

# Wadable Stream Qualitative Fish Habitat Rating for Streams < 10 m wide

Form 3600-532A (R 6/07)

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Instructions: Bold fields must be completed. Record all measurements in metric units.

## Station Summary

Stream Name <i>Kohlville River</i>	Waterbody ID Code <i>865400</i>	SWIMS Station ID <i>10022037</i>	FH Database ID <i>20626730</i>
Date (MMDDYYYY) <i>08012017</i>	Station Name <i>Kohlville @ Midland Rd.</i>		
Latitude - Longitude Determination Method Used <i>SWIMS</i>			Datum Used <i>NAD83</i>
Start Latitude <i>43.48343</i>	Start Longitude <i>-88.76165</i>	End Latitude <i>—</i>	End Longitude <i>—</i>
		County <i>Washington</i>	

## Water Characteristics

Time (24-hr clock) <i>1006</i>	Air Temperature (C) <i>—</i>	Water Temperature (C) <i>17.7</i>	Conductivity (µs/cm) <i>822.6</i>	Transparency (cm) <i>67</i>
Dissolved Oxygen (mg/l) <i>8.50</i>		Dissolved Oxygen % Saturation <i>89.0 %</i>	pH <i>7.8</i>	
Flow (m³/sec) <i>0.161</i>	Water Level (check one - measure distance if Above or Below Normal): <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Below: _____ (m) <input type="checkbox"/> Above: _____ (m)		Water Clarity: <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Turbid <input type="checkbox"/> Stained	

## Channel and Basin Characteristics

Mean Stream Width (m) <i>5.1</i>	Station Length (m) <i>178.5</i>			
Channel Condition: (check one) <input checked="" type="checkbox"/> Natural <input type="checkbox"/> > 20-year-old Channelization <input type="checkbox"/> 10- to 20-year-old Channelization <input type="checkbox"/> < 10-year-old Channelization <input type="checkbox"/> Concrete Channel				
Percent Channelization <i>—</i>	Sinuosity <i>1.19</i>	Gradient (m/km) <i>0.07</i>	Stream Order <i>3</i>	Basin Area (km²) <i>56.29</i>

Comments / Notes

# Wadable Stream Qualitative Fish Habitat Rating for Streams < 10 m wide

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Rating Item	Excellent	Good	Fair	Poor	Score
<b>Riparian Buffer Width (m)</b> Width of contiguous undisturbed land uses; meadow, shrubs, woodland, wetland, exposed rock	Riparian zone well protected; buffer wide ( > 10.0 m )  15	Riparian zone protected, but buffer width moderate ( 5.0 - 10.0 m )  10	Riparian zone moderately disturbed, buffer narrow ( 1.0 - 4.9 m )  5	Most of the riparian zone disturbed, buffer very narrow or absent ( < 1.0 m )  0	
<b>Bank Erosion</b> Width of bare soil on bank, along transects	No significant bank erosion; < 0.20 m of bank is bare soil  15	Limited erosion; 0.20 - 0.50 m of bank is bare soil  10	Moderate erosion; 0.51 - 1.0 m of bank is bare soil  5	Extensive erosion; > 1.0 m of bank is bare soil  0	
<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  10	Pools present; not frequent or over-abundant; 30 to 39% or 61 to 70% of station  7	Pools present, but either rare or overly dominant, few other habitats present; 10 to 29% or 71 to 90% of station  3	Pools either absent or dominant, not balanced by other habitats; < 10% or > 90% of station  0	
<b>Width:Depth Ratio</b> Average stream width divided by average thalweg depth in runs and pools	Streams very deep and narrow; width/depth ≤ 7  15	Stream relatively deep and narrow; width/depth 8-15  10	Stream moderately deep and narrow; width/depth 16-25  5	Stream relatively wide and shallow; width/depth > 25  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  15	Diverse habitats; bends and riffles present, but not abundant; ratio 10 to 14  10	Habitat diversity low; occasional riffles or bends, ratio 15 to 25  5	Habitat monotonous; riffles or bends rare; generally continuous run habitat; ratio > 25  0	
<b>Fine Sediments</b> % of the substrate that is < 2 mm (sand, silt, or clay)	Fines rare or absent, < 10% of the stream bed  15	Fines present but limited, generally in stream margins or pools; 10 to 20% of stream bed  10	Fines common in mid-channel areas, present in riffles and extensive in pools; 21 to 60%  5	Fines extensive in all habitats; > 60% of stream bed covered  0	
<b>Cover for Fish</b> % of the stream area with cover	Cover/shelter for fish abundant; > 15% of stream  15	Cover common, but not extensive; 10 - 15% of stream  10	Occasional cover, limited to one or two areas; 5 - 9% of stream  5	Cover rare or absent; limited to < 5% of stream  0	
(see Quantitative Habitat Evaluation) -EC					<b>Total Score</b>

# Wadable Stream Quantitative Habitat Evaluation

Form 3600-228 (R 6/07)

