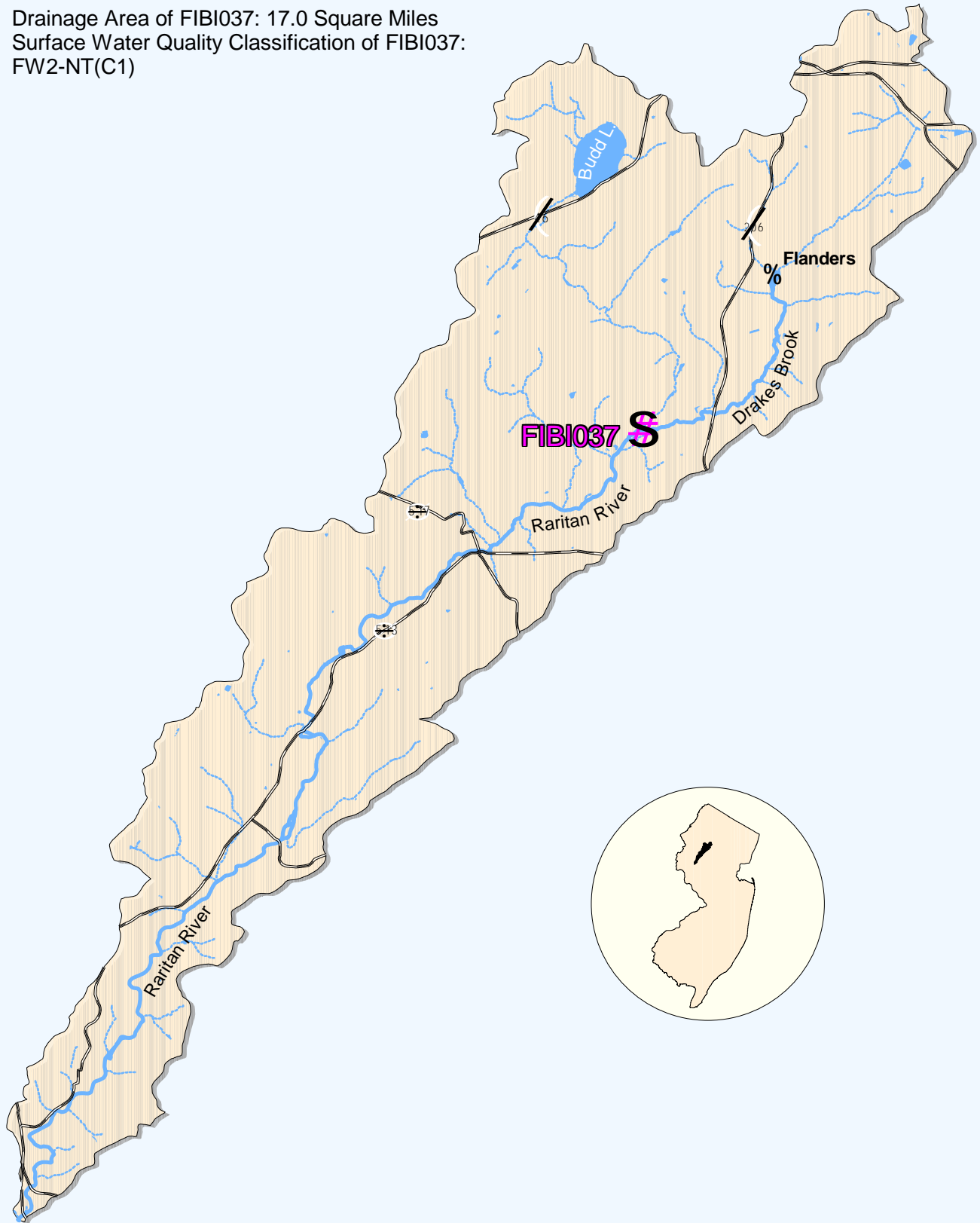





Drakes Brook - FIBI037

Drainage Area of FIBI037: 17.0 Square Miles
Surface Water Quality Classification of FIBI037:
FW2-NT(C1)



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



SUMMARY OF RESULTS – FIBI037



1. Stream Name:	Drakes Brook
2. Sampling Date:	08/09/2001
3. Sampling Location:	Old R .R. off N. Four Bridges Rd. (40 48 42N; 74 43 57W)
4. Municipality:	Washington Twp.
5. County:	Morris
6. Watershed Management Area:	8
7. Contributing Drainage Area (Sq. Mi.):	17.0
8. Stream Water Quality Class:	FW2-NT(C1)
9. FIBI Rating:	Good (44) (See Appendix 3)
10. Habitat Assessment Rating:	Optimal (178) (See Appendix 3)
11. Fishable Species Present:	Yes
12. Relevant AMNET ¹ Station Data:	
Proximity of FIBI station to AMNET station:	0.19 mi. downstream of AN0312
AMNET Rating:	1994-Non-Impaired; 1999-Non-Impaired
13. Stream Chemistries:	
Dissolved Oxygen (mg/l)	8.7
Temperature °C.	21.4
pH	7.9
Conductivity (µmhos/cm)	354
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:	8%
18. Discharge (ft. ³ /sec.):	3.9
19. Substrate: (qualitative)	10% Gravel/Sand, 80% Cobble, 10% Silt
20. Habitat Type: (qualitative)	25% Riffle, 50% Run, 25% Pool
21. Other observations:	N/A
22. Number of Fish Species Identified: (see next page)	18
23. Total Number of Fish Collected:	544

