

# Appendix 2

## Stream Assessment

The streams of Weymouth Township were assessed by Michael Hogan during the summer of 2008 using the US Department of Agriculture Stream Visual Assessment Protocol. All stream segments assessed rated in the excellent category with a numerical rating higher than 9.

# Stream Visual Assessment Protocol

(Customized for Rutgers Cooperative Research & Extension Water Resources Program)

**PROJECT:** *Great Egg Harbor River Watershed (South Jersey Land and Water Trust)*

Evaluators Name\_M. Hogan, 07.18.08 Time 11:00am  
Property Owners Name (if applicable) Estell Manor County, NJDEP, GEHR Wildlife Management Area  
Stream Name South River, Great Egg Harbor River Grid ID  
Reach Location South River, Great Egg Harbor River  
Applicable Reference Site South River, Great Egg Harbor River downstream of Rt. 50.  
GPS Coordinates: N 39 25.38 W 74 44.08

Weather conditions today Sunny, hazy humid mid 90's Rain Past 2-5 days no recent rain  
Active channel width 100 ft Dominant substrate (circle one): boulder cobble gravel sand silt  
mud

**Site Diagram:** Note direction of flow, pipes, photo locations, stream characteristics, stormwater infrastructure, & ditches.



Photo Notes: 1

**Assessment Scores (1-Poor to 10-Excellent)**

\*\*\*(facing upstream)\*\*\*

Channel Condition 10

Pools

Hydrologic Alteration 10  
(Score only if Applicable)

Invertebrate habitat 10

Riparian Zone Left: 10 Right: 10

<i>Score only if applicable</i>	
Canopy Cover <small>(use Manual for guidance)</small>	<input type="text"/>
Manure presence	<input type="text"/>
Salinity	<input type="text"/>
Riffle embeddedness <small>(look in riffles)</small>	<input type="text"/>
Macroinvertebrates Observed (optional)	<input type="text"/>

Bank Stability Left: 10 Right: 10

Water Appearance 9

Nutrient Enrichment 9

Barriers to fish movement 10

Instream fish cover 9

Overall Score	< 6.0	Poor
<small>(Total divided by number scored)</small>	6.1-7.4	Fair
Left: 9.7 Right: 9.7 Average: 9.7	7.5-8.9	Good
	> 9.0	Excellent

**Streamside Land Use:**

(within 100 ft. of top of bank)  
Check all that apply:

Land Use Category	While Observed in the field	
	Left Bank	Right Bank
Forest	x	x
Pasture		
Cultivated Field		
Nursery		
Residential		
Commercial		
Industrial		
Other	Power line crossing County Park	Power line crossing County Park

**Outfall Pipe 1:** (Photo #\_\_ and

mark on site diagram) GPS Coordinates \_\_\_\_\_ N

Diameter: \_\_\_\_\_ in \_\_\_\_\_ W

Headwall? YES NO Double culvert? YES NO Stream bank at outfall eroded? YES

NO

Pipe Material: concrete steel PVC Clay Other

Location of Pipe: in stream, at top of bank, in bank, out of/ under bridge, other \_\_\_\_\_

Channel downstream eroded? YES NO

Pipe gathers water from (road, yard, farm, etc.):

Flow appearance: clear turbid oily foamy colored other \_\_\_\_\_

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**Outfall Pipe 2:** (Photo #\_\_ and mark on site diagram) GPS Coordinates \_\_\_\_\_N

Diameter: \_\_\_\_\_in  
\_\_\_\_\_W

Headwall? YES NO Double culvert? YES NO Streambank at outfall eroded?  
YES NO

Pipe Material: concrete steel PVC Clay Other

Location of Pipe: in stream, at top of bank, in bank, out of/ under bridge, other \_\_\_\_\_

Channel downstream eroded? YES NO

Pipe gathers water from (road, yard, farm, etc.): \_\_\_\_\_

Flow appearance: clear turbid oily foamy colored other \_\_\_\_\_

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**Drainage Ditch:** (Photograph #\_\_ and mark on site diagram) GPS Coordinates \_\_\_\_\_N

Width of ditch \_\_\_\_\_ft  
\_\_\_\_\_W

Begins at: \_\_\_\_\_ Ditch lining: stone, vegetation, concrete, mud, other \_\_\_\_\_

Ditch is: Stable, Eroding Ditch Flow is: none, intermittent, steady

Stream channel downstream is: stable, eroded, silted Flow is: clear, cloudy, oily, foamy, colored

Ditch comes from:

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**Drainage Ditch:** (Photograph #\_\_ and mark on site diagram) GPS Coordinates \_\_\_\_\_N

Width of ditch \_\_\_\_\_ft  
\_\_\_\_\_W

Begins at: \_\_\_\_\_ Ditch lining: stone, vegetation, concrete, mud, other \_\_\_\_\_

Ditch is: Stable, Eroding Ditch Flow is: none, intermittent, steady

Stream channel downstream is: stable, eroded, silted Flow is: clear, cloudy, oily, foamy, colored

Ditch comes from:

-----  
**Comments & Suggestions:**

Do you have suggestions for remediation along this reach?

Given dry weather, is there any running water in nearby stormwater structures?

Access to this site...how far off of road is it? Accessible for large equipment, if necessary?

Site is accessible Estell Manor Park and GEHR Wildlife Management Area

Debris, trash, litter? Some around road.

Additional comments: Reach is the South River downstream to Rt. 50. The stream flows through an area of mixed red maple with a few stands of Atlantic white cedar. Stream has wide areas of diverse, open tidal wetlands along both banks, thick with wild rice and other species. A power line crosses the river

approximately 1200 feet downstream of Rt. 50 and the remains of the Belcoville sewer plant are along the right bank approximately 500 feet downstream of Rt. 50.

The left bank is the NJDEP Great Egg Harbor River Wildlife Management Area and the left bank is Estell Manor Atlantic County Park. Water in stream is cedar colored in the upper portion and becomes brackish and salty farther downstream. Water striders, whirly-gig beetles, damsel flies, various dragonfly species and other insects are common. Sunfish, large and striped mouth bass, chain pickerel, American eel, yellow and white perch are common and the reach is a spawning area for alewife. I have observed river otters in this reach and waterfowl and wading birds are also common. The lower portion of the reach is affected by the tides.

## **Stream Visual Assessment Protocol**

**(Customized for Rutgers Cooperative Research & Extension Water Resources Program)**

***PROJECT: Great Egg Harbor River Watershed (South Jersey Land and Water Trust)***

Evaluators Name\_M. Hogan, 07.03.08 Time 3:00pm

Property Owners Name (if applicable) private

Stream Name Youngs Branch, Tuckahoe River, Great Egg Harbor River Grid ID

Reach Location Youngs Branch, Tuckahoe River, Great Egg Harbor River from headwater to confluence with Tuckahoe River

Applicable Reference Site Youngs Branch, Tuckahoe River, GEH River from headwater to confluence with Tuckahoe River

GPS Coordinates: N 39 23.31 W 74 50.52

Weather conditions today Sunny, hazy humid low 90's

Rain Past 2-5 days no recent rain

Active channel width 5 ft *Dominant* substrate (*circle one*): boulder cobble gravel sand silt  
mud

**Site Diagram:** Note direction of flow, pipes, photo locations, stream characteristics, stormwater infrastructure, & ditches.

