





SUMMARY OF RESULTS - FIBI024



Passaic River 1. Stream Name: 08/08/2001 2. Sampling Date: Stonehouse Rd. (40 40 16N; 74 31 33W) 3. Sampling Location: Long Hill Twp. 4. Municipality Morris 5. County: 6. Watershed Management Area: 54.3 7. Contributing Drainage Area (Sq. Mi.): FW2-NT 8. Stream Water Quality Class: 9. FIBI Rating: Fair (36) (See Appendix 3) Marginal (108) (See Appendix 3) 10. Habitat Assessment Rating:

11. Fishable Species Present:

12. Relevant AMNET¹ Station Data:

Proximity of FIBI station to AMNET station: 1.07 mi. upstream of AN0224

AMNET Rating: 1992-Non-Impaired; 1999-Non-Impaired

13. Stream Chemistries:

Dissolved Oxygen (mg/l)
7.9
Tamperature ⁰C

Temperature ⁰C. 26.2 pH 8

Conductivity (µmhos/cm) 302 14. Number of Fish With Anomalies: 0

15. Length of Stream Segment Sampled 150 meters (492 feet)

16. Water Clarity:Clear17. Average Forest Open Canopy:50%

18. Discharge (ft.³/sec.): 21.8

19. Substrate: (qualitative) 15% Gravel/Sand, 70% Cobble, 15% Silt 20. Habitat Type: (qualitative) 20% Riffle, 70% Run, 10% Pool

21. Other observations: Retaining Wall/Rip Rap along entire right bank

22. Number of Fish Species Identified: (see next page)
15
23. Total Number of Fish Collected:
829

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.



FIBI024 - Passaic River @ Stonehouse & Haas Rd	Fair Poor
	Score
# of Fish Species	5
# of Benthic Insectivorous Species (BI)	3
# of Trout and Centrarchid Species (trout, bass, sunfish, crappie)	3
# of Intolerant Species (IS)	3
Proportion of Individuals as White Suckers	5
Proportion of Individuals as Generalists (carp, creek chub, banded killifish,	5
goldfish, fathead minnow, green sunfish)	
Proportion of Individuals as Insectivorous Cyprinids (I and BI)	1
Proportion of Individuals as Trout *whichever gives better score OR	
Proportion of Individuals as Pisciviores (Excluding American Eel)*	1
Number of Individuals in Sample	5
Proportion of Individuals w/disease/anomalies (excluding blackspot)	5
Total	36

