



# 2017 Water Quality Monitoring

## Wadable Stream Qualitative Fish Habitat Rating Survey Tip Sheet

Thank you for being a Water Quality Monitor! We recommend doing this survey one time at each of your stations during the month of July or August. The purpose of this survey is to assess the habitat diversity and health of the waterways.

Before you begin:

**Note the two different forms.** One is for narrower streams (page 2-3). The other is for wider streams (page 4-5). Read the headings carefully.

**You may do this survey on a different day than your primary station visiting day.**

**Tools such as a tape measure, surveying flags or tape, and dip nets with measurement markings may be helpful when doing this survey.** If you'd like to use any of these tools, email Kelly at [kelly@milwaukeeriverkeeper.org](mailto:kelly@milwaukeeriverkeeper.org).

**Average together both sides of the stream bank.** One side of your waterway might be very different than the other. Use your best judgement to average the two sides together.

# Wadable Stream Qualitative Fish Habitat Rating for Streams ≤ 10 m (≤ 33 ft) wide

(Use this form for narrower streams! Complete all the fields.)

State of Wisconsin  
 Department of Natural Resources  
 dnr.wi.gov

**Wadable Stream Qualitative Fish Habitat Rating**  
**for Streams ≤ 10 m (≤ 33 ft) wide**  
 Form 3600-532A (WAV version R 4/15) Page 1 of 2

**Instructions:** Bold field must be completed. Use the habitat guidance in the WAV methods packet to understand terminology used on this form.

Station Summary	
Station Name	Station ID
Date (MMDDYYYY)	Time <span style="float: right;">AM or PM</span>
Channel and Basin Characteristics	
Stream Width (circle units) _____ ft / m (Measure in 10 locations along station length)	Station Length (35 times mean stream width; max 400 m [1300 ft])
Water Level (check one) <input type="checkbox"/> Normal <input type="checkbox"/> Below <input type="checkbox"/> Above	Water Clarity <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Stained
Channel Condition: <input type="checkbox"/> Natural	<input type="checkbox"/> Straightened <input type="checkbox"/> Concrete Channel
Comments/Notes	

Measure the width of your stream in at least 3 places to get an idea of its average width.

Walk a decent length of your stream (at least 33 m/100 ft) to get a picture of what the average shoreline is like.

Add any additional comments to this area.

Now, turn your form over...

Ask yourself the questions below for each Rating Item.

Rate each item based on your personal opinion. Circle the corresponding number below the rating you give. **CIRCLE ONLY ONE NUMBER. Do not rate items as 'in between'.**

Write the number you circled on the Score line.

Wadable Stream Qualitative Fish Habitat Rating for Streams ≤ 10 m (≤ 33 ft) wide  
Form 3600-532A (WAV R 4/15) Page 2 of 2

Rating Item	Excellent	Good	Fair	Poor	Score
<b>Riparian Buffer Width</b> Width of contiguous undisturbed land uses; meadow, shrubs, woodland, wetland, exposed rock	Riparian zone well protected; buffer wide (>10 m; >33 ft)	Riparian zone protected, but buffer width moderate (5-10 m; 16-33 ft)	Riparian zone moderately disturbed, buffer narrow (1-4.9 m; 3.3-16 ft)	Most of the riparian zone disturbed, buffer very narrow or absent (<1 m; <3.3 ft)	10
<b>Bank Erosion</b> Width of bare soil on bank, along transects	No significant bank erosion; <0.2 m (<0.7 ft) of bank is bare soil	Limited erosion; 0.2-0.5 m (0.7-1.6 ft) of bank is bare soil	Moderate erosion; 0.51-1.0 m (1.7-3.3 ft) of bank is bare soil	Extensive erosion; >1.0 m (>3.3 ft) of bank is bare soil	
<b>Pool Area</b> % of stream length in pools	Pools common; wide, deep, slow velocity habitat, balanced by other habitats; 40 to 60% of station	Pools present; not frequent or over-abundant; 30 to 39% or 61 to 70% of station	Pools present, but either rare or overly dominant, few other habitats present; 10 to 29% or 71 to 90% of station	Pools either absent or dominant, not balanced by other habitats; <10% or >90% of station	
<b>Width:Depth Ratio</b> Average stream width divided by average thalweg depth in runs and pools	Stream very deep and narrow; width/depth ≤ 7	Stream relatively deep and narrow; width/depth 8-15	Stream moderately deep and narrow; width/depth 16-25	Stream relatively wide and shallow; width/depth > 25	
<b>Riffle:Riffle or Bend:Bend Ratio</b> Average distance between riffles or bends divided by average stream width	Diverse habitats; meandering stream with deep bends and riffles common; ratio <10	Diverse habitats; bends and riffles present, but not abundant; ratio 10 to 14	Habitat diversity low; occasional riffles or bends, ratio 15 to 25	Habitat monotonous; riffles or bends rare; generally continuous run habitat; ratio >25	
<b>Fine Sediments</b> % of the substrate that is < 2 mm (< 0.08 in) [sand, silt or clay]	Fines rare or absent, <10% of the stream bed	Fines present but limited, generally in stream margins or pools; 10 to 20% of stream bed	Fines common in mid-channel areas, present in riffles and extensive in pools; 21 to 60%	Fines extensive in all habitats; > 60% of stream bed covered	
<b>Cover for Fish</b> % of stream area with cover in or overhanging water at least 0.2 m (8 inches) deep	Cover/shelter for fish abundant; >15% of stream	Cover common but not extensive; 10-15% of stream	Occasional cover, limited to one or two areas; 5-9% of stream	Cover rare or absent; limited to <5% of stream	

How much space is there between the water's edge and concrete, manicured lawns, or other man-made landscaping?