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## Map Data

Stream Name

Kohl'sville River @ Midland Rd

Waterbody ID Code

865400

Date (MMDDYYYY)

08012017

Dist. from Start (m)	Stream Feature (Bend, Riffle, Pool, Run, Log Jam, etc.)
0	Start of station, start run
5.1	T1
16.2	<del>11.2</del> Bend right
20.4	T2
35.7	T3
2.2 37.9	Start fallen tree
51	End tree fall, T4
66.3	T5
9.3 75.10	Start pool
11.1 80.1	down tree
81.6	T6
5.8 87.4	End pool, start run, bend left
96.9	T7
112.2	T8
113.5	Start pool
127.5	T9
138	end pool start run
148	bend left 14.2 downed tree
142.8	T10
	+ 3.5 dead tree + 10.4 downed tree
158.1	T11
173.4	T12

## Distance Summary

Distance Between Bends (m) Measured from Center of Bend	Distance Between Riffles (m) Measurements from the Upstream end of one Riffle to the Downstream end of the next Riffle Upstream
Downstream - 1st: ?	Downstream - 1st: _____
1st - 2nd: 71.2	1st - 2nd: _____
2nd - 3rd: 44.9	2nd - 3rd: _____
3rd - 4th: _____	3rd - 4th: _____
4th - 5th: _____	4th - 5th: _____
5th - 6th: _____	5th - 6th: _____
6th - 7th: _____	6th - 7th: _____
7th - 8th: _____	7th - 8th: _____
8th - 9th: _____	8th - 9th: _____
9th - 10th: _____	9th - 10th: _____
10th - 11th: _____	10th - 11th: _____
11th - Upstream: _____	11th - Upstream: _____
Sum: 116.1	Sum: _____
Mean: 58.1	Mean: _____

## Length (m) of Individual Riffles, Pools and Runs

1st Riffle: _____	1st Pool: 11.8	1st Run: 75.6
2nd Riffle: _____	2nd Pool: 5.6	2nd Run: 13.5
3rd Riffle: _____	3rd Pool: _____	3rd Run: 42.1
4th Riffle: _____	4th Pool: _____	4th Run: _____
5th Riffle: _____	5th Pool: _____	5th Run: _____
6th Riffle: _____	6th Pool: _____	6th Run: _____
7th Riffle: _____	7th Pool: _____	7th Run: _____
8th Riffle: _____	8th Pool: _____	8th Run: _____
9th Riffle: _____	9th Pool: _____	9th Run: _____
10th Riffle: _____	10th Pool: _____	10th Run: _____
11th Riffle: _____	11th Pool: _____	11th Run: _____
Sum: _____	Sum: 17.4	Sum: 131.2
Mean: _____	Mean: 8.7	Mean: 65.6

Draw map of station on back of this sheet (optional)

A large rectangular area filled with a fine grid of small squares, intended for quantitative data entry or calculations.

## Wadable Stream Quantitative Habitat Evaluation

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## Transect Data

Stream Name <i>Kohlsville</i>	Waterbody ID Code <i>865400</i>	Date (MMDDYYYY) <i>08012017</i>	Transect No. <i>1</i>
Distance from Start (m) <i>5.1</i>	Stream Width (m) <i>6m</i>	Habitat Type: <input type="checkbox"/> Riffle <input type="checkbox"/> Pool <input checked="" type="checkbox"/> Run	Bankfull Depth (m) (optional) <i>0.3</i>
		Bankfull Width (m) (optional) <i>6.4</i>	

	Deepest Point	Channel Position (Fifths of Current Stream Width)			
		1.2 1/5	2.4 2/5	3.6 3/5	4.8 4/5
Water Depth (m)	<i>0.34</i>	<i>0.34</i>	<i>0.27</i>	<i>0.22</i>	<i>0.22</i>
Depth of Fines and Water (m)		<i>0.4</i>	<i>0.27</i>	<i>0.24</i>	<i>0.22</i>
Embeddedness (nearest 10%) of Course Gravel and Rubble/Cobble		<i>40</i>	<i>50</i>	<i>50</i>	<i>60</i>

## Percent (nearest 5%) of Stream Bottom Covered

Section Total Must = 100%

Bedrock (solid slab)				
Boulder (261 mm - 4.1 m)				
Rubble / Cobble (65 - 260 mm)		<i>20</i>	<i>20</i>	
Gravel (2 - 64 mm)		<i>25</i>	<i>30</i>	<i>40</i>
Sand (0.062 - 1.9 mm)	<i>rest</i>	<i>50</i>	<i>45</i>	<i>50</i>
Silt (0.004 - 0.061 mm)		<i>20</i>	<i>5</i>	<i>10</i>
Clay		<i>5</i>		
Detritus				
Other - Specify: _____				

