N/ha) and biomass (kg/ha) for wild brown and brook trout at site 0202 in Section 02 during 1979 and 1998-99.

## BROWN TROUT

Length Gr. (mm)	1979		1998		1999	
	N/ha	kg/ha	N/ha	kg/ha	N/ha	kg/ha
25						
50	598	2.4	13	< 0.1	30	0.1
75	95	0.3				
100			122	2.9	20	0.3
125	86	2.9	270	8.9	20	0.4
150	229	10.3	84	3.8	40	1.7
175	38	2.6	38	2.6	45	2.8
200	31	3.3	94	9.3	20	1.6
225	25	3.1	31	5.1	10	1.2
250	31	5.1	13	2.1	20	4.1
275	6	1.9	13	1.7		
300			13	4.5		
325			13	5.3		
350	13	5.6				
TOTALS	1152	37.5	704	46.3	205	12.1

## BROOK TROUT

Length Gr. (mm)	1979		1998		1999	
	N/ha	kg/ha	N/ha	kg/ha	N/ha	kg/ha
25			6	< 0.1		
50	6	< 0.1	50	0.2	40	0.1
75			31	0.3		
100			13	0.9		
125			25	1.2		
150	6	0.2	44	2.2		
175			44	2.6		
200			25	3.1		
225			6	0.8		
250						
TOTALS	12	0.3	244	11.4	40	0.1

PENNSYLVANIA FISH AND BOAT COMMISSION  
BUREAU OF FISHERIES  
FISHERIES MANAGEMENT DIVISION

Laurel Run (309C) Management Report  
(Port Matilda)

Prepared by  
Robert Weber and R. Thomas Greene

**Sampled:** June 1998

**Reported:** November 1998

### Introduction

Laurel Run arises from the slopes of Sandy Ridge in Centre County and flows southeast 10.6 kilometers (6.6 miles) to its confluence with Bald Eagle Creek at Port Matilda (Figure 1). The 24.29 sq km basin is predominately forested with ownership being a mix of public and private holdings. Access is moderate via SR 0322 in the lower reaches while limited access exists in the headwaters. Laurel Run was considered as two sections. Section 01 is located entirely within State Game Lands (SGL) #33 and is managed as a wild trout water under the Natural Yield Option. Section 02 is located from the first unnamed tributary downstream of the SGL #33 boundary and flows downstream to the mouth. Based on historical file information, this section has been stocked with brook, brown and/or rainbow trout ranging from 6 to 14 inches since 1932.

Historical surveys were conducted by Sorenson (1932) who found the stream to contain brook trout and "minnows." He noted heavy fishing pressure and some posting while subsequently recommending stocking of brook trout. Snyder et al. (1979) inventoried Section 02 of Laurel Run as part of the development of a program for resource based management. Physical characteristics of the stream were adequately assessed and it was noted that water quality and habitat were suitable for wild trout. A good population of brown (28.7 kg/ha) and brook trout (4.58 kg/ha) was documented. Continued stocking was recommended until resource based management called for management under a different strategy.

The purpose of our survey was to reinventory Laurel Run to update resource classification and for inclusion into a potential study to evaluate trout population response of Class B waters after stocking has been terminated (Ferrerri and Carline 1997). Subsequent funding for this study was not approved by the Commission.

### Methods

On June 22-24, 1998, two sites, in approximately the same locations as Snyder et al. (1979), were evaluated using standard PFBC

techniques (Marcinko et al 1986). Fish were sampled using a TAS generator with a Coffelt variable voltage pulsator backpack electrofisher (model BP-1C) operated at 200 VAC. All trout captured were measured, weighed and grouped into 25 mm size groups. Other species captured were noted. A Chapman Modified Petersen estimate (Ricker 1975) was calculated for each size group where at least three individuals were recaptured during the recapture run to predict trout population abundance and biomass. Physical data were also collected.

### Results and Discussion

Section 02 was represented by two sampling stations. The upper station had a relatively high gradient, flowing over large boulders through small deep pools and short riffles. Dense shading was provided by trees and overhanging rhododendron. The lower station was somewhat wider, flowed through longer riffles and shallower pools and was only partially shaded. Some silt was present; however, it did not appear to be significant (Table 1).