Stream Rating

45-50 Excellent37-44 Good29-36 Fair10-28 Poor

HABITAT ASSESSMENT FOR *HIGH* GRADIENT STREAMS Passaic River (FIBI024) – 8/8/01

Light part Colonization and shower manufactors banks, cubble or other stands behalts and stage to alrow full colonization proteins Line and the colonization and stage to alrow full colonization proteins Line and the colonization and stage to alrow full colonization proteins Line and the colonization and the part Line and the colonization an			Conunc	on Category	
L. Epilamand Substrate Available Cover Ava		Optimal	Suboptimal	Marginal	Poor
2. Embeddedness 2. Embeddedness 2. Embeddedness 3. Velocity/Depth Regimes 5. CORE 19 3. Velocity/Depth Regimes 5. CORE 19 3. Velocity/Depth Regimes 5. CORE 19 4. Sediment Deposition 5. CORE 11 5. Company of the bottom affected by sediment deposition in pools. 5. CORE 19 5. C		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 not new	well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate i the form of newfall, but not yet prepared for colonization (may	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lact of habitat is obvious; substrate unstable or lacking.
2. Embeddedness particles are 0.25% surrounded by fine sediment. Layering of the control of the provides diversity of nitches are 0.25% surrounded by fine sediment. Some provides diversity of nitches are 0.25% surrounded by fine sediment. Some provides diversity of nitches are 0.25% surrounded by fine sediment. Some provides of the control of the provides of the provides of the control of the provides	SCORE 13		15 14 <mark>13</mark> 12 11	10 9 8 7 6	5 4 3 2 1 0
3. Velocity/Depth Regimes	2. Embeddedness	particles are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche	particles are 25-50% surrounded	particles are 50-75% surrounded	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment.
SCORE 10 20 19 18 17 16 Channel Provision Channel Alteration C	SCORE 8	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
Little or no enlargement of islands or point burs and less than islands or point burs and less than for point burs and less than formation, mostly from gravel, saved or fine sediment of the content affected by sediment deposition. Section		present (slow-deep, slow-shallow, fast-deep, fast-shallow). (slow is <0.3 m/s, deep is >0.5 m)	(if fast-shallow is missing, score lower than if missing other regimes).	present (if fast-shallow or slow- shallow are missing, score low).	Dominated by 1 velocity / depth regime (usually slow-deep).
4. Sediment Deposition slands or point biars and less than 5% (<260% for low-gradient) streams of the bottom affected by sediment deposition. sold with the sellinguish streams of the bottom affected; sight deposits at obstructions, moderated position of pools streams of the bottom affected; sight deposits of obstructions, moderated position of pools streams of the bottom affected; sight deposits at obstructions, moderated position of pools streams of the bottom affected; scilinared deposition of pools streams of the bottom affected; scilinared deposition of pools streams of the bottom affected; scilinared streams of the bottom affected; sight streams of the streams of	SCORE 11	20 19 18 17 16	15 14 13 12	10 9 8 7 6	5 4 3 2 1 0
SCORE 15 20 19 18 17 16 15 14 12 11 10 9 8 7 6 5 4 3 2 1	4. Sediment Deposition	islands or point bars and less than 5% (<20% for low-gradient streams) of the bottom affected	formation, mostly from gravel, sand or fine sediment; 5-30% (20-50% for low-gradient of the bottom affected; slight	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	frequently; pools almost absent due to substantial sediment
Score Scor	SCORE 13	20 19 18 17 16	15 14 13 12 11		5 4 3 2 1 0
Channel Alteration Channel Alter	5. Channel Flow Status	banks, and minimal amount of	channel; or <25% of channel	available channel, and/or riffle	Very little water in channel and mostly present as standing pools.
absent or minimal, stream with normal pattern. absent or minimal, stream with normal pattern. absent or minimal, stream with normal pattern. absent or minimal, stream with normal pattern. absent or minimal, stream with normal pattern. absent or minimal, stream with normal pattern. absent or minimal, stream with normal pattern. absent or minimal, stream with normal pattern. absent or minimal, stream with normal pattern. absent or minimal, stream with normal pattern. absent or minimal, stream with normal pattern. absent or minimal, stream with normal pattern. absent or minimal, stream with normal pattern. absent or minimal, stream with normal pattern. absent or minimal, stream with personnel of the stream is not present. absent or minimal, stream with personnel of the stream is not present. absent or minimal, stream with normal pattern. absent or minimal, stream with personnel of the stream is not present. absent or minimal, stream with off the stream is not present. absent or minimal, stream with off the stream is not present. absent or minimal, stream with off the stream is not present. absent or minimal, stream with off the stream is not present. absent or minimal, stream with off the stream is not present. absent or minimal, stream with off the stream is not present. absent or minimal, stream with off the stream is not present. absent or minimal, stream with off the stream is not present. absent or minimal, stream with off the stream is not present. absent or minimal, stream with off the stream is not present. absent or minimal, stream with the stream is not present. absent or minimal, stream with the stream is not present. absent or minimal, stream with the stream is not present. absent or minimal, stream with the stream is not present. absent or minimal, stream with the stream is not present. absent or stream with stream is not present. absent or stream with the stream is not present. absent or stream with the stream is not present. ab	SCORE 16	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) 7. Frequency of Riffles (or bends) 7. Frequency of Riffles (or bends) 8. Bank Stability (score each bank) Note: determine left or right side by facing downstream. SCORE 5 (RB) 9. Bank Vegetative Protection (score each bank) 9. Bank Vegetative Protection (score each bank) SCORE 1 (LB) SCORE 1 (LB) SCORE 7 (RB) Width of riparian zone 218 micros) SCORE 7 (RB) Width of riparian zone 218 micros) have not migneted zone each bank in zone (2 no moving minimal) ron to evident; always, or ropsy) have not impacted zone only minimally. laws, or cropsy have not impacted zone each bank in zone) Width of riparian zone 218 micros (rights) and the stream activities (i.e., parking loss, roadbeds, clear-cuts, laws, or crops) have not impacted zone each bank in zone (2 no minimal) rimaged zone each bank in zone) Width of riparian zone 2 laws (i.e., parking loss, roadbeds, clear-cuts, laws, or crops) have not impacted zone each bank riparian zone.	6. Channel Alteration	absent or minimal; stream with	usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization	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.
