GREEN TEAM
Elmhurst Park District

Natural Area Management Plan

The Elmhurst Park District currently owns and leases 460 acres of park land with approximately 170 acres of this in some form of natural state. It is the District's intent (policy) "to preserve and restore indigenous plant and animal diversity to these sites using sound environmental policies and practices."

Natural area management practices include:

- Cleanup of the trash and dump sites within natural area
- Eliminating encroachment
- Conducting surveys and inventories of resident flora and fauna
- Removal of invasive and undesirable plants (trees, shrubs & herbaceous
- Use of prescribed burns
- Planting of native plants to help in the reestablishment of natural diversity
- Monitoring progress
- Provision of animal habitat
- Fostering volunteer stewardship

Cleanup & Encroachment
The Park District maintains a year-round litter pick up crew, with natural areas having waste receptacles stationed at the entrances and exits. Reported dumping is cleaned up on a work order basis. Park encroachment has been in the form of plantings, gardens, outdoor furniture, fire rings, and forts. All encroachments detract from the natural experience of the community, hinder maintenance, and add to the potential for District liability.

Surveys & Inventories
Surveys are an important management tool in order to provide a benchmark for progress or setbacks in management practices. Presently, only the Great Western Prairie and the Berens wetland sites have had any type of professional plant surveys. An informal prairie survey was performed during a visit by Robert Betts, Assistant Professor of Biology at Northeastern Illinois University and known prairie expert 1970s-1990s. Prairie volunteers survey the site on an ongoing basis, and are now beginning to carry out GPS recording to further map plant locations. The Berens Park Wetland Mitigation Project 2001-2006 was surveyed by employees of the V3 Corporation but nothing was mapped. Other areas have had cursory inventories made by Park District employees based on predominant plant species present.

Invasive and Undesirable Plants (trees, shrubs, or herbaceous)
Natural landscapes consist of native and non–indigenous plants. In many natural areas, the oldest plants are all that is left of the indigenous Illinois plant life. The remaining plants are classified as either "invasive" (non-native and aggressive) or "undesirable" (non-native but not aggressive).

All plants compete for water, nutrients, sunlight, and space. The greater the number of non-indigenous plants present, the fewer native plants. As non-native plants take over a site, the natural habitat (plant, animal, insect, and microorganism species) decline and may be altered forever.

Invasive plants actually takeover the environment; and, if left unchecked, will create a monoculture that will choke out all other plants and the animal life dependent on them. They do this because of certain competitive advantages such as:

- No regulatory organisms present in Illinois to keep invasive plants in check
- Overwhelming seed production, greater seed viability, and faster seed maturation and germination
- Longer growing season (first to green up, last to go brown)
- Aggressive-monoculture growth crowding out everything else
- Ability to grow in almost any condition (soil, temperature, moisture)

Examples: Teasel, Parsnip, Burdock, Canada Thistle, Buckthorn, Mustard, Common Bull Rush, Canary Reed Grass, Purple Loosestrife

Undesirable plants are those that have spread into Illinois natural areas due to seed movement and the suppression of fire as a control force. They do not dominate the environment as invasive plants do, but still compete with neighboring plants.

Examples: Honeysuckle