Appendix 1
JUNE 2014 DICKEY BROOK RAPID STREAM ANALYSIS FOR THE PEEKSKILL URBAN WATERSHED PROJECT

Conducted by Hudson River Sloop Clearwater, the Peekskill Urban Watershed Council, and the Youth Environmental Stewards from the Peekskill Youth Bureau, with assistance from Andrew Fischer of the Hollow Brook Water Watch and John Gebhards of the Quassaick Creek Watershed Alliance.

1.0 INTRODUCTION

The Environmental Protection Agency's Environmental Justice Program lists the Federal government's commitment to accomplish the goals of Advancing Environmental Justice. Hudson River Sloop Clearwater, Inc. ("Clearwater"), working closely with a broad range of partners, is leading a collaborative, community-based watershed planning and protection initiative focused on the urban watershed of the City of Peekskill, NY, which includes the MacGregory and Dickey Brooks, a small unnamed stream, various lakes, ponds, springs and wetlands. In January of 2014, Clearwater and the City of Peekskill made a commitment to develop a Peekskill Urban Watershed Council (PUWC) to define the metes, bounds, and perimeters of Peekskill's Urban Watershed Sub-basins, as well as to describe their liabilities and assets for the protection, preservation and enhancement of the watershed in and around the City, now and in the future for the community of Peekskill.

While the City of Peekskill has a Watershed Protection Office and identified Watershed Protection Officers, it does not yet have a defined and well-researched watershed report or plan from which to reference for projects to improve, and or, to protect the watershed.

Hudson River Sloop Clearwater, through its Green Cities Initiative Program and in partnership with Peekskill community members, elected officials and staff, formed the Peekskill Environmental Justice Council, and created a comprehensive Community-Based Environmental Justice Inventory (CBEJI), which was presented to the City and citizens of Peekskill in December 2010. The Peekskill Urban Watershed (PUW) Project has as its main goal to protect and preserve the water quality for the City of Peekskill. The two main, moving bodies of water that traverse through Peekskill are the MacGregory Brook and the Dickey Brook, and there is a third smaller tributary, that is as yet unnamed, that also moves through the PUW.

The mission of the PUW Project has a two-pronged approach to enhancing environmental justice in the community of Peekskill. An integral facet of this project, in addition to establishing a defined and well documented watershed, is the creation of a Peekskill Urban Watershed Council, a seated body of individuals to oversee the welfare of the watershed now and into the future and additionally, and the Peekskill Urban Watershed Youth Stewards Program. The PUWC could be a freestanding entity or a sub-committee of the Peekskill Conservation Advisory Committee (CAC). In addition, the Youth Stewards Program was developed to coordinate interested, committed High School Students into the development of the watershed project. By doing so, the students would learn first-hand the skills of doing research, writing resumes, understanding watersheds and wetlands and performing simple, but valid stream analysis, as well as the skills and formats needed to document and present such findings to the general public, thereby creating a base for employment in the ever growing and expanding environmental workforce field.

The Westchester County Citizens' Volunteer Monitoring Program has developed a Complete Stream Analyses Collection Packet (WCDP 4/09)[1] – a stream assessment method that includes quantitative stream stability and assessment parameters – that was used to perform the rapid assessments during this study. The primary objective of the assessment method is to identify and prioritize poor quality riparian corridor areas within a watershed for additional detailed assessment and/or restoration. The

[1] See Westchester County Department of Planning (WCDP) www.westchestergov.com/CVMP/pdfs/CompleteStreamAnalysisCollectionPacket.pdf

proposed method provides methodology for assessment of stream and riparian parameters that influence stream stability, nutrient uptake, and in-stream riparian habitats.

The WCDP Guidelines and Directives were therefore modified in their scope to accommodate the educational level of high school students participating in the Peekskill Urban Watershed Project.

2.0 METHOD DEVELOPMENT

2.1 Assessment Method Overview

The assessment method is a comprehensive riparian corridor assessment and inventory procedure which evaluates aspects of riparian and in-stream habitats and stream stability. Its intended use is to rapidly identify, assess, and prioritize stream corridor conditions within a watershed. It is a short-term decision making tool. Problem areas are identified through the use of the method only represent current conditions and must be addressed within the immediate future (1 to 5 years). Beyond five years, the condition of problem areas will most likely have changed.

