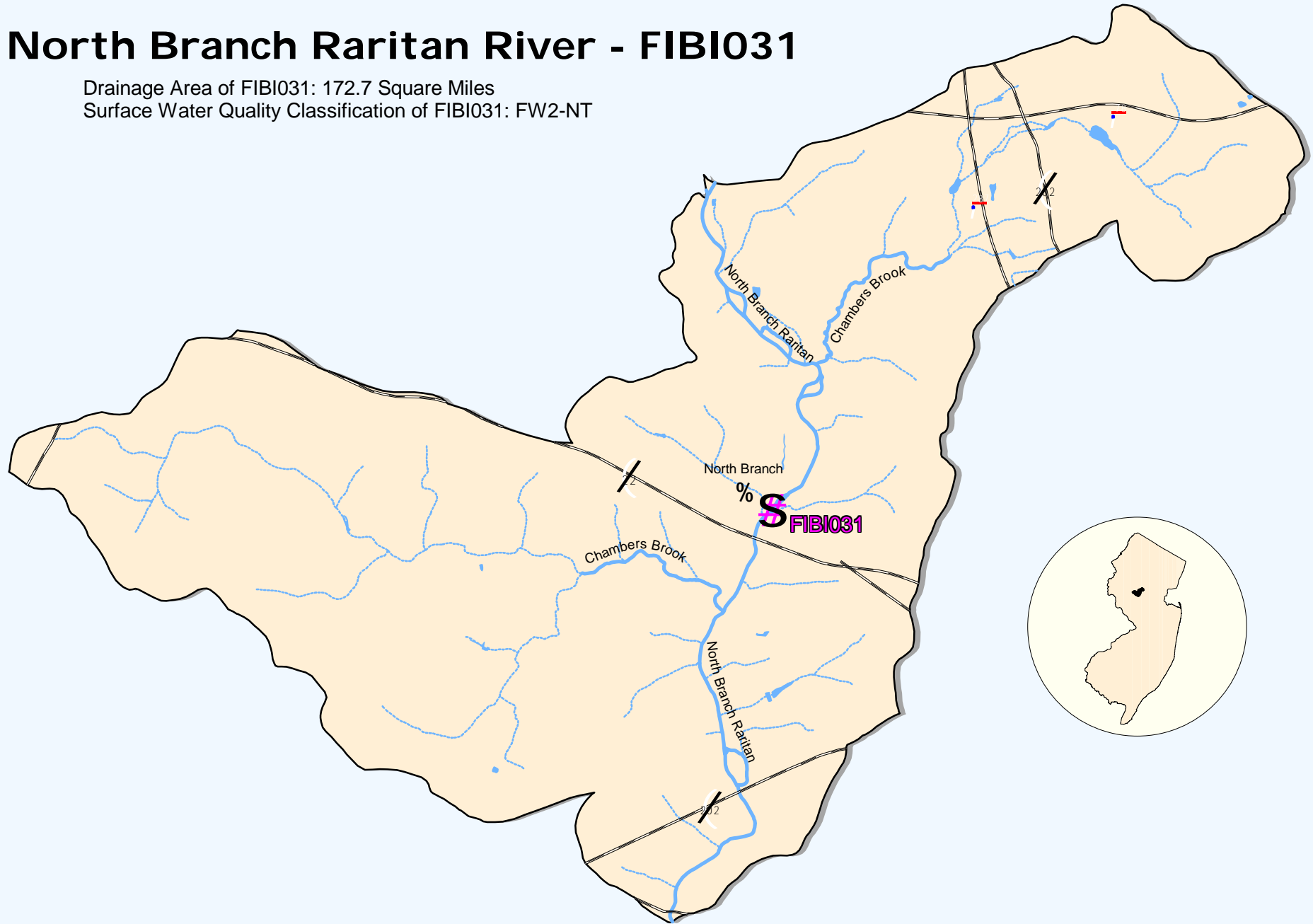


North Branch Raritan River - FIBI031

Drainage Area of FIBI031: 172.7 Square Miles
Surface Water Quality Classification of FIBI031: FW2-NT



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



SUMMARY OF RESULTS – FIBI031



1. Stream Name:	North Branch Raritan River
2. Sampling Date:	08/01/2001
3. Sampling Location:	Easton Tpk. (40 36 00N; 74 40 24W)
4. Municipality:	Bridgewater Twp.
5. County:	Somerset
6. Watershed Management Area:	8
7. Contributing Drainage Area (Sq. Mi.):	172.7
8. Stream Water Quality Class:	FW2-NT
9. FIBI Rating:	Good (42) (See Appendix 3)
10. Habitat Assessment Rating:	Optimal (160) (See Appendix 3)
11. Fishable Species Present:	Yes
12. Relevant AMNET ¹ Station Data:	
Proximity of FIBI station to AMNET station:	2.47 mi. upstream of AN0374
AMNET Rating:	1990-Non-Impaired; 1999-Non-Impaired
13. Stream Chemistries:	
Dissolved Oxygen (mg/l)	9.4
Temperature °C.	21.3
pH	7.9
Conductivity (µmhos/cm)	281
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:	43%
18. Discharge (ft. ³ /sec.):	39.2
19. Substrate: (qualitative)	30% Gravel/Sand, 50% Cobble, 20% Silt
20. Habitat Type: (qualitative)	10% Riffle, 60% Run, 30% Pool
21. Other observations:	N/A
22. Number of Fish Species Identified: (see next page)	23
23. Total Number of Fish Collected:	813

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.