A total of 9 species were collected over two sample sites (Table 2). Warmwater species present most likely originated from numerous small ponds on and/or near the stream. At the upper site, the electrofishing inventory recorded 409 brook trout/ha and 588 brown trout/ha corresponding to a biomass of 14.86 kg/ha and 40.91 kg/ha, respectively (Table 3). At the lower site, 244 brook trout/ha and 704 brown trout/ha were estimated corresponding to a biomass of 11.36 kg/ha and 46.26 kg/ha, respectively (Table 3). These estimates yielded a section average of 13.11 kg/ha of brook trout and 43.59 kg/ha of brown trout qualifying this section for Class A management. Brook trout ranged from one inch to 10 inches in length while brown trout ranged in size from 2 inches to 13 inches. Young-of-year trout were probably not adequately assessed due to their small size at the time of sampling and subsequent low vulnerability to sampling gear. An additional 27 brook trout of hatchery origin were captured at the upper site while only 2 hatchery brook trout were collected at the lower site, indicating possible low angler use in the upper reaches of the section.

When compared to data collected in previous surveys (Table 3) the lower station (0202) was similar in brown trout biomass with an expansion in the brook trout population in the 1998 survey (Table 3). The overall increase of the brown trout population in the upper site (0201) has elevated the section biomass to Class A status. This biomass increase may be due to natural variations in trout populations as the section may actually fluctuate between Class A and Class B status depending on yearly climatic conditions. However, light fishing pressure, indicated by the number of hatchery trout present, combined with continued available habitat for wild trout may have benefited this trout population to where it has expanded and stabilized as a Class A population. The current Chapter 93 water use criteria of CWF is not adequate to protect this fine fishery.

1. Reinventory Laurel Run in 1999 to confirm presence of Class A trout population.
2. The DEP Chapter 93 designation for the Laurel Run basin should be upgraded from CWF to HQ-CWF.

- Ferreri, C. P., and R. F. Carline. 1997. Evaluation of Wild Trout Response to Termination of Stocking in Pennsylvania's Class B Streams. A Project Proposal to the Pennsylvania Fish and Boat Commission.
- Marcinko, M., R. Lorson, and R. Hoopes. 1986. Procedures for Stream and River Inventory Information Input. PFBC Files. 450 Robinson Lane, Bellefonte, PA.
- Ricker, W. E. 1975. Computation and Interpretation of Biological Statistics in Fish Populations. Fisheries Research Board of Canada. Bulletin 191.
- Snyder, R. A., M. Kaufmann, J. Harrison, D. Kepler, S. Nicolette, and J. Bindas. 1979. Stream Examination Report. PFBC files. 450 Robinson Lane, Bellefonte, PA. 16823.
- Sorenson, D. 1932. Stream Survey Report. PFBC files. 450 Robinson Lane, Bellefonte, PA. 16823.

Table 1. Key Physical and Social Characteristics of Laurel Run  
(309C), Section 02, June 22-24 1998.

<u>Characteristics</u>	<u>Description</u>
<b>USGS Quadrangle</b>	Port Matilda, PA
<b>Social</b>	
Private Ownership, Open	96%
Private Ownership, Closed	2%
Public Ownership	2%
Road Access within 100m	42%
Road Access within 300m	93%
Road Access within 500m	100%
Parking Spaces	-
<b>Physical</b>	
Site 0201, Length	300 meters
Width	4.2 meters
Area	0.13 hectares
Substrate	Rubble, Gravel
Site 0202, Length	338 meters
Width	4.6 meters
Area	0.16 hectares
Substrate	Rubble, Gravel,

DEP Stream Code: 23210 Occurrence in Laurel Run (309 Laurel Run (Port Matilda))  
June 22-24 1998.

