The Watershed Institute | **NJ Watershed Watch Network Bioassessment Data Sheet**

Date:	**Start Time:**	**Organization:**
Investigators:		**Project Name:**
Site ID:	**Site Location Description:**	

Approximate Reach Length (aim for 100m)**:**	**Current Weather Conditions:**	**Time Since Last Precipitation or Snow Melt:**
Thermometer #:	☐ Clear ☐ Partly Cloudy ☐ Overcast ☐ Light Rain (no runoff) ☐ Heavy Rain (runoff) ☐ Snow ☐ Moderate to Heavy Snow Melt	☐ Within 24 hours ☐ 24-48 hours ago ☐ More than 2 days ago ☐ Unknown
Air Temp (°C): / **Water Temp (°C):**		

Representative Wetted Width

(indicate units)**:**

Representative Depth Profile: Measure at five equidistant points across representative width

(indicate units)**:** _____ , _____ , _____ , _____ , _____ **= Avg.** _____

Velocity

Distance: Aim for 3 meters or 10 feet _____ if using feet, convert to meters before calculating velocity (ft x 0.3048 = m) _____ meters

= Avg. Velocity _____ meters / avg. seconds

Float Time: 1) _____ 2) _____ 3) _____ 4) _____ **= Avg.** _____ seconds

☐ **Check here if this section is not completed due to nonwadable assessment.**

Stream Flow:	**Water Odor:**	**Turbidity:**	**Surface Coating:**	**Water Color:**
☐ Slow (barely moving or not at all) ☐ Moderate (clearly moving, surface flat) ☐ Swift (clearly moving, surface disturbed)	☐ Normal ☐ Sulfuric/Rotten eggs ☐ Sewage ☐ Petroleum/Chemical ☐ Other:	☐ Clear ☐ Slightly turbid ☐ Turbid/Muddy ☐ Milky ☐ Green pea soup	☐ None ☐ Foam ☐ Scum ☐ Oil ☐ “Paint” streaks ☐ Leaves or vegetation ☐ Other:	☐ Clear ☐ Tea-stained ☐ Brown ☐ Green or blue-green ☐ Yellow ☐ Gray or white ☐ Other:

Approx. Stream Morphology:

☐ Riffle: _____%

☐ Run: _____%

☐ Pool: _____%

Woody Debris:

☐ None
☐ Scarce
☐ Moderate
☐ Abundant

Macroinvertebrate Habitat Types:

☐ Riffles and cobble
☐ Wood snags and submerged logs
☐ Leaf packs
☐ Aquatic vegetation and algal mats
☐ Overhanging vegetation
☐ Undercut banks
☐ Gravel and/or sand
☐ Other:

Benthic Substrate Characterization

(compute percentages or rank by relative prevalence (ex. 1=most common):

Clay and Silt: (<0.06 mm, fine)	Sand: (0.06-2mm, gritty)
Gravel: (0.1-2.5”)	Cobble: (2.5-10”)
Boulder: (>10”)	Bedrock: (unbroken sheets)
Other: (ex. concrete, organic detritus)	

Aquatic Veget. Type:	**Algae Type:**	**Bank Vegetation:**	**Tree Canopy (at full leaf):**
☐ Emergent ☐ Submergent ☐ Rooted floating ☐ Floating	☐ Benthic ☐ Filamentous ☐ Floating ☐ Suspected HAB	☐ Trees ☐ Shrubs ☐ Grasses ☐ Lawns ☐ Invasive species ☐ None ☐ Other:	☐ Open: 0-25% ☐ Mostly open: 25-50% ☐ Mostly closed: 50-75% ☐ Closed: 75-100%
Amount: ☐ Absent ☐ Scarce ☐ Moderate ☐ Abundant	**Amount:** ☐ Absent ☐ Scarce ☐ Moderate ☐ Abundant		
	State: ☐ Live/growing ☐ Dead/decaying		

Land Uses in ¼ Mile Radius:

- ☐ Rural/Low Density Residential
- ☐ Medium Density Residential
- ☐ High Density Residential
- ☐ Urban
- ☐ Commercial
- ☐ Industrial
- ☐ Roads
- ☐ Parking Lot
- ☐ Agriculture (cropland)
- ☐ Agriculture (livestock)
- ☐ Meadow/Field
- ☐ Forested
- ☐ Preserved Open Space
- ☐ Athletic Fields
- ☐ Active construction
- ☐ Other:

Structures:

- ☐ None
- ☐ Bridge
- ☐ Culvert
- ☐ Outfall
- ☐ Dam
- ☐ Drainage Ditch
- ☐ Other:

Litter:

- ☐ None
- ☐ Scarce
- ☐ Moderate
- ☐ Abundant
- ☐ Dump site

Wildlife Observations:

- ☐ Fish
- ☐ Frogs
- ☐ Turtles
- ☐ Crayfish
- ☐ Clams/Mussels
- ☐ Salamanders
- ☐ Waterfowl
- ☐ Other:

Comments/Observations:

Site Sketch Indicate roads, buildings, landmarks, parking area, access point(s) to stream, stream flow direction, in-stream habitat for macroinvertebrate sampling (i.e. riffles, pools, aquatic vegetation, woody debris), outfalls, etc.**:**

Regional EPA Habitat Assessment Data Sheet: ☐ High Gradient ☐ Low Gradient

COMPLETE THIS SECTION ONLY IF MACROINVERTEBRATE SAMPLING WAS PERFORMED.

Sample Equipment:

- ☐ D-net
- ☐ Other:

Preservation Method:

- ☐ Whole sample (with detritus) preservation
- ☐ Organism-only preservation
- ☐ None: Field identification
- ☐ Other:

Form Attached:

- ☐ Preserved samples: Chain of Custody Form
- ☐ Streamside ID: Macroinvertebrate Tally Sheet
- ☐ Other:

EPA Rapid Bioassessment Protocol | **LOW GRADIENT HABITAT ASSESSMENT**

Habitat Parameter	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**
1. Epifaunal Substrate/Available Cover	**Greater than 50%** 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).	**30-50%** mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of new fall, but not yet prepared for colonization (may rate at high end of scale).	**10-30%** mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	**Less than 10%** stable habitat; lack of habitat is obvious; substrate unstable or lacking.
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
2. Pool Substrate Characterization	Mixture of substrate materials, with **gravel and firm sand prevalent**; root mats and submerged vegetation common.	**Mixture of soft sand, mud, or clay;** mud may be dominant; some root mats and submerged vegetation present.	**All mud or clay or sand** bottom; little or no root mat; no submerged vegetation.	**Hard-pan clay or bedrock**; no root mat or vegetation.
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
3. Pool Variability	Even mix of large-shallow, large-deep, small-shallow, small-deep pools present. (Deep > 1m; large is width or length > half cross-section of stream)	Majority of pools large-deep; very few shallow.	Shallow pools much more prevalent than deep pools.	Majority of pools small-shallow or pools absent.
SCORE	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 20%** of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; **20-50%** of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; **50-80%** of the bottom affected; sediment deposits at obstructions, constrictions and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; **more than 80%** of the bottom changing frequently; pools almost absent due to substantial sediment deposition.
SCORE	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.	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	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0

SITE	DATE

TOTAL HABITAT SCORE	HABITAT CONDITION

SCORE	HABITAT CONDITION
160 – 200	OPTIMAL
110 – 159	SUB-OPTIMAL
60 – 109	MARGINAL
< 60	POOR

Habitat Parameter	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**
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 (greater than past 20 yr), i.e., dredging, 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	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
7. Channel Sinuosity	The bends in the stream increase the stream length by **3 to 4 times** compared to if it was in a straight line.	The bends in the stream increase the stream length by **2 to 3 times** compared to if it was in a straight line.	The bends in the stream increase the stream length by **1 to 2 times** compared to if it was in a straight line.	Channel straight; waterway has been channelized for a long distance.
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
Note: Face DOWNSTREAM to determine left and right bank				
8. Bank Stability (score each bank)	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 – LEFT BANK	10 9	8 7 6	5 4 3	2 1 0
SCORE – RIGHT BANK	10 9	8 7 6	5 4 3	2 1 0
9. Bank Vegetative Protection (score each bank)	**More than 90%** of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or non-woody 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.
SCORE – LEFT BANK	10 9	8 7 6	5 4 3	2 1 0
SCORE – RIGHT BANK	10 9	8 7 6	5 4 3	2 1 0
10. Riparian Vegetative Zone Width (score each bank)	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 – LEFT BANK	10 9	8 7 6	5 4 3	2 1 0
SCORE – RIGHT BANK	10 9	8 7 6	5 4 3	2 1 0