

## **Wetlands & Streams**

### *Plants as environmental indicators in Great Lakes coastal wetlands*

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**ABSTRACT:** Coastal wetlands are the focal point of much human activity, both direct and indirect, that threatens their condition and existence. Wetland plants and their assemblages can provide early warning of environmental stress in coastal ecosystems. Plants have the advantage over many faunal indicators that they remain in place, simplifying sampling and increasing the likelihood that the biotic indicator is spatially coincident with in situ stressors. Wetlands and their vegetation have also been extensively mapped, providing a basis for analyzing landscape-scale wetland attributes and their relationship to stressors. Field studies were conducted in 87 coastal wetlands spanning the Great Lakes coast from Duluth, Minnesota to Cape Vincent, New York. Wetlands were sampled from three types based on their dominant water source and connectivity to the lake: lacustrine, riverine, and barrier-protected. The wetlands contained more than 500 plant taxa, most of which were identified to species. About half of those taxa occurred at only one or two wetland field sites, limiting their utility as indicators. Emerging indicators focus on selected species (invasives), assemblages (e.g., biodiversity measures), and landscape characteristics (e.g., interspersions of wetland types).