Floristic Quality Assessment

The Floristic Quality Assessment (FQA) is a floristic integrity assessment method developed in the Chicago area by Swink and Wilhelm in the 1970's and 1980's. It is based upon two basic ecological tenets: 1) Plants differ in their tolerance to disturbance and disturbance types, and 2) native plant species exhibit varying degrees of fidelity to habitat integrity. The FQA methodology is based on a coefficient of conservatism (CC), between 0 – 10, being assigned to each native plant species by a panel of regional experts. Non-native species are all assigned a 0 coefficient. Essentially, a higher coefficient is assigned to those species that are more conservative in their requirements for stable native plant communities. Species with lower CC's are generally found in a broader range of habitats and are more likely to colonize disturbed ground, abandoned fields, waste ground and old pastures, etc. Plants and plant communities with exacting habitat requirements score highest, and are also the plants of greatest concern because we are losing them as the landscape is fragmented and developed. The use of an index of conservatism to rank species has been used in more than a dozen states and has been found to correlate well with wildlife diversity and other environmental indicators.

Assignment of Coefficients

- **0 to 3** Plants with a high range of ecological tolerances/found in a variety of plant communities
- **4 to 6** Plants with an intermediate range of ecological tolerances/associated with a specific plant community
- **7 to 8** Plants with a poor range of ecological tolerances/associated with advanced successional stage
- **9 to 10** Plants with a high degree of fidelity to a narrow range of pristine habitats

Plant Stewardship Index

The Plant Stewardship Index (PSI) is a modification of the Floristic Quality Assessment methodology that incorporates the presence and impact of non-native plants on the calculation. The numerical difference between the FQI and the PSI will indicate the impact of non-natives on the site's quality.

PSI Calculator

Bowman's Hill Wildflower Preserve offers a free website calculator (www.bhwp.org) to groups and individuals interested in monitoring and documenting the landscape. Once a list of plants on a given site (or portion of a site) are recorded, the online calculator computes several measures of naturalness and disturbance that can be used to track the site's progress over time. Site reports can be printed from the website to be included in progress reports and grant applications.

PSI Database

Even though organizations spend a lot of time and money is documenting the plants around us, we have very little cumulative data to show for it. The PSI Database is an incremental and cumulative record of the native plants in NJ and piedmont PA, indexed by zipcode and maintained on the Preserve's webpage. It is accessible to all account-holders for study. With every entry, the information about our flora increases.

Methodology

1) Compile a plant list of the species within the assessment area.
2) Assign the Coefficient of Conservatism (CC) to each plant documented on the plant list.
3) Calculate the Native Mean Coefficient value by totaling the CC's and divide the sum by the number of **native** plant species within the assessed area.
4) **OR** Calculate the Total Mean Coefficient value by totaling the CC's and divide by the sum of the total number of plants (native and introduced) within the assessed area.
5) Multiply the Native Mean Coefficient OR the Total Mean Coefficient by the square root of the total of the number of **native plant species**

FQI = Native Mean C x Sqrt N
PSI = Total Mean C x Sqrt.N

FQI = Floristic Quality Index
PSI = Plant Stewardship Index
N = Number of native species
I = Number of Introduced species
Native Mean C = Sum of Coefficients / N
Total Mean C = Sum of Coefficients / N + I

Please join the efforts of citizens and scientists to monitor the natural landscapes of the region. Ask your municipality to use this tool by including a PSI survey as the format for plant lists that are required by most municipal checklists and ordinances. Give a gift of a PSI survey to your local park or land trust.

Need more information? Call the PSI Coordinator at 215-862-2924, or consult our website:

www.bhwp.org

References & Resources

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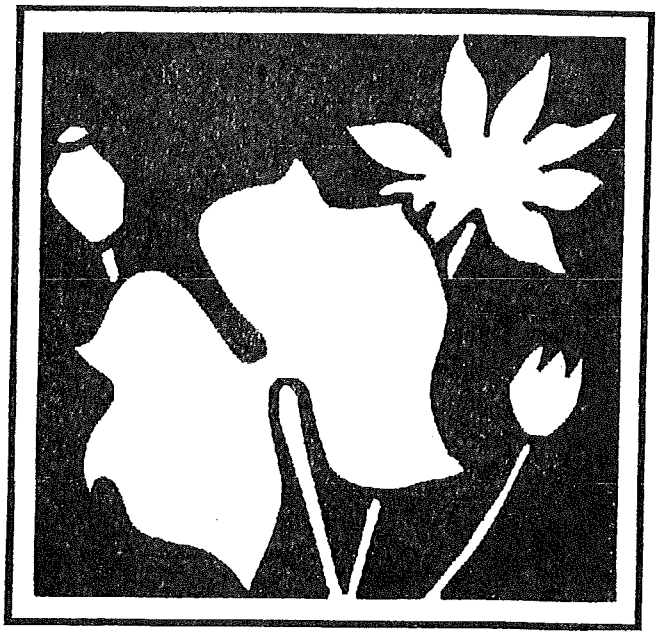
Plant Stewardship Index & Database User's Guide



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