

Appendix E: Floristic Quality Assessment

Floristic Quality Assessment is a standardized method to assess quality of a natural area based on its plant community. It quantifies the plant community and can be used to compare a site to other sites or to determine changes in the same site through time. Each species is given an *a priori* Coefficient of Conservatism (C) based on how specific it is to undisturbed natural areas. Species with high conservatism have adapted over long periods to specific sets of conditions, while species with low conservatism adapt quickly and are less unique in their requirements, growing under more generalist conditions. With the rapid changes in natural areas that took place when European settlers arrived in Iowa, such as plowing of the soil, disruption of the fire regime, and intensive grazing, many native species were lost from all but the most undisturbed areas. These represent highly conservative plants that might be found only in the highest quality natural areas. Still others are weedy native species that may be found almost anywhere. The latter represent species with low conservatism. All plant species in Iowa have been given a C value between 0 and 10. A C value of 0 (for example, tall goldenrod, *Solidago altissima*) means that there is 0 percent confidence that the species was found in a natural area—it could be found anywhere. A C of 10 (for example white prairie-clover, *Dalea candida*) represents a species with 100 percent chance that the species was found in a high quality natural area. Areas with large aggregations of conservative plants are more representative of natural conditions that existed prior to European settlement. Highly disturbed areas influenced by humans are more likely to be dominated by less conservative or weedy species. While conservatism is not the same as rarity, most conservative plants are not common, because there are so few natural areas in Iowa.

The first measure that can be calculated is the mean Coefficient of Conservatism:

been used to quantify natural areas include species diversity or richness. While a high quality site may have a large number of species, increasing the number of species in a low-quality site may not represent an increase in quality. A large number of species with low conservatism do not represent high quality. FQI incorporates not only the number of the species, but the conservatism of the species into a metric that is more indicative of site quality.

FQI can be used to assess each remnant or unit independently, or as a sum of all sites combined. It can be weighted based on the percent cover of each species or using only presence/absence data.