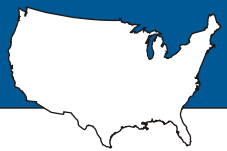
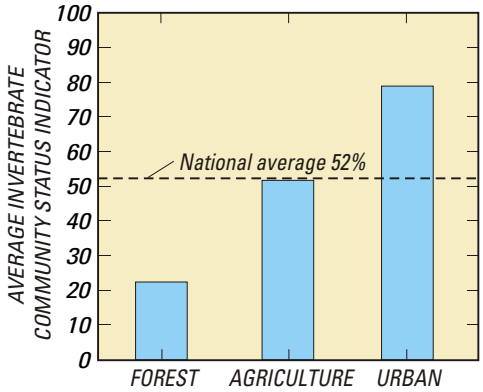


URBAN BIOLOGICAL COMMUNITIES IN A NATIONAL CONTEXT--INVERTEBRATE COMMUNITIES REFLECT POOR RESOURCE QUALITY WITHIN URBAN STREAMS IN THE STUDY UNIT

Invertebrate communities in 13 urban streams were the most degraded in the Study Unit compared to 26 agricultural streams and 1 forest stream. Urban streams were also among the most degraded in the Nation. Invertebrate communities in urban streams were composed of tolerant species, such as Diptera, with few sensitive species, such as mayflies and stoneflies.

Factors influencing invertebrate communities in urban streams may include elevated concentrations of PCBs, organochlorine pesticides (DDT, DDE), PAHs, and trace elements in streambed sediments. Concentrations of some of these compounds rank among the greatest in the Nation (McNellis and others, 2000; Kroening and others, 2000). In addition to chemical characteristics, modification to stream hydrology and removal of instream habitat may contribute to degraded aquatic communities in urban streams in the Study Unit.

This figure taken from: **Stark, J.R., Hanson, P. E., Goldstein, R.M., Fallon, J.D., Fong, A.L., Lee, K.E., Kroening, S.E., and Andrews, W.J.,** 2001, Water quality in the Upper Mississippi River Basin, Minnesota and Wisconsin, South Dakota, Iowa, and North Dakota, 1995-98: U.S. Geological Survey Summary Circular 1211, 35 p.



Invertebrate Community Status Indicators (ICSI) scores were greatest in urban streams indicating poor aquatic resource (habitat and water) quality. The ICSI is a measure that summarizes species richness, tolerance, trophic conditions, and dominance that are associated with water-quality degradation. The indicator values increase with greater resource-quality degradation.