

Vegetation Metrics

Plant metrics (measures) for the Index of Biological Integrity

The metrics (measures) listed below are used to assess the health of wetlands. Each metric receives a score of one, three, or five. The seven metrics are then totaled to produce an overall IBI score. The greater the score, the greater the indication of a healthy wetland. The score is then interpreted into a general health rating of Excellent, Moderate or Poor.

Metric #1 Number of vascular plant genera	It is a general ecological principle that integrated and stable natural communities have more kinds of organisms (i.e. greater richness"). Based on this principle this metric measures the richness of vascular plant genera within a wetland.
Metric #2 Number of nonvascular plants	This metric is similar to metric #1, in principle, but it evaluates the number of a different plant group, the nonvascular plants . Mosses, liverwort, lichens, and macroscopic algae depend on a healthy aquatic environment for reproduction and are extremely sensitive to changes in this environment. With the exception of blue-green and filamentous algae, which are not counted in this metric, this group of plants will disappear quickly under stressed wetland conditions.
Metric #3 Number of Grass-like plants	This metric is similar to metric #1 in principle but it measures the diversity of a more specific type of vascular plants, the grasses and grass-like plants . Grass-like plants are very common and important in wetland communities. A variety of grass-like plants may grow in a wetland, or it may be dominated by only one or two species. A healthy wetland will typically support several grass-like plants.
Metric #4 Cover of Sedge	Sedges are one of the grass-like plants and are very important components in the wetland community. Sedges are especially sensitive to changes in wetland hydrology. This metric score is based on the extent of sedge cover within the sample plot. The greater the extent, the higher the score.
Metric #5 Presence of Bladderwort	Bladderwort (<i>Utricularia</i>) is a carnivorous plant that feeds on micro-invertebrates. As such, its presence or absence is indicative of stress to both wetland plants and animals . The presence of bladderwort in a wetland suggests good health.
Metric #6 Cover of "aquatic guild" plants	Nearly all of the true aquatic plants depend on an aquatic environment to survive. Many of these plants float or are just below the water's surface. They are especially sensitive to the quality of the aquatic environment. This metric evaluates the cover of the true aquatic plants . This higher the cover, the healthier the wetland.
Metric #7 Cover of plants with persistent standing litter	This metric measures the cover of certain plants whose annual leaves and stems decompose very slowly after senescence . A high cover of these plants means slower nutrient cycling and lower diversity of both wetland plants and animals. A low abundance of these plants suggests rapid nutrient and mineral cycling and therefore a healthy wetland.
IBI Score	Wetland Health Assessment
26-35	Excellent
16-25	Moderate
7-15	Poor