## Percent (nearest 10%) of Stream Bottom Covered

Algae (attached & fila.)		<i>0</i>	<i>10</i>	<i>0</i>
Macrophytes		<i>0</i>	<i>0</i>	<i>0</i>
Canopy / Shading (circle one)	<i>90 can</i>	<i>30 can</i>	<i>30 can</i>	<i>10 can</i>

## Cover for Adult Gamefish: Length (nearest 0.01 m) of transect within 0.15 m upstream or downstream in water at least 0.20 m in depth

Undercut Banks	Overhanging Vegetation at least 0.20 m overhang	Woody Debris	Other Debris	Boulder	Submerged Macrophytes	Emergent Macrophytes at least 0.20 m deep	Other - Specify:
	<i>0.25</i>						

## Bank Erosion: Length of Continuous Bare Soil (nearest 0.01 m) within 1 m of stream

% of Eroded Bank to the crest or within 5 m of stream edge

Left: *0.3* (m) Right: *0.4* (m)Left: *50%* (%) Right: *40* (%)

## Riparian Land Use: Percent (nearest 10%) of Bank within 5 m of stream edge, along transect

Section Total Must = 100%

Cropland	Pasture	Barneyard	Developed	Meadow	Shrubs	Woodland	Wetland	Exposed Rock	Other - Specify:
						<i>50</i>	<i>50</i>		

## Riparian Buffer Width: Length (nearest 1.0 m) of Undisturbed Land Uses along transect, within 10 m of stream

Left: *110* (m) Right: *110* (m)

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## Transect Data

Stream Name <i>Kohlsville</i>		Waterbody ID Code <i>865400</i>	Date (MMDDYYYY) <i>08 01 2017</i>	Transect No. <i>2</i>
Distance from Start (m) <i>20.4</i>	Stream Width (m) <i>4.8</i>	Habitat Type: <input type="checkbox"/> Riffle <input type="checkbox"/> Pool <input checked="" type="checkbox"/> Run	Bankfull Depth (m) (optional) <i>.24</i>	Bankfull Width (m) (optional) <i>5</i>

	Deepest Point	Channel Position (Fifths of Current Stream Width)-			
		<i>1/5</i>	<i>2/5</i>	<i>3/5</i>	<i>4/5</i>
Water Depth (m)	<i>.50</i>	<i>.46</i>	<i>.50</i>	<i>.52</i>	<i>.44</i>
Depth of Fines and Water (m)		<i>.46</i>	<i>.50</i>	<i>.55</i>	<i>.67</i>
Embeddedness (nearest 10%) of Course Gravel and Rubble/Cobble		<i>80</i>	<i>70</i>	<i>90</i>	<i>—</i>

## Percent (nearest 5%) of Stream Bottom Covered

Section Total Must = 100%

Bedrock (solid slab)				
Boulder (261 mm - 4.1 m)				
Rubble / Cobble (65 - 260 mm)				
Gravel (2 - 64 mm)	<i>30</i>	<i>40</i>	<i>20</i>	
Sand (0.062 - 1.9 mm)	<i>30</i>	<i>40</i>	<i>40</i>	<i>10</i>
Silt (0.004 - 0.061 mm)	<i>20</i>	<i>20</i>	<i>20</i>	<i>30</i>
Clay				<i>30</i>
Detritus				
Other - Specify:	<i>20 peat</i>		<i>20 peat</i>	<i>10 wood</i>

## Percent (nearest 10%) of Stream Bottom Covered

Algae (attached & fila.)			<i>Ø</i>	<i>Ø</i>
Macrophytes			<i>Ø</i>	<i>Ø</i>
Canopy / Shading (circle one)	<i>30 can</i>	<i>Ø can</i>	<i>10 Shade</i>	<i>10 can</i>

## Cover for Adult Gamefish: Length (nearest 0.01 m) of transect within 0.15 m upstream or downstream in water at least 0.20 m in depth

Undercut Banks	Overhanging Vegetation at least 0.20 m overhang	Woody Debris	Other Debris	Boulder	Submerged Macrophytes	Emergent Macrophytes at least 0.20 m deep	Other - Specify:
	<i>.2+.7</i>						

## Bank Erosion: Length of Continuous Bare Soil (nearest 0.01 m) within 1 m of stream

% of Eroded Bank to the crest or within 5 m of stream edge

Left: <i>Ø</i> (m)	Right: <i>Ø</i> (m)	Left: <i>Ø</i> (%)	Right: <i>Ø</i> (%)
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## Riparian Land Use: Percent (nearest 10%) of Bank within 5 m of stream edge, along transect

Section Total Must = 100%

Cropland	Pasture	Barnyard	Developed	Meadow	Shrubs	Woodland	Wetland	Exposed Rock	Other - Specify:
							<i>100</i>		

## Riparian Buffer Width: Length (nearest 1.0 m) of Undisturbed Land Uses along transect, within 10 m of stream

Left: <i>10</i> (m)	Right: <i>10</i> (m)
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# Wadable Stream Quantitative Habitat Evaluation