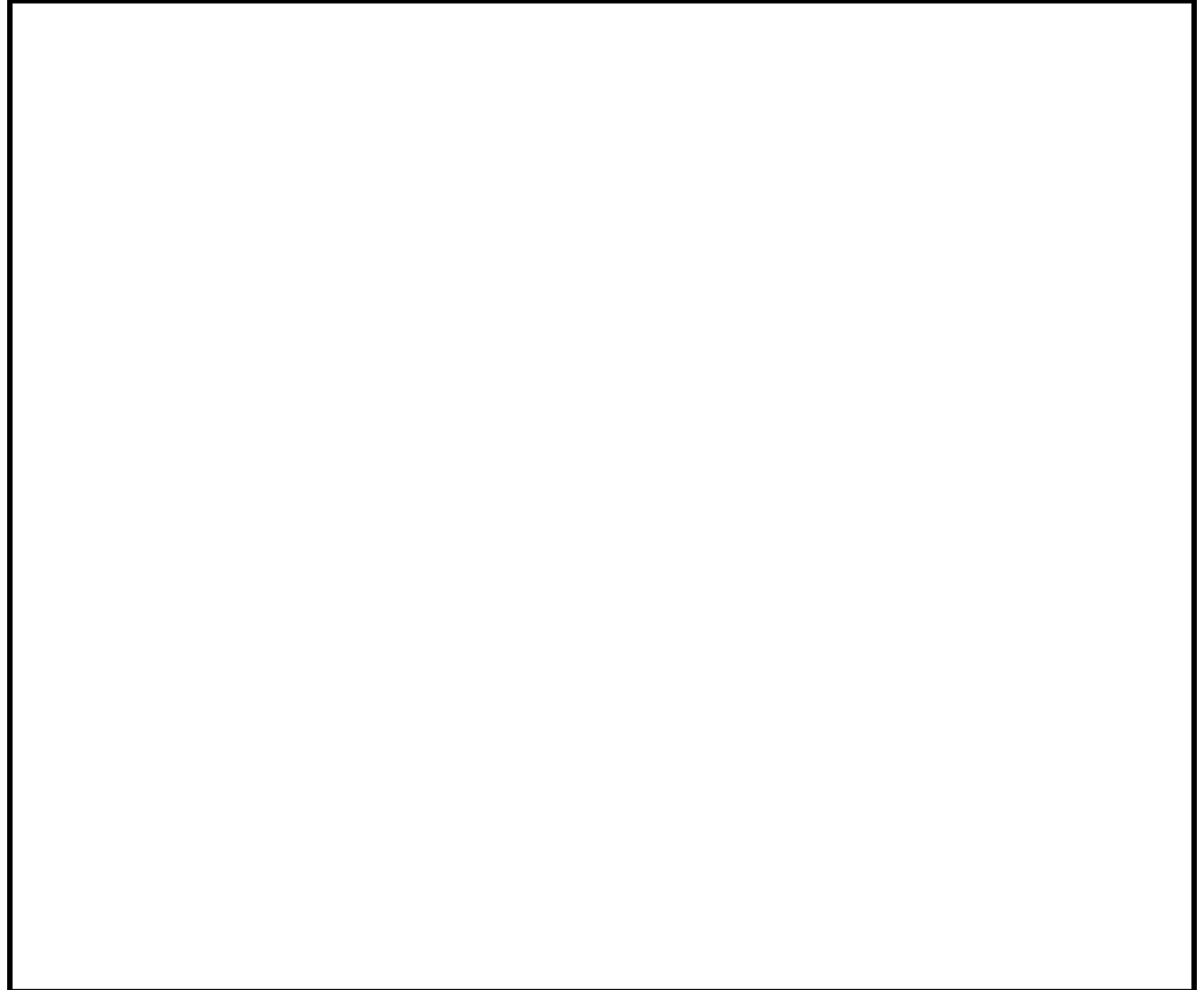


Photo Notes: 1

**Assessment Scores (1-Poor to 10-Excellent)**

\*\*\*(facing upstream)\*\*\*

Channel Condition 10

Pools

Hydrologic Alteration 10  
(Score only if Applicable)

Invertebrate habitat 7

Riparian Zone Left: 10 Right: 10

Bank Stability Left: 10 Right: 10

Water Appearance 9

Nutrient Enrichment 9

Barriers to fish movement 10

Instream fish cover 6

<b>Score only if applicable</b>	
Canopy Cover <small>(use Manual for guidance)</small>	10
Manure presence	<input type="text"/>
Salinity	<input type="text"/>
Riffle embeddedness <small>(look in riffles)</small>	<input type="text"/>
Macroinvertebrates Observed (optional)	<input type="text"/>

Overall Score	< 6.0	Poor
<small>(Total divided by number scored)</small>	6.1-7.4	Fair
Left: 9.1 Right: 9.1 Average: 9.1	7.5-8.9	Good
	> 9.0	Excellent

**Streamside Land Use:**

(within 100 ft. of top of bank)  
Check all that apply:

Land Use Category	While Observed in the field	
	Left Bank	Right Bank
Forest	x	x
Pasture		
Cultivated Field	x	
Nursery		
Residential	x	x
Commercial		
Industrial		
Other		

**Outfall Pipe 1:** (Photo # \_\_ and mark on site diagram) GPS Coordinates \_\_\_\_\_ N

Diameter: \_\_\_\_\_ in \_\_\_\_\_ W

Headwall? YES NO Double culvert? YES NO Stream bank at outfall eroded? YES NO

Pipe Material: concrete steel PVC Clay Other

Location of Pipe: in stream, at top of bank, in bank, out of/ under bridge, other \_\_\_\_\_

Channel downstream eroded? YES NO

Pipe gathers water from (road, yard, farm, etc.):

Flow appearance: clear turbid oily foamy colored other \_\_\_\_\_

**Outfall Pipe 2:** (Photo # \_\_ and mark on site diagram) GPS Coordinates \_\_\_\_\_ N

Diameter: \_\_\_\_\_ in  
\_\_\_\_\_ W

Headwall? YES NO                      Double culvert? YES NO                      Streambank at outfall eroded?  
YES NO

Pipe Material: concrete steel PVC Clay Other

Location of Pipe: in stream, at top of bank, in bank, out of/ under bridge, other \_\_\_\_\_

Channel downstream eroded? YES NO

Pipe gathers water from (road, yard, farm, etc.): \_\_\_\_\_

Flow appearance: clear turbid oily foamy colored other \_\_\_\_\_

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**Drainage Ditch:** (Photograph #\_\_ and mark on site diagram) GPS Coordinates \_\_\_\_\_ N

Width of ditch \_\_\_\_\_ ft  
\_\_\_\_\_ W

Begins at: \_\_\_\_\_ Ditch lining: stone, vegetation, concrete, mud, other \_\_\_\_\_

Ditch is: Stable, Eroding    Ditch Flow is: none, intermittent, steady

Stream channel downstream is: stable, eroded, silted                      Flow is: clear, cloudy, oily, foamy, colored

Ditch comes from:

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**Drainage Ditch:** (Photograph #\_\_ and mark on site diagram) GPS Coordinates \_\_\_\_\_ N

Width of ditch \_\_\_\_\_ ft  
\_\_\_\_\_ W

Begins at: \_\_\_\_\_ Ditch lining: stone, vegetation, concrete, mud, other \_\_\_\_\_

Ditch is: Stable, Eroding    Ditch Flow is: none, intermittent, steady

Stream channel downstream is: stable, eroded, silted                      Flow is: clear, cloudy, oily, foamy, colored

Ditch comes from:

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**Comments & Suggestions:**

Do you have suggestions for remediation along this reach?

Given dry weather, is there any running water in nearby stormwater structures?

Access to this site...how far off of road is it? Accessible for large equipment, if necessary?

Site only accessible through private properties along 11<sup>th</sup> and 12<sup>th</sup> Avenues.

Debris, trash, litter? None

Additional comments: Reach is the entire length of the Young's Branch, a small tributary of the Tuckahoe River that begins near 12<sup>th</sup> Ave. and Cape May Road. Stream meanders west, through a wide, red maple



wetlands with scattered Atlantic white cedar, to its confluence with the Tuckahoe River. Stream was very low at time of assessment and has dried out in the past during periods of drought and has overflowed its banks into the adjoining flood plains during periods heavy rains. Water in stream is cedar colored, water striders and other insects are common. Stream normally has flowing water in it year-round. 2 residents along the left banks grow crops, 1 resident east of Atlantic Ave. grows a field of corn, 1 resident west of Atlantic Ave. grows Christmas trees and vegetables. Spring peeper, Fowler's toad, wood frog, Pine Barrens tree frog, northern gray tree frog, NJ chorus frogs, green frog, marbled salamander, snapping turtle, eastern screech owl, barred owl and Cooper's hawks have been documented at this reach.

## **Stream Visual Assessment Protocol**

**(Customized for Rutgers Cooperative Research & Extension Water Resources Program)**

***PROJECT: Great Egg Harbor River Watershed (South Jersey Land and Water Trust)***

Evaluators Name\_M. Hogan, 07.16.08 Time 11:00am

Property Owners Name (if applicable) private/Weymouth Twp

Stream Name South Branch Stephen Creek, Great Egg Harbor River Grid ID

Reach Location South Branch Stephen Creek, Great Egg Harbor River, from head waters above Estell Ave to its confluence with the main stem of Stephens Creek.

Applicable Reference Site South Branch Stephen Creek, Great Egg Harbor River, from head waters above Estell Ave to its confluence with the main stem of Stephens Creek.

GPS Coordinates: N 39 24.11 W 74 48.48

Weather conditions today Sunny, hazy humid mid 80's

Rain Past 2-5 days no recent rain

Active channel width 10 ft *Dominant substrate (circle one):* boulder cobble gravel sand silt  
mud

**Site Diagram:** Note direction of flow, pipes, photo locations, stream characteristics, stormwater infrastructure, & ditches.