The information gained from the assessment will provide the PUWC and local citizens a sense of potential problems, but not the extent of each problem. The method may not identify cause and effect relationships influenced by factors located outside of the assessment area. It focuses on identifying existing problems based on observation and not the analysis of riparian function, structure, and processes. A more detailed assessment is required to fully assess the functions, structure, and process of the riparian corridor and to determine the effects of stream issues resulting from sources elsewhere in the watershed. A detailed assessment may also be required to refine prioritization ranking of assessment areas that have similar ratings.

This rapid procedure method provides only a relative ranking rather than a quantitative evaluation of magnitudes of change. The prioritization of assessment areas is based solely on the objectives of this assessment methodology and specific assessment area scores. There are many other ranking factors used in prioritizing problem areas such as the likely rate of self-recovery, secondary impacts, relative importance of aquatic ecosystems being impacted, cost and feasibility of restoration, social effects, and site accessibility; the ranking factors used in the prioritization process should be determined by assessors and/or decision makers from within the PUWC.

This method should be utilized by trained practitioners or educators; those doing the assessments should be, and were, led by those knowledgeable in riparian ecosystem processes and experienced in identifying relevant indicators. Additionally those leading in the assessment must have a basic understanding in watershed-based assessment procedures in order to correctly identify, assess and prioritize stream corridor conditions for the Youth Stewards present on the days of Stream Assessment Monitoring.

2.2 Assessment Method Components

The WCDP Analysis method has two main sections; namely:

1. Partial Stream Analysis Collection Packet (Weekly)[2] and
2. Complete Stream Analysis Collection Packet (Biannual)[3]

[2] www.westchestergov.com/CVMP/pdfs/PartialStreamAnalysisCollectionPacket.pdf
[3] www.westchestergov.com/CVMP/pdfs/CompleteStreamAnalysisCollectionPacket.pdf

The Partial Stream Analysis section of the packet evaluates general information about the time, date, weather conditions on day of testing, flow conditions of the stream and, water chemistry conditions. For purposes of accommodating the experience level of the Environmental Youth Stewards and their component of the Peekskill Urban Watershed Project, which was to evaluate the Dickey Brook and/or MacGregory Brook, the Partial Stream Analysis covered the Water Chemistry Sections and General Information only. A portable water testing kit, to undergo the water chemistry evaluations was provided by the Hollow Brook Water Watch President, Andrew Fischer.

The Complete Stream Analysis has three main sections; namely:

1. Physical Parameter Table
2. Macro-invertebrate Collection
3. Substrate Conditions

2.3 Complete Stream Analysis Method Scoring

Each of the eight (8) analysis parameters, of the Physical Parameter Table, receives and individual rating. *Ex. 1.Riffle Size*, receives an individual rating from one (1) to four (4), with four (4) being **“**excellent” and one (1) equating with poor**,** which is then totaled and averaged for an Average Habitat Score (Sum/8).

The riparian habitat and stream stability analysis scores and individual parameter recordings can be used to prioritize potential restoration projects.

It should be noted that the Analysis for Physical Parameters instructs that if the two stream banks are significantly different, the ratings should be made detailing the worse of the two sides.

3.0 ANALYSIS METHOD

There are two steps in the analysis: 1) field analysis, and 2) analysis area prioritization. This analysis is simplified for use by high school age Environmental Youth Stewards as they learn components and practices of employment in the field of environmental monitoring, preservation and practices. While the team leaders guiding the stewards were required to be knowledgeable in riparian system ecosystem processes and well trained/experienced understanding watershed-based assessment procedures in order to correctly identify, assess, and prioritize stream corridor conditions, the Youth Stewards were directed through a more limited Rapid Stream Assessment for the purposes of education on an introductory basis.

3.1 Preliminary Assessment

The purposes of the preliminary assessment are to delineate the preliminary monitoring/assessment areas, identify potential problem areas and ascertain an expected understanding of the riparian corridor conditions to be evaluated.

Permission to meet at the Park to undertake the rapid stream assessment was secured and included a Certificate of Insurance agreement between the County of Westchester Parks Department and Hudson River Clearwater Sloop. Meeting times and dates were set and maps were created and issued to the Youth Stewards and Stream Monitoring Event Volunteers, ands advanced notice was sent to all Blue Mountain Parks Department Employees on duty the morning of the stream monitoring event. Copies of the Certificate of Insurance as well as permit to proceed were on hand with Hudson River Sloop Clearwater, Green Cities Contractors and Educators on the day of the event.