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## Transect Data

Stream Name <u>Kohlsville</u>	Waterbody ID Code <u>865400</u>	Date (MMDDYYYY) <u>08012014</u>	Transect No. <u>T3</u>
Distance from Start (m) <u>35.7</u>	Stream Width (m) <u>20.7-8</u>	Habitat Type: <input type="checkbox"/> Riffle <input type="checkbox"/> Pool <input checked="" type="checkbox"/> Run	Bankfull Depth (m) (optional) <u>.28</u>
		Bankfull Width (m) (optional) <u>7.4</u>	

	Deepest Point	Channel Position (Fifths of Current Stream Width)			
		1.2 1/5	2.4 2/5	3.6 3/5	4.8 4/5
Water Depth (m)	<u>.56</u>	<u>.15</u>	<u>.04</u>	<u>.23</u>	<u><del>.50</del></u>
Depth of Fines and Water (m)		<u>.41</u>	<u>.2</u>	<u>.45</u>	<u><del>.76</del></u>
Embeddedness (nearest 10%) of Course Gravel and Rubble/Cobble		<u>—</u>	<u>—</u>		<u>—</u>

## Percent (nearest 5%) of Stream Bottom Covered

Section Total Must = 100%

Bedrock (solid slab)				
Boulder (261 mm - 4.1 m)				
Rubble / Cobble (65 - 260 mm)				
Gravel (2 - 64 mm)				
Sand (0.062 - 1.9 mm)	<u>10</u>		<u>30</u>	<u>10</u>
Silt (0.004 - 0.061 mm)	<u>60</u>	<u>90</u>	<u>50</u>	<u>20</u>
Clay	<u>20</u>	<u>5</u>		<u>50</u>
Detritus	<u>10</u>	<u>5</u>	<u>20</u>	<u>10</u>
Other - Specify:				<u>10 wood</u>

## Percent (nearest 10%) of Stream Bottom Covered

Algae (attached & fila.)	<u>Ø</u>	<u>Ø</u>	<u>Ø</u>	<u>Ø</u>
Macrophytes	<u>Ø</u>	<u>Ø</u>	<u>Ø</u>	<u>Ø</u>
Canopy / Shading (circle one)	<u>10 can</u>	<u>Ø</u>	<u>Ø</u>	<u>80 can</u>

## Cover for Adult Gamefish: Length (nearest 0.01 m) of transect within 0.15 m upstream or downstream in water at least 0.20 m in depth

Undercut Banks	Overhanging Vegetation at least 0.20 m overhang	Woody Debris	Other Debris	Boulder	Submerged Macrophytes	Emergent Macrophytes at least 0.20 m deep	Other - Specify:
	<u>.75 (right)</u>						

## Bank Erosion: Length of Continuous Bare Soil (nearest 0.01 m) within 1 m of stream

Left: Ø (m) Right: .50 (m)

## % of Eroded Bank to the crest or within 5 m of stream edge

Left: Ø (%) Right: 80 (%)

## Riparian Land Use: Percent (nearest 10%) of Bank within 5 m of stream edge, along transect

Section Total Must = 100%

Cropland	Pasture	Barnyard	Developed	Meadow	Shrubs	Woodland	Wetland	Exposed Rock	Other - Specify:
						<u>50</u>	<u>50</u>		

## Riparian Buffer Width: Length (nearest 1.0 m) of Undisturbed Land Uses along transect, within 10 m of stream

Left: 110 (m) Right: 110 (m)

# Wadable Stream Quantitative Habitat Evaluation

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## Transect Data

Stream Name Kohlville Waterbody ID Code 865400 Date (MMDDYYYY) 08 01 2017 Transect No. T4

Distance from Start (m) 51 Stream Width (m) 6.4 Habitat Type: ☐ Riffle ☐ Pool ☒ Run Bankfull Depth (m) (optional) .2 Bankfull Width (m) (optional) 7m

	Deepest Point	Channel Position (Fifths of Current Stream Width) -			
		1.25 1/5	2.50 2/5	3.75 3/5	5 4/5
Water Depth (m)	<u>.55</u>	<u>.24</u>	<u>.45</u>	<u>.55</u>	<u>.46</u>
Depth of Fines and Water (m)		<u>.34</u>	<u>.63</u>	<u>.59</u>	<u>.79</u>
Embeddedness (nearest 10%) of Course Gravel and Rubble/Cobble		<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

Percent (nearest 5%) of Stream Bottom Covered Section Total Must = 100%

Bedrock (solid slab)				
Boulder (261 mm - 4.1 m)				
Rubble / Cobble (65 - 260 mm)				
Gravel (2 - 64 mm)				
Sand (0.062 - 1.9 mm)			<u>10</u>	
Silt (0.004 - 0.061 mm)		<u>80</u>	<u>90</u>	<u>60</u>
Clay			<u>10</u>	<u>50</u>
Detritus		<u>20</u>		<u>10</u>
Other - Specify: _____			<u>20 peat</u>	