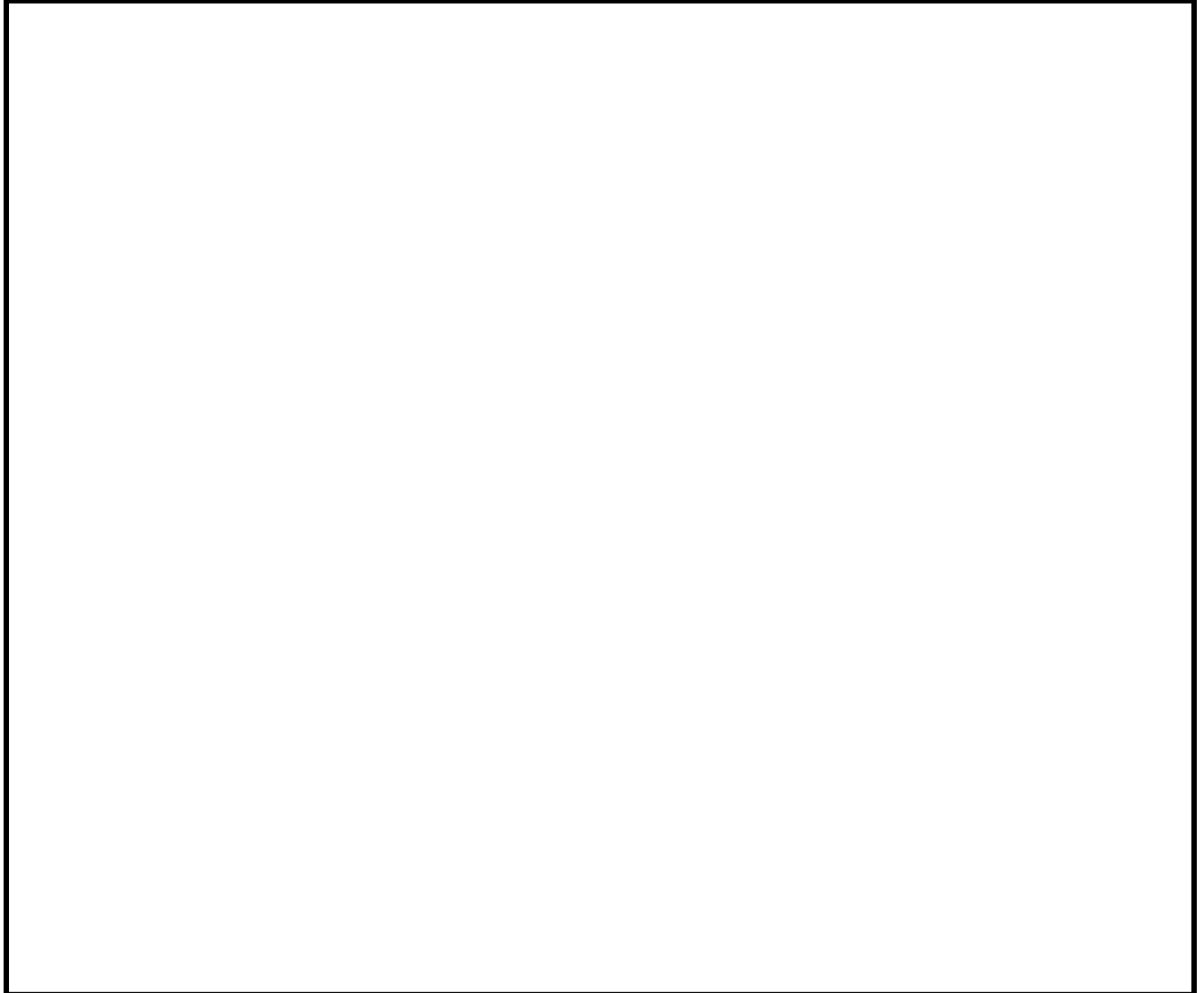


Photo Notes: 1

**Assessment Scores (1-Poor to 10-Excellent)**

\*\*\*(facing upstream)\*\*\*

Channel Condition 10

Pools

Hydrologic Alteration 10  
(Score only if Applicable)

Invertebrate habitat 9

Riparian Zone Left: 10 Right: 10

Bank Stability Left: 10 Right: 10

Water Appearance 9

Nutrient Enrichment 9

Barriers to fish movement 10

Instream fish cover 7

<b>Score only if applicable</b>	
Canopy Cover <small>(use Manual for guidance)</small>	10
Manure presence	<input type="text"/>
Salinity	<input type="text"/>
Riffle embeddedness <small>(look in riffles)</small>	<input type="text"/>
Macroinvertebrates Observed (optional)	<input type="text"/>

Overall Score	< 6.0	Poor
<small>(Total divided by number scored)</small>	6.1-7.4	Fair
Left: 9.4 Right: 9.4 Average: 9.4	7.5-8.9	Good
	> 9.0	Excellent

**Streamside Land Use:**

(within 100 ft. of top of bank)  
Check all that apply:

Land Use Category	While Observed in the field	
	Left Bank	Right Bank
Forest	x	x
Pasture		
Cultivated Field		
Nursery		
Residential	x	x
Commercial		
Industrial		
Other		

**Outfall Pipe 1:** (Photo # \_\_ and mark on site diagram) GPS Coordinates \_\_\_\_\_ N  
Diameter: \_\_\_\_\_ in \_\_\_\_\_ W

Headwall? YES NO Double culvert? YES NO Stream bank at outfall eroded? YES NO

Pipe Material: concrete steel PVC Clay Other

Location of Pipe: in stream, at top of bank, in bank, out of/ under bridge, other \_\_\_\_\_

Channel downstream eroded? YES NO

Pipe gathers water from (road, yard, farm, etc.):

Flow appearance: clear turbid oily foamy colored other \_\_\_\_\_

**Outfall Pipe 2:** (Photo # \_\_ and mark on site diagram) GPS Coordinates \_\_\_\_\_ N

Diameter: \_\_\_\_\_ in  
\_\_\_\_\_ W

Headwall? YES NO                      Double culvert? YES NO                      Streambank at outfall eroded?  
YES NO

Pipe Material: concrete steel PVC Clay Other

Location of Pipe: in stream, at top of bank, in bank, out of/ under bridge, other \_\_\_\_\_

Channel downstream eroded? YES NO

Pipe gathers water from (road, yard, farm, etc.): \_\_\_\_\_

Flow appearance: clear turbid oily foamy colored other \_\_\_\_\_

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**Drainage Ditch:** (Photograph #\_\_ and mark on site diagram) GPS Coordinates \_\_\_\_\_ N

Width of ditch \_\_\_\_\_ ft  
\_\_\_\_\_ W

Begins at: \_\_\_\_\_ Ditch lining: stone, vegetation, concrete, mud, other \_\_\_\_\_

Ditch is: Stable, Eroding    Ditch Flow is: none, intermittent, steady

Stream channel downstream is: stable, eroded, silted                      Flow is: clear, cloudy, oily, foamy, colored

Ditch comes from:

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**Drainage Ditch:** (Photograph #\_\_ and mark on site diagram) GPS Coordinates \_\_\_\_\_ N

Width of ditch \_\_\_\_\_ ft  
\_\_\_\_\_ W

Begins at: \_\_\_\_\_ Ditch lining: stone, vegetation, concrete, mud, other \_\_\_\_\_

Ditch is: Stable, Eroding    Ditch Flow is: none, intermittent, steady

Stream channel downstream is: stable, eroded, silted                      Flow is: clear, cloudy, oily, foamy, colored

Ditch comes from:

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**Comments & Suggestions:**

Do you have suggestions for remediation along this reach?

Given dry weather, is there any running water in nearby stormwater structures?

Access to this site...how far off of road is it? Accessible for large equipment, if necessary?

Site is accessible only from Estell and Maple Avenues.

Debris, trash, litter? Some around roads.

Additional comments: Reach is the entire length of the South Branch of Stephen Creek, a small tributary of the Great Egg Harbor River, from its headwaters above Estell Ave. to its confluence with the main

stem of Stephens Branch down stream of Maple Ave. The stream meanders through areas mixed red maple/Atlantic white cedar wetlands and thick stands of Atlantic white cedar. There are a few houses along each bank. Stream was low at time of assessment and has overflowed its banks into the adjoining flood plains during periods heavy rains. Water in stream is cedar colored, water striders, damsel flies, various dragonfly species and other insects are common, chain pickerel are common. There is a "B" ranked swamp pink population in this reach that is monitored each year by USF&WLS volunteers. There is a large vernal pool just upstream of Estell Avenue which wood frog, northern spring peeper, Fowler's toad and northern gray tree frog have been documented.

## **Stream Visual Assessment Protocol**

**(Customized for Rutgers Cooperative Research & Extension Water Resources Program)**

***PROJECT: Great Egg Harbor River Watershed (South Jersey Land and Water Trust)***

Evaluators Name\_M. Hogan, 07.16.08 Time 11:30am

Property Owners Name (if applicable) private/Weymouth Twp

Stream Name Stephen Creek, Great Egg Harbor River Grid ID

Reach Location Main stem Stephen Creek, Great Egg Harbor River, from head waters above Maple Ave, to 14<sup>th</sup> Ave./Estell Manor border

Applicable Reference Site Main stem Stephen Creek, Great Egg Harbor River, from head waters above Maple Ave, to 14<sup>th</sup> Ave./Estell Manor border

GPS Coordinates: N 39 25.06 W 74 49.35

Weather conditions today Sunny, hazy humid mid 80's

Rain Past 2-5 days no recent rain

Active channel width 5 ft *Dominant* substrate (*circle one*): boulder cobble gravel sand silt  
mud

**Site Diagram:** Note direction of flow, pipes, photo locations, stream characteristics, stormwater infrastructure, & ditches.

