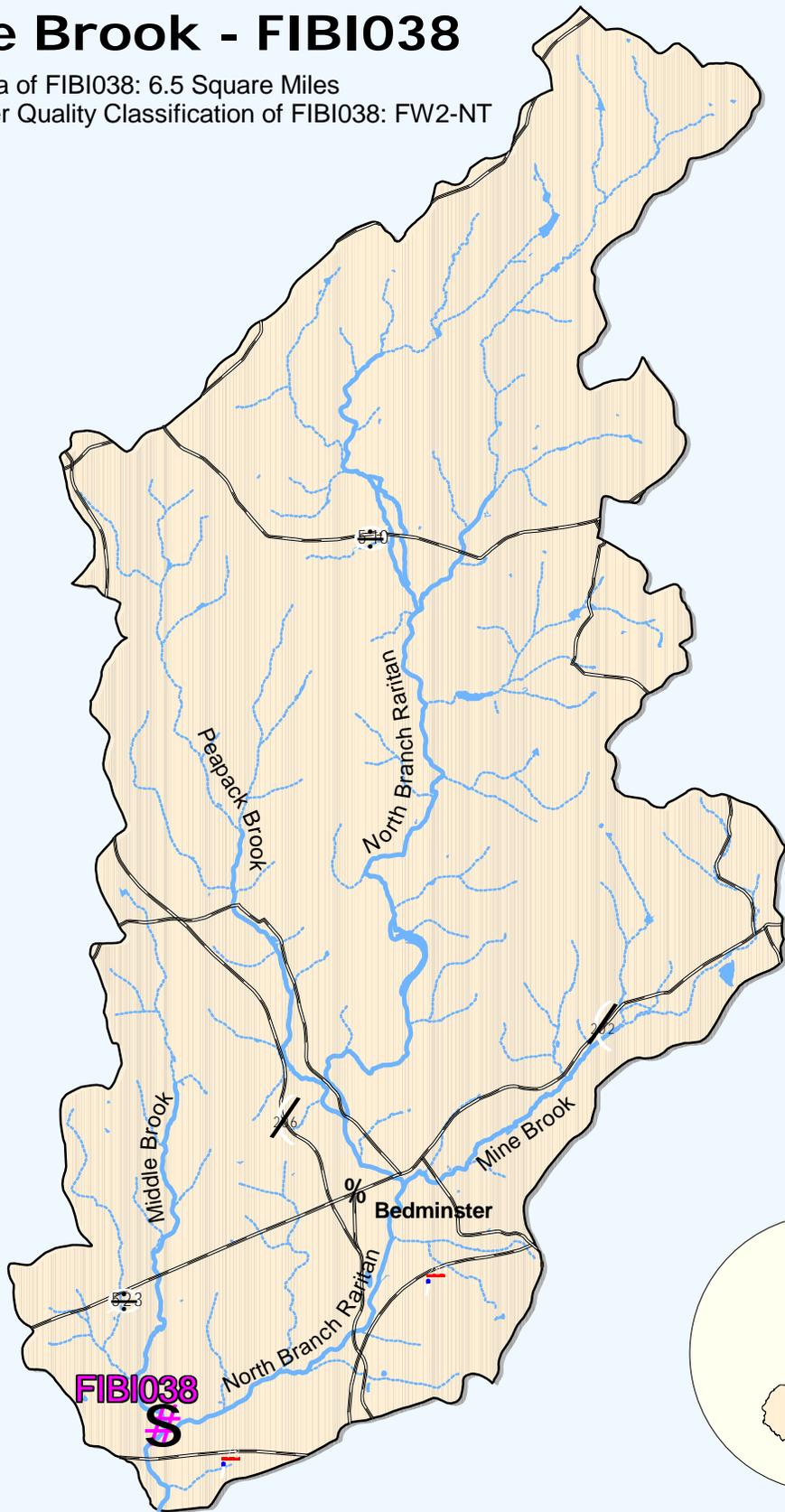


# Middle Brook - FIBI038

Drainage Area of FIBI038: 6.5 Square Miles  
Surface Water Quality Classification of FIBI038: FW2-NT