How much bare soil, exposed roots, or eroded retaining walls do I see along the shoreline?

How straight is my stream? Does it bend and riffle frequently like a coiling snake (Excellent) or is it very straight like a canal (Poor)?

Grab a handful of sediment from the stream bed in your hand and rub your fingers together. Is it grainy and wash off easily? That's sand. Is it smooth and wash off easily? That's silt. Is it sticky and hard to wash off? That's clay. How much of the stream bed made of these three things?

How many deep areas with slow-moving water do I see in my stream?

What is the width and depth of my stream like? Is it deep and narrow? Shallow and wide? Or somewhere in between?

How much of the stream is shaded or covered by bank vegetation in areas that are deep enough for a fish to swim?

Add all the numbers from each Rating Item to get your Total Score, then see page 6, Interpreting the Results.

# Wadable Stream Qualitative Fish Habitat Rating for Streams > 10 m (>33 ft) wide

(Use this form for wider streams! Complete all the fields.)

State of Wisconsin  
 Department of Natural Resources  
 dnr.wi.gov

**Wadable Stream Qualitative Fish Habitat Rating  
 for Streams >10 m (>33 ft) wide**  
 Form 3600-532A (WAV version R 4/15)

Page 1 of 2

**Instructions:** Bold field must be completed. Use the habitat guidance in the WAV methods packet to understand terminology used on this form.

Station Summary	
<b>Station Name</b>	<b>Station ID</b>
<b>Date (MMDDYYYY)</b>	<b>Time</b>
Channel and Basin Characteristics	
<b>Stream Width (circle units)</b> _____ ft / m (Measure in 10 locations along station length)	<b>Station Length</b> (35 times mean stream width; max 400 m [1300 ft])
Water Level (check one) <input type="checkbox"/> Normal <input type="checkbox"/> Below <input type="checkbox"/> Above	Water Clarity <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Stained
Channel Condition: <input type="checkbox"/> Natural	<input type="checkbox"/> Straightened <input type="checkbox"/> Concrete Channel
Comments/Notes	

Measure the width of your stream in at least 3 places to get an idea of its average width.

Walk a decent length of your stream (at least 33 m/100 ft) to get a picture of what the average shoreline is like.

Add any additional comments to this area.

Now, turn your form over...

Ask yourself the questions below for each Rating Item

Rate each item based on your personal opinion. Circle the corresponding number below the rating you give. CIRCLE ONLY ONE NUMBER. Do not rate items as 'in between'.

Write the number you selected on the Score line.

How much bare soil, exposed roots, or eroded retaining walls do I see along the shoreline?

On average, how deep is the deepest, fastest moving part of my stream? Think of the path you would take if you were in a boat floating down the stream. How deep is that path?

How much of the stream is shaded or covered by bank vegetation in areas that are deep enough for a fish to swim?

**Wadable Stream Qualitative Fish Habitat Rating for Streams >10 m (>33 ft) wide**  
Form 3600-532A (WAV R 4/15) Page 2 of 2

Rating Item	Excellent	Good	Fair	Poor	Score
<b>Bank Stability</b> % of bank protected by rock or vegetation	No significant bank erosion; >90% of bank protected; <10% bare soil	Limited erosion; 70 to 90% of bank protected; 10-30% bare soil	Moderate erosion; 50 to 69% of bank protected; 31-50% bare soil	Extensive erosion; <50% of bank protected; >50% bare soil	
	12	8	<b>4</b>	0	4
<b>Maximum Thalweg Depth</b> Average of the four deepest depths recorded	Stream very deep; >1.5 m (>5 ft)	Stream relatively deep; 1-1.5 m (3.3-5 ft)	Stream moderately deep; 0.6-0.9 m (2-3 ft)	Stream relatively shallow; <0.6 m (<2 ft)	
	25	16	8	0	
<b>Riffle:Riffle or Bend:Bend Ratio</b> Average distance between riffles or bends divided by average stream width	Diverse habitats; meandering stream with deep bends and riffles common; ratio <10	Diverse habitats; bends and riffles present, but not abundant; ratio 10 to 14	Habitat diversity low; occasional riffles or bends; ratio 15 to 25	Habitat monotonous; riffles or bends rare; generally continuous run habitat; ratio >25	
	12	8	4	0	
<b>Rocky Substrate</b> % of substrate, by area, that is bedrock, boulder, rubble/cobble or gravel	Extensive rocky substrate; >65% of the stream bed	Moderate rocky substrate; 45-65% of stream bed	Limited rocky substrate; 15-44% of stream bed	Rocky substrate uncommon; <15% of stream bed	
	25	16	8	0	
<b>Cover for Fish</b> % of stream area with cover in or overhanging water at least 0.2 m (8 inches) deep	Cover/shelter for fish abundant; >12% of stream	Cover common, but not extensive; 7-12% of stream	Occasional cover, limited to one or two areas; 2-6% of stream	Cover rare or absent; limited to <2% of stream	
	25	16	8	0	
<b>Total Score</b>					

How straight is my stream? Does it bend and riffle frequently like a coiling snake (Excellent) or is it very straight like a canal (Poor)?

How rocky is the bottom of my stream?

Add all the numbers from each Rating Item to get your Total Score, then see page 6, Interpreting the Results.

## Interpreting the Results for Both Forms

(Look to the front, bottom section of your form.)

Interpreting the Results	Water Quality Rating	Score Range
	Excellent	>80
	Good	60-80
	Fair	20-60
	Poor	<20

Referring to your Total Score from the back of your form, use the Score Range to find your overall Water Quality Rating for your stream.