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.

FIBI037
DRAKES BROOK
old R. R. grade off N. Four Bridges Road
Washington Twp., Morris Co.



FIBI037-Drakes Bk b/w Bartley & N 4 Bridges Rd
Date Sampled - 8/09/2001

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)	1
Proportion of Individuals as Trout	
OR	
Proportion of Individuals as Piscivores (Excluding American Eel)*	5
Number of Individuals in Sample	5
Proportion of Individuals w/disease/anomalies (excluding blackspot)	5
Total	44

Stream Rating

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

HABITAT ASSESSMENT FOR HIGH GRADIENT STREAMS **Drakes Brook (FIBI037) – 8/9/01**

	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 18	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 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 19	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 16	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>9</u> (LB) SCORE <u>9</u> (RB)	Left Bank 10 8 Right Bank 10 8	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>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

HABITAT SCORE

178

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

FIBI037 08/09/01

DRAKES BROOK

LISTED IN ORDER OF ABUNDANCE FOUND

COMMON NAME	SCIENTIFIC NAME	# FOUND	SIZE RANGE (INCHES)
Brook Trout*	<i>Salvelinus fontinalis</i>	132	2.0 - 11.4
Slimy Sculpin	<i>Cottus cognatus</i>	123	
White Sucker*	<i>Catostomus commersoni</i>	75	
Tesselated Darter	<i>Etheostoma olmstedii</i>	58	
Blacknose Dace	<i>Rhinichthys atratulus</i>	51	
Brown Trout*	<i>Salmo trutta</i>	27	2.6 - 15.7
Longnose Dace	<i>Rhinichthys cataractae</i>	21	
Fallfish	<i>Semotilus corporalis</i>	18	
Eastern Mudminnow	<i>Umbra pygmaea</i>	12	
Green Sunfish*	<i>Lepomis cyanellus</i>	7	2.2 - 4.8
Bluegill*	<i>Lepomis macrochirus</i>	7	3.1 - 5.1
Pumpkinseed*	<i>Lepomis gibbosus</i>	4	2.4 - 4.3
Redfin Pickerel*	<i>Esox americanus americanus</i>	4	3.1 - 6.9
Common Shiner	<i>Luxilus cornutus</i>	1	
Redbreast Sunfish*	<i>Lepomis auritus</i>	1	2.8
Yellow Perch*	<i>Perca flavescens</i>	1	5.1
Margined Madtom	<i>Noturus insignis</i>	1	
Golden Shiner	<i>Notemigonus crysoleucas</i>	1	

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

**FIGURE 1.1 (Not To Scale)
Species Identified at Drakes Brook (FIBI037)**

John Scarola



Fallfish

Jenkins & Burkhead



Redfin Pickerel

John Scarola



Blacknose Dace

John Scarola



White Sucker

John Scarola



Brown Trout

Don Beimborn



Brook Trout

**FIGURE 1.1 (Not To Scale)
Species Identified at Drakes Brook (FIBI037)**

John Scarola



Common Shiner

Shute



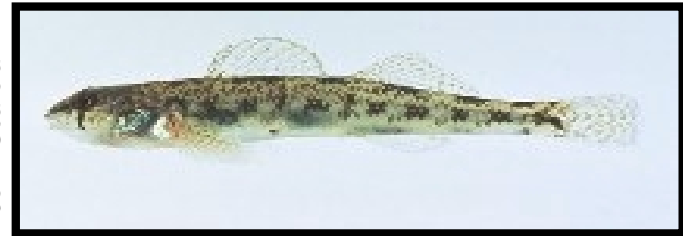
Longnose Dace

John Scarola



Golden Shiner

John Scarola



Tessellated Darter

John Scarola



Redbreast Sunfish

John Scarola



Pumpkinseed

**FIGURE 1.1 (Not To Scale)
Species Identified at Drakes Brook (FIBI037)**

John Scarola



Bluegill

John Scarola



Yellow Perch

John Scarola



Slimy Sculpin

Shute



Margined Madtom

Konrad Schmidt



Green Sunfish

Jenkins & Burkhead



Eastern Mudminnow