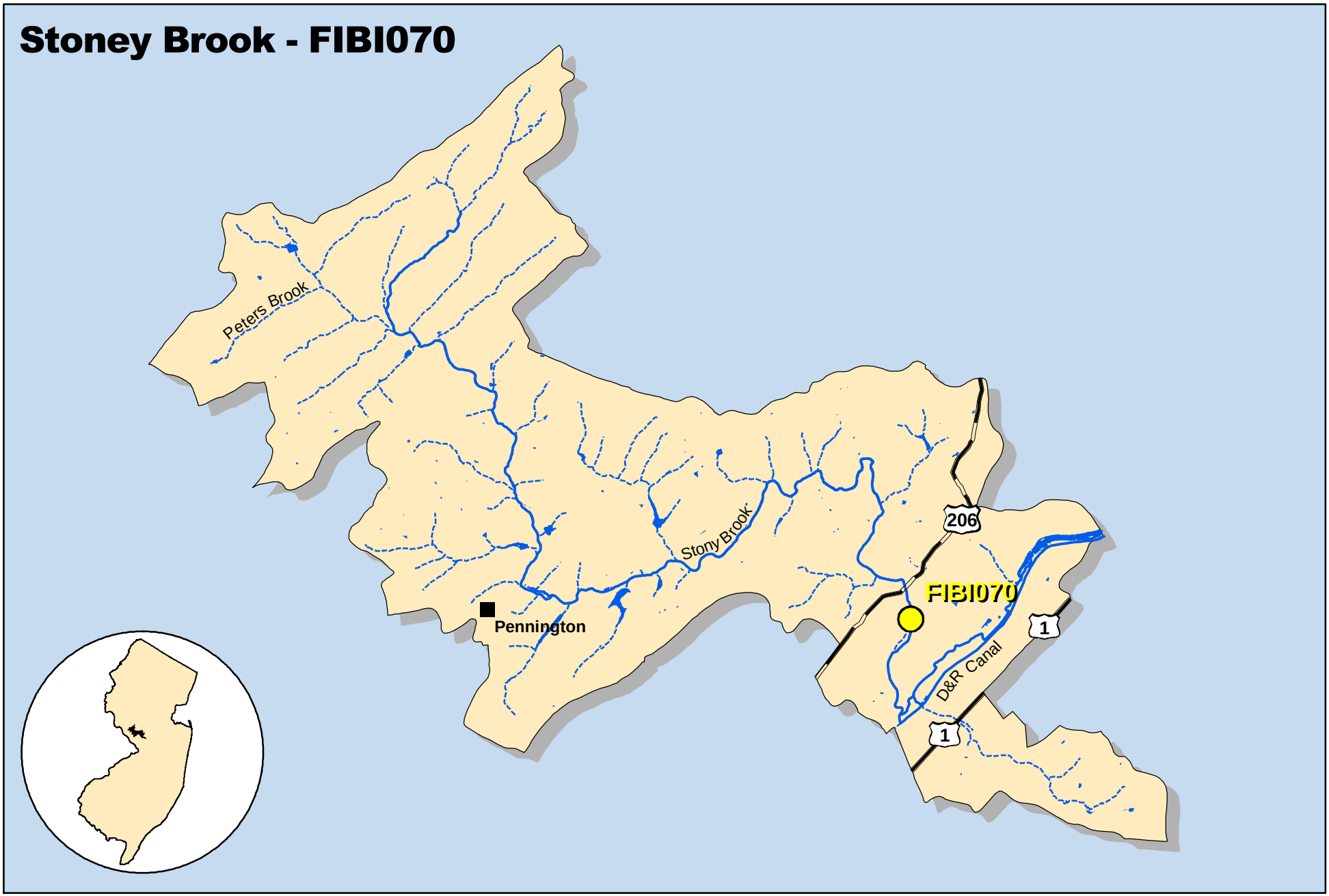
Stoney Brook - FIBI070



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

SUMMARY OF RESULTS

FIBI070 - Stony Brook

1. Stream Name:	Stony Brook
2. Sampling Date:	07-18-2003
3. Sampling Location:	CR 583
4. Municipality	Princeton
5. County:	Mercer
6. Watershed Management Area:	10
7. Contributing Drainage Area:	45.1 Square Miles
8. Electrofishing Gear:	2 Backpack
9. FIBI Score and Rating:	42 - Good
10. Habitat Score and Rating:	124 - Suboptimal
11. Fishable Species Present:	Yes
12. Relevant AMNET[1] Station Data:	
Proximity of FIBI station to AMNET station:	0.47 mi downstream AN0393
AMNET Rating:	Round 1 - Moderate Round 2 – Moderate Round 3 - Moderate
13. Stream Chemistries:	
Dissolved Oxygen	6.7 mg/L
Temperature.	21.3 ^{0}C
pH	7.9
Conductivity	314 μmhos/cm
14. Number of Fish With Anomalies:	1 Bluegill with deformities
15. Length of Stream Segment Sampled	150 Meters
16. Water Clarity:	Clear
17. Average Forest Open Canopy:	77.5%
18. Discharge:	6.1 ft.^{3}/sec
19. Substrate:	50% Gravel and Sand, 30% Cobble, 20% Silt
20. Habitat:	20% Riffle, 70% Run, 10% Pool
21. Snags	Yes
22. Periphyton	Moderate
23. Submerged Aquatic Vegetation	Yes
24. Other observations:	
25. Number of Fish Species Identified:	20
26. Total Number of Fish Collected:	285

[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.

[2] A small, isolated pool located on the north side of County Route 583 and on the west side of Stony Brook contained the only Salmonids found in this survey. There was a temp. difference of 3°C(18.3°F) in the pool apparently caused by upwelling groundwater.


FIBI070
STONY BROOK
ROUTE 583
PRINCETON TOWNSHIP, MERCER COUNTY
Hutchinson Drive
Route 583
Quaker Road
N
LEGEND
START
FINISH
SEGMENT SAMPLED
DIRECTION OF FLOW

FIBI070 - Stony Brook @ CR 583 Excellent **Good** Fair Poor

Date Sampled - 7/18/2003

	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	5
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)	1
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
Total	**42**

Stream Rating

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

HABITAT ASSESSMENT FOR *HIGH* GRADIENT STREAMS Stony Brook (FIBI070) – 7/18/03

	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).	40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.
