SEWRPC Ecological Assessment Summary for Hillmoor Property

City of Lake Geneva

December 2025

The document is a preliminary vegetation survey report for the Hillmoor Property in the City of Lake Geneva, conducted by the Southeastern Wisconsin Regional Planning Commission.

City of Lake Geneva - Hillmoor Property Overview

This report presents the findings of a preliminary vegetation survey conducted on the Hillmoor Property in Lake Geneva, Wisconsin, focusing on botanical inventory, rare species, and invasive species cover.

Introduction to the Vegetation Survey

- The survey was initiated in response to a request from Mayor Charlene Klein on January 2, 2024.
- The project scope was confirmed by Mayor Todd Krause on April 16, 2025.
- The survey area includes City-owned property in specific U.S. Public Land Survey Sections in Walworth County, Wisconsin.
- The survey aimed to provide a botanical inventory, rare plant species survey, and invasive species cover estimates.

Methods Used for Vegetation Assessment

- Fieldwork was conducted on June 6, June 24, and August 27, 2025.
- The assessment was performed by Commission staff using the Wisconsin Department of Natural Resources Timed Meander Method.
- Various data sources were reviewed prior to field inspections, including soil surveys, floodplain mapping, and historical aerial photography.

Results of the Botanical Inventory

- A total of 20 plant community areas were assessed, with detailed species lists provided in Exhibit A.
- Areas labeled "NA" were not assessed due to being maintained parkland or stormwater ponds.
- The inventory included a total of 77 plant species, with 47 (61%) identified as non-native.

Rare Species Findings

- No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the survey.

Invasive Species Cover Assessment

- Figures were developed to illustrate floristic quality metrics and invasive species cover.
- Key metrics included:
    - Non-native relative cover percentages
    - Invasive relative cover percentages

    - Native species richness
    - Floristic Quality Index
    - Mean Coefficient of Conservatism

Discussion on Vegetation and Management Recommendations

- The White River has been historically straightened, and re-meandering could enhance habitat and water quality.
- Recommendations include establishing native buffer plantings and restoring wetlands.
- Management strategies should focus on invasive species control and restoration of natural community types.
- Specific management techniques suggested include prescribed fire, mechanical control, and Timber Stand Improvement (TSI).

Summary of Plant Community Areas

- A detailed summary table (Table 1.1) provides floristic quality assessments for each plant community area, including:
    - Acreage, non-native relative cover, invasive relative cover, native species richness, Floristic Quality Index, and Mean Coefficient of Conservatism.
- Notable findings include:
    - PCA 1: 33.4 acres, 60% non-native cover, 28% invasive cover.
    - PCA 3: 100 species, 31% non-native species, Mean C: 2.6.
    - PCA 5: 69 species, 41% non-native species, Mean C: 2.1.

Management of Oak and Hickory Trees

Careful management is essential to protect oak and hickory trees from damage, particularly to prevent the spread of oak wilt.

- Damage to oaks, especially red oaks, should be avoided from early spring to midsummer.
- Red oaks are highly susceptible to oak wilt if damaged during the growing season.
- Management activities should prioritize the health of these tree species.

Restoration of Native Plant Communities

Restoration efforts require the introduction of diverse native seed mixes to reestablish plant communities.

- A native seedbank is likely absent, necessitating the addition of native seeds.
- Seeding can occur before or after shrub control, depending on the method chosen.
- Acceptance criteria and adaptive management strategies should be established for recruitment and establishment.

Prescribed Fire Management Plan

Regular low-intensity prescribed fire is recommended to maintain the health of fire-dependent ecosystems.

- Prescribed fire should be implemented once shrub cover is reduced to less than 15%.
- The herbaceous layer should be well established 3-5 years post-seeding.
- The fire plan must include objectives, unit descriptions, permits, conditions, contingency plans, and safety measures.

Plant Community Area Species Lists

The document details various plant community areas, highlighting native and non-native species.

- Total number of plant species across all areas: 44 to 80.
- Non-native species range from 24% to 59% of total species in different areas.
- Specific native species include oak, hickory, and various sedges, while non-native species include common buckthorn and garlic mustard.

Wildlife Observations and Species Concerns

Wildlife observations indicate the presence of certain species, with no endangered species noted.

- Common garter snake was observed in the area.
- A small population of the uncommon Purple twayblade orchid was found.
- No Federal or State-designated Special Concern, Threatened, or Endangered species were identified during inspections.

Historical Vegetation and Disturbance Overview

The historical context of the vegetation and disturbances provides insight into current conditions.

- Past disturbances include selective cutting, grading, and agricultural activities.
- Areas have been impacted by invasive species and human activities, affecting plant community integrity.
- Restoration efforts should consider historical land use and current ecological conditions.