Percent (nearest 10%) of Stream Bottom Covered

Algae (attached & fila.)	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Macrophytes	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Canopy / Shading (circle one)	<u>20 can</u>	<u>10 can</u>	<u>70 can</u>	<u>80 can</u>

Cover for Adult Gamefish: Length (nearest 0.01 m) of transect within 0.15 m upstream or downstream in water at least 0.20 m in depth

Undercut Banks	Overhanging Vegetation at least 0.20 m overhang	Woody Debris	Other Debris	Boulder	Submerged Macrophytes	Emergent Macrophytes at least 0.20 m deep	Other - Specify:
		<u>.6</u>					

Bank Erosion: Length of Continuous Bare Soil (nearest 0.01 m) within 1 m of stream % of Eroded Bank to the crest or within 5 m of stream edge  
 Left: 0 (m) Right: .9 (m) Left: 0 (%) Right: 90 (%)

Riparian Land Use: Percent (nearest 10%) of Bank within 5 m of stream edge, along transect Section Total Must = 100%

Cropland	Pasture	Barnyard	Developed	Meadow	Shrubs	Woodland	Wetland	Exposed Rock	Other - Specify:
						<u>50</u>	<u>50</u>		

Riparian Buffer Width: Length (nearest 1.0 m) of Undisturbed Land Uses along transect, within 10 m of stream

Left: 410 (m) Right: 410 (m)



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## Transect Data

Stream Name

Kohlsville  $\rightarrow$  (T6) 5

Waterbody ID Code

865400

Date (MMDDYYYY)

08 01 2017

Transect No.

5/6

Distance from Start (m)

Stream Width (m)

Habitat Type:

Bankfull Depth (m) (optional)

Bankfull Width (m) (optional)

T5 = 46.3 T6 = 81.6

(S) 4.8

☐ Riffle ☐ Pool ☒ Run

(T5) 2.6

(T6) 2.6

(T5) 5.51

(T6) 5.5

	Deepest Point	Channel Position (Fifths of Current Stream Width)							
		(T5) 1/5 T6	2(T5) 2/5 T6	(T6) 3(T5) 3/5 T6	(T6) 4(T5) 4/5 T6	(T6)	(T6)	(T6)	(T6)
Water Depth (m)	.60 .98	.44	.46	.38	.86	.53	.98	.6	.98
Depth of Fines and Water (m)	.62	.60	.69	.89	.73	.98	>.9		.98
Embeddedness (nearest 10%) of Course Gravel and Rubble/Cobble	—	—	—	—	—	50	—		40

## Percent (nearest 5%) of Stream Bottom Covered

Section Total Must = 100%

Bedrock (solid slab)									
Boulder (261 mm - 4.1 m)									
Rubble / Cobble (65 - 260 mm)									
Gravel (2 - 64 mm)						60			40
Sand (0.062 - 1.9 mm)						20	20		
Silt (0.004 - 0.061 mm)		70	80	85	90	60	20		10
Clay		10		10				60	50
Detritus		20	20	5	10				
Other - Specify:						20 peat		40 peat	

## Percent (nearest 10%) of Stream Bottom Covered

Algae (attached & fila.)	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
Macrophytes	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø	Ø
Canopy / Shading (circle one)	10 Shade	40 Can	Ø	40 Can	10 Can	70 Can	10 Can		100 canopy

## Cover for Adult Gamefish: Length (nearest 0.01 m) of transect within 0.15 m upstream or downstream in water at least 0.20 m in depth

Undercut Banks	Overhanging Vegetation at least 0.20 m overhang	Woody Debris	Other Debris	Boulder	Submerged Macrophytes	Emergent Macrophytes at least 0.20 m deep	Other - Specify:
	(T5) Left side						.7 not wad (T6) right side

## Bank Erosion: Length of Continuous Bare Soil (nearest 0.01 m) within 1 m of stream

% of Eroded Bank to the crest or within 5 m of stream edge

Left: Ø (m) Right: .41 (m)

Left: Ø (%) Right: Ø 10 (%)

## Riparian Land Use: Percent (nearest 10%) of Bank within 5 m of stream edge, along transect

Section Total Must = 100%

Cropland	Pasture	Barnyard	Developed	Meadow	Shrubs	Woodland	Wetland	Exposed Rock	Other - Specify:
						50	50		

## Riparian Buffer Width: Length (nearest 1.0 m) of Undisturbed Land Uses along transect, within 10 m of stream

Left: 10 (m) Right: 10 (m)

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## Transect Data

Stream Name <i>Kohlville</i>	Waterbody ID Code <i>865400</i>	Date (MMDDYYYY) <i>08 01 2017</i>	Transect No. <i>7</i>
Distance from Start (m) <i>96.9</i>	Stream Width (m) <i>4.4</i>	Habitat Type: <input type="checkbox"/> Riffle <input type="checkbox"/> Pool <input checked="" type="checkbox"/> Run	Bankfull Depth (m) (optional) <i>.35</i>
		Bankfull Width (m) (optional) <i>5</i>	

