The Poaceae, or the grass family

In a past Plant Talk posting, I discussed the Cyperaceae (Sedge Family) in Delaware and provided data on its overall status and distribution in the state. I also pointed out the difficulty that occurs in species identification, and due to this fact, the family is frequently avoided by many people. In this issue, I discuss another family that can be difficult to identify and often strikes fear into the hearts of those who attempt to key-out species, and that family is the Poaceae, or the Grass Family.

As with sedges, the identification of grasses usually requires technical manuals, and a familiarity with the botanical terms used to describe the morphological features of grasses. In addition, species in the grass family do not have a showy, colorful appearance as the wildflowers do and thus are often overlooked in the field.

The main "field" characters that distinguish a grass from a sedge are: grasses have hollow stems, vs. solid stems for sedges; grasses have joints where the leaves are attached, vs. no joints for sedges; the base of the leaves of grasses wrap around the stem in a structure called the sheath and is open, vs. sheaths that are closed for sedges. In addition, the flowers of grasses are arranged differently than the flowers of sedges, and the flower structures of grasses are slightly different than the flowers of sedges.

The Poaceae is well represented in the state of Delaware. It is the second largest family in the state, composed of 237 native and non-native species and varieties (the largest family in the state is the Asteraceae, aster or daisy family with 238 species and varieties). There are 77 genera within the grass family in Delaware with the largest being Dichanthelium with 34 species and varieties. This diversity of grasses in Delaware is primarily due to diversity in habitat; from dunes and upland forests, to tidal and nontidal wetlands and swamps.

The majority of grasses in Delaware are found growing in the Coastal Plain physiographic province, with 81 species and varieties being restricted to this region. In contrast, 25 species and varieties are restricted to the Piedmont province. Seventy-three (73) species and varieties of grasses in Delaware are not native to the state and 8 non-native species are considered to be invasive. When considering the overall natural distribution of grasses in the eastern U.S., 60 species of grasses in Delaware are at or near their northern limits of distribution and 23 species of grasses in the state are at or near their southern limits. The grass flora of Delaware is primarily perennial (174 species and varieties), compared to 63 species and varieties that are annuals.

A high percentage (41%) of the grass flora of Delaware is rare or uncommon. Sixty-seven (67) species and varieties are considered to be rare or uncommon in the state and 7 are known from only a single occurrence or population. In addition, 20 are historical, meaning they have not been reported for 20 or more years. Furthermore, two (2) species are thought to be gone, or extirpated in the state. One species, Panicum hirstii, is globally rare and is known from only four sites worldwide (Sussex Co., Delaware, southern New Jersey, and two in North Carolina).

There are several species of grasses that are available in the nursery trade and would make great additions to native plant gardens. Some of these species include: *Andropogon gerardii* (big

bluestem), *Andropogon virginicus* (broom-sedge), *Panicum virgatum* (switch panic grass), *Saccharum giganteum* (giant plume grass, synonym = *Erianthus giganteus*), *Schizachyrium scoparium* (little bluestem, synonym = *Andropogon scoparius*), and *Sorghastrum nutans* (yellow Indian-grass).

To conclude this series on grasses and sedges, I'll emphasize that the grass and sedge families are two of the most diverse families of vascular plants in Delaware, and in my opinion the most fascinating ecologically and in many cases, the most attractive. So I encourage you to try your hand at keying them out, and to learn more about their ecology and life history.

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