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Common Name	Scientific Name
Brown Trout	<i>Salmo Trutta</i>
Brook Trout	<i>Salvelinus fontinalis</i>
Cutlips Minnow	<i>Exoglossum maxillingua</i>
Blacknose Dace	<i>Rhinichthys atratulus</i>
Longnose dace	<i>Rhinichthys cataractae</i>
Creek chub	<i>Semotilus atromaculatus</i>
Fallfish	<i>Semotilus corporalis</i>
Pumpkinseed	<i>Lepomis gibbosus</i>
Slimy sculpin	<i>Cottus cognatus</i>

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Table 3. Laurel Rn (09C) Estimated Abundance (N/ha) and Biomass (kg/ha) for Brown and Brook Trout from Section 02 during 1979 and 1998.

		0201		0202		
Length Gr. (mm)	1979		1998		1998	
	(N/ha)	(kg/ha)	(N/ha)	(kg/ha)	(N/ha)	(kg/ha)
50	13	0.01	15	0.03	598	2.39
75			8	0.05	95	0.28
100	6	0.08	202	3.64		
125	6	0.21	103	2.46	86	2.92
150	25	1.13	23	0.90	229	10.30
175	75	4.50	62	4.74	38	2.63
200	25	2.68	67	6.53	31	3.31
225	13	1.88	38	5.77	25	3.05
250			31	6.49	31	5.09
275	6	1.59	31	8.49	6	1.88
300			8	1.81		
325					13	5.63
350						
<b>TOTALS</b>	<b>169</b>	<b>12.08</b>	<b>588</b>	<b>40.91</b>	<b>1152</b>	<b>37.48</b>
					<b>704</b>	<b>46.26</b>
		0201		0202		
Length Gr. (mm)	1979		1998		1998	
	(N/ha)	(kg/ha)	(N/ha)	(kg/ha)	(N/ha)	(kg/ha)
25	6	0.01	8	0.01		
50	359	0.72	62	0.06	6	0.01
75	131	0.53	38	0.23	50	0.15
100	31	0.41	87	1.47	31	0.31
125	118	2.36	92	2.31	13	0.93
150	78	3.13	38	1.69	25	1.20
175			46	3.14	44	2.19
200			15	1.17	44	2.63
225	6	0.74	23	4.78	25	3.10
250					6	0.84
<b>TOTALS</b>	<b>723</b>	<b>7.89</b>	<b>401</b>	<b>14.85</b>	<b>12</b>	<b>0.28</b>
					<b>238</b>	<b>11.35</b>

DEP Stream Code: 23210

Laurel Run (Port Matilda)

