

Citizens Qualitative Habitat Evaluation Index (CQHEI)

CQHEI	<input type="text"/>
Total	<input type="text"/>

Date: ___/___/___ Volunteer ID: _____ Site ID: _____ Stream Length: _____

Stream Name: _____ Location Details: _____













1. SUBSTRATE (bottom type) Score

<p>b) Size</p> <p><input type="checkbox"/> (14 pts) Mostly Large (fist size or bigger)</p> <p><input type="checkbox"/> (10 pts) Mostly Medium (smaller than fist, larger than fingernail)</p> <p><input type="checkbox"/> (6 pts) Mostly Small (smaller than fingernail, but course, or Bedrock)</p> <p><input type="checkbox"/> (0 pts) Mostly Very Fine (not course, sometimes greasy or mucky)</p>	<p>a) Smothering- Are fist sized and larger pieces smothered by sands/silts? (Symptoms Hard to move pieces, often black on the bottom)</p> <p><input type="checkbox"/> (5 pts) No</p> <p><input type="checkbox"/> (0 pts) Yes</p>	<p>c) Silting- Are silts and clays distributed throughout the stream? (symptoms- light kicking results in substantial clouding for more than a minute)</p> <p><input type="checkbox"/> (5 pts) No</p> <p><input type="checkbox"/> (0 pts) Yes</p>
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2. FISH COVER (hiding places) – Add 2 points for each one present Score

<input type="checkbox"/> Underwater tree roots (large)	<input type="checkbox"/> Backwater, oxbows, or side channels	<input type="checkbox"/> Undercut banks
<input type="checkbox"/> Underwater tree rootlets (small)	<input type="checkbox"/> Shallow, slow areas for small fish	<input type="checkbox"/> Boulders
<input type="checkbox"/> Shrubs/small trees hang over the bank	<input type="checkbox"/> Deep areas (chest deep)	
<input type="checkbox"/> Downed trees, logs, or branches	<input type="checkbox"/> Water plants	

3. STREAM SHAPE & HUMAN ALTERATIONS Score

<p>a) Curviness or Sinuosity</p> <table border="0"> <tr> <td><input type="checkbox"/> 0 pts Very Straight </td> <td><input type="checkbox"/> 3 pts Mostly Straight Some "Wiggle" </td> </tr> <tr> <td><input type="checkbox"/> 6 pts 1 or 2 Good Bends </td> <td><input type="checkbox"/> 8 pts 2 or More Good Bends </td> </tr> </table>	<input type="checkbox"/> 0 pts Very Straight 	<input type="checkbox"/> 3 pts Mostly Straight Some "Wiggle" 	<input type="checkbox"/> 6 pts 1 or 2 Good Bends 	<input type="checkbox"/> 8 pts 2 or More Good Bends 	<p>b) How natural is the site?</p> <p><input type="checkbox"/> (12 pts) Mostly Natural (12 pts)</p> <p><input type="checkbox"/> (9 pts) A few minor artificial changes (eg. a bridge)</p> <p><input type="checkbox"/> (6 pts) Many changes, but some natural conditions left (eg. Trees, meanders)</p> <p><input type="checkbox"/> (0 pts) Heavy changes (eg. Leveed or channelized)</p>
<input type="checkbox"/> 0 pts Very Straight 	<input type="checkbox"/> 3 pts Mostly Straight Some "Wiggle" 				
<input type="checkbox"/> 6 pts 1 or 2 Good Bends 	<input type="checkbox"/> 8 pts 2 or More Good Bends 				