	Deepest Point	Channel Position (Fifths of Current Stream Width) -			
		<i>.8</i> 1/5	<i>1.6</i> 2/5	<i>2.4</i> 3/5	<i>3.6</i> 4/5
Water Depth (m)	<i>.73</i>	<i>.73</i>	<i>.71</i>	<i>.59</i>	<i>.31</i>
Depth of Fines and Water (m)		<i>.77</i>	<i>.80</i>	<i>.78</i>	<i>.4</i>
Embeddedness (nearest 10%) of Course Gravel and Rubble/Cobble		—	—	—	—
Percent (nearest 5%) of Stream Bottom Covered		Section Total Must = 100%			

Bedrock (solid slab)				
Boulder (261 mm - 4.1 m)				
Rubble / Cobble (65 - 260 mm)				
Gravel (2 - 64 mm)				
Sand (0.062 - 1.9 mm)			<i>30</i>	<i>10</i>
Silt (0.004 - 0.061 mm)	<i>50</i>	<i>90</i>	<i>50</i>	<i>70</i>
Clay	<i>50</i>		<i>10</i>	<i>20</i>
Detritus		<i>10</i>		
Other - Specify: _____			<i>10 peat</i>	

Percent (nearest 10%) of Stream Bottom Covered				
Algae (attached & fila.)	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
Macrophytes	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
Canopy / Shading (circle one)	<i>10 can</i>	<i>0</i>	<i>0</i>	<i>20 shade</i>

Cover for Adult Gamefish: Length (nearest 0.01 m) of transect within 0.15 m upstream or downstream in water at least 0.20 m in depth							
Undercut Banks	Overhanging Vegetation at least 0.20 m overhang	Woody Debris	Other Debris	Boulder	Submerged Macrophytes	Emergent Macrophytes at least 0.20 m deep	Other - Specify:

Bank Erosion: Length of Continuous Bare Soil (nearest 0.01 m) within 1 m of stream	% of Eroded Bank to the crest or within 5 m of stream edge
Left: <i>0</i> (m) Right: <i>.5</i> (m)	Left: <i>0</i> (%) Right: <i>10</i> (%)

Riparian Land Use: Percent (nearest 10%) of Bank within 5 m of stream edge, along transect									Section Total Must = 100%
Cropland	Pasture	Barnyard	Developed	Meadow	Shrubs	Woodland	Wetland	Exposed Rock	Other - Specify:
						<i>50</i>	<i>50</i>		

Riparian Buffer Width: Length (nearest 1.0 m) of Undisturbed Land Uses along transect, within 10 m of stream	
Left: <i>110</i> (m)	Right: <i>110</i> (m)

# Wadable Stream Quantitative Habitat Evaluation

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## Transect Data

Stream Name Kohlsville River Waterbody ID Code 865400 Date (MMDDYYYY) 08 01 2014 Transect No. 8/9

Distance from Start (m) 127.5 / 112.2 Stream Width (m) 4.8 / 5.4 Habitat Type: ☐ Riffle ☐ Pool ☒ Run Bankfull Depth (m) (optional) 0.32 / 0.25 Bankfull Width (m) (optional) 5.2 / 6.0

	Deepest Point	1	2	3	4	5	6	7	8	9
		1/5	2/5	3/5	4/5					
Water Depth (m)	.70 / 1.09	.64	.48	.52	1.0	.7	1.09	.39	.81	
Depth of Fines and Water (m)		.68	.9	.70	1.12	.8	1.11	.91	1.02	
Embeddedness (nearest 10%) of Course Gravel and Rubble/Cobble							80			

## Percent (nearest 5%) of Stream Bottom Covered

Section Total Must = 100%

Bedrock (solid slab)										
Boulder (261 mm - 4.1 m)										
Rubble / Cobble (65 - 260 mm)										
Gravel (2 - 64 mm)							20			
Sand (0.062 - 1.9 mm)					10	20	2			
Silt (0.004 - 0.061 mm)	40	100	80	90	50	40	50	40		
Clay	50					40		40		
Detritus			20					20		
Other - Specify:	10 wood					30 peat		10 wood 20 peat	20 peat	

## Percent (nearest 10%) of Stream Bottom Covered

Algae (attached & fila.)	0	0	0	0	0	0	0	0	0	0
Macrophytes	0	0	0	0	0	0	0	0	0	0
Canopy / Shading (circle one)	10 an	20 an	0	0	0	0	0	10	0	0

## Cover for Adult Gamefish: Length (nearest 0.01 m) of transect within 0.15 m upstream or downstream in water at least 0.20 m in depth

Undercut Banks	Overhanging Vegetation at least 0.20 m overhang	Woody Debris	Other Debris	Boulder	Submerged Macrophytes	Emergent Macrophytes at least 0.20 m deep	Other - Specify:
	.5 (T8) Left side / 1.1 (T8) Right						