7. Frequency of Riffles (or bends) 2. Frequency of Riffles (or bends) 2. Frequency of Riffles (or bends) 2. Frequency of Riffles (or bends) 3. Frequency of Riffles (or bends) 3. Frequency of Riffles (or bends) 4. Frequency of Riffles (or bends) 4. Frequency of Riffles (or bends) 5. Frequency of Riffles (wided by the width of the stream is between riffles (divided by the width of the stream is between riffles (divided by the width of the stream is between riffles (divided by the width of the stream is between riffles (divided by the width of the stream is between riffles (divided by the width of the stream is between riffles (divided by the width of the stream is between riffles (divided by the width of the stream is between riffles (divided by the width of the stream is between riffles (divided by the width of the stream is a rational part of the option of the stream is between riffles (divided by the width of the stream is a rational part of the option of the stream is a rational part of the option of the stream is between riffles (of the stream is a rational part of the option of the stream is between riffles (or bendship in the part of the stream is a rational part of the option of the st	SCORE 9	20 19 18 17 16		10 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 _9_ (LB) SCORE _5 (RB) 9. Bank Vegetative Protection (score each bank) Annual Protection (score each bank) SCORE _1 (LB) SCO		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	Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is	Occasional riffle or bend; bottom contours provide some habitat; distance between riffles divided by the width of the stream is	Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ratio of
8. Bank Stability (score each bank) Note: determine left or right side by facing downstream. SCORE _9 _ (LB) SCORE _5 _ (RB) More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, under story shrubs, or nonwoody macrophytes; vegetative almost all plants allowed to grow nowing minimal or not evident; almost all plants allowed to grow nowing minimal or not evident; almost all plants allowed to grow nowing minimal or not evident; almost all plants allowed to grow nowing minimal or not evident; almost all plants allowed to grow nowing minimal or not evident; almost all plants allowed to grow nowing minimal or not evident; almost all plants allowed to grow nowing minimal or not evident; almost all plants allowed to grow nowing minimal or not evident; almost all plants allowed to grow nowing minimal or not evident; almost all plants allowed to grow nowing minimal or not evident; almost all plants allowed to grow nowing minimal or not evident; almost all plants allowed to grow nowing minimal or not evident; almost all plants allowed to grow nowing minimal or not evident; almost all plants allowed to grow nowing minimal or not evident; almost all plants allowed to grow nowing minimal or not evident; almost all plants allowed to grow nowing minimal or not evident; almost all plants allowed to grow nowing minimal or not evident; almost all plants allowed to grow nowing minimal or not evident; almost all plants allowed to grow nowing minimal or not evident; almost all plants allowed to grow nowing minimal or not evident; almost all plants allowed to grow nowing minimal or not evident; almost all plants allowed to grow nowing minimal or not evident; almost all plants allowed to grow nowing minimal or not evident; almost all plants allowed to grow nowing minimal or not evident; almost all plants allowed to grow nowing minimal or not evident; almost all plants allowed to grow nowing minimal or not evident; almost all plants allowed to grow nowing minimal or not e	SCORE 8		15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
SCORE _ 1_ (LB) SCORE _ 7_ (RB) Right Bank 10 9 8 7 6 4 3 2 1 0 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 _ 1_ (LB) SCORE _ 7_ (RB) Right Bank 10 9 8 7 6 5 5 4 3 2 1 0 Width of riparian zone > 18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, zone Width (score each bank riparian zone) = 20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	each bank) Note: determine left or right side by facing	or bank failure absent or minimal; little potential for future	small areas of erosion mostly healed over. 5-30% of bank in	bank in reach has areas of erosion; high erosion potential	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60- 100% of bank has erosional scars.
9. Bank Vegetative Protection (score each bank) 9. Bank Vegetative Surfaces covered by native vegetation, but one class of plants is not well-represented; disruption obvious; patches of extent; more than one-half of the potential plant stubble height remaining. 9. Bank Vegetative Surfaces covered by native vegetation, but one class of plants is not well-represented; disruption obvious; patches of extent; more than one-half of the potential plant stubble height remaining. 9. Bank Vegetative Surfaces covered by native vegetation, but one class of plants is not well-represented; disruption obvious; patches of extent; more than one-half of the potential plant stubble height remaining. 9. Bank Vegetative Surfaces covered by native vegetation, but one class of plants is not well-represented; disruption obvious; patches of extent; more than one-half of the potential plant stubble height remaining. 9. Core 1 (LB) SCORE 1 (LB) SCORE 7 (RB) 10. Riparian Vegetative Zone Width (score each bank riparian zone such parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone. 9. Bank 10 9 8 6 5 4 3 2 1 0 Width of riparian zone 6-12 meters; human activities have impacted zone a great deal. 9. Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.					
SCORE 1 (LB) SCORE 7 (RB) Right Bank 10 9 8 7 6 5 4 3 2 1 0 Right Bank 10 9 8 6 5 4 3 2 1 0 Width of riparian zone >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 6-12 meters; human activities have impacted zone a great deal.	9. Bank Vegetative Protection (score each	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	70-90% of the streambank surfaces covered by native vegetation, but one class of plant is not well-represented; disruptio evident but not affecting full plar growth potential to any great extent; more than one-half of the potential plant stubble height	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped t vegetation common; less than one-half of the potential plant	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
10. Riparian Vegetative Zone Width (score each bank riparian zone crops) have not impacted zone. Width of riparian zone 12-18 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 6-12 meters; human activities have impacted zone a great deal.		Left Bank 10 9			
10. Riparian Vegetative Zone Width (score each bank riparian zone) meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone. meters; human activities have impacted zone only minimally. meters; human activities have impacted zone a great deal. little or no riparian vegetative impacted zone a great deal.	SCORE7(RB)	Right Bank 10 9	8 <mark>7</mark> 6	5 4 3	2 1 0
SCORE1(LB)	Zone Width (score each bank riparian zone)	meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.	meters; human activities have	meters; human activities have impacted zone a great deal.	