3.2 Field Assessment

Once the in-office assessment was completed, the field assessment and stream monitoring event was coordinated and later conducted. It was predetermined that MacGregory Brook would present hazardous conditions for an educational foray to stream assessment because it was heavily strewn with bulk discarded waste and the stream banks were eroded and unstable, as well as inaccessible due to private property restrictions. As a result the stream assessment venue was changed to the Dickey Brook in Blue Mountain Park, Peekskill. This was determined to be a more suitable location for volunteers and students to congregate to learn the skills to undertake simple rapid stream assessment training.

The size and level of the detail within the field method was developed to allow a field team of three adults lead a team of Youth Stewards through a Partial Stream Analysis and then a Complete Stream Analysis on a second date at same location at Dickey Brook in Blue Mountain Park, Westchester, NY. Therefore late spring, Saturday, June 7, 2014, was chosen for the first stream monitoring event to ensure optimal weather conditions and availability of the Youth Stewards working around end-of-year school requirements. The analysis parameters that apply to shading, water appearance and nutrient enrichment are best evaluated at this time of year as well.

As weather conditions also affect when the method can be used, a fine clear day was chosen to avoid poor visibility and turbid water, as well as to avoid compromising the shading assessment parameter. Storm events cause poor visibility due to turbid water and affect stream assessment parameters such as bed-stability, water appearance, nutrient enrichment, velocity flow regimes, and in-stream cover.

3.2.1 Partial Stream Analysis (Weekly)

Date Monitored:	Saturday, June 7, 2014 at 10a.m.
Site Name:	Dickey Brook, Welcher Avenue, Blue Mountain Park, Peekskill (NY)
Team Name:	Clearwater, Peekskill Urban Watershed Youth Stewards

3.2.2.1 General Information Table

Names of Volunteers:	Susan Cockburn, Mark Guzewski, Andrew Fischer (Hollow Brook Water Watch), Joe Congelosi (Blue Mountain Park Volunteer), Tino Martin (Parks Dept. Representative)
Time and Date:	June 7, 2014
Today's Weather:	Clear
Today's Precipitation:	0
Air Temperature:	20°C
Water Level:	Low
Algae or Weed Growth:	Yes, Modified Winkler Titration

3.2.2.2 Water Chemistry

1. pH and Water Temperature (Using Sension 1 Portable pH Meter)

Parameter	Replicate 1	Replicate 2
pH	8.21	8.23
Temperature(C)	15.9°C	15.8°C

2. Conductivity and Salinity (Using Sension 5 Conductivity Meter)

Parameter	Replicate 1	Replicate 2
Conductivity (uS/cm)	3.68	3.99
Salinity (ppt)	0.2	0.2

3. Turbidity (using HACH Pocket Turbidimeter)

Parameter	Replicate 1	Replicate 2
Turbidity (NTU)	0.46 NTU	0.49 NTU

4. Alkalinity (mg/L) – No Readings. Test chemicals not available in volunteer kit.

5. Dissolved Oxygen (mg/L) – No Readings. Test chemicals not available in volunteer kit.

6. Percent Dissolved Oxygen (mg/L) – No Readings. Test chemicals not available in volunteer kit.

7. Orthophosphate as P (mg/L) – No Readings. Test chemicals not available in volunteer kit.

8. Nitrate (mg/L) – No Readings. Test chemicals not available in volunteer kit.

3.2.2.3 Summary of Weekly Collection Event

The weather was a perfect day for a stream-monitoring event. Hollowbrook Watershed Volunteer, Andrew Fischer was present with the duffle full of HACH water chemistry testing equipment/materials and a portable work station table; also present and ready were: Mark Guzewski, Clearwater Green Cities Contractor and Youth Steward Educator and Susan Cockburn, Clearwater Green Cities Contractor. The team waited until 10:45 a.m. for the Youth Stewards, who did not arrive.