FIBI031
NORTH BRANCH RARITAN RIVER
Easton Turnpike
Bridgewater Twp., Somerset Co.

Easton Tpk. (SR 28, CR 614)

0 0.1 Miles



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

FIBI031 - N. Branch Raritan River @ CR 614
Date Sampled - 8/01/2001

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)	3
Proportion of Individuals as Trout	
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
Total	42

Stream Rating

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

HABITAT ASSESSMENT FOR HIGH GRADIENT STREAMS North Branch Raritan River (FIBI031) – 8/1/01

	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 16	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 14	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 17	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 15	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 17	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 15	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>5</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
9. Bank Vegetative Protection (score each bank) SCORE <u>10</u> (LB) SCORE <u>10</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>8</u> (LB) SCORE <u>10</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
160

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

FIBI031 08/01/01

NORTH BRANCH RARITAN RIVER

LISTED IN ORDER OF ABUNDANCE FOUND

COMMON NAME	SCIENTIFIC NAME	# FOUND	SIZE RANGE (INCHES)
Longnose Dace	<i>Rhinichthys cataractae</i>	296	
Tesselated Darter	<i>Etheostoma olmstedii</i>	181	
White Sucker*	<i>Catostomus commersoni</i>	147	
Spottail Shiner	<i>Notropis hudsonius</i>	45	
American Eel*	<i>Anguilla rostrata</i>	39	
Redbreast Sunfish*	<i>Lepomis auritus</i>	33	2.4 - 7.1
Margined Madtom	<i>Noturus insignis</i>	15	
Shield Darter	<i>Percina peltata</i>	14	
Rock Bass*	<i>Ambloplites rupestris</i>	11	3.9 - 6.3
Smallmouth Bass*	<i>Micropterus dolomieu</i>	9	2.6 - 9.8
Green Sunfish*	<i>Lepomis cyanellus</i>	4	2.5 - 3.8
Yellow Bullhead*	<i>Ameiurus natalis</i>	3	8.3 - 9.8
Pumpkinseed*	<i>Lepomis gibbosus</i>	3	
Spotfin Shiner	<i>Cyprinella spiloptera</i>	3	
Common Shiner	<i>Luxilus cornutus</i>	2	
Comely Shiner	<i>Notropis amoenus</i>	1	
Blacknose Dace	<i>Rhinichthys atratulus</i>	1	
American Brook Lamprey	<i>Lampetra appendix</i>	1	
Yellow Perch*	<i>Perca flavescens</i>	1	2.2
Largemouth Bass*	<i>Micropterus salmoides</i>	1	3.9
Swallowtail Shiner	<i>Notropis procne</i>	1	
Carp*	<i>Cyprinus carpio</i>	1	
Banded Killifish	<i>Fundulus diaphanus</i>	1	

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

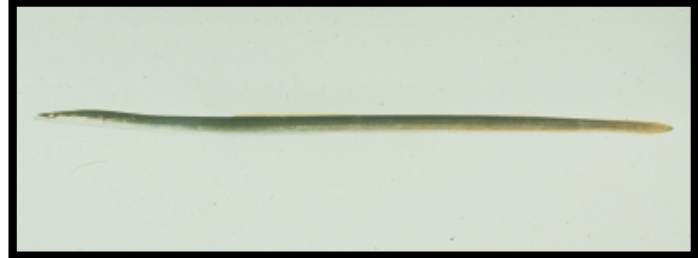
FIGURE 1.1 (Not To Scale)
Species Identified at North Branch Raritan River (FIBI031)

John Scarola



Blacknose Dace

John Scarola



American Eel

John Scarola



White Sucker

William Pflieger



Spotfin Shiner

John Scarola



Common Carp

John Scarola



Smallmouth Bass

**FIGURE 1.1 (Not To Scale)
Species Identified at North Branch Raritan River (FIBI031)**

John Scarola



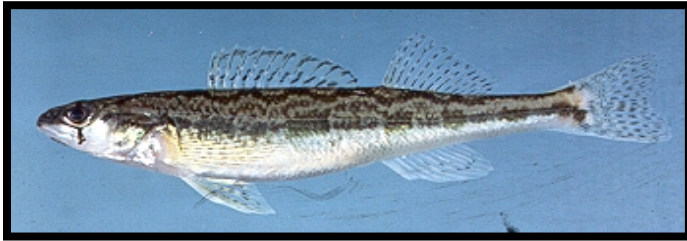
Pumpkinseed

John Scarola



Redbreast Sunfish

Jenkins and Burkhead



Shield Darter

Konrad Schmidt



Green Sunfish

Noel Burkhead



Comely Shiner

John Scarola



Common Shiner

FIGURE 1.1 (Not To Scale)
Species Identified at North Branch Raritan River (FIBI031)

John Scarola



Rock Bass

John Scarola



Yellow Bullhead

John Scarola



Tesselated Darter

Konrad Schmidt



Spottail Shiner

Shute



Margined Madtom

Shute



Longnose Dace

FIGURE 1.1 (Not To Scale)
Species Identified at North Branch Raritan River (FIBI031)

John Scarola



Yellow Perch

AFS



Largemouth Bass

Jenkins & Burkhead



Swallowtail Shiner

Konrad Schmidt



American Brook Lamprey

John Scarola



Banded Killifish