



# 2008 Impaired Waters

## Categories 4 and 5 by Basin & Stream Name

### New River Basin

Cause Group Code: **N18R-01-BAC**      **Crab Creek**

Location: The upstream limit is the Crab Creek headwaters on the Ironto Quad. The downstream limit is at the Crab Creek mouth on the New River about 1.5 mi upstream of the Rt. 114 Bridge and downstream of Radford, Virginia (Riner, Blacksburg and Radford North Quads).

City / County: Montgomery Co.

Use(s): Recreation

Cause(s) /

VA Category: Escherichia coli/ 4A

The Crab Creek Bacteria TMDL Study is complete and US EPA approved on 8/10/2004 [FED ID 18594 / 23405] and SWCB approved 12/02/2004 (formerly VAW-N18R-01). The waters are initially 303(d) Listed with the 2002 Assessment for fecal coliform (FC) bacteria causing non-support of the Recreational Use for 12.01 miles. The TMDL Study can be viewed at <http://www.deq.virginia.gov>. Escherichia coli (E.coli) replaces fecal coliform bacteria as the indicator as per Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters].

9-CBC009.81 (Rt. 111 Bridge) The 2008 assessment finds six of 18 E.coli samples exceed the WQS 235 cfu/100 ml instantaneous criterion. Exceeding values range from 400 to greater than 2000 cfu/100 ml. Six of 15 E.coli samples exceed the WQS 235 cfu/100 ml instantaneous criterion in 2006 with the same range of exceedence.

9-CBC006.35 (Rt. 661 Bridge) There are no additional data beyond December 2006 where E.coli exceeds the WQS instantaneous criterion of 235 cfu/100 ml in eight of 16 observations. Exceeding values range from 250 to >800 cfu/100 ml. E.coli data within the 2008 data window are three of six exceeding values. This station is located upstream of the former Christiansburg outfall.

9-CBC004.38 (Rt. 660 Bridge) E.coli exceeds the 235 cfu/100 ml WQS instantaneous criterion in 16 of 33 observations within the 2008 data window. Exceeding values range from 280 to greater than 800 cfu/100 ml. 2006 E.coli results find 22 of 40 observations in excess of the instantaneous criterion and the same range of exceedence.

9-CBC001.00 (Route 663 Bridge near Walton) Nine of 27 E.coli samples exceed the instantaneous criterion ranging from 260 to greater than 800 cfu/100 ml in 2008. The 2006 Integrated Report (IR) finds nine of 23 E.coli samples exceed the instantaneous criterion. The range of exceeding values is the same as in 2008.

Crab Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Recreation</b>			
Escherichia coli - Total Impaired Size by Water Type:			<b>12.01</b>

Sources:

- |  |   |   |                            |
|--|---|---|----------------------------|
| Discharges from Municipal Separate Storm Sewer Systems (MS4) | Livestock (Grazing or Feeding Operations) | Municipal (Urbanized High Density Area) | Unspecified Domestic Waste |
| Wastes from Pets   | Wildlife Other than Waterfowl             |   |                            |

\*Narrative descriptions, Location and City/County describes the entire extent of the Impairment. Sizes may not represent the total overall size of the impairment in terms of stream name only.



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### New River Basin

Cause Group Code: **N18R-01-BEN**      **Crab Creek**

Location: The upstream limit is the Crab Creek headwaters on the Ironto Quad. The downstream limit is at the Crab Creek mouth on the New River about 1.5 mi upstream of the Rt. 114 Bridge and downstream of Radford, Virginia (Riner, Blacksburg and Radford North Quads).

City / County: Montgomery Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Benthic-Macroinvertebrate  
Bioassessments/ 4A

The 1996 303(d) Listing Crab Creek General Standard (Benthic) TMDL Study is complete and US EPA approved 8/10/2004 [Sediment- FED ID 18595 / 23406]. The SWCB approved the study on 12/02/2004 (formerly VAW-N18R-01). The waters remain impaired for the aquatic life use for 12.01 miles.

Natural seasonal effects are noted at the sites below. Pollution tolerant families are dominant in both seasons, the midge family Chironomidae in spring and the caddisfly family Hydropsychidae in fall. Beginning in spring 2002, Toms Creek was determined to be a more suitable ecoregion reference site because of similarity in size and watershed characteristics than the previous reference site (Sinking Creek, 9-SNK012.06). Agricultural and urban NPS runoff impact Crab Creek. Habitat impacts to this reach result in fine sediment deposition causing stream substrates to become embedded from bank erosion, altered hydrology, and degraded riparian buffers due to residences, roads, and railroad tracks. An apparent nutrient rich environment all contribute to the benthic impairment.

9-CBC006.35- Bio 'MI'; moderate impairment. Five RBP II surveys scoring- 2000 spring 47.83, fall- 34.78; 2002 spring- 52.17, fall- 59.09 and 2003 spring- 65.22. Seasonal 5 year Spring score 55.07 and Fall score 46.94.

9-CBC004.38- Bio 'MI'; moderate impairment. Five RBP II surveys scoring- 2000 spring- 39.13, fall- 34.78; 2002 spring- 65.22, fall- 59.09 and 2003 spring- 69.57. Seasonal 5 year Spring score 57.97; Fall score 46.94.

9-CBC001.00- Bio 'IM' Three Virginia Stream Condition Index (VSCI) surveys (2002-2003) with an average score of 58.43. Pollution tolerant families are dominant in spring and fall, the midge family Chironomidae in spring and the caddisfly family Hydropsychidae in fall. Impacts to the benthic community and stream habitat are the same as noted at 9-CBC004.38.

Crab Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Aquatic Life</b>			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type			<b>12.01</b>

Sources:

Discharges from Municipal Separate Storm Sewer Systems (MS4)	Loss of Riparian Habitat	Municipal (Urbanized High Density Area)	Post-development Erosion and Sedimentation
Sediment Resuspension (Clean Sediment)	Sediment Resuspension (Contaminated Sediment)	Streambank Modifications/destablization	

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