4. STREAM FORESTS & WETLANDS (Riparian Area) & EROSION Score

<p>a) Riparian Width -mostly</p> <p><input type="checkbox"/> (8 pt) Wide -can't throw a rock thru</p> <p><input type="checkbox"/> (5 pt) Narrow -can throw a rock thru</p> <p><input type="checkbox"/> (0 pt) None</p>	<p>b) Land Use - mostly</p> <table border="0"> <tr> <td><input type="checkbox"/> (5 pt) Forest/wetland</td> <td><input type="checkbox"/> (2 pt) Conservation Tillage</td> </tr> <tr> <td><input type="checkbox"/> (4 pt) Shrubs</td> <td><input type="checkbox"/> (1 pt) Suburban</td> </tr> <tr> <td><input type="checkbox"/> (3 pt) Overgrown fields</td> <td><input type="checkbox"/> (1 pt) Row Crop</td> </tr> <tr> <td><input type="checkbox"/> (2 pt) Fenced pasture</td> <td><input type="checkbox"/> (0 pt) Open Pasture</td> </tr> <tr> <td><input type="checkbox"/> (2 pt) Park (grass)</td> <td><input type="checkbox"/> (0 pt) Urban/Industrial</td> </tr> </table>	<input type="checkbox"/> (5 pt) Forest/wetland	<input type="checkbox"/> (2 pt) Conservation Tillage	<input type="checkbox"/> (4 pt) Shrubs	<input type="checkbox"/> (1 pt) Suburban	<input type="checkbox"/> (3 pt) Overgrown fields	<input type="checkbox"/> (1 pt) Row Crop	<input type="checkbox"/> (2 pt) Fenced pasture	<input type="checkbox"/> (0 pt) Open Pasture	<input type="checkbox"/> (2 pt) Park (grass)	<input type="checkbox"/> (0 pt) Urban/Industrial	<p>c) Bank Erosion</p> <p><input type="checkbox"/> (4 pts) Stable, hard, or well vegetated</p> <p><input type="checkbox"/> (2 pts) Combination of stable & eroding</p> <p><input type="checkbox"/> (0 pt) Raw collapsing banks</p>	<p>d) Stream Shading</p> <p><input type="checkbox"/> (3 pts) Mostly</p> <p><input type="checkbox"/> (2 pts) Partly</p> <p><input type="checkbox"/> (0 pts) None</p>
<input type="checkbox"/> (5 pt) Forest/wetland	<input type="checkbox"/> (2 pt) Conservation Tillage												
<input type="checkbox"/> (4 pt) Shrubs	<input type="checkbox"/> (1 pt) Suburban												
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<input type="checkbox"/> (2 pt) Park (grass)	<input type="checkbox"/> (0 pt) Urban/Industrial												

5. DEPTH & VELOCITY Score

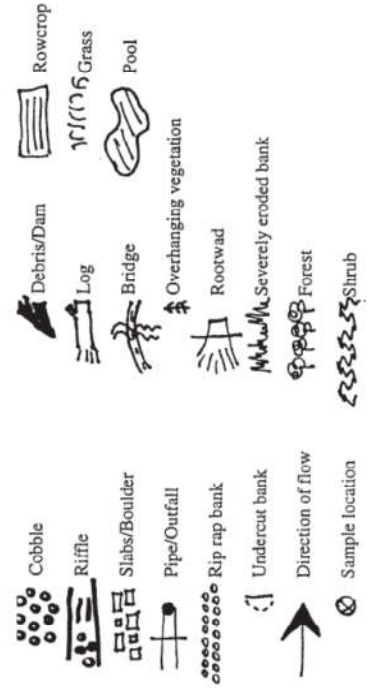
<p>a) Deepest Pool is at Least:</p> <p><input type="checkbox"/> (8 pts) Chest Deep</p> <p><input type="checkbox"/> (6 pts) Waist Deep</p> <p><input type="checkbox"/> (4 pts) Knee Deep</p> <p><input type="checkbox"/> (0 pts) Pools do not exist</p>	<p>a) Check all flow types that exist:</p> <table border="0"> <tr> <td><input type="checkbox"/> (2 pts) Very fast, hard to stand in current</td> <td><input type="checkbox"/> (1 pt) Slow, flow nearly absent</td> </tr> <tr> <td><input type="checkbox"/> (3 pts) Fast, quickly takes objects downstream</td> <td><input type="checkbox"/> (0 pts) None, no flow</td> </tr> <tr> <td><input type="checkbox"/> (1 pt) Moderate, slowly takes objects downstream</td> <td></td> </tr> </table>	<input type="checkbox"/> (2 pts) Very fast , hard to stand in current	<input type="checkbox"/> (1 pt) Slow , flow nearly absent	<input type="checkbox"/> (3 pts) Fast , quickly takes objects downstream	<input type="checkbox"/> (0 pts) None , no flow	<input type="checkbox"/> (1 pt) Moderate , slowly takes objects downstream	
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<input type="checkbox"/> (1 pt) Moderate , slowly takes objects downstream							