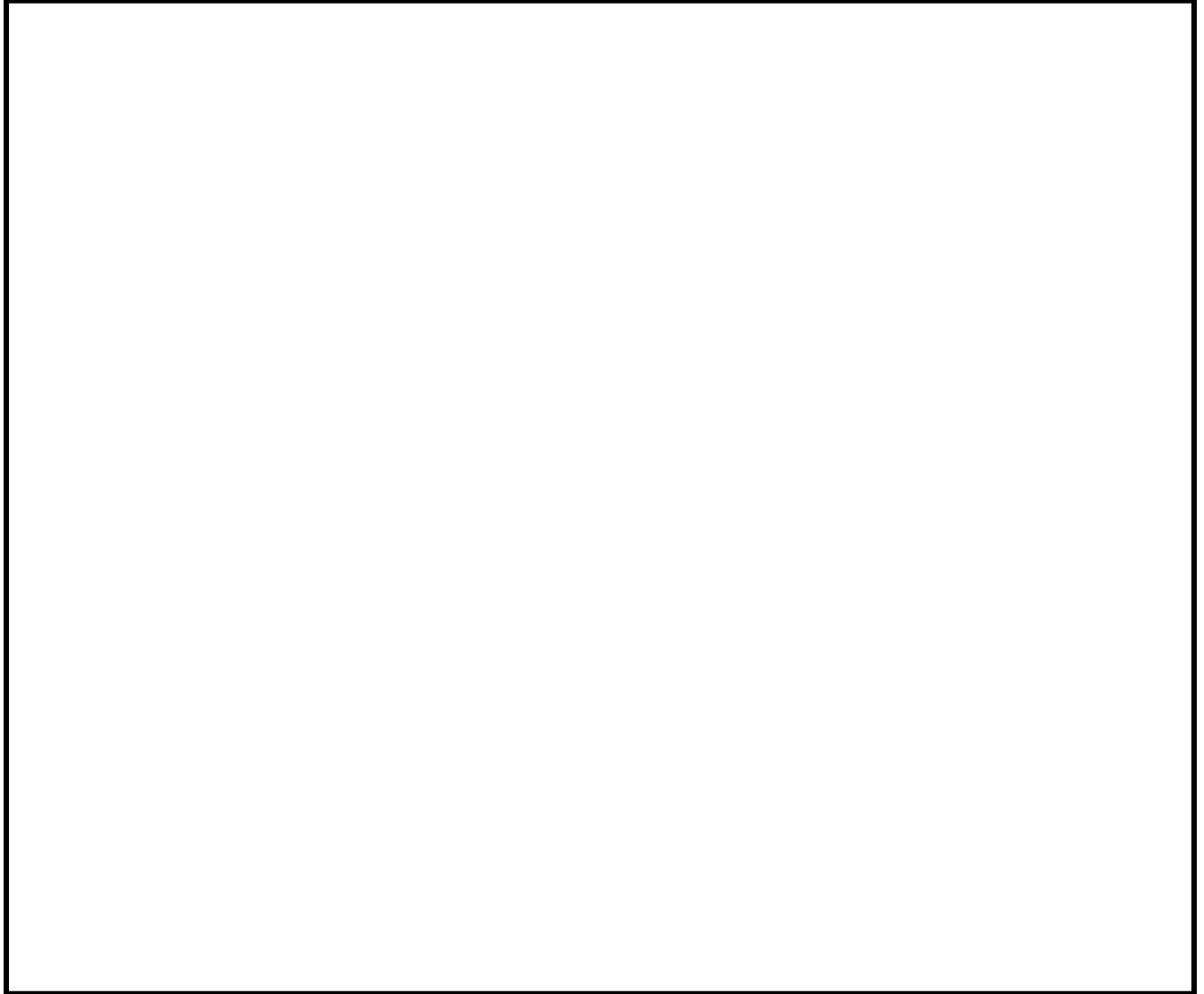


Photo Notes: 1

**Assessment Scores (1-Poor to 10-Excellent)**

\*\*\*(facing upstream)\*\*\*

Channel Condition 10

Pools

Hydrologic Alteration 10  
(Score only if Applicable)

Invertebrate habitat 7

Riparian Zone Left: 10 Right: 10

Bank Stability Left: 10 Right: 10

Water Appearance 9

Nutrient Enrichment 9

Barriers to fish movement 10

Instream fish cover 6

<b>Score only if applicable</b>	
Canopy Cover <small>(use Manual for guidance)</small>	10
Manure presence	<input type="text"/>
Salinity	<input type="text"/>
Riffle embeddedness <small>(look in riffles)</small>	<input type="text"/>
Macroinvertebrates Observed (optional)	<input type="text"/>

Overall Score	< 6.0	Poor
<small>(Total divided by number scored)</small>	6.1-7.4	Fair
Left: 9.1 Right: 9.1 Average: 9.1	7.5-8.9	Good
	> 9.0	Excellent

**Streamside Land Use:**

(within 100 ft. of top of bank)  
Check all that apply:

Land Use Category	While Observed in the field	
	Left Bank	Right Bank
Forest	x	x
Pasture		
Cultivated Field		
Nursery		
Residential	x	x
Commercial		
Industrial		
Other		

**Outfall Pipe 1:** (Photo # \_\_ and mark on site diagram) GPS Coordinates \_\_\_\_\_ N

Diameter: \_\_\_\_\_ in \_\_\_\_\_ W

Headwall? YES NO Double culvert? YES NO Stream bank at outfall eroded? YES NO

Pipe Material: concrete steel PVC Clay Other

Location of Pipe: in stream, at top of bank, in bank, out of/ under bridge, other \_\_\_\_\_

Channel downstream eroded? YES NO

Pipe gathers water from (road, yard, farm, etc.):

Flow appearance: clear turbid oily foamy colored other \_\_\_\_\_

**Outfall Pipe 2:** (Photo # \_\_ and mark on site diagram) GPS Coordinates \_\_\_\_\_ N

Diameter: \_\_\_\_\_ in  
\_\_\_\_\_ W

Headwall? YES NO                      Double culvert? YES NO                      Streambank at outfall eroded?  
YES NO

Pipe Material: concrete steel PVC Clay Other

Location of Pipe: in stream, at top of bank, in bank, out of/ under bridge, other \_\_\_\_\_

Channel downstream eroded? YES NO

Pipe gathers water from (road, yard, farm, etc.): \_\_\_\_\_

Flow appearance: clear turbid oily foamy colored other \_\_\_\_\_

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**Drainage Ditch:** (Photograph #\_\_ and mark on site diagram) GPS Coordinates \_\_\_\_\_ N

Width of ditch \_\_\_\_\_ ft  
\_\_\_\_\_ W

Begins at: \_\_\_\_\_ Ditch lining: stone, vegetation, concrete, mud, other \_\_\_\_\_

Ditch is: Stable, Eroding    Ditch Flow is: none, intermittent, steady

Stream channel downstream is: stable, eroded, silted                      Flow is: clear, cloudy, oily, foamy, colored

Ditch comes from:

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**Drainage Ditch:** (Photograph #\_\_ and mark on site diagram) GPS Coordinates \_\_\_\_\_ N

Width of ditch \_\_\_\_\_ ft  
\_\_\_\_\_ W

Begins at: \_\_\_\_\_ Ditch lining: stone, vegetation, concrete, mud, other \_\_\_\_\_

Ditch is: Stable, Eroding    Ditch Flow is: none, intermittent, steady

Stream channel downstream is: stable, eroded, silted                      Flow is: clear, cloudy, oily, foamy, colored

Ditch comes from:

---

**Comments & Suggestions:**

Do you have suggestions for remediation along this reach?

Given dry weather, is there any running water in nearby stormwater structures?

Access to this site...how far off of road is it? Accessible for large equipment, if necessary?

Site is accessible only from Maple Avenue.

Debris, trash, litter? Some around road.

Additional comments: Reach is the upper length of Stephen Creek, a small tributary of the Great Egg Harbor River, in Weymouth Twp, from its headwaters above Maple Ave. to Etell Maor border at 14<sup>th</sup>



Ave. The stream meanders through mixed red maple/Atlantic white cedar wetlands. There are a few houses along the left bank and Sanford salvage yard is located at the head waters. Stream was very low at time of assessment and has overflowed its banks into the adjoining flood plains during periods heavy rains. Water in stream is cedar colored, water striders, damsel flies, various dragonfly species and other insects are common.

## **Stream Visual Assessment Protocol**

**(Customized for Rutgers Cooperative Research & Extension Water Resources Program)**

***PROJECT: Great Egg Harbor River Watershed (South Jersey Land and Water Trust)***

Evaluators Name\_M. Hogan, 07.16.08 Time 9:00am

Property Owners Name (if applicable) private/Peaslee Management Area/NJDEP

Stream Name Tuckahoe River, Great Egg Harbor River Grid ID

Reach Location Tuckahoe River, Great Egg Harbor River from 13<sup>th</sup> Ave. upstream to Buena Vista Twp border.

Applicable Reference Site Tuckahoe River, Great Egg Harbor River from 13<sup>th</sup> Ave. upstream to Buena Vista Twp border.

GPS Coordinates: N 39 23.53 W 74 51.26

Weather conditions today Sunny, hazy humid mid 80's

Rain Past 2-5 days no recent rain

Active channel width 20 ft *Dominant* substrate (*circle one*): boulder cobble gravel sand silt  
mud

**Site Diagram:** Note direction of flow, pipes, photo locations, stream characteristics, stormwater infrastructure, & ditches.

