Ecological Land Management

Walter Levernier
August 11, 2020
Fermilab is a mosaic of land uses and habitats ranging from agriculture and office buildings to buttonbush swamps and bur oak savannas. We treasure the natural areas interwoven into the 6,800-acre site.

**About Fermilab’s Ecology**
Fermilab has a long and proud history of land management based on ecological science and stewardship values that enhance the environment.

**Conservation**
Conservation work at Fermilab supports global initiatives such as climate change adaptation and enhancement of biodiversity and ecosystem services.

**Habitat Communities**
The land within the boundaries of Fermilab is a microcosm of many ecosystems and land uses found in the Midwest.

**Wildlife Conservation**
From songbirds and green anoles to bats and bumblebees, Fermilab has a role to play in wildlife conservation and management. Adaptive management for species of conservation concern is necessary and valued at Fermilab.

**Volunteer and Recreation**
Thanks to the dedicated efforts of people both in and outside the lab, Fermilab is a 6,800-acre ecological jewel that is enjoyed by employees and neighbors. Come on out for a visit or join us during a volunteer day!
Prairie
Woodland
Savanna
Shrubland
Grassland
Dr. Robert F. Betz and the tallgrass prairie

• 1960s
  – Prairie remnant explorer
    • Railroad rights-of-way
    • Pioneer cemeteries (Betz and Lamp 1989, 1990)

• Betz found a desire to create a large-scale, tallgrass prairie on silt-loam soil

1972

• National Accelerator Lab in Batavia, Illinois
  – “After a number of discussions involving a series of proposals over a period of a year and a half, it was agreed that a prairie restoration project could be undertaken on land within the accelerator ring.”
1974

- Volunteer seed collection, 70 spp., within 50 mile radius
- 4-month, cold moist storage, land plowed w/ multiple diskings
- Planted 400 lb. mix in June 1975 on 9.6 acres- Nisbet drill
Fermilab Roads & Grounds does the heavy lifting
The planting continued and the prairies grew

<table>
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<th>PRAIRIE PLOT #</th>
<th>ACRES</th>
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<td>4</td>
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<td>12</td>
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Fermilab Roads & Grounds
Results after 40 years of prairie restoration at Fermilab
Current Ecology Program

- Ecological Land Management Committee meets monthly and helps guide restoration activities on-site.

PRAIRIE MEETING
January 14, 1983


* New members

1. Dr. Betz handed out a cumulative species list. There were 3 lists: a list of plants in the prairie, a list of weed/woodland plants, and a frequency plot by plot list. A few new "rare" species were noticed in plot #1 which were planted in 3 years ago. Betz said he knew an aquatic vegetation expert who might recommend some marsh species.
The Calendar

- **Growing Season** (April thru October) = Outdoors (90%)
  - running from place to place
- **Dormant Season** (November thru March) = Indoors (60%)
  - “Catch up”, data entry, GIS map updates, planning/reporting
Invasive Species Management at Fermilab

- teasel
- purple Loosestrife
- *Phragmites*
- oriental bittersweet
- bush honeysuckle
- common buckthorn
- Japanese barberry
- autumn olive
- European highbush cranberry
- burning bush
- coralberry
- garlic mustard
- white sweet clover
- reed canary grass
- crown vetch
- bird’s foot trefoil
- poison hemlock
- spotted knapweed
- wild chervil
- glossy buckthorn
- Callery pear
- Japanese knotweed
- Japanese hedge parsley
- mugwort
ArcGIS – poison hemlock
Using hemi-parasitic plants

- Wood betony established in 21 plantings
- Bastard toadflax established in 9 plantings

- Increase patchiness naturally
Fermilab Volunteer Program

- Stewards
- Wildlife Monitors
- Plants of Concern
- Workday Volunteers
- Annual Seed Harvests
- Provide Interns
- Obtain Grants
Fermilab Natural Areas

2019 Volunteer Hours

- Stewardship
- Seed Harvests
- Monitoring
- BOD and Committees
- Misc.
The natural areas of the Chicago Wilderness region are home to a wide diversity of life and rare habitats — prairies, wetlands, woodlands, savannas, and more. Thousands of native plant and animal species live here among the more than 10 million people who also call the region home.

Chicago Wilderness 2019
Excellence in Ecological Restoration
Platinum Accreditation

AWARDED TO
Fermilab
US Department of Energy

For conservation leadership and exemplary use of best management practices in natural resource restoration.
Questions?