

MISSISSIPPI MAKEOVER

A Plan for Restoration, Just Around the Bend

Indicator: Aquatic Vegetation



American Lotus

Aquatic vegetation is one of the most important components of a healthy aquatic ecosystem. Aquatic vegetation includes floating leaved plants that are rooted to the bottom with leaves that float on the surface (e.g. American lotus), submersed plants that grow entirely underwater (e.g. wild celery), and emergent plants that grow above water in shallow areas along shorelines and in marshes (e.g. arrowhead). Aquatic vegetation is influenced by bottom type, flow, and water clarity and can be measured in a variety of ways. Three common techniques include **percent frequency of occurrence, species richness, and biomass**.

Percent frequency of occurrence is a measure of how frequently aquatic vegetation occurs in a given area. If 100 sites are sampled randomly, and aquatic vegetation is present at 50 sites, percent frequency of occurrence is 50%. Frequency of occurrence gives a general idea of the distribution of plants within an area, or pool. Percent frequency of occurrence in the reach upstream of Lake Pepin is low, averaging only 9% along the main channel and side channel areas where it is commonly measured. In the reach of river downstream of Lake Pepin, where there is better water clarity, the average is over 40%.

Species richness is a measure of the number and kinds of species present. Generally, the more species that are present, the healthier the system. Currently, there are a maximum of 9 species found along side channels and the main channel in the reach upstream of Lake Pepin, compared to a maximum of 13 species found downstream. Water clarity improvements upstream of Lake Pepin should result in an increase in the number of species.

Biomass is a measure of the productivity and abundance of aquatic plants. While frequency of occurrence and species richness tell us how often and what types of plants are encountered, they don't tell us how dense or how big these plants communities are. Biomass is calculated by measuring the dry weight of plants collected from a given area, such as a square meter. Biomass is not often measured, as it is labor intensive and costly information to collect and analyze.