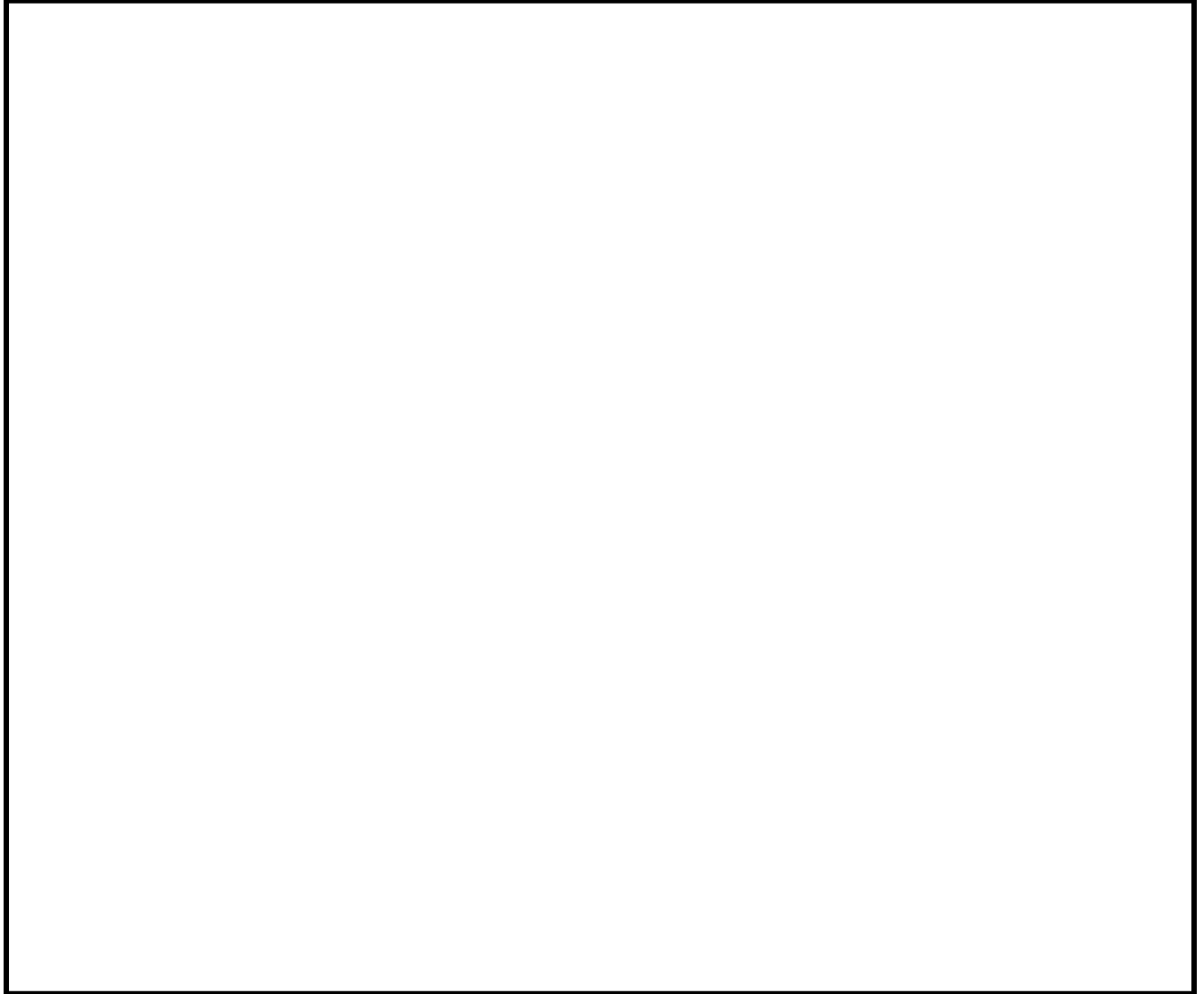


Photo Notes: 1

**Assessment Scores (1-Poor to 10-Excellent)**

\*\*\*(facing upstream)\*\*\*

Channel Condition 10

Pools

Hydrologic Alteration 10  
(Score only if Applicable)

Invertebrate habitat 10

Riparian Zone Left: 10 Right: 10

<i>Score only if applicable</i>	
Canopy Cover <small>(use Manual for guidance)</small>	10
Manure presence	<input type="text"/>
Salinity	<input type="text"/>
Riffle embeddedness <small>(look in riffles)</small>	<input type="text"/>
Macroinvertebrates Observed (optional)	<input type="text"/>

Bank Stability Left: 10 Right: 10

Water Appearance 9

Nutrient Enrichment 9

Barriers to fish movement 10

Instream fish cover 8

Overall Score	< 6.0	Poor
<small>(Total divided by number scored)</small>	6.1-7.4	Fair
Left: 9.6 Right: 9.6 Average: 9.6	7.5-8.9	Good
	> 9.0	Excellent

**Streamside Land Use:**

(within 100 ft. of top of bank)  
Check all that apply:

Land Use Category	While Observed in the field	
	Left Bank	Right Bank
Forest	x	x
Pasture		
Cultivated Field		
Nursery		
Residential		x
Commercial		
Industrial		
Other		

**Outfall Pipe 1:** (Photo # \_\_ and mark on site diagram) GPS Coordinates \_\_\_\_\_ N  
Diameter: \_\_\_\_\_ in \_\_\_\_\_ W

Headwall? YES NO Double culvert? YES NO Stream bank at outfall eroded? YES NO

Pipe Material: concrete steel PVC Clay Other

Location of Pipe: in stream, at top of bank, in bank, out of/ under bridge, other \_\_\_\_\_

Channel downstream eroded? YES NO

Pipe gathers water from (road, yard, farm, etc.):

Flow appearance: clear turbid oily foamy colored other \_\_\_\_\_

**Outfall Pipe 2:** (Photo # \_\_ and mark on site diagram) GPS Coordinates \_\_\_\_\_ N

Diameter: \_\_\_\_\_ in  
\_\_\_\_\_ W

Headwall? YES NO                      Double culvert? YES NO                      Streambank at outfall eroded?  
YES NO

Pipe Material: concrete steel PVC Clay Other

Location of Pipe: in stream, at top of bank, in bank, out of/ under bridge, other \_\_\_\_\_

Channel downstream eroded? YES NO

Pipe gathers water from (road, yard, farm, etc.): \_\_\_\_\_

Flow appearance: clear turbid oily foamy colored other \_\_\_\_\_

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**Drainage Ditch:** (Photograph #\_\_ and mark on site diagram) GPS Coordinates \_\_\_\_\_ N

Width of ditch \_\_\_\_\_ ft  
\_\_\_\_\_ W

Begins at: \_\_\_\_\_ Ditch lining: stone, vegetation, concrete, mud, other \_\_\_\_\_

Ditch is: Stable, Eroding    Ditch Flow is: none, intermittent, steady

Stream channel downstream is: stable, eroded, silted                      Flow is: clear, cloudy, oily, foamy, colored

Ditch comes from:

---

**Drainage Ditch:** (Photograph #\_\_ and mark on site diagram) GPS Coordinates \_\_\_\_\_ N

Width of ditch \_\_\_\_\_ ft  
\_\_\_\_\_ W

Begins at: \_\_\_\_\_ Ditch lining: stone, vegetation, concrete, mud, other \_\_\_\_\_

Ditch is: Stable, Eroding    Ditch Flow is: none, intermittent, steady

Stream channel downstream is: stable, eroded, silted                      Flow is: clear, cloudy, oily, foamy, colored

Ditch comes from:

---

**Comments & Suggestions:**

Do you have suggestions for remediation along this reach?

Given dry weather, is there any running water in nearby stormwater structures?

Access to this site...how far off of road is it? Accessible for large equipment, if necessary?

Site is accessible only from 13<sup>th</sup> Avenue.

Debris, trash, litter? Some around road.

Additional comments: Reach is the Tuckahoe River upstream of 13<sup>th</sup> Ave. to Buena Vista Twp border. Just upstream there is an open/pond area that may have been the site of a saw mill. Farther upstream the

stream meanders through a mixed red maple/Atlantic white cedar wetlands, then to an open wetlands area with diverse wetlands vegetation and an isolated pool full of horned bladderwort, then farther upstream through a thick stand of Atlantic white cedar. Stream was low at time of assessment and has overflowed its banks into the adjoining flood plains during periods heavy rains. Water in stream is cedar colored, water striders, damsel flies, various dragonfly species and other insects are common, chain pickerel are common in stream.

## **Stream Visual Assessment Protocol**

**(Customized for Rutgers Cooperative Research & Extension Water Resources Program)**

***PROJECT: Great Egg Harbor River Watershed (South Jersey Land and Water Trust)***

Evaluators Name\_M. Hogan, 07.16.08 Time 9:30am

Property Owners Name (if applicable) private/Peaslee Management Area/NJDEP

Stream Name Tuckahoe River, Great Egg Harbor River Grid ID

Reach Location Tuckahoe River, Great Egg Harbor River from 13<sup>th</sup> Ave. downstream to Estell Manor border.

Applicable Reference Site Tuckahoe River, Great Egg Harbor River from 13<sup>th</sup> Ave. downstream to Estell Manor border.

GPS Coordinates: N 39 23.38 W 74 51.26

Weather conditions today Sunny, hazy humid mid 80's

Rain Past 2-5 days no recent rain

Active channel width 20 ft *Dominant* substrate (*circle one*): boulder cobble gravel sand silt  
mud

**Site Diagram:** Note direction of flow, pipes, photo locations, stream characteristics, stormwater infrastructure, & ditches.