Tino Martin of the Westchester County Parks Department and Joe Congelosi the Blue Mountain Park Rifle Range Coordinator did visit the collection site, and the day's water testing proceeded by those present without the Youth Stewards. The Dickey Brook appeared to be in much better condition than the MacGregory Brook, likely related the location of the Dickey Brook in a more protected and natural setting. We did observe and photograph the destruction of a portion of the stream embankment on both sides of the brook by industrial sized tire tracks leading from the north side of the brook, down the slope leading into the brook, across and through the brook and then out the other side and across to the asphalt park roadway. Broad tire tracks were left as the vehicle traversed across the brook and out to the other side. The visiting park representatives, Joe Congelosi and Tino Martin, explained that the stream bank destruction was the result of a large PVC water main break in the line leading to a park dining facility. The water main was said to have broken during the winter and the heavy equipment used to access the break to repair it, created all the damage still evident in late spring.

3.2.2 Complete Stream Analysis (Biannual)

Date Monitored:	June 28, 2014
Site Name:	Dickey Brook, Blue Mountain Park, Peekskill, NY
Team Name:	Peekskill Urban Watershed Project, Youth Stewards

3.2.2.1 General Information Table

Names of Volunteers:	Mark Guzewski, Manna Jo Greene, Aldaine Heaven, Shadeja Barker, Jerry K. Best, Ainsley McMillan, Laura Perkins of Peekskill Urban Watershed Council, and John Gebhards, Coordinator, Quassaick Creek Watershed Alliance
Data Collectors:	Guzewksi, Perkins, and Greene; Youth Stewards also recorded data for practice
Time and Date:	Saturday, June 28, 2014 at 10:25 a.m.
Weather:	Clear
Precipitation:	0
Predominant Weather day before:	Cloudy
Precipitation day before:	Wednesday night 6/25 it rained heavily until early a.m. Thursday 6/26
Air Temperature:	23.5^{o}C
Water Level:	Low
Algae or Weed Growth:	Yes
Stream Gradient:	Varied
Surrounding Land Use:	Forested

3.2.2.2 <u>Flow Conditions</u>

3.2.2.2.1.1 Stream Depth Table:

Length from Wetted Edge = Interval (m)

Interval (m)	Depth (in)		equiv. (m)
0	4”	=	0.1016
0.5	6”	=	0.1524
1.0	0”	=	0.0
1.5	2.5”	=	0.0635
2.0	0”	=	0.0
2.5	1”	=	0.0254
3.0	0.25”	=	0.0063
	13.25”	=	0.3492

Depth Sum = 0.3492 meters

3.2.2.2.2.1 Total Cross Sectional Area:

(Depth Sum) 0.3492 m x 0.5m = 0.1746 m^2
This is the total cross sectional area.

3.2.2.2.3 Velocity of the Stream's Water:

Velocity "Race Course" = The time is takes for a tennis ball to pass through the 2 meter course when dropped upstream of the 2 meter measure.

Velocity Table:

Center:	9 seconds
Center:	5 seconds
SUM:	14 Seconds

Average Time (Sum/2): 7 Seconds

3.2.2.2.4.1 Underwater Velocity Equation:

[(Distance of 2 meters)/(Average Time of 7 seconds**)] x (**0.85**) =** Average Underwater Velocity **(AUV)** (meter/sec)

[(2 meters/7 seconds)] x 0.85 = **AUV of 0.2429 meter/second**

3.2.2.2.5.1 Flow: The flow, or discharge of the stream, is the volume of water that moves past a site in a certain amount of time. Calculate by multiplying total cross-sectional area by the average underwater velocity.

Average Velocity (m/s) x Cross Sectional Area (m^2) = Flow (m^3/sec)
0.2429 m/sec x 0.1746 m^2 = **0.0424 m^3/sec = FLOW**

It should be noted that there are two slightly different methods to approximation shape of the creek. Measurements of depth were taken every 0.5 meters from the edge. Each interval can then be represented as either a rectangle or a trapezoid in shape, from a cross-sectional area standpoint. The first approximation of cross-sectional area added all the depth measurement and multiplied by one interval, as recommended in the RSAT protocol, which has been intentionally simplified "to provide rapid reconnaissance-level assessment of stream conditions". This approximates the stream as a rectangular channel, rather than accounting for invert grading. This calculation is therefore slightly larger, and when multiplied by the same velocity, generates a larger flow rate, than the trapezoidal method.

