

How are the grades determined?

The **Water Quality grades** are determined using the following methods:

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 and *E. coli* (bacteria)  levels are compared to Water Quality Standards (WQS)¹ set by the Division of Water and graded by how often the levels did not meet the standards.
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 and metals  are compared to Water Quality Standards (WQS)¹ set by the Division of Water and graded by how often the levels did not meet the standards. Their cut-offs differ from dissolved oxygen and *E. coli* due to the toxicity that these indicators represent.
- Specific conductivity  and Nutrient Enrichment  levels do not have standards set by Division of Water. Depending on the indicator graded, levels are compared to scientifically determined guidance values or bioregion specific percentile data.
- Sediment  is graded based on the score of the sediment parameters that are available on the habitat assessment form², which is split into 4 categories: optimal, suboptimal, marginal and poor.

Water Quality Indicators

		 		 		
A	WQS exceeded <5% of the time	No exceedances of the WQS	WQS exceeded <10% of the time	On average, value <25 th percentile	Guidance exceeded <5% of the time	Score that relates to Optimal
B	WQS exceeded 5—10% of the time	1 exceedance of the WQS	WQS exceeded 10—20% of the time	On average, value between the 25 th and 50 th percentile	Guidance exceeded 5—10% of the time	Score that relates to Sub-Optimal
C	WQS exceeded 11—25% of the time	>1 exceedance of the WQS but <10% of the time	WQS exceeded 21—33% of the time	On average, value between the 50 th and 90 th percentile	Guidance exceeded 11—25% of the time	Score that relates to High or Mid Marginal
D	WQS exceeded 26—63% of the time	WQS exceeded 10—55% of the time	WQS exceeded 34—66% of the time	On average, value between the 90 th and 99 th percentile	Guidance exceeded 26—63% of the time	Score that relates to Low Marginal or High Poor
F	WQS exceeded >63% of the time	WQS exceeded 55—100% of the time	WQS exceeded >66% of the time	On average, value >99 th percentile	Guidance exceeded >63% of the time	Score that Relates to Mid or Low Poor

The **Biological Health grades** are determined using the following methods:

- Available Cover  and Riparian Zone  are graded based on the scores of these parameters on the habitat assessment form², which is split into 4 categories: optimal, suboptimal, marginal and poor.
- Habitat  is graded using the total score of the habitat assessment form² and comparing the score to the Division of Water's Habitat assessment table², which is divided into full support, partial support, or non-support for each region of the state.
- Aquatic Bugs  are graded using the Division of Water's Macroinvertebrate Bioassessment Index³ (MBI) score, which is divided into excellent, good, fair, poor, and very poor for each region of the state.

Biological Health Indicators

	 		
A	Score that relates to Optimal	Score that relates to Full Support	Score that relates to Excellent
B	Score that relates to Sub-Optimal	Score that relates to high Partial Support	Score that relates to Good
C	Score that relates to High or Mid Marginal	Score that relates to low Partial Support	Score that relates to Fair
D	Score that relates to Low Marginal or High Poor	Score that relates to high Non-Support	Score that relates to Poor
F	Score that Relates to Mid or Low Poor	Score that relates to low Non-Support	Score that relates to Very Poor

Important Note: The report card grades are used to provide information to the public about the general health of a watershed and to help demonstrate the strengths and weaknesses of a watershed. The grades do not represent, and should not replace, assessments of a watershed to determine designated use support status as required by the U. S. Environmental Protection Agency. To view the assessment information for a particular stream, refer to the integrated report:

<http://water.ky.gov/waterquality/Pages/IntegratedReport.aspx>

References:

¹For more information about water quality standards: <http://lrc.ky.gov/kar/401/010/031.htm>

²For more information about habitat assessments and assessing the biological integrity of Kentucky waters:

http://water.ky.gov/Documents/QA/Surface%20Water%20SOPs/Historic%20SOPs/BiologicalSOPMainDocument03_08.pdf

³For more information about the MBI: http://water.ky.gov/Documents/QA/MBI/Statewide_MBI.pdf