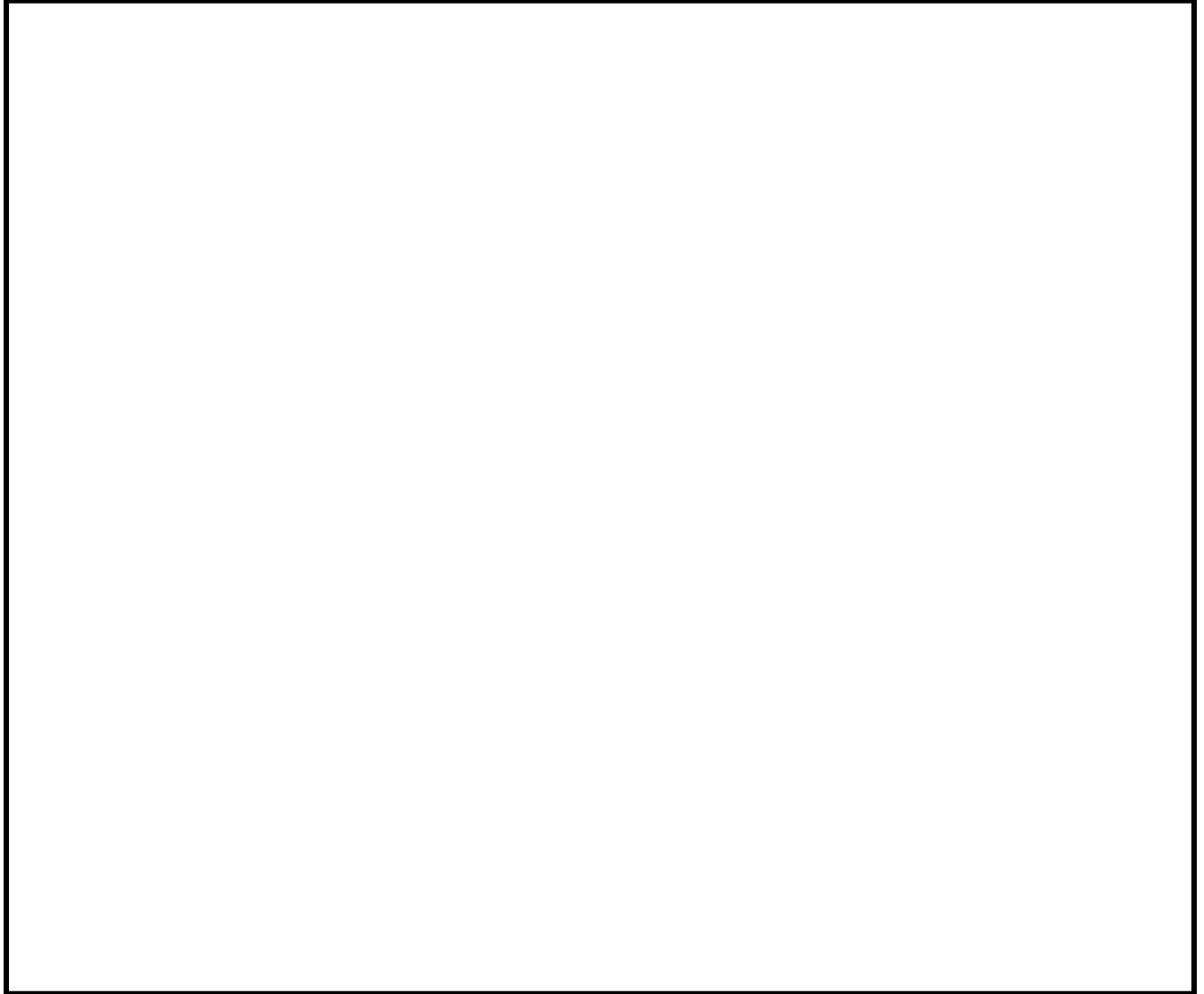


Photo Notes: 1

**Assessment Scores (1-Poor to 10-Excellent)**

\*\*\*(facing upstream)\*\*\*

Channel Condition 10

Pools

Hydrologic Alteration 10  
(Score only if Applicable)

Invertebrate habitat 10

Riparian Zone Left: 10 Right: 10

<i>Score only if applicable</i>	
Canopy Cover <small>(use Manual for guidance)</small>	10
Manure presence	<input type="text"/>
Salinity	<input type="text"/>
Riffle embeddedness <small>(look in riffles)</small>	<input type="text"/>
Macroinvertebrates Observed (optional)	<input type="text"/>

Bank Stability Left: 10 Right: 10

Water Appearance 9

Nutrient Enrichment 9

Barriers to fish movement 5

Instream fish cover 8

Overall Score	< 6.0	Poor
<small>(Total divided by number scored)</small>	6.1-7.4	Fair
Left: 9.1 Right: 9.1 Average: 9.1	7.5-8.9	Good
	> 9.0	Excellent

**Streamside Land Use:**

(within 100 ft. of top of bank)  
Check all that apply:

Land Use Category	While Observed in the field	
	Left Bank	Right Bank
Forest	x	x
Pasture	x	
Cultivated Field		
Nursery		
Residential		x
Commercial		
Industrial		
Other		

**Outfall Pipe 1:** (Photo #\_\_ and mark on site diagram) GPS Coordinates \_\_\_\_\_ N  
Diameter: \_\_\_\_\_ in \_\_\_\_\_ W

Headwall? YES NO Double culvert? YES NO Stream bank at outfall eroded? YES NO

Pipe Material: concrete steel PVC Clay Other

Location of Pipe: in stream, at top of bank, in bank, out of/ under bridge, other \_\_\_\_\_

Channel downstream eroded? YES NO

Pipe gathers water from (road, yard, farm, etc.):

Flow appearance: clear turbid oily foamy colored other \_\_\_\_\_

**Outfall Pipe 2:** (Photo #\_\_ and mark on site diagram) GPS Coordinates \_\_\_\_\_ N

Diameter: \_\_\_\_\_ in  
\_\_\_\_\_ W

Headwall? YES NO                      Double culvert? YES NO                      Streambank at outfall eroded?  
YES NO

Pipe Material: concrete steel PVC Clay Other

Location of Pipe: in stream, at top of bank, in bank, out of/ under bridge, other \_\_\_\_\_

Channel downstream eroded? YES NO

Pipe gathers water from (road, yard, farm, etc.): \_\_\_\_\_

Flow appearance: clear turbid oily foamy colored other \_\_\_\_\_

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**Drainage Ditch:** (Photograph #\_\_ and mark on site diagram) GPS Coordinates \_\_\_\_\_ N

Width of ditch \_\_\_\_\_ ft  
\_\_\_\_\_ W

Begins at: \_\_\_\_\_ Ditch lining: stone, vegetation, concrete, mud, other \_\_\_\_\_

Ditch is: Stable, Eroding    Ditch Flow is: none, intermittent, steady

Stream channel downstream is: stable, eroded, silted                      Flow is: clear, cloudy, oily, foamy, colored

Ditch comes from:

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**Drainage Ditch:** (Photograph #\_\_ and mark on site diagram) GPS Coordinates \_\_\_\_\_ N

Width of ditch \_\_\_\_\_ ft  
\_\_\_\_\_ W

Begins at: \_\_\_\_\_ Ditch lining: stone, vegetation, concrete, mud, other \_\_\_\_\_

Ditch is: Stable, Eroding    Ditch Flow is: none, intermittent, steady

Stream channel downstream is: stable, eroded, silted                      Flow is: clear, cloudy, oily, foamy, colored

Ditch comes from:

---

**Comments & Suggestions:**

Do you have suggestions for remediation along this reach?

Given dry weather, is there any running water in nearby stormwater structures?

Access to this site...how far off of road is it? Accessible for large equipment, if necessary?

Site is accessible only from 13<sup>th</sup> Avenue.

Debris, trash, litter? Some around road.

Additional comments: Reach is the Tuckahoe River downstream of 13<sup>th</sup> Ave. to Estell Manor border.  
Below 13<sup>th</sup> Ave. the stream meanders through areas mixed red maple/Atlantic white cedar wetlands and



thick stands of Atlantic white cedar. Farther downstream of 10<sup>th</sup> Ave., in Estell Manor, the stream flows through old cranberry bogs and is dammed just below Cumberland Ave. creating a lake for a public campsite. Stream was low at time of assessment and has overflowed its banks into the adjoining flood plains during periods heavy rains. Water in stream is cedar colored, water striders, damsel flies, various dragonfly species and other insects are common, chain pickerel are common.

## **Stream Visual Assessment Protocol**

**(Customized for Rutgers Cooperative Research & Extension Water Resources Program)**

***PROJECT: Great Egg Harbor River Watershed (South Jersey Land and Water Trust)***

Evaluators Name\_M. Hogan, 07.18.08 Time 9:30am

Property Owners Name (if applicable) private/

Stream Name South River, Great Egg Harbor River Grid ID

Reach Location South River, Great Egg Harbor River from Hamilton Twp border downstream to 11<sup>th</sup> Ave.

Applicable Reference Site South River, Great Egg Harbor River from Hamilton Twp border downstream to 11<sup>th</sup> Ave.

GPS Coordinates: N 39 26.25 W 74 45.19

Weather conditions today Sunny, hazy humid mid 90's

Rain Past 2-5 days no recent rain

Active channel width 20 ft *Dominant* substrate (*circle one*): boulder cobble gravel sand silt  
mud

**Site Diagram:** Note direction of flow, pipes, photo locations, stream characteristics, stormwater infrastructure, & ditches.

