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| <b>Abbreviated Citation</b>                  | Rankin and Yoder (2009)   |
| <b>Full Citation</b>                         | Rankin, E. T. and C.O. Yoder. 2009. Temporal Change in Regional Reference Condition as a Potential Indicator of Global Climate Change: Analysis of the Ohio Regional Reference Condition Database (1980-2006).  |
| <b>Description</b>                           | This report was prepared for the EPA GCRP State Biomonitoring Data Climate Change Pilot Project. Appendix Table 2 contains thermal optima and current optima data (referred to as Weighted Stressor Values (WSVs) in this document) for macroinvertebrates in headwater and wadeable streams, and were calculated using Ohio EPA data. In addition to weighted average values, general tolerance and functional feeding group assignments specific to Ohio were included in the entries. These were derived from the BUGTAXA table in the Ohio EPA biomonitoring database. Fish data are also available in Appendix Table 2 (we hope to incorporate fish data into future versions of the Freshwater Biological Traits Database). |
| <b>Tolerance Calculations</b>                | <b>Temperature</b> Weighted Stressor Values (WSVs) calculations were based on maximum temperature (°C) recorded from summer-fall grab samples collected during the same period within which the biological data were collected. Data from headwater streams (drainage area <20 mi. <sup>2</sup> ) and wadeable streams (drainage area >20 to 300 mi. <sup>2</sup> ) were analyzed separately. Summary statistics (mean, median, 10th, 25th, 75th, 90th, 95th percentiles) and sample size information are available in Appendix Table 2. For more information contact Ed Rankin.  |
|  | <b>Current/flow</b> optima WSVs representing the Qualitative Habitat Evaluation Index (QHEI) attributes for the current component of the Hydro-QHEI were calculated (for more information on how the current QHEI scores were derived, contact Ed Rankin). Data from headwater streams (drainage area <20 mi. <sup>2</sup> ) and wadeable streams (drainage area >20 to 300 mi. <sup>2</sup> ) were analyzed separately. Summary statistics (mean, median, 10th, 25th, 75th, 90th, 95th percentiles), sample size information, and WSVs for the depth component of the QHEI and the hydro-QHEI are available in Appendix Table 2. For more information contact Ed Rankin.   |
| <b>Published</b>                             | no  |
| <b>Highest Level of Taxonomic Resolution</b> | species   |
| <b>Point of Contact</b>                      | Ed Rankin (qhei@aol.com)  |

**Data Integration Notes**

Jen Stamp (Tetra Tech) added in ThermalOptima\_Rank and CurrentOptima\_Rank entries so that data could be better compared across datasets. Rankings were calculated using a 1-7 scoring scheme based on the following percentiles: 0, 0.1, 0.25, 0.4, 0.6, 0.75, 0.9, 1.