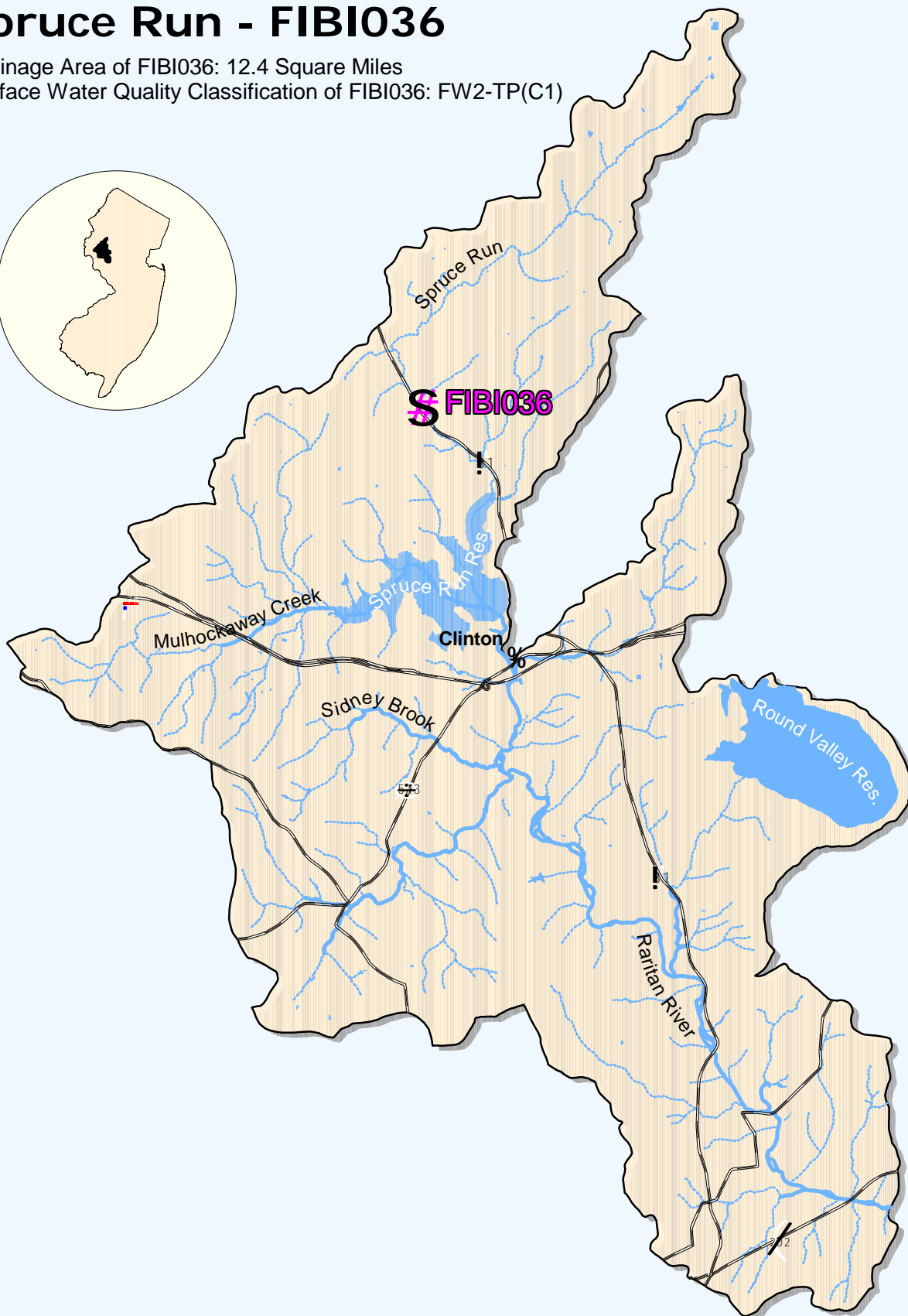
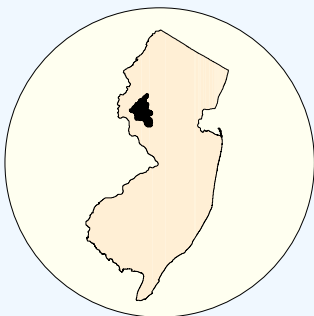


