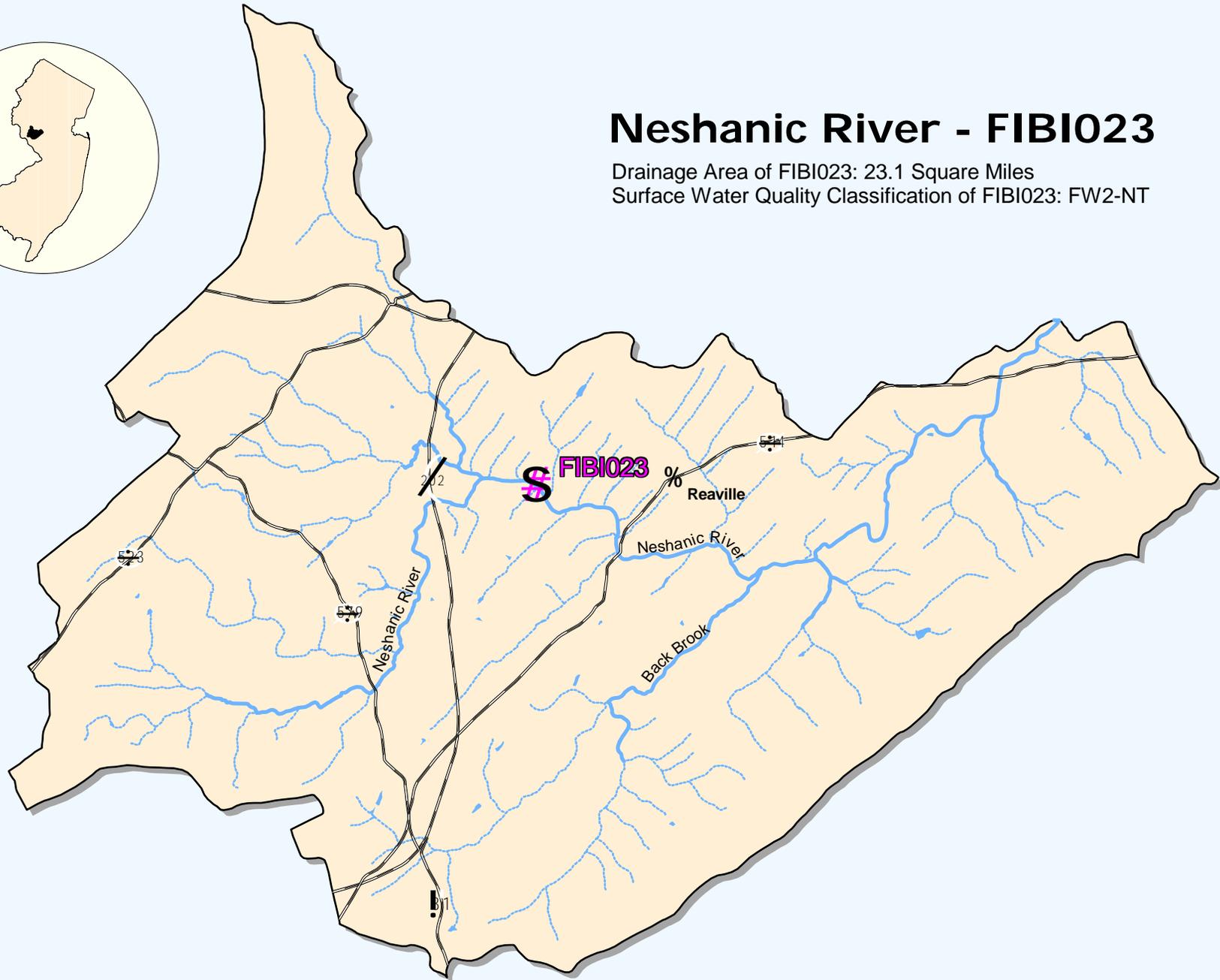




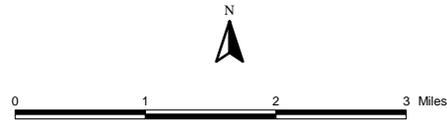
# Neshanic River - FIBI023

Drainage Area of FIBI023: 23.1 Square Miles

Surface Water Quality Classification of FIBI023: FW2-NT



**S** FIBI Sampling Location  
..... Small Streams (1st and 2nd Order)  
—— Large Streams (3rd Order and Above)



## SUMMARY OF RESULTS – FIBI023



1. Stream Name:	Neshanic River
2. Sampling Date:	08/03/2001
3. Sampling Location:	along Kuhl Rd. (40 28 39N; 74 50 35W)
4. Municipality:	Raritan Twp.
5. County:	Hunterdon
6. Watershed Management Area:	8
7. Contributing Drainage Area (Sq. Mi.):	23.1
8. Stream Water Quality Class:	FW2-NT
9. FIBI Rating:	Fair (36) (See Appendix 3)
10. Habitat Assessment Rating:	Suboptimal (130) (See Appendix 3)
11. Fishable Species Present:	Yes
12. Relevant AMNET <sup>1</sup> Station Data:	
Proximity of FIBI station to AMNET station:	0.94 mi. upstream of AN0333
AMNET Rating:	1994-Moderately Impaired; 1999-Moderately Impaired
13. Stream Chemistries:	
Dissolved Oxygen (mg/l)	7.6
Temperature °C.	21.8
pH	8.3
Conductivity (µmhos/cm)	356
14. Number of Fish With Anomalies:	0
15. Length of Stream Segment Sampled	150 meters (492 feet)
16. Water Clarity:	Clear
17. Average Forest Open Canopy:	50%
18. Discharge (ft. <sup>3</sup> /sec.):	5.3
19. Substrate: (qualitative)	20% Gravel/Sand, 45% Cobble, 10% Boulder, 5% Mud, 5% Silt, 15% Bedrock
20. Habitat Type: (qualitative)	10% Riffle, 65% Run, 25% Pool
21. Other observations:	Rip Rap on Stream Bank
22. Number of Fish Species Identified: (see next page)	23
23. Total Number of Fish Collected:	1393

<sup>1</sup> 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.

FIBI023  
NESHANIC RIVER  
Kuhl Rd.  
Raritan Twp., Hunterdon Co.