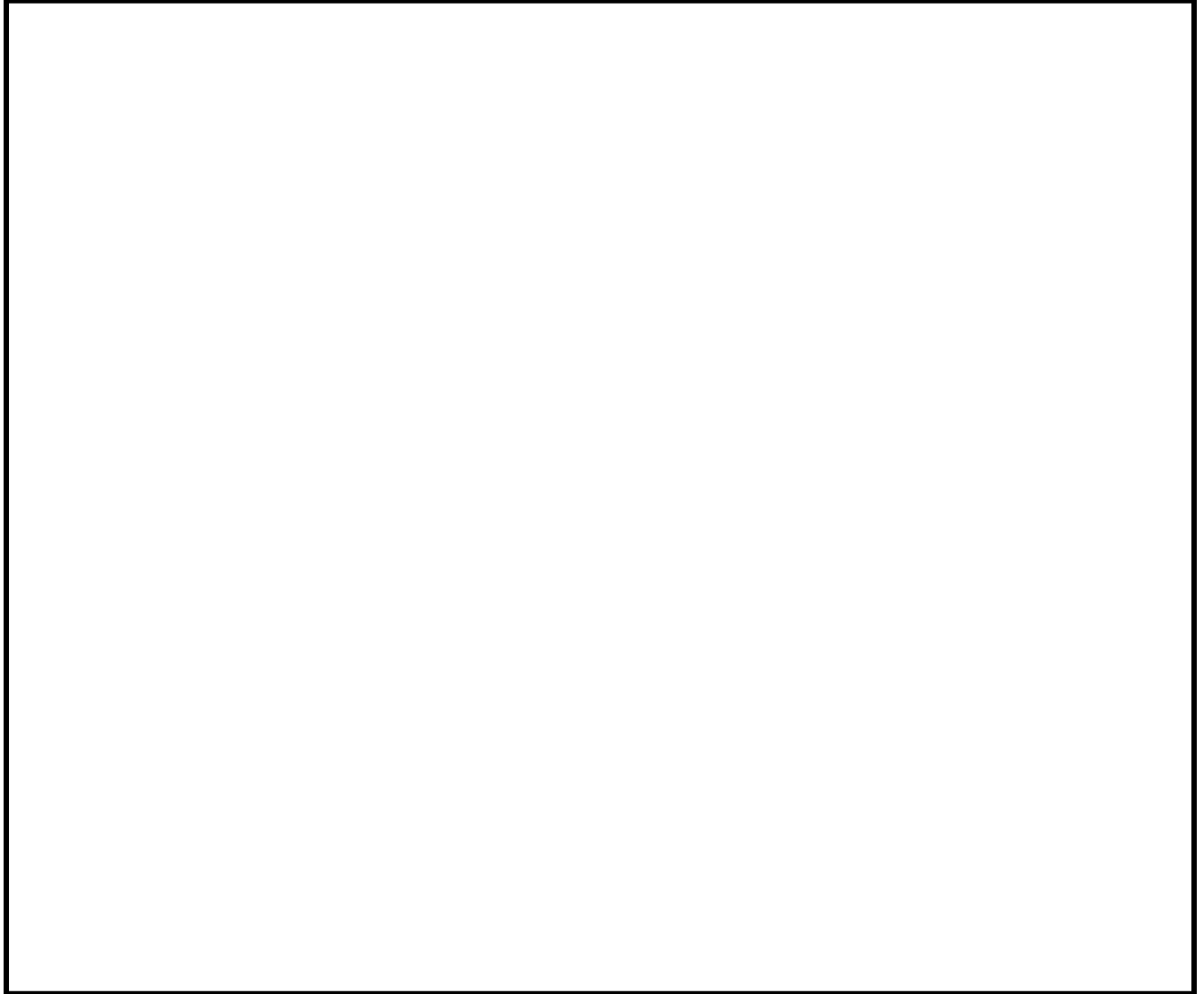


Photo Notes: 1

**Assessment Scores (1-Poor to 10-Excellent)**

\*\*\*(facing upstream)\*\*\*

Channel Condition 10

Pools

Hydrologic Alteration 10  
(Score only if Applicable)

Invertebrate habitat 10

Riparian Zone Left: 10 Right: 10

<i>Score only if applicable</i>	
Canopy Cover <small>(use Manual for guidance)</small>	10
Manure presence	<input type="text"/>
Salinity	<input type="text"/>
Riffle embeddedness <small>(look in riffles)</small>	<input type="text"/>
Macroinvertebrates Observed (optional)	<input type="text"/>

Bank Stability Left: 10 Right: 10

Water Appearance 9

Nutrient Enrichment 9

Barriers to fish movement 10

Instream fish cover 8

Overall Score	< 6.0	Poor
<small>(Total divided by number scored)</small>	6.1-7.4	Fair
Left: 9.6 Right: 9.6 Average: 9.6	7.5-8.9	Good
	> 9.0	Excellent

**Streamside Land Use:**

(within 100 ft. of top of bank)  
Check all that apply:

Land Use Category	While Observed in the field	
	Left Bank	Right Bank
Forest	x	x
Pasture		
Cultivated Field		
Nursery		
Residential	x	
Commercial		
Industrial		
Other		

**Outfall Pipe 1:** (Photo # \_\_ and mark on site diagram) GPS Coordinates \_\_\_\_\_ N  
Diameter: \_\_\_\_\_ in \_\_\_\_\_ W

Headwall? YES NO Double culvert? YES NO Stream bank at outfall eroded? YES NO

Pipe Material: concrete steel PVC Clay Other

Location of Pipe: in stream, at top of bank, in bank, out of/ under bridge, other \_\_\_\_\_

Channel downstream eroded? YES NO

Pipe gathers water from (road, yard, farm, etc.):

Flow appearance: clear turbid oily foamy colored other \_\_\_\_\_

**Outfall Pipe 2:** (Photo # \_\_ and mark on site diagram) GPS Coordinates \_\_\_\_\_ N

Diameter: \_\_\_\_\_ in  
\_\_\_\_\_ W

Headwall? YES NO                      Double culvert? YES NO                      Streambank at outfall eroded?  
YES NO

Pipe Material: concrete steel PVC Clay Other

Location of Pipe: in stream, at top of bank, in bank, out of/ under bridge, other \_\_\_\_\_

Channel downstream eroded? YES NO

Pipe gathers water from (road, yard, farm, etc.): \_\_\_\_\_

Flow appearance: clear turbid oily foamy colored other \_\_\_\_\_

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**Drainage Ditch:** (Photograph #\_\_ and mark on site diagram) GPS Coordinates \_\_\_\_\_ N

Width of ditch \_\_\_\_\_ ft  
\_\_\_\_\_ W

Begins at: \_\_\_\_\_ Ditch lining: stone, vegetation, concrete, mud, other \_\_\_\_\_

Ditch is: Stable, Eroding                      Ditch Flow is: none, intermittent, steady

Stream channel downstream is: stable, eroded, silted      Flow is: clear, cloudy, oily, foamy, colored

Ditch comes from:

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**Drainage Ditch:** (Photograph #\_\_ and mark on site diagram) GPS Coordinates \_\_\_\_\_ N

Width of ditch \_\_\_\_\_ ft  
\_\_\_\_\_ W

Begins at: \_\_\_\_\_ Ditch lining: stone, vegetation, concrete, mud, other \_\_\_\_\_

Ditch is: Stable, Eroding                      Ditch Flow is: none, intermittent, steady

Stream channel downstream is: stable, eroded, silted      Flow is: clear, cloudy, oily, foamy, colored

Ditch comes from:

---

**Comments & Suggestions:**

Do you have suggestions for remediation along this reach?

Given dry weather, is there any running water in nearby stormwater structures?

Access to this site...how far off of road is it? Accessible for large equipment, if necessary?

Site is accessible only from Walkers Forge Road and 11<sup>th</sup> Ave.

Debris, trash, litter? Some around road.

Additional comments: Reach is the South River of at Hamilton Twp border downstream to 11<sup>th</sup> Ave. border. The stream widely meanders through a wide, shallow valley with mixed red maple/Atlantic white

cedar wetlands and thick stands of Atlantic white cedar. Upstream of 11<sup>th</sup> Ave., along the right bank, there are 2 large ponds, each approximately 50 by 450 feet in size, created by sand excavation. Stream was low at time of assessment and has overflowed its banks into the adjoining flood plains during periods heavy rains. Water in stream is cedar colored, water striders, whirly-gig beetles, damsel flies, various dragonfly species and other insects are common. Sunfish, large mouth bass, chain pickerel, yellow and white perch are common and the lower portion of the reach is a spawning area for alewife. There is a beaver lodge near 11<sup>th</sup> Ave., I have observed river otters in this reach and waterfowl and wading birds are also common.

## **Stream Visual Assessment Protocol**

**(Customized for Rutgers Cooperative Research & Extension Water Resources Program)**

***PROJECT: Great Egg Harbor River Watershed (South Jersey Land and Water Trust)***

Evaluators Name\_M. Hogan, 07.18.08 Time 10:00am

Property Owners Name (if applicable) private/

Stream Name South River, Great Egg Harbor River Grid ID

Reach Location South River, Great Egg Harbor River from 11<sup>th</sup> Ave. downstream to Rt. 50.