Spruce Run - FIBI036

Drainage Area of FIBI036: 12.4 Square Miles

Surface Water Quality Classification of FIBI036: FW2-TP(C1)



FIBI Sampling Location

Small Streams (1st and 2nd Order)

Large Streams (3rd Order and Above)



0 1 2 3 Miles



SUMMARY OF RESULTS – FIBI036



1. Stream Name:	Spruce Run
2. Sampling Date:	07/10/2001
3. Sampling Location:	Main St (40 41 29N; 74 56 14W)
4. Municipality:	Glen Gardner Boro.
5. County:	Hunterdon
6. Watershed Management Area:	8
7. Contributing Drainage Area (Sq. Mi.):	12.4
8. Stream Water Quality Class:	FW2-TP(C1)
9. FIBI Rating:	Excellent (46) (See Appendix 3)
10. Habitat Assessment Rating:	Suboptimal (140) (See Appendix 3)
11. Fishable Species Present:	Yes
12. Relevant AMNET ¹ Station Data:	
Proximity of FIBI station to AMNET station:	0.42 mi. upstream of AN0319
AMNET Rating:	1994-Non-Impaired; 1999-Non-Impaired
13. Stream Chemistries:	
Dissolved Oxygen (mg/l)	9.8
Temperature °C.	18.2
pH	7.75
Conductivity (µmhos/cm)	195
14. Number of Fish With Anomalies:	1
15. Length of Stream Segment Sampled	150 meters (492 feet)
16. Water Clarity:	Clear
17. Average Forest Open Canopy:	38%
18. Discharge (ft. ³ /sec.):	20.1
19. Substrate: (qualitative)	30% Gravel/Sand, 60% Cobble, 10% Boulder
20. Habitat Type: (qualitative)	60% Riffle, 20% Run, 20% Pool
21. Other observations:	Retaining wall first 75 feet
22. Number of Fish Species Identified: (see next page)	11
23. Total Number of Fish Collected:	257

¹ AMNET is the acronym for the DEP's ambient benthic macroinvertebrate monitoring network – a series of 820 monitoring stations located throughout the state's waterways that collects data on the health of bottom dwelling stream fauna which in turn is used to assess general water quality.

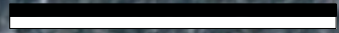
FIBI036
SPRUCE RUN
Main Street
Glen Gardner, Hunterdon Co.

SR 31

Main St.



0 0.1 Miles



LEGEND	
#	Start
#	Finish
—	Segment Sampled
Ⓜ	Direction of Flow

FIBI036 - Spruce Run @ Main St
Date Sampled - 7/10/2001

Excellent Good Fair Poor

	Score
# of Fish Species	5
# of Benthic Insectivorous Species (BI)	5
# of Trout and Centrarchid Species (trout, bass, sunfish, crappie)	5
# of Intolerant Species (IS)	5
Proportion of Individuals as White Suckers	3
Proportion of Individuals as Generalists (carp, creek chub, banded killifish, goldfish, fathead minnow, green sunfish)	5
Proportion of Individuals as Insectivorous Cyprinids (I and BI)	5
Proportion of Individuals as Trout	
OR	
Proportion of Individuals as Piscivores (Excluding American Eel)*	3
Number of Individuals in Sample	5
Proportion of Individuals w/disease/anomalies (excluding blackspot)	5
Total	46