Alternately the area can be trapezoidal, which, when added, gives a slightly smaller area, and a slightly lower flow rate. This calculation is a bit more detailed. Here is the alternate calculation:

3.2.2.2.2.2 Total Cross Sectional Area

Total Cross Sectional Area = *SUM*[Width Interval x Average Depth x conversion factor]

0.5 x [(4+6)/2] x 0.0254	= 0.064 m^2
0.5 x [(6+0)/2] x 0.0254	= 0.038 m^2
0.5 x [(0+2.5)/2] x 0.0254	= 0.016 m^2
0.5 x [(2.5+0)/2] x 0.0254	= 0.016 m^2
0.5 x [(0+1)/2] x 0.0254	= 0.010 m^2
0.5 x [(1+0.25)/2] x 0.0254	= <u>0.010 m^2</u>
	Sum = 0.154 m^2

3.2.2.2.4.2 Underwater Velocity Equation (this calculation is the same in both versions)

[(Distance of 2 meters)/(Average Time of 7 seconds)**]** x (0.85) **=** Average Underwater Velocity (m/s)

[(2 meters/7 seconds)**]** x 0.85 = **Average Underwater Velocity of 0.2429 m/s**

3.2.2.2.5.2 Flow

Average Velocity (m/s) x Cross Sectional Area (m^2) = Flow (m^3/sec)
0.2429 m/sec x 0.154 m^2 = **0.0374 m^2/s = FLOW**