## Bank Erosion: Length of Continuous Bare Soil (nearest 0.01 m) within 1 m of stream

Left: 0.5 (m) Right: 0.5 (m) % of Eroded Bank to the crest or within 5 m of stream edge Left: 0 (%) Right: 10 (%)

## Riparian Land Use: Percent (nearest 10%) of Bank within 5 m of stream edge, along transect

Section Total Must = 100%

Cropland	Pasture	Barnyard	Developed	Meadow	Shrubs	Woodland	Wetland	Exposed Rock	Other - Specify:
						50	50		

## Riparian Buffer Width: Length (nearest 1.0 m) of Undisturbed Land Uses along transect, within 10 m of stream

Left: 110 (m) Right: 110 (m)

# Wadable Stream Quantitative Habitat Evaluation

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## Transect Data

Stream Name <i>Kokksville</i>	Waterbody ID Code <i>865400</i>	Date (MMDDYYYY) <i>08 02 2017</i>	Transect No. <i>T. 12</i>
Distance from Start (m) <i>173.4</i>	Stream Width (m) <i>5.0</i>	Habitat Type: <input type="checkbox"/> Riffle <input type="checkbox"/> Pool <input checked="" type="checkbox"/> Run	Bankfull Depth (m) (optional) <i>.28</i>
		Bankfull Width (m) (optional) <i>5.3</i>	

Deepest Point	Channel Position (Fifths of Current Stream Width) -			
	1/5	2/5	3/5	4/5
Water Depth (m) <i>.50</i>	<i>.50</i>	<i>.36</i>	<i>.25</i>	<i>.22</i>
Depth of Fines and Water (m) <i>.59</i>	<i>.47</i>	<i>.36</i>	<i>.44</i>	
Embeddedness (nearest 10%) of Course Gravel and Rubble/Cobble <i>—</i>	<i>—</i>	<i>—</i>	<i>—</i>	

## Percent (nearest 5%) of Stream Bottom Covered Section Total Must = 100%

Bedrock (solid slab)				
Boulder (261 mm - 4.1 m)				
Rubble / Cobble (65 - 260 mm)				
Gravel (2 - 64 mm)				
Sand (0.062 - 1.9 mm)	<i>5</i>	<i>5</i>	<i>30</i>	<i>30</i>
Silt (0.004 - 0.061 mm)	<i>70</i>	<i>90</i>	<i>40</i>	<i>20</i>
Clay	<i>5</i>	<i>5</i>		
Detritus	<i>20</i>		<i>10</i>	<i>10</i>
Other - Specify: _____			<i>20 fine</i>	<i>40 log</i>

## Percent (nearest 10%) of Stream Bottom Covered

Algae (attached & fila.)	<i>—</i>	<i>—</i>	<i>—</i>	<i>—</i>
Macrophytes	<i>—</i>	<i>—</i>	<i>—</i>	<i>—</i>
Canopy / Shading (circle one)	<i>40</i>	<i>20</i>	<i>10</i>	<i>10 can</i>

## Cover for Adult Gamefish: Length (nearest 0.01 m) of transect within 0.15 m upstream or downstream in water at least 0.20 m in depth

Undercut Banks	Overhanging Vegetation at least 0.20 m overhang	Woody Debris	Other Debris	Boulder	Submerged Macrophytes	Emergent Macrophytes at least 0.20 m deep	Other - Specify:
<i>2 hr</i>	<i>.4 hr</i> <del><i>3 hr</i></del>						

Bank Erosion: Length of Continuous Bare Soil (nearest 0.01 m) within 1 m of stream	% of Eroded Bank to the crest or within 5 m of stream edge
Left: <i>—</i> (m) Right: <i>—</i> (m)	Left: <i>—</i> (%) Right: <i>—</i> (%)

## Riparian Land Use: Percent (nearest 10%) of Bank within 5 m of stream edge, along transect Section Total Must = 100%

Cropland	Pasture	Barnyard	Developed	Meadow	Shrubs	Woodland	Wetland	Exposed Rock	Other - Specify:
							<i>100</i>		

## Riparian Buffer Width: Length (nearest 1.0 m) of Undisturbed Land Uses along transect, within 10 m of stream

Left: *110* (m) Right: *+10* (m)

## Wadable Stream Quantitative Habitat Evaluation

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## Transect Data

Stream Name

Kohlsville

Waterbody ID Code

865400

Date (MMDDYYYY)

08012017

Transect No.