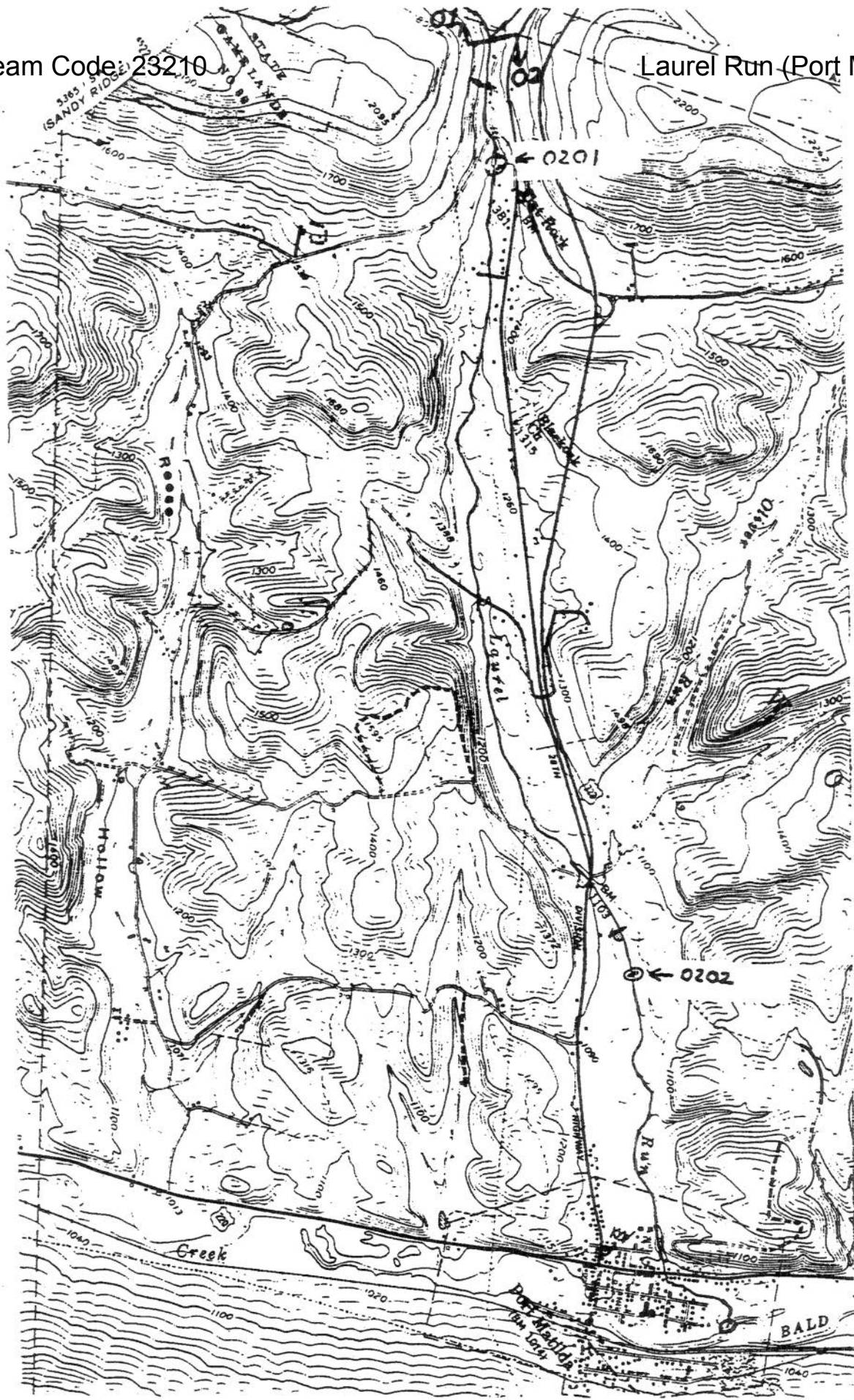


Figure 1. Laurel Run (309C), Centre County

DEP Stream Code: 23210

PA FISH AND BOAT COMMISSION  
COMMENTS AND RECOMMENDATIONS

January 4, 1999

*Hollender*  
Laurel Run (Port Matilda)

WATER: Laurel Run (309C) (*Port*)

Centre County

EXAMINED: June 1998

BY: Robert Weber and R. Thomas Greene

Bureau Director Action: ~~Approved~~ *Delano R. Hoff* Date: 1-5-99

Division Chief Action: *Richard A Snyder* Date: 1-5-99

WW Unit Leader Action: \_\_\_\_\_ Date: \_\_\_\_\_

CW Unit Leader Action: *R. Thomas Greene* Date: 1/4/99

**CWU COMMENTS:**

Laurel Run (309C), Section 02, was examined during June 1998 as part of a reinventory of catchable trout stocked water and to examine the potential of this segment as a candidate water for a proposed study to evaluate the impacts of the termination of stocking on biomass Class B wild trout fisheries.

Section 02 can be characterized as a small, coldwater stream. Historically, this segment has received plantings of PFBC catchable size brook trout on a preseason only basis. The 1998 examination (conducted at two sites) recorded the presence of nine fish species, including a Class A wild brown trout fishery estimated in excess of 43 kg/ha.

**CWU RECOMMENDATIONS:**

1. Laurel Run (309C), Section 02, should continue to be managed with the planting of PFBC catchable size brook trout on a preseason only basis for the 1999 season.
2. The Area 3 staff should reinventory Laurel Run (309C), Section 02, during the 1999 field season to confirm the status of the wild trout fishery. At the completion of this survey, updated management recommendations should be submitted regarding the future management strategy for Section 02.