Applicable Reference Site South River, Great Egg Harbor River from 11<sup>th</sup> Ave. downstream to Rt. 50.

GPS Coordinates: N 39 26.25 W 74 44.23

Weather conditions today Sunny, hazy humid mid 90's

Rain Past 2-5 days no recent rain

Active channel width 20 ft *Dominant substrate (circle one):* boulder cobble gravel sand silt  
mud

**Site Diagram:** Note direction of flow, pipes, photo locations, stream characteristics, stormwater infrastructure, & ditches.

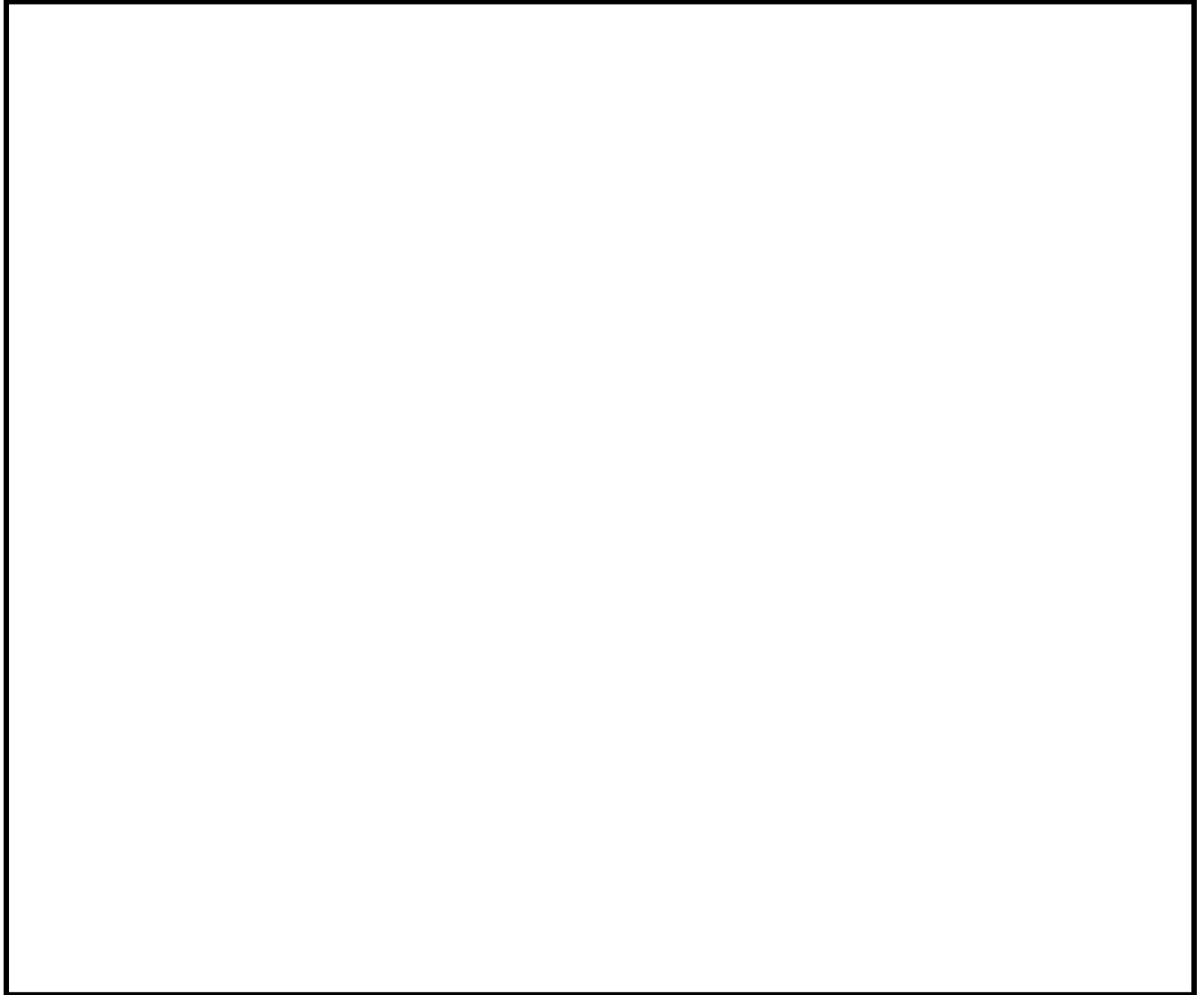


Photo Notes: 1

**Assessment Scores (1-Poor to 10-Excellent)**

\*\*\*(facing upstream)\*\*\*

Channel Condition 8

Pools

Hydrologic Alteration 8  
(Score only if Applicable)

Invertebrate habitat 10

Riparian Zone Left: 10 Right: 10

<i>Score only if applicable</i>	
Canopy Cover <small>(use Manual for guidance)</small>	10
Manure presence	<input type="text"/>
Salinity	<input type="text"/>
Riffle embeddedness <small>(look in riffles)</small>	<input type="text"/>
Macroinvertebrates Observed (optional)	<input type="text"/>

Bank Stability Left: 10 Right: 10

Water Appearance 9

Nutrient Enrichment 9

Barriers to fish movement 10

Instream fish cover 8

Overall Score	< 6.0	Poor
<small>(Total divided by number scored)</small>	6.1-7.4	Fair
Left: 9.2 Right: 9.2 Average: 9.2	7.5-8.9	Good
	> 9.0	Excellent

**Streamside Land Use:**

(within 100 ft. of top of bank)  
Check all that apply:

Land Use Category	While Observed in the field	
	Left Bank	Right Bank
Forest	x	x
Pasture		
Cultivated Field		
Nursery		
Residential		
Commercial		
Industrial		
Other		

**Outfall Pipe 1:** (Photo # \_\_ and mark on site diagram) GPS Coordinates \_\_\_\_\_ N

Diameter: \_\_\_\_\_ in \_\_\_\_\_ W

Headwall? YES NO Double culvert? YES NO Stream bank at outfall eroded? YES NO

Pipe Material: concrete steel PVC Clay Other

Location of Pipe: in stream, at top of bank, in bank, out of/ under bridge, other \_\_\_\_\_

Channel downstream eroded? YES NO

Pipe gathers water from (road, yard, farm, etc.):

Flow appearance: clear turbid oily foamy colored other \_\_\_\_\_

**Outfall Pipe 2:** (Photo # \_\_ and mark on site diagram) GPS Coordinates \_\_\_\_\_ N

Diameter: \_\_\_\_\_ in  
\_\_\_\_\_ W

Headwall? YES NO                      Double culvert? YES NO                      Streambank at outfall eroded?  
YES NO

Pipe Material: concrete steel PVC Clay Other

Location of Pipe: in stream, at top of bank, in bank, out of/ under bridge, other \_\_\_\_\_

Channel downstream eroded? YES NO

Pipe gathers water from (road, yard, farm, etc.): \_\_\_\_\_

Flow appearance: clear turbid oily foamy colored other \_\_\_\_\_

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**Drainage Ditch:** (Photograph #\_\_ and mark on site diagram) GPS Coordinates \_\_\_\_\_ N

Width of ditch \_\_\_\_\_ ft  
\_\_\_\_\_ W

Begins at: \_\_\_\_\_ Ditch lining: stone, vegetation, concrete, mud, other \_\_\_\_\_

Ditch is: Stable, Eroding    Ditch Flow is: none, intermittent, steady

Stream channel downstream is: stable, eroded, silted                      Flow is: clear, cloudy, oily, foamy, colored

Ditch comes from:

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**Drainage Ditch:** (Photograph #\_\_ and mark on site diagram) GPS Coordinates \_\_\_\_\_ N

Width of ditch \_\_\_\_\_ ft  
\_\_\_\_\_ W

Begins at: \_\_\_\_\_ Ditch lining: stone, vegetation, concrete, mud, other \_\_\_\_\_

Ditch is: Stable, Eroding    Ditch Flow is: none, intermittent, steady

Stream channel downstream is: stable, eroded, silted                      Flow is: clear, cloudy, oily, foamy, colored

Ditch comes from:

---

**Comments & Suggestions:**

Do you have suggestions for remediation along this reach?

Given dry weather, is there any running water in nearby stormwater structures?

Access to this site...how far off of road is it? Accessible for large equipment, if necessary?

Site is accessible only from Walkers Forge Road and 11<sup>th</sup> Ave.

Debris, trash, litter? Some around road.

Additional comments: Reach is the South River from 11<sup>th</sup> Ave. downstream to Rt. 50. The stream flows through an area of mixed red maple/Atlantic white cedar wetlands and a few thick stands of Atlantic



white cedar. The upper portion of the reach was an area of old cranberry bogs, the stream channel was moved to the right bank/side of the wetlands and the spoils were placed along the right bank, the channel is very straight in this area. The bogs have re-grown into red maple and some Atlantic white cedar. Stream was low at time of assessment and has overflowed its banks into the adjoining flood plains during periods heavy rains. Water in stream is cedar colored, water striders, whirly-gig beetles, damsel flies, various dragonfly species and other insects are common. Sunfish, large mouth bass, chain pickerel, yellow and white perch are common and the reach is a spawning area for alewife. I have observed river otters in this reach and waterfowl and wading birds are also common. The lower portion of the reach is affected by the tides.