T10

Distance from Start (m)

142.8

Stream Width (m)

5.6

Habitat Type:

☐ Riffle☐ Pool☒ Run

Bankfull Depth (m) (optional)

.27

Bankfull Width (m) (optional)

6.5

Deepest Point

Channel Position (Fifths of Current Stream Width)

1/5 11

2/5 22

3/5 33

4/5 44

Water Depth (m)

1.20

.80

1.20

.89

.39

Depth of Fines and Water (m)

1.02

1.22

1.10

.71

Embeddedness (nearest 10%)  
of Course Gravel and Rubble/Cobble

—

—

—

—

Percent (nearest 5%) of Stream Bottom Covered

Section Total Must = 100%

Bedrock (solid slab)

Boulder (261 mm - 4.1 m)

Rubble / Cobble (65 - 260 mm)

Gravel (2 - 64 mm)

Sand (0.062 - 1.9 mm)

20

10

Silt (0.004 - 0.061 mm)

60

80

80

60

Clay

Detritus

10

30

Other - Specify:

20 wood

20 wood

Percent (nearest 10%) of Stream Bottom Covered

Algae (attached &amp; fila.)

Macrophytes

Canopy / Shading (circle one)

60

80

Cover for Adult Gamefish: Length (nearest 0.01 m) of transect within 0.15 m upstream or downstream in water at least 0.20 m in depth

Undercut Banks

Overhanging Vegetation  
at least 0.20 m overhang

Woody Debris

Other Debris

Boulder

Submerged Macrophytes

Emergent Macrophytes  
at least 0.20 m deep

Other - Specify:

1.0 best

2 best

Bank Erosion: Length of Continuous Bare Soil (nearest 0.01 m) within 1 m of stream

% of Eroded Bank to the crest or within 5 m of stream edge

Left: 0 (m)

Right: 0 (m)

Left: 0 (%)

Right: 0 (%)

Riparian Land Use: Percent (nearest 10%) of Bank within 5 m of stream edge, along transect

Section Total Must = 100%

Cropland

Pasture

Barnyard

Developed

Meadow

Shrubs

Woodland

Wetland

Exposed Rock

Other - Specify:

100

Riparian Buffer Width: Length (nearest 1.0 m) of Undisturbed Land Uses along transect, within 10 m of stream

Left: 10 (m)

Right: 10 (m)

# Wadable Stream Quantitative Habitat Evaluation

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## Transect Data

Stream Name Kohlsville Waterbody ID Code 865400 Date (MMDDYYYY) 08 07 2017 Transect No. 11

Distance from Start (m) 158.1 Stream Width (m) 4.7 Habitat Type: ☐ Riffle ☐ Pool ☒ Run Bankfull Depth (m) (optional) .31 Bankfull Width (m) (optional) 5.2

	Deepest Point	Channel Position (Fifths of Current Stream Width)			
		1/5	2/5	3/5	4/5
Water Depth (m)	<u>.68</u>	<u>.68</u>	<u>.60</u>	<u>.36</u>	<u>.18</u>
Depth of Fines and Water (m)		<u>.70</u>	<u>.69</u>	<u>.46</u>	<u>.76</u>
Embeddedness (nearest 10%) of Course Gravel and Rubble/Cobble		<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>

Percent (nearest 5%) of Stream Bottom Covered **Section Total Must = 100%**

Bedrock (solid slab)				
Boulder (261 mm - 4.1 m)				
Rubble / Cobble (65 - 260 mm)				
Gravel (2 - 64 mm)				
Sand (0.062 - 1.9 mm)				<u>10</u>
Silt (0.004 - 0.061 mm)	<u>60</u>	<u>95</u>	<u>30</u>	<u>80</u>
Clay	<u>20</u>	<u>5</u>	<u>30</u>	
Detritus			<u>10</u>	<u>10</u>
Other - Specify: <u>20 wood</u>			<u>10 wood 20 percent</u>	

Percent (nearest 10%) of Stream Bottom Covered

Algae (attached & fila.)	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
Macrophytes	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
Canopy / Shading (circle one)	<u>50%</u>	<u>—</u>	<u>10%</u>	<u>—</u>

Cover for Adult Gamefish: Length (nearest 0.01 m) of transect within 0.15 m upstream or downstream in water at least 0.20 m in depth

Undercut Banks	Overhanging Vegetation at least 0.20 m overhang	Woody Debris	Other Debris	Boulder	Submerged Macrophytes	Emergent Macrophytes at least 0.20 m deep	Other - Specify:
<u>2 hr</u>							

Bank Erosion: Length of Continuous Bare Soil (nearest 0.01 m) within 1 m of stream Left: 0 (m) Right: .55 (m) % of Eroded Bank to the crest or within 5 m of stream edge Left: 0 (%) Right: 10 (%)

Riparian Land Use: Percent (nearest 10%) of Bank within 5 m of stream edge, along transect **Section Total Must = 100%**

Cropland	Pasture	Barnyard	Developed	Meadow	Shrubs	Woodland	Wetland	Exposed Rock	Other - Specify:
							<u>100</u>		

Riparian Buffer Width: Length (nearest 1.0 m) of Undisturbed Land Uses along transect, within 10 m of stream

Left: 10 (m) Right: 10 (m)