

Excellent Good	Fair	Poor
	Score	_
	5	
	5	]
fish, crappie)	5	]
	5	]
	3	]
ub, banded killifish,	5	]
		7
(I and BI)	5	
never gives better score		
merican Eel)*	3	]
	5	]
uding blackspot)	5	]
	46	
	Excellent Good fish, crappie) ub, banded killifish, (I and BI) never gives better score merican Eel)*	Excellent       Good       Fair         Score       5         5       5         ish, crappie)       5         ish, banded killifish,       5         ish (I and BI)       5         never gives better score       3         imerican Eel)*       3         ish (I and BI)       5         ish (I and BI)

37-44

29-36

10-28

Good

Fair

Poor

FIBI040 WEST BRANCH PAPAKATING CREEK CR 565 Wantage Twp., Sussex Co.

 $(\mathbf{x})$ 

LEGEND Start Finish Segment Sampl ed

CR 65

Excellent Good	Fair	Poor
	Score	_
	5	
	5	]
fish, crappie)	5	]
	5	]
	3	]
ub, banded killifish,	5	]
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#### HABITAT ASSESSMENT FOR HIGH GRADIENT STREAMS W. Branch Papakating Creek (FIBI040) -8/21/01

	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).	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 13	20 19 18 17 16	15 14 <mark>13</mark> 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 <mark>13</mark> 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 12	20 19 18 17 10	13 14 13 12 11	10 9 8 7 0	J 4 3 2 1 0	
4. Sediment Deposition	islands or point pars 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.	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.	neary deposits of file 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 12	20 19 18 17 16	15 14 13 <mark>12</mark> 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 14	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 12	20 19 18 17 16	15 14 13 <mark>12</mark> 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 <mark>13</mark> 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 66(LB) SCORE 8 (RB)	Left Bank 10 9 Right Bank 10 9	8 7 6 8 7 6	5 4 3 5 4 3	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	
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.	
SCORE7(LB)	Left Bank 10 9	8 6	5 4 3	2 1 0	
SCORE7 (RB)	Right Bank 10 9	8 6	5 4 3	2 1 0	
<b>10. Riparian Vegetative</b> <b>Zone Width</b> (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 5 (RB)	Right Bank 10 9	8 7 6	5 4 <b>5</b> 4 3	2 1 0 2 1 0	
500KL_5_(KD)	Augar Dunk 10 7	0 / 0	<b>4 5</b>	2 1 0	

HABITAT	SCORE

125

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

#### FIBIO40 08/21/01 West branch papakating creek

#### LISTED IN ORDER OF ABUNDANCE FOUND

COMMON NAME	SCIENTIFIC NAME	# FOUND	SIZE RANGE (INCHES)	
Longnose Dace	Rhinichthys cataractae	256		
White Sucker*	Catostomus commersoni	149		
Creek Chub	Semotilus atromaculatus	129		
Blacknose Dace	Rhinichthys atratulus	103		
Pumpkinseed*	Lepomis gibbosus	69	2.0 - 3.1	
Common Shiner	Luxilus cornutus	62		
Tesselated Darter	Etheostoma olmstedi	42		
Redfin Pickerel*	Esox americanus americanus	19	3.1 - 7.1	
Bluegill*	Lepomis macrochirus	8	2.6 - 2.8	
Golden Shiner	Notemigonus crysoleucas	4		
Brook Trout*	Salvelinus fontinalis	3	11.8 - 12.8	
Redbreast Sunfish*	Lepomis auritus	2	3.7 - 4.3	
Largemouth Bass*	Micropterus salmoides	2	3.7 - 4.3	
Cutlips Minnow	Exoglossum maxillingua	2		
Banded Killifish	Fundulus diaphanus	1		

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

### FIGURE 1.1 (Not to Scale) Species Identified at West Branch Papakating Creek (FIBI040)



**Brook Trout** 



**Common Shiner** 













**Creek Chub** 



Pumpkinseed

# FIGURE 1.1 (Not to Scale) Species Identified at West Branch Papakating Creek (FIBI040)





**Redfin Pickerel** 



**Cutlips Minnow** 



Longnose Dace

Bluegill



**Golden Shiner** 



**Tesselated Darter** 

## FIGURE 1.1 (Not to Scale) Species Identified at West Branch Papakating Creek (FIBI040)



Largemouth Bass



**Redbreast Sunfish** 



**Banded Killifish**