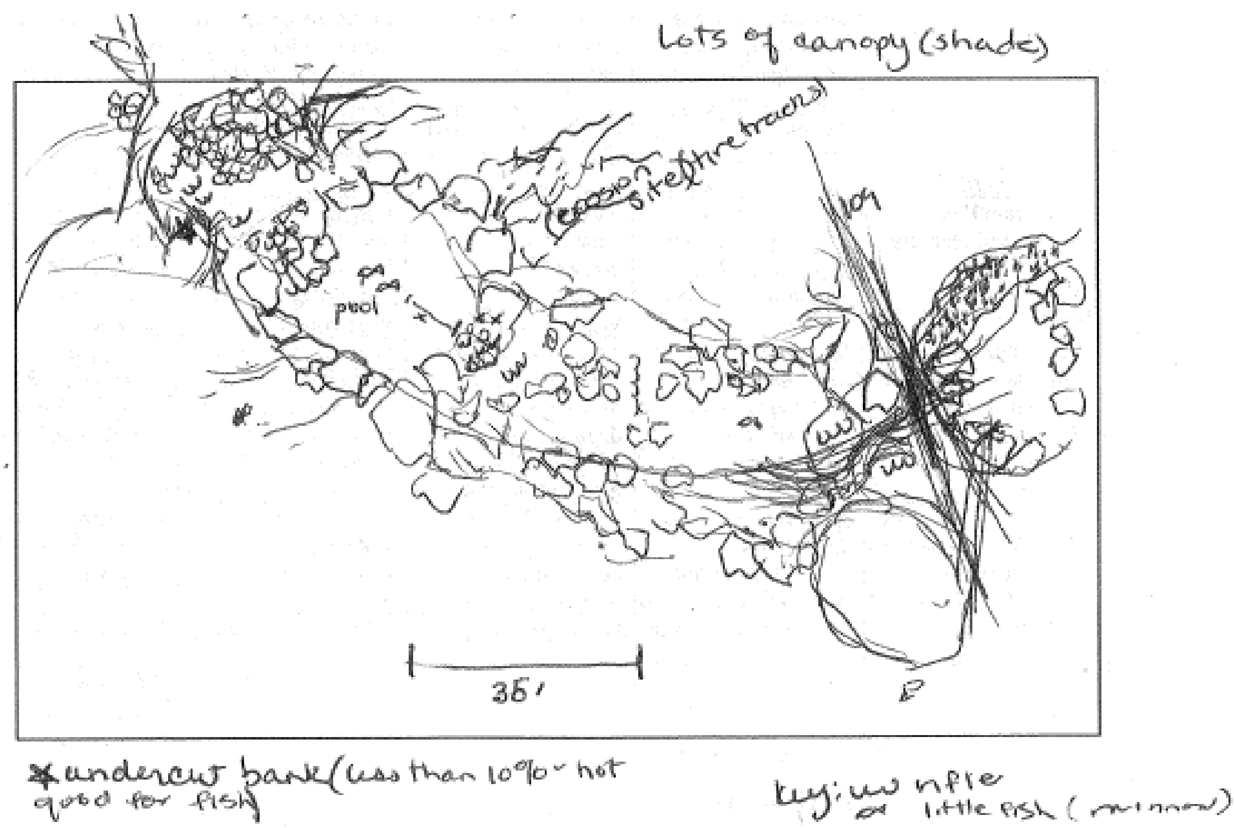
3.2.2.3 Physical Parameter Table

Eight (8) Parameters that best fit 2-meter stream stretch. If the two stream banks are significantly different, rate the worse side.

1. Riffle Size: 2 (Fair). Riffle not as wide as stream and length 2x stream width.
2. Shelter for Fish: 1 (Poor). Snags, submerged logs, and undercut banks or other stable habitat is found in 10% of the site.
3. Flow Pattern: 2 (Fair). Only 2 of 4 flow patterns present (depth is greater than 2 ft).
4. Channel Alteration: 4 (Excellent). Stream straightening, dredging, artificial embankments, dams or bridge abutments absent or minimal; stream with meandering pattern.
5. Stream Bank Cover Stability: 3 (Good). Moderately stable; small areas of erosion; most of bank covered by vegetation or rock.
6. Disruption of Naturally Vegetated Stream bank Side Coverage: 3 (Good). Trees, woody plants, soft green plants dominant; some disruption but not affecting full plant growth potential.
7. Width of Naturally Vegetated Stream bank Side: 3 (Good). Zone 12-35 meters wide; marginal impact from human activities.
8. Litter: 4 (Excellent). No unnatural litter in area.

Average Habitat Score (sum/8) = 2.75

3.2.2.4 Site Sketch



3.2.2.5 Physical Parameters

3.2.2.5.1 Physical Parameter Table

Physical Parameter Table

Mark the box for all 8 parameters that best fit your 200-foot stream stretch. If the two streambanks are significantly different, rate the worse side.

Parameter	Excellent = 4	Good = 3	Fair = 2	Poor = 1
1. Riffle Size	Well-developed riffle, as wide as stream and as long as 2x stream width	Riffle as wide as stream but riffle length <2x stream width	Riffle not as wide as stream and length <2x stream width	Riffles or run virtually nonexistent
2. Shelter for Fish	Snags, submerged logs, undercut banks or other stable habitat are found in over 50% of the site	Snags, submerged logs, under cut banks or other stable habitat are found in 30-50% of the site	Snags, submerged logs, undercut banks or other stable habitat are found in 10-30% of the site	Snags, submerged logs, undercut banks or other stable habitat are found in ≤10% of the site
3. Flow Pattern (deep is > 2 ft.)	All 4 patterns present; slow/deep, fast/shallow, fast/deep, slow/shallow	Only 3 of 4 flow patterns present	Only 2 of 4 flow patterns present	Dominated by one flow pattern
4. Channel Alteration	Stream straightening, dredging, artificial embankments, dams or bridge abutments absent or minimal; stream with meandering pattern	Some stream straightening, dredging, artificial embankments or dams present, usually near bridge abutments; no recent channel alteration	Artificial channel embankments present to some extent on both banks; and 40-80% of stream site straightened, dredged or otherwise altered	Banks shored with gabion or cement; over 80% of the stream site straightened and disrupted
5. Stream Bank Cover and Stability	Banks stable, no evidence of erosion; bank covered by vegetation or rock	Moderately stable; small areas of erosion; most of bank covered by vegetation or rock	Largely unstable; almost half of bank has areas of erosion or is not covered by vegetation or rock	Unstable, eroded; < half of bank covered by vegetation or rock, or rock slumping into creek
6. Disruption of Naturally Vegetated Streambank Side Coverage	Mature trees and vegetation; most growing naturally, no disturbance by mowing	Trees, woody plants, soft green plants dominate; some disruption but not affecting full plant growth potential	Obvious disruption; patches of bare soil and closely cropped vegetation are the norm	Not much natural vegetation left or it has been removed to 3" or less in height
7. Width of Naturally Vegetated Streambank Side	More than 35 meters wide; human activities have not impacted zone	Zone 12-35 meters wide; marginal impact from human activities	Zone 6-12 meters wide; impact from human activities present	< 6 meters; lots of nearby human activities
8. Litter	No unnatural litter in area	Litter sparse	Litter fairly common	Lots of litter present; obviously dumped (i.e. an area serving as an obvious garbage dump)