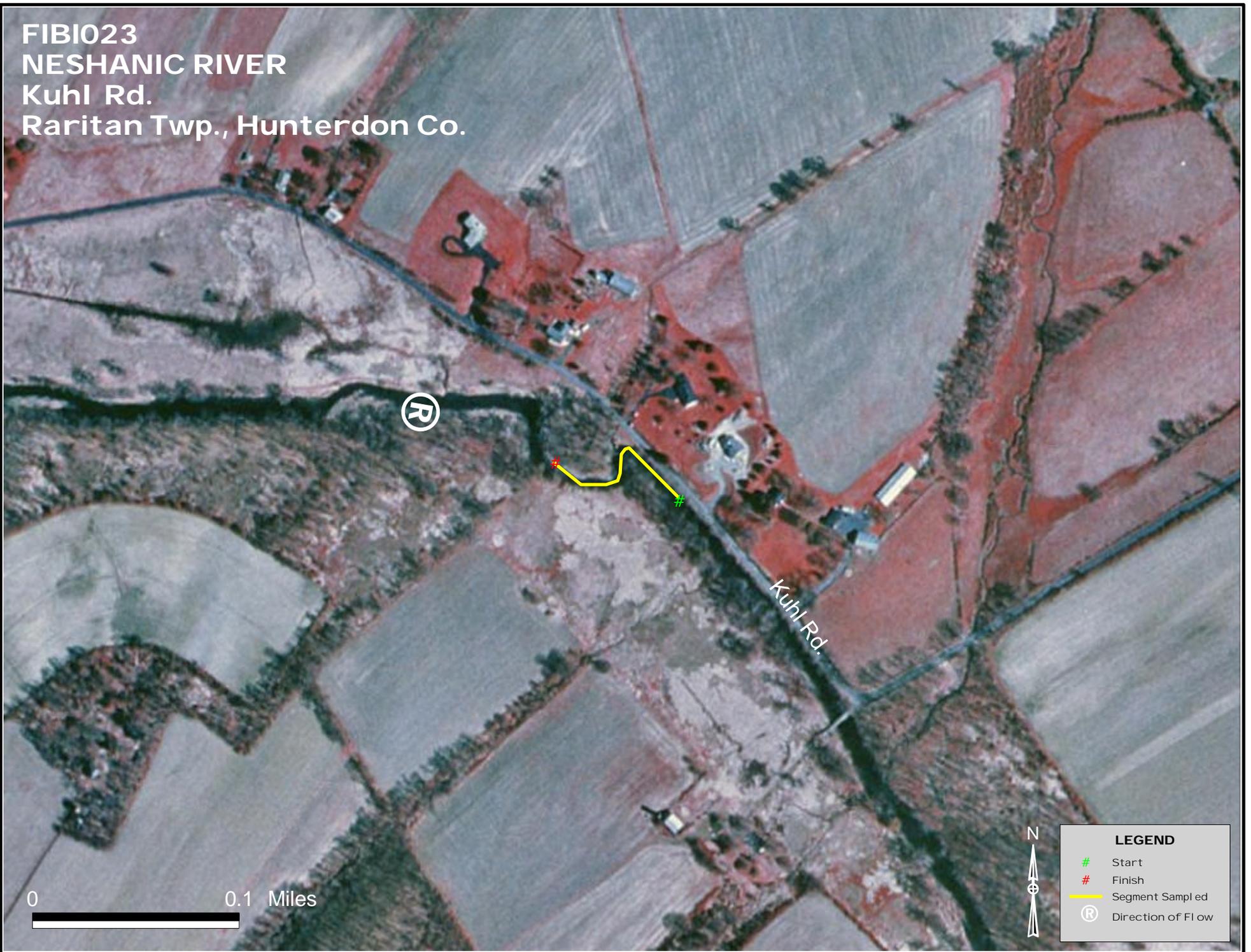
®

Kuhl Rd.

0 0.1 Miles



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



**FIBI023 - Neshanic River @ Kuhl Rd**  
**Date Sampled - 8/03/2001**

Excellent    Good    **Fair**    Poor

	<b>Score</b>
# of Fish Species	5
# of Benthic Insectivorous Species (BI)	5
# of Trout and Centrarchid Species (trout, bass, sunfish, crappie)	5
# of Intolerant Species (IS)	1
Proportion of Individuals as White Suckers	1
Proportion of Individuals as Generalists (carp, creek chub, banded killifish, goldfish, fathead minnow, green sunfish)	5
Proportion of Individuals as Insectivorous <b>Cyprinids</b> (I and BI)	3
Proportion of Individuals as Trout                      *whichever gives better score OR Proportion of Individuals as Piscivores (Excluding American Eel)*	1
Number of Individuals in Sample	5
Proportion of Individuals w/disease/anomalies (excluding blackspot)	5
<b>Total</b>	<b>36</b>

**Stream Rating**

<b>45-50</b>	<b>Excellent</b>
<b>37-44</b>	<b>Good</b>
<b>29-36</b>	<b>Fair</b>
<b>10-28</b>	<b>Poor</b>

	Condition Category			
	Optimal	Suboptimal	Marginal	Poor
<b>1. Epifaunal Substrate /Available Cover</b> 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). <b>SCORE 14</b>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
<b>2. Embeddedness</b> Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space <b>SCORE 16</b>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
<b>3. Velocity/Depth Regimes</b> 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) <b>SCORE 13</b>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
<b>4. Sediment Deposition</b> 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. <b>SCORE 17</b>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
<b>5. Channel Flow Status</b> Water reaches base of both lower banks, and minimal amount of channel substrate is exposed. <b>SCORE 13</b>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
<b>6. Channel Alteration</b> Channelization or dredging absent or minimal; stream with normal pattern. <b>SCORE 20</b>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
<b>7. Frequency of Riffles (or bends)</b> 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. <b>SCORE 10</b>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
<b>8. Bank Stability (score each bank)</b> Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected. Note: determine left or right side by facing downstream. SCORE <u>6</u> (LB) SCORE <u>6</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
<b>9. Bank Vegetative Protection (score each bank)</b> More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, under story shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally. 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
<b>10. Riparian Vegetative Zone Width (score each bank riparian zone)</b> Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone. SCORE <u>2</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**