SCORE 16	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	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment.	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment.
SCORE 13	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)	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).	Only 2 of the 4 habitat regimes present (if fast-shallow or slow-shallow are missing, score low).	Dominated by 1 velocity / depth regime (usually slow-deep).
SCORE 16	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.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 5-30% (20-50% for low-gradient) of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 30-50% (50-80% for low-gradient) of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 50% (80% for low-gradient) of the bottom changing frequently; pools almost absent due to substantial sediment deposition.
SCORE 13	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.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.
SCORE 10	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.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.	Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. In stream habitat greatly altered or removed entirely.
SCORE 18	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.	Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.	Occasional riffle or bend; bottom contours provide some habitat; distance between riffles divided by the width of the stream is between 15 to 25.	Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ratio of >25.
SCORE 13	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.	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.
SCORE ___**1**___ (LB)	Left 10 9	8 7 6	5 4 3	2 **1** 0
SCORE ___**4**___ (RB)	Right 10 9	8 7 6	5 **4** 3	2 1 0
9. Bank Vegetative Protection (score each bank)	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.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.
SCORE ___**2**___ (LB)	Left 10 9	8 7 6	5 4 3	**2** 1 0
SCORE ___**2**___ (RB)	Right 10 9	8 7 6	5 4 3	**2** 1 0
10. Riparian Vegetative Zone Width (score each bank riparian zone)	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riparian zone <6 meters: little or no riparian vegetation due to human activities.
SCORE ___**8**___ (LB)	Left 10 9	**8** 7 6	5 4 3	2 1 0
SCORE ___**8**___ (RB)	Right 10 9	**8** 7 6	5 4 3	2 1 0

HABITAT SCORE

124

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

FIBI070 07-18-2003

Stony Brook

LISTED IN ORDER OF ABUNDANCE FOUND

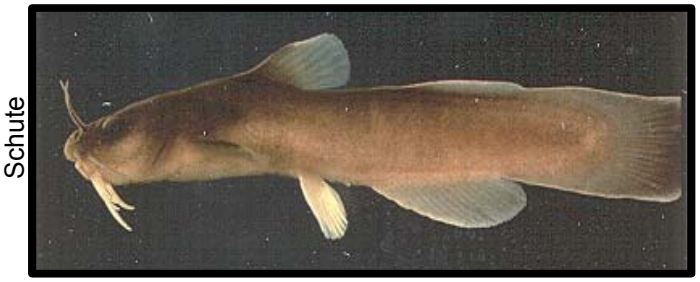
COMMON NAME	SCIENTIFIC NAME	# FOUND	SIZE RANGE (INCHES)
American eel	*Anguilla rostrata*	54	
Rock bass	*Ambloplites rupestris*	41	2.6 - 5.5
Redbreast sunfish	*Lepomis auritus*	41	1.6 - 6.7
Pumpkinseed sunfish	*Lepomis gibbosus*	25	2.6 - 4.7
Tesselated darter	*Etheostoma olmstedi*	21	
Banded killifish	*Fundulus diaphanus*	19	
Green sunfish	*Lepomis cyanellus*	17	1.8 - 4.5
Bluegill sunfish	*Lepomis macrochirus*	15	2.2 - 5.3
Swallowtail shiner	*Notropis procne*	13	
White sucker	*Catostomus commersoni*	13	
Satinfin shiner	*Cyprinella analostana*	10	
Common shiner	*Luxilus cornutus*	4	
Largemouth bass	*Micropterus salmoides*	2	2.6 - 12.2
Spottail shiner	*Notropis hudsonius*	2	
Rainbow trout	*Oncorhynchus mykiss*	2	11.8 - 12.6
Golden shiner	*Notemigonus crysoleucas*	2	
Brook trout	*Salvelinus fontinalis*	1	9.4
Blacknose dace	*Rhinichthys atratulus*	1	
Margined madtom	*Noturus insignis*	1	
Creek chub	*Semotilus atromaculatus*	1	

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

Species Identified at Stony Brook (FIBI070)

(Not to Scale)

Schute

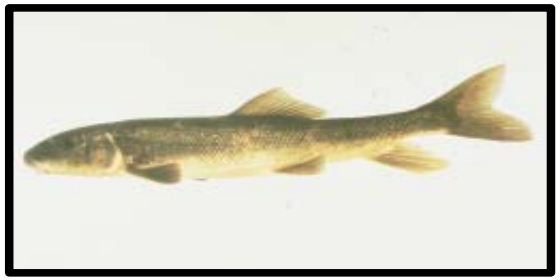


Margined Madtom

AFS

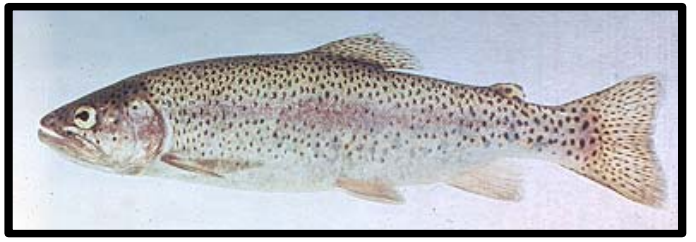
Largemouth Bass

John Scarola



White Sucker

John Scarola



Rainbow Trout

John Scarola

Bluegill

John Scarola

Blacknose Dace

Species Identified at Stony Brook (FIBI070)

(Not to Scale)

Konrad Schmidt

Creek Chub

Konrad Schmidt

Green Sunfish

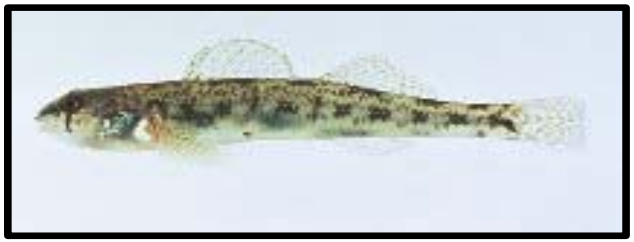
John Scarola

Pumpkinseed

John Scarola

Rock Bass

John Scarola



Tesselated Darter

Don Beimborn

Brook Trout

Species Identified at Stony Brook (FIBI070)

(Not to Scale)

John Scarola

Redbreast Sunfish

John Scarola

Common Shiner

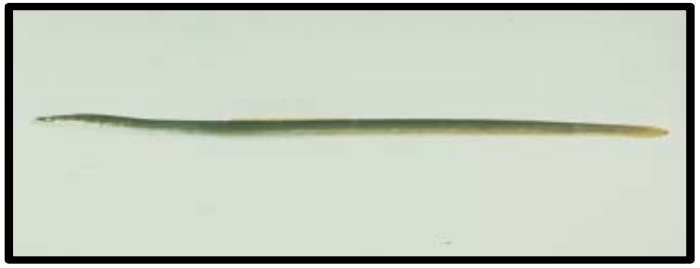
John Scarola

Golden Shiner

Konrad Schmidt

Spottail Shiner

John Scarola



American Eel

Jenkins & Burkhead

Swallowtail Shiner

Species Identified at Stony Brook (FIBI070)

(Not to Scale)

William Pflieger

Satinfin Shiner

John Scarola

Banded Killifish