Average Habitat Score (sum/8) 2.75

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3.2.2.6 Substrate Conditions

Substrate Type Table (Record 25 values)

Substrate Type	**Silt/Clay/Mud** (makes the water cloudy if disturbed)	**Sand** (< 0.1”)	**Gravel** (0.1-2”)	**Cobble** (2-10”)	**Boulder** (> 10”)	**Bedrock** (solid rock covers stream bottom)
Tallies		IIII	II	~~IIII~~ ~~IIII~~	~~IIII~~ I	
Number of Tallies				IIII		
Percent (multiply # of Tallies by 4)						

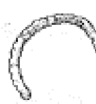
Embeddedness Table (Record 10 values)

Cobble #	0-25%	25-50%	50-75%	75-100%
Tallies	~~IIII~~ III	III	II	~~IIII~~ I
Number of Tallies				
Percent (multiply # of Tallies by 10)				

3.2.2.7 Macroinvertebrate Collection

3.2.2.7.1 Tier-1 Macroinvertebrate Data Sheet

Tier 1 Macroinvertebrate Data Sheet

Benthic Macroinvertebrate Order	Replicate 1 Note if present or absent and record notes below.	Replicate 2 Note if present or absent and record notes below.	Additional Notes
EPHEMEROPTERA (Mayflies) 	0	0	Small
PLECOPTERA (Stoneflies) 	卌 卌	15	fish | minnows
TRICHOPTERA (Caddisflies) 	10	28	present
COLEOPTERA (Beetles) 	-	1	Crayfish
OLIGOCHAETA (Aquatic Worms) 	0	0	present
Dragonfly larvae		2	Many different species of
Other fly larvae		Other Fly larvae 2	frogs

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4.0 RELATED OBSERVATIONS

In addition to the benthic macroinvertebrates found by kick sampling, the team observed small fish, including minnows, crayfish and many species of frogs. Vegetation included many ferns, skunk cabbage, jewelweed, raspberry and Solomon's seal – all indicative of a healthy habitat.

5.0 FINDINGS AND CONCLUSIONS

As indicated in the Tier 1 Macroinvertebrate Data Sheet, the biological indicators were good, with an EPT ratio of 43 Ephemeroptera (Mayflies), Plecoptera (Stoneflies) and Tricoptera (Caddisflies), to 5 Coleoptera (Beetles) and Oligochetes (Aquatic Worms), including 2 dragonfly larvae and 2 other fly larvae, totaling 48 benthic macroinvertebrates (BMI) identified at this sampling. Many of the caddisflies were in cases and very few snails or leeches were present, indicating good to excellent Biological Indicators on the RSAT Evaluation Method.

Channel stability was not analyzed by shape, but some undercutting of the bank was noted (as indicated on site sketch), but it was less than 10%. Also noted were tire tracks, as explained above. The overall canopy was substantial, with a mix of trees, shrubs and grasses; most trees were upright, with few recent tree falls.

Embeddeness of Cobble and Boulders ranged from 8/20 at 0-25%; 3/20 at 25-50%, 2/20 at 50-75% and 7/20 giving an overall embeddeness score of 40%, which is good on the RSAT evaluation method.

A few deep pools with moderate sand/silt substrate were noted in this reach of the brook, and few streak marks, indicating fair-to-good channel scouring/sediment deposit. No point bars were noted. Riffle to pool ratio was not estimated.

Substrate conditions showed 3/25 sand; 2/25 gravel; 14/25 cobble; 6/25 boulder, with no silt/clay/mud or bedrock at the site tested.

Our conclusion from this cursory assessment is that the Dickey Brook, as indicated by observation of this reach, is in good condition and only slightly impacted by human use and other factors.

We wish to reiterate that the purpose of this Rapid Stream Assessment Technique training was to expose the Youth Stewards and participating community members to basic stream sampling methods used to assess, measure, and quantify stream conditions, and to understand that benthic macroinvertebrates, those crawly critters found under the rocks, are actually indicators of stream health and water quality.