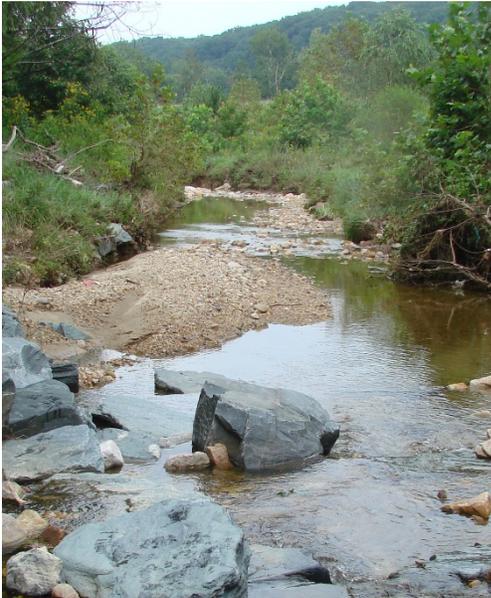


CEDS STREAM QUALITY CHECKLIST

This checklist provides easy to use indicators of stream health. It is oriented to streams draining the suburban-urban areas where most of us ([81%](#)) live. Many of these waters are within a five-minute walk of a home yet are frequently degraded to a point that they may not be [Child-Safe & Friendly](#). The cause of the degradation is usually [stormwater pollution](#), [sewer releases](#), [illicit discharges](#), and other sources of contamination. To see what a healthy stream looks like apply these indicators to a rural waterway, preferably one draining lots of forest in an area with little development. To learn how to restore waters degraded by past growth and how to prevent future damage see the CEDS [Protecting & Restoring Wetlands, Streams, Lakes, Tidal Waters & Wells from Land Development Impacts](#) webpage. Please add your findings to the [Stream Quality database](#): ceds.org/streamquality. For further information contact CEDS at 410-654-3021 or Help@ceds.org.

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">ASSESSING STREAM QUALITY WITH FISH</p>		<p>Fish are the easiest method for assessing stream health and should be present in all waters that flow year-round. If you don't see any fish and the waterway is small, then look downstream at points where it's bigger. If fish are still absent then the stream is probably in poor condition. If fish are present but there's only one kind (species) then the stream may still be degraded. The presence of several different kinds of fish frequently indicates good quality.</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">ASSESSING STREAM QUALITY & PIN-POINTING POLLUTION SOURCES WITH INSECTS</p>	 <p style="text-align: center;">Caddisfly larvae</p>  <p style="text-align: center;">Caddisfly case</p>  <p style="text-align: center;">Mayfly nymph</p>	<p>Aquatic insects can provide a more accurate method for assessing quality and tracing pollution to a source. Most stream dwelling insects are immature and live in the swifter flowing riffle areas of a stream. Pick up a few stones bathed in the most rapidly flowing water. Look closely at the entire surface for critters a third- to a half-inch long. Caddisfly larvae are one of the most common stream insects and resemble a caterpillar with six jointed legs. They make a case of sand or wood which may look like a bump on a stone. If only caddisfly larvae are present then a stream is probably of fair quality. Mayfly nymphs look like a small roach with six jointed legs and three tails. If both caddis and mayflies are present then a stream is probably of good quality. If both caddisflies and mayflies are absent then stream quality is probably poor. If either caddis or mayflies are absent then sample upstream, road crossing by road crossing. You're looking for a point where they are present. If such a point is found then a pollution source may exist between this point and the last location sampled where they were absent. Unfortunately this method is not as easily applied to sluggish, slow-moving streams or rivers.</p>

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">MUDDY WATER SOURCE IDENTIFICATION</p>		<p>A muddy stream frequently indicates a pollution problem, particularly when a few days have passed since the last runoff producing storm. Streams draining well-managed watersheds should not become muddy after a storm. You may be able to pin-point the mud pollution source by working upstream. View the waterway at each road crossing or other access point. If the stream is less muddy at a crossing then the source may exist between there and the last point downstream where it was muddy. Further detail is provided in the CEDS factsheet Tracing Muddy Waters To Sediment Pollution Sources.</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">ILLICIT POLLUTION</p>		<p>Nothing should be flowing from a storm drain pipe when more than a few days have passed since the last rain or snow melt. Liquid flowing from a storm drain in dry weather may indicate an illicit pollution source, particularly if it is anything other than clear and cool. To learn how to trace the pollution to a source see the CEDS factsheet Investigating Storm Drain Discharges for Pollution.</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">ACCELERATED STREAM CHANNEL EROSION</p>		<p>While it is natural for stream banks to gradually erode over time, this process is greatly accelerated when forests are replaced with development and flooding increases by up to a hundred fold. Numerous eroded stream banks is a good indication of accelerated bank erosion. Another strong indication of accelerated erosion is an abundance of roots extending into the air from a bank. Since they only grow in soil, exposed roots indicate floodwaters have scoured away bank soil within the recent past.</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">SEDIMENT POLLUTION INDICATORS</p>		<p>In a healthy watershed, new sand and gravel bars rarely appear. When they do the bars are quickly colonized with vegetation. An abundance of unvegetated bars within a channel may indicate excessive soil erosion in the land area draining to the stream. Construction or mining sites are likely to be the primary source of the soil erosion and sediment pollution causing the formation of new bars. Continued sediment accumulations prevent vegetation from colonizing the bar. The presence of soft, quicksandlike deposits may be another sediment pollution indicator. Without good pollution control, a single construction site can damage three miles of downstream waters with recovery taking up to a century. This is why when it comes to construction sites Exposed Soil = Pollution.</p>