**130**

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

# FIBI023 08/03/01

NESHANIC RIVER

## LISTED IN ORDER OF ABUNDANCE FOUND

COMMON NAME	SCIENTIFIC NAME	# FOUND	SIZE RANGE (INCHES)
White Sucker*	<i>Catostomus commersoni</i>	522	
Common Shiner	<i>Luxilus cornutus</i>	191	
Tessellated Darter	<i>Etheostoma olmstedii</i>	130	
Redbreast Sunfish*	<i>Lepomis auritus</i>	109	2.4 - 6.5
Spottail Shiner	<i>Notropis hudsonius</i>	91	
Green Sunfish*	<i>Lepomis cyanellus</i>	71	2.2 - 4.6
Rock Bass*	<i>Ambloplites rupestris</i>	61	2.8 - 6.3
Spotfin Shiner	<i>Cyprinella spiloptera</i>	41	
American Eel*	<i>Anguilla rostrata</i>	33	
Blacknose Dace	<i>Rhinichthys atratulus</i>	33	
Banded Killifish	<i>Fundulus diaphanus</i>	25	
Swallowtail Shiner	<i>Notropis procne</i>	17	
Bluegill*	<i>Lepomis macrochirus</i>	14	2.6 - 3.9
Longnose Dace	<i>Rhinichthys cataractae</i>	12	
Pumpkinseed*	<i>Lepomis gibbosus</i>	11	2.8 - 3.1
Satinfin Shiner	<i>Cyprinella analostana</i>	10	
Yellow Bullhead*	<i>Ameiurus natalis</i>	10	3.5 - 8.7
Creek Chubsucker	<i>Erimyzon oblongus</i>	4	
Fathead Minnow	<i>Pimephales promelas</i>	2	
Golden Shiner	<i>Notemigonus crysoleucas</i>	2	
Creek Chub	<i>Semotilus atromaculatus</i>	2	
Largemouth Bass*	<i>Micropterus salmoides</i>	1	3.1
Comely Shiner	<i>Notropis amoenus</i>	1	

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

**FIGURE 1.1 (Not To Scale)**  
**Species Identified at Neshanic River (FIBI023)**

John Scarola



**Tessellated Darter**

AFS



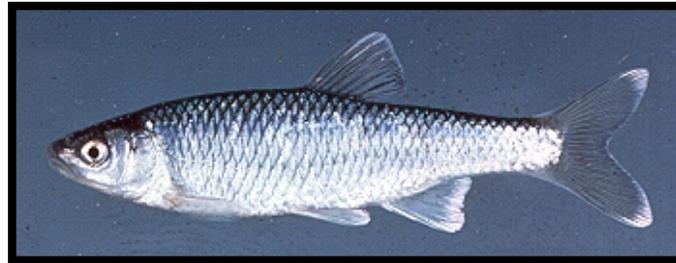
**Largemouth Bass**

John Scarola



**Bluegill**

Jenkins & Burkhead



**Satinfin Shiner**

John Scarola



**White Sucker**

John Scarola



**Blacknose Dace**

**FIGURE 1.1 (Not To Scale)**  
**Species Identified at Neshanic River (FIBI023)**

John Scarola



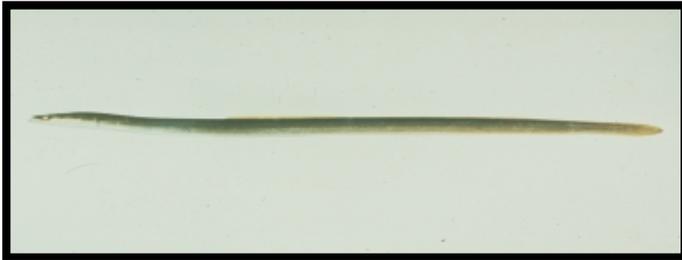
**Redbreast Sunfish**

John Scarola



**Yellow Perch**

John Scarola



**American Eel**

Konrad Schmidt



**Creek Chub**

John Scarola



**Pumpkinseed**

Shute



**Longnose Dace**

**FIGURE 1.1 (Not To Scale)  
Species Identified at Neshanic River (FIBI023)**

John Scarola



**Yellow Bullhead**

William Pflieger



**Spotfin Shiner**

John Scarola



**Rock Bass**

William Roston



**Creek Chubsucker**

William Roston



**Fathead Minnow**

John Scarola



**Common Shiner**

**FIGURE 1.1 (Not To Scale)  
Species Identified at Neshanic River (FIBI023)**

Konrad Schmidt



**Spottail Shiner**

Noel Burkhead



**Comely Shiner**

John Scarola



**Golden Shiner**

John Scarola



**Banded Killifish**

Jenkins & Burkhead



**Swallowtail Shiner**