6. RIFFLES/RUNS (Areas where the water is fast/turbulent , surface may be broken) Score

<p>a) Riffles/Runs are:</p> <p><input type="checkbox"/> (8 pts) Knee Deep, or deeper and fast</p> <p><input type="checkbox"/> (6 pts) Ankle/Calf deep and fast</p> <p><input type="checkbox"/> (4 pts) Ankle deep or less and slow</p> <p><input type="checkbox"/> (0 pts) Do not Exist</p>	<p>a) Riffles/Runs substrates (rocks on bottom) are:</p> <p><input type="checkbox"/> (7 pts) Fist size or larger</p> <p><input type="checkbox"/> (4 pts) Smaller than fist size, but large than fingernail</p> <p><input type="checkbox"/> (0 pts) Smaller than fingernail or do not exist</p>
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Return Forms to Butler County Stream Team at whitelr@butlercountyohio.org

Stream Site Map



What is cQHEI?

This index was developed by the Ohio Environmental Protection Agency as a "Citizens" companion to the Qualitative Habitat Evaluation Index (QHEI) used by the state's professional staff. The purpose of the index is to provide a measure of the stream habitat and riparian health that generally corresponds to physical factors affecting fish and other aquatic life (i.e. macroinvertebrates). The CQHEI produces a total score that can be used to compare changes at one site over time or compare two different sites. When completing the CQHEI, evaluate your entire stream site (200' section).

How to Score

In each category chose the most predominant answer. If sections of the stream or stream banks have completely different characteristics, you may check two boxes and average the points to obtain a score for the subsection (a), (b), or (c).

- I. Substrate (Bottom Type) - Max 24 pts
- II. Fish Cover (Hiding Places) - Max 20 pts Select all the cover types that you see. Add the points. (Note: "smothering" is the same as "embeddedness." Check "yes" for smothering, if the stream bottom is more than 50% embedded.)
- III. Stream Shape and Human Alterations - Max 20 pts
- IV. Stream Forests and Wetlands (Riparian Areas) & Erosion - Max 20 pts
 - a) Width of the Riparian Forest or Wetland - ***This is not the width of the stream!*** Estimate the width of the area containing trees or wetlands on each side of the stream by answering: "Can you throw a rock to the other side?"
- V. Depth & Velocity - Max 15 pts
 - a) Deepest Pool - If your stream is a consistent depth, select the maximum depth.
 - b) Select all the flow types that you see and add the points.
- VI. Riffles/Runs (where the current is turbulent) - Max 15

What do the points mean?

MAXIMUM TOTAL POINTS FOR THE CQHEI IS 114.

0-49 Moderate to extensive man made modifications to stream. These water bodies would generally be classified as "Modified Warm Water Habitats." Channelized, treeless ditches with little depth and poor flow rate could score as low as 30 or 40. Silt and muck included in the same stream could result in scores as low as 20.

50-60 Streams in this range generally can attain "Warm Water Habitat" (WWH) biological communities. Depending on which features (flow, depth) are lacking the biological communities may continue to fall short of the WWH classification.

61-69 Streams scoring at this range have enough positive habitat features available to attain "Warm Water Habitat" (WWH). This would include good depth, flow, substrate and forest canopy over stream.

70-100 Streams scoring in this range are capable of supporting "Exceptional Warm Water Habitat" biological communities. This would include variable depth, good flow, riffles and pools, good substrates, and good riparian quality.

Site Map

Drawing a map of your site location is an excellent first step in getting to know your 200-foot stream segment. Photographs help but don't always capture all the details. Looking at an aerial image (eg. google maps) before or during your visit may also help with familiarization. Continuing this tradition on an annual basis may also alert you to changes at your site that may not have been obvious during regular sampling visits.