HABITAT SCORE

108

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

FIBI024 08/08/01

PASSAIC RIVER

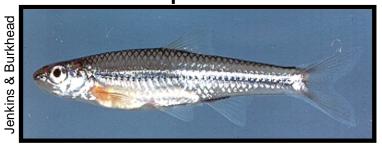
LISTED IN ORDER OF ABUNDANCE FOUND

COMMON NAME	SCIENTIFIC NAME	# FOUND	SIZE RANGE (INCHES)
Tesselated Darter	Etheostoma olmstedi	292	
Redbreast Sunfish*	Lepomis auritus	175	1.8 - 5.5
Green Sunfish*	Lepomis cyanellus	140	2.0 - 4.7
Spottail Shiner	Notropis hudsonius	74	
Eastern Mudminnow	Umbra pygmaea	57	
Swallowtail Shiner	Notropis procne	32	
Longnose Dace	Rhinichthys cataractae	16	
Satinfin Shiner	Cyprinella analostana	11	
Margined Madtom	Noturus insignis	10	
Pumpkinseed*	Lepomis gibbosus	8	2.4 - 3.1
Redfin Pickerel*	Esox americanus americanus	6	2.8 - 5.5
Banded Sunfish	Enneacanthus obesus	3	
Creek Chub	Semotilus atromaculatus	2	
White Sucker*	Catostomus commersoni	2	
Chain Pickerel*	Esox niger	1	

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

FIGURE 1.1 (Not To Scale)

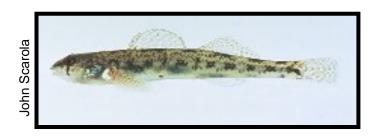
Species Identified at Passaic River (FIBI024)



Swallowtail Shiner



Green Sunfish



Tesselated Darter



Pumpkinseed



Redbreast Sunfish



Redfin Pickerel

FIGURE 1.1 (Not To Scale)

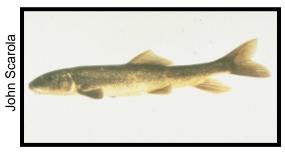
Species Identified at Passaic River (FIBI024)



Spottail Shiner



Margined Madtom



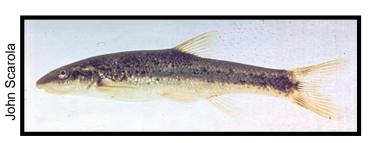
White Sucker



Satinfin Shiner



Creek Chub



Longnose Dace

FIGURE 1.1 (Not To Scale)

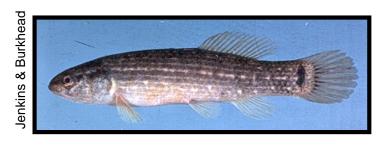
Species Identified at Passaic River (FIBI024)



Chain Pickerel



Banded Sunfish



Eastern Mudminnow