

Lessons learned from the USEPA Environmental Monitoring and Assessment Program for Great River Ecosystems. ^a Pearson, M.S., ^a Angradi, T.A., ^a Bolgrien, ^a Jicha, T.J., ^a Taylor, D. L., ^a Hill, B.H.
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We assessed the North American mid-continent great rivers (Upper Mississippi, Missouri, and Ohio). We estimated the extent of each river in most – (MDC) or least-disturbed condition (LDC) based on multiple biological response indicators (fish and macroinvertebrates, trophic state based on chlorophyll *a*, macrophyte cover, and exposure of wildlife to toxic contaminants). All three rivers had a greater percent of river length in MDC than in LDC based on fish assemblages. The upper Mississippi River had the greatest percent of river length with eutrophic status. The Ohio River had the greatest percent of river length with fish and tissue contaminant levels toxic to wildlife. Overall, condition indices based on fish assemblages were more sensitive to stress than macroinvertebrate indices. The effect of large urban areas on river condition was apparent for several indicators. We will present lessons learned based on our experiences with indicators and indices for large rivers, including designs, methods, reference condition and adoption of our methods to other large rivers. *This abstract does not necessarily reflect U.S. EPA policy.*