

## **Graminoid Fens of the Northeastern Illinois**

### **Chicago Wilderness Findings and priorities (*Biodiversity Recovery Plan*)**

All types of wetlands in the Chicago Wilderness region have declined in quantity and quality. Conservation of the remaining examples, restoration of degraded sites, and creation of new wetland areas are priority activities within Chicago Wilderness due to the high value of these communities both for species diversity and for ecological processes of functional value to people.

#### **Fens**

Fens in general have high overall diversity as well as distinctive plant communities, and they are of high biological importance to the region. Priority plant species dependent on fens include marsh valerian, a candidate for federal listing, American burnet, and queen of the prairie.

Although there are more graminoid fens than other types of fen, they are being lost at an alarming rate. Unprotected graminoid fens have been identified recently, and experts think more are still to be discovered in the region, although their condition is likely declining. Hydrological changes, invasive species, and cattle grazing threaten graminoid fens. Although the full effects of these threats have not been seen yet, there is a high potential for further degradation of the graminoid fens. In general, graminoid fens are in poorer condition than calcareous floating mats and, of the fens, are the most sensitive to groundwater changes.

The reptile and amphibian assemblage of sedge meadow, fen, and dolomite prairie includes western chorus frog, green frog, northern leopard frog, pickerel frog, Blanding's turtle, smooth green snake, northern water snake, and queen snake. This assemblage in the region is considered to be globally important. Across the region, this assemblage is declining, although there is a north/south division. In the northern part of the region (Lake and McHenry Counties in Illinois), the assemblage is doing better, perhaps even increasing, due to management and protection. In the southern part of the region, the species that are specialists are declining, with only a few species hanging on. This is primarily due to fragmentation and isolation. Purple loosestrife poses a threat to these species over time.

The fen insects are of conservation concern with many rare species. Sensitive species, which are rare and habitat restricted, include Baltimore checkerspot, swamp metalmark, and bluebell dragonfly. Hydrological alteration and invasion by common reed and cattail threaten fen insects.

Graminoid fens are in the first tier of priority for additional conservation action, due to their rarity, degraded condition, and the global significance of the remaining examples in the Chicago Wilderness region.

#### ***WETLAND COMMUNITIES***

Conservation targets in top tiers (*CW*)

##### ***First (highest) tier***

Graminoid fen, Panne

##### ***Second tier***

Basin marsh, Calcareous floating mat, Calcareous seep, Streamside marsh

##### ***Third tier***

Forested fen, Sedge meadow

## Forest Preserve District of DuPage County Findings

### Fens

Fens, which are pre-settlement wetland communities, are created and maintained by the continuous internal flow of mineralized groundwater emanating from bordering upland calcareous sand and gravel glacial outwash formations. An impervious layer of till below the outwash gravel lenses forces cold, oxygen-deficient, mineralized groundwater to seep laterally at the bases of upland slopes. Fens can take several topographic forms. They can be perched (on a terrace), hanging (on a steep slope) or on calcareous flats such as in prairies or over dolomite. Peat enriched with magnesium and calcium carbonates form the fen substrate, which supports many calcophilic plants adapted to high concentrations of dissolved alkaline minerals (as high as 3000 ppm). Fens are often found in association with strongly calcareous spring runs as well as natural communities such as calcareous seeps, sedge meadows, and marshes.

### *Present Status (FPDDC)*

Most fens in DuPage County today are small and suffer from degradation due to hydrological changes and invasion by adventive species, such as *Rhamnus cathartica* (Common Buckthorn) and *Phalaris arundinacea* (Reed Canary Grass).

### *Pre-settlement Distribution/Size*

Fens were probably once a common floristic community in northeastern Illinois due to hydrologic conditions.

### *Dominant Plants (FPDDC)*

*Carex hystericina* (Porcupine Sedge) and *C. stricta* (Common Tussock Sedge).

### *Characteristic Plants (FPDDC)*

Forbs: *Angelica atropurpurea* (Great Angelica), *Aster puniceus firmus* (Shining Aster), , *Chelone glabra* (Turtlehead), *Cicuta bulbifera* (Bulblet-Bearing Water Hemlock), *Cirsium muticum* (Swamp Thistle), *Epilobium leptophyllum* (Fen Willow Herb), , *Lobelia kalmii* (Bog Lobelia), *Pedicularis lanceolata* (Swamp Betony), *Rumex orbiculatus* (Great Water Dock), *Solidago patula* (Swamp Goldenrod), *Stachys tenuifolia hispida* (Rough Hedge Nettle), *Symplocarpus foetidus* (Skunk Cabbage), and *Viola nephrophylla* (Northern Bog Violet).

### *Special Concern Plants that were known from DuPage Forest Preserves but have disappeared:*

*Carex leptalea* (Slender Sedge)  
*Gentiana crinita* (Fringed Gentian)  
*Parnassia glauca* (Grass of Parnassus)

### *Special Concern Plants that are currently known from fens in DuPage Forest Preserves but are very restricted:*

*Juncus brachycephalus* (Short-headed Rush)  
*Habenaria hyperborea huronensis* (Northern Bog Orchid)  
*Solidago ohioensis* (Ohio Goldenrod)

### *Species currently listed as E/T that grow in fens (or calcareous spring runs) that were known from DuPage County in the literature:*

*Calopogon tuberosus* (Grass Pink)  
*Cypripedium calceolus parviflorum* (Small Yellow Lady's Slipper)  
*Filipendula rubra* (Queen of the Prairie)  
*Veronica americana* (American Brooklime)

*Species currently listed as E/T that grow in fens (or calcareous spring runs) that are known from northeastern Illinois but not DuPage County:*

- Cypripedium reginae (Showy Lady's Slipper)
- Eleocharis rostellata (Wicket Spike Rush)
- Galium labradoricum (Bog Bedstraw)
- Helianthus giganteus (Tall Sunflower)
- Mimulus glabratus fremontii (Yellow Monkey Flower)

***Fen Dependant Lepidoptera and host plants: Butterflies (FPDDC)***

*Black Dash Skipper* - Upright sedge (*Carex stricta*), and possibly others

*Dion Skipper* - Various sedges including woolgrass (*Scirpus cyperinus*), hairy sedge (*Carex lacustris*), and shoreline sedge (*Carex hyalinolepis*)

*Bronze Copper* - Water dock (*Rumex orbiculatus*) and curled dock (*Rumex crispus*).

*Acadian Hairstreak* - Various willow species including black willow (*Salix nigra*) and silk willow (*Salix sericea*).

*Baltimore Checkerspot* – Turtlehead (*Chelone glabra*), hairy beardtongue (*Penstemon hirsutus*), English plantain (*Plantago lanceolata*), and false foxglove (*Aureolaria*).

*Eyed Brown* - Various sedges (*Carex stricta*, *C. lupulina*, *C. bromoides*, and *C. trichocarpa*) in the sedge family (*Cyperaceae* spp.).

***Fen Dependant Lepidoptera and host plants: Moths (FPDDC)***

*Papaipema nelita* – Wild golden glow (*Rudbeckia laciniata*)

*Papaipema limpida* - Ironweeds (*Vernonia*)

***Examples***

Schick Road Fen at Hawk Hollow FP (26 acres)

Elsen's Hill Fens at West DuPage Woods FP (1.2 acres)

North Fens at Warrenville Grove FP (1 acre)

West DuPage Fens at West DuPage Woods FP (39 Acres)

Tri-County Fen at James "Pate" Philip State Park (2 acres)

Springbrook Fen at Springbrook Prairie FP (8 acres)

Klein Road Fens South at West Branch FP (32 acres)