Stream Rating

45-50	Excellent
37-44	Good
29-36	Fair
10-28	Poor

HABITAT ASSESSMENT FOR HIGH GRADIENT STREAMS **Spruce Run (FIBI036) – 7/10/01**

	Condition Category			
	Optimal	Suboptimal	Marginal	Poor
1. Epifaunal Substrate /Available Cover Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient). SCORE 18	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
2. Embeddedness Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space SCORE 17	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
3. Velocity/Depth Regimes All 4 velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast-shallow). (slow is <0.3 m/s, deep is >0.5 m) SCORE 15	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
4. Sediment Deposition Little or no enlargement of islands or point bars and less than 5% (<20% for low-gradient streams) of the bottom affected by sediment deposition. SCORE 18	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
5. Channel Flow Status Water reaches base of both lower banks, and minimal amount of channel substrate is exposed. SCORE 14	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
6. Channel Alteration Channelization or dredging absent or minimal; stream with normal pattern. SCORE 12	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
7. Frequency of Riffles (or bends) Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important. SCORE 19	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
8. Bank Stability (score each bank) Note: determine left or right side by facing downstream. SCORE <u>6</u> (LB) SCORE <u>3</u> (RB)	Left Bank 10 9 Right Bank 10 9	8 7 6 8 7 6	5 4 3 5 4 3	2 1 0 2 1 0
9. Bank Vegetative Protection (score each bank) SCORE <u>6</u> (LB) SCORE <u>5</u> (RB)	Left Bank 10 9 Right Bank 10 9	8 7 6 8 7 6	5 4 3 5 4 3	2 1 0 2 1 0
10. Riparian Vegetative Zone Width (score each bank riparian zone) SCORE <u>5</u> (LB) SCORE <u>2</u> (RB)	Left Bank 10 9 Right Bank 10 9	8 7 6 8 7 6	5 4 3 5 4 3	2 1 0 2 1 0

HABITAT SCORE

140

HABITAT SCORES	VALUE
OPTIMAL	160 C 200
SUB-OPTIMAL	110 C 159
MARGINAL	60 C 109
POOR	< 60

FIBI036 07/10/01

SPRUCE RUN

LISTED IN ORDER OF ABUNDANCE FOUND

COMMON NAME	SCIENTIFIC NAME	# FOUND	SIZE RANGE (INCHES)
Blacknose Dace	<i>Rhinichthys atratulus</i>	93	
Longnose Dace	<i>Rhinichthys cataractae</i>	71	
White Sucker*	<i>Catostomus commersoni</i>	42	
American Eel*	<i>Anguilla rostrata</i>	15	
Brown Trout*	<i>Salmo trutta</i>	12	2.4 - 16.5
Creek Chub	<i>Semotilus atromaculatus</i>	7	
Smallmouth Bass*	<i>Micropterus dolomieu</i>	6	6.3 - 8.1
Rainbow Trout*	<i>Oncorhynchus mykiss</i>	5	9.8 - 10.6
Tessellated Darter	<i>Etheostoma olmstedi</i>	3	
Brook Trout*	<i>Salvelinus fontinalis</i>	2	6.5 - 10.6
Pumpkinseed*	<i>Lepomis gibbosus</i>	1	3.1

* Regulated as a fishable species under current New Jersey Fish and Wildlife codes

FIGURE 1.1 (Not To Scale)
Species Identified at Spruce Run (FIBI036)

John Scarola



White Sucker

John Scarola



Smallmouth Bass

John Scarola



Brown Trout

Don Beimbom



Brook Trout

John Scarola



Rainbow Trout

Konrad Schmidt



Creek Chub

**FIGURE 1.1 (Not To Scale)
Species Identified at Spruce Run (FIBI036)**

John Scarola



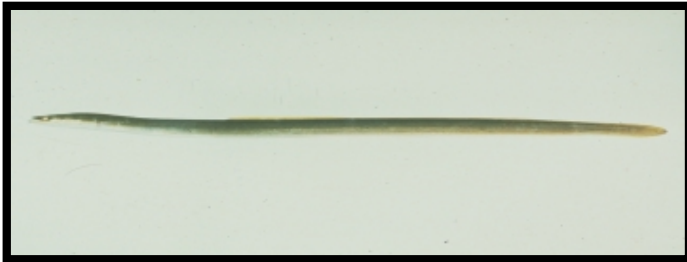
Pumpkinseed

John Scarola



Blacknose Dace

John Scarola



American Eel

John Scarola



Tessellated Darter

Shute



Longnose Dace