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



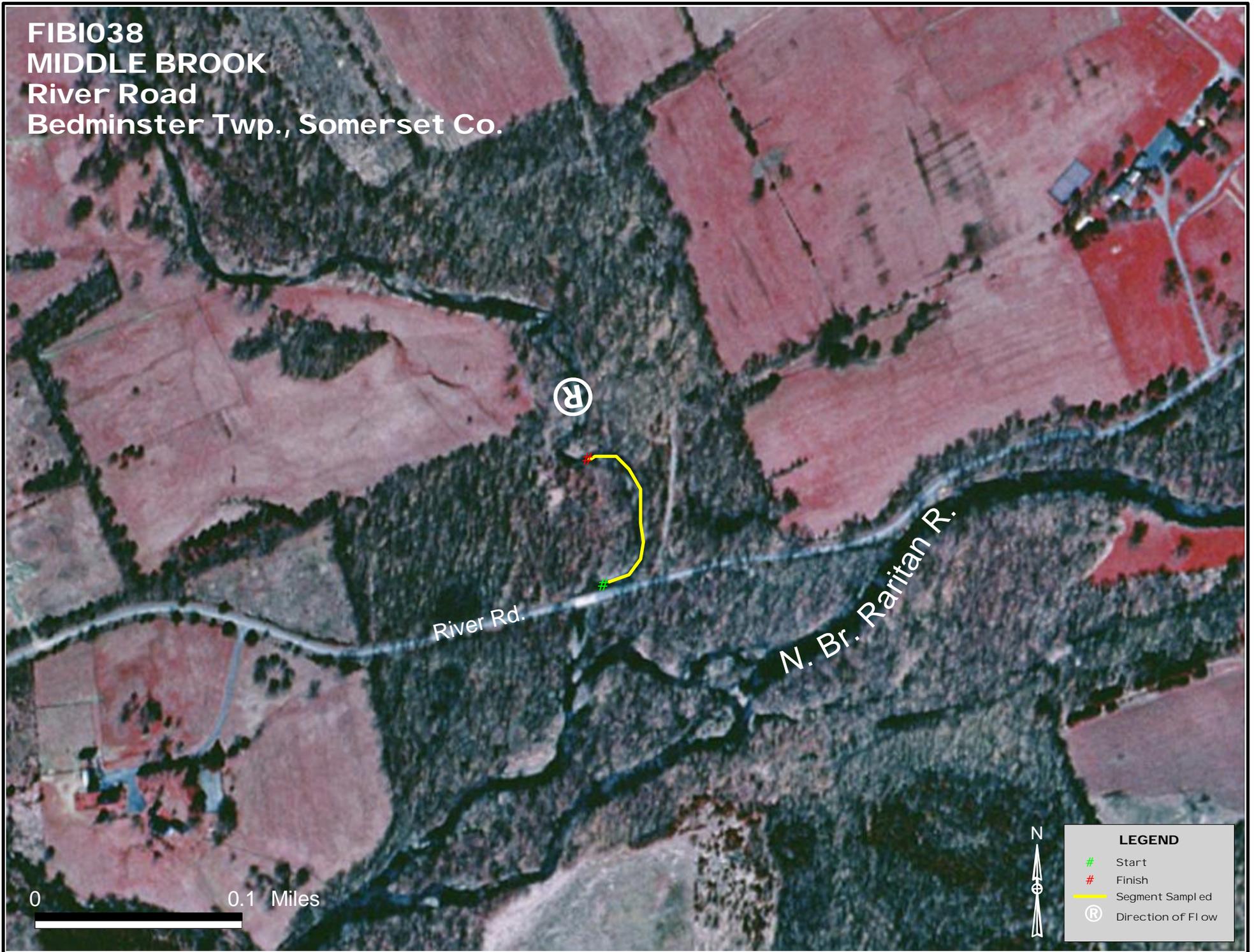
## SUMMARY OF RESULTS – FIBI038



1. Stream Name:	Middle Brook
2. Sampling Date:	08/06/2001
3. Sampling Location:	River Rd. (40 38 51N; 74 40 52W)
4. Municipality:	Bedminster Twp.
5. County:	Somerset
6. Watershed Management Area:	8
7. Contributing Drainage Area (Sq. Mi.):	6.5
8. Stream Water Quality Class:	FW2-NT
9. FIBI Rating:	Good (38) (See Appendix 3)
10. Habitat Assessment Rating:	Suboptimal (155) (See Appendix 3)
11. Fishable Species Present:	Yes
12. Relevant AMNET <sup>1</sup> Station Data:	
Proximity of FIBI station to AMNET station:	AN0355
AMNET Rating:	1994-Moderately Impaired; 1999-Non-Impaired
13. Stream Chemistries:	
Dissolved Oxygen (mg/l)	7.61
Temperature °C.	23.1
pH	7.75
Conductivity (µmhos/cm)	245
14. Number of Fish With Anomalies:	0
15. Length of Stream Segment Sampled	150 meters (492 feet)
16. Water Clarity:	Turbid
17. Average Forest Open Canopy:	10%
18. Discharge (ft. <sup>3</sup> /sec.):	3.0
19. Substrate: (qualitative)	20% Gravel/Sand, 40% Cobble, 40% Silt
20. Habitat Type: (qualitative)	25% Riffle, 25% Run, 50% Pool
21. Other observations:	extreme lack of fish
22. Number of Fish Species Identified: (see next page)	18
23. Total Number of Fish Collected:	129

<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.

FIBI038  
MIDDLE BROOK  
River Road  
Bedminster Twp., Somerset Co.



**FIBI038 - Middle Brook @ River Rd**  
**Date Sampled - 8/06/2001**

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	5
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)	1
Proportion of Individuals as Trout	
OR	
Proportion of Individuals as Piscivores (Excluding American Eel)*	3
Number of Individuals in Sample	3
Proportion of Individuals w/disease/anomalies (excluding blackspot)	5
<b>Total</b>	<b>38</b>

**Stream Rating**

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

# HABITAT ASSESSMENT FOR HIGH GRADIENT STREAMS **Middle Brook (FIBI038) – 8/6/01**

	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 not transient). <b>SCORE 19</b>	20 <b>19</b> 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 <b>16</b>	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 16</b>	20 19 18 17 <b>16</b>	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 11</b>	20 19 18 17 16	15 14 13 12 <b>11</b>	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 10</b>	20 19 18 17 16	15 14 13 12 11	<b>10</b> 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>	<b>20</b> 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 15</b>	20 19 18 17 16	<b>15</b> 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>5</u> (LB) SCORE <u>5</u> (RB)	Left Bank 10 9 Right Bank 10 9	8 7 6 8 7 6	<b>5</b> 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>9</u> (LB) SCORE <u>9</u> (RB)	Left Bank 10 <b>9</b> Right Bank 10 <b>9</b>	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>10</u> (LB) SCORE <u>10</u> (RB)	Left Bank <b>10</b> 9 Right Bank <b>10</b> 9	8 7 6 8 7 6	5 4 3 5 4 3	2 1 0 2 1 0

**HABITAT SCORE**

**155**

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

# FIBI038 08/06/01

MIDDLE BROOK

## LISTED IN ORDER OF ABUNDANCE FOUND

COMMON NAME	SCIENTIFIC NAME	# FOUND	SIZE RANGE (INCHES)
Tesselated Darter	<i>Etheostoma olmstedii</i>	24	
Green Sunfish*	<i>Lepomis cyanellus</i>	13	2.3 - 4.6
Longnose Dace	<i>Rhinichthys cataractae</i>	13	
White Sucker*	<i>Catostomus commersoni</i>	12	
Bluegill*	<i>Lepomis macrochirus</i>	11	1.2 - 3.5
Redbreast Sunfish*	<i>Lepomis auritus</i>	10	4.3 - 4.7
Banded Killifish	<i>Fundulus diaphanus</i>	7	
Rock Bass*	<i>Ambloplites rupestris</i>	7	2.4 - 6.3
Blacknose Dace	<i>Rhinichthys atratulus</i>	6	
American Eel*	<i>Anguilla rostrata</i>	6	
Pumpkinseed*	<i>Lepomis gibbosus</i>	5	3.1 - 3.5
Largemouth Bass*	<i>Micropterus salmoides</i>	4	1.6 - 3.5
Redfin Pickerel*	<i>Esox americanus americanus</i>	3	3.1 - 6.7
Golden Shiner	<i>Notemigonus crysoleucas</i>	2	
Yellow Perch*	<i>Perca flavescens</i>	2	2.0
Brown Bullhead*	<i>Ameiurus nebulosus</i>	2	4.7 - 5.9
Creek Chub	<i>Semotilus atromaculatus</i>	1	
Swallowtail Shiner	<i>Notropis procne</i>	1	

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

FIGURE 1.1 (Not to Scale)  
Species Identified at Middle Brook (FIBI038)

John Scarola



White Sucker

John Scarola



Pumpkinseed

John Scarola



Brown Bullhead

John Scarola



Rock Bass

Konrad Schmidt



Green Sunfish

John Scarola



Redbreast Sunfish

FIGURE 1.1 (Not to Scale)  
Species Identified at Middle Brook (FIBI038)



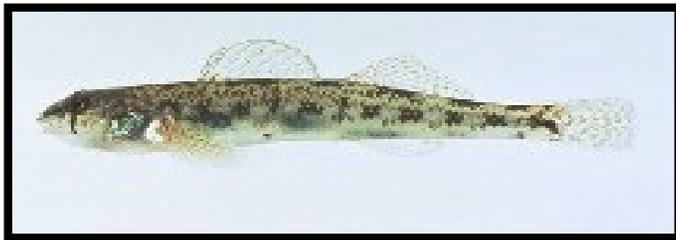
Jenkins & Burkhead

Redfin Pickerel



AFS

Largemouth Bass



John Scarola

Tessellated Darter



John Scarola

Yellow Perch



Shute

Longnose Dace



Jenkins & Burkhead

Swallowtail Shiner

FIGURE 1.1 (Not to Scale)  
Species Identified at Middle Brook (FIBI038)

John Scarola



Blacknose Dace

John Scarola



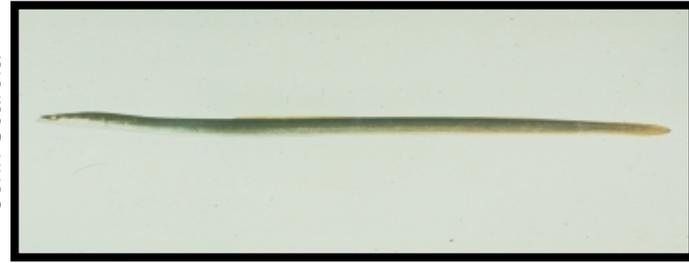
Bluegill

John Scarola



Golden Shiner

John Scarola



American Eel

Konrad Schmidt



Creek Chub

FIGURE 1.1 (Not to Scale)  
Species Identified at Middle Brook (FIBI038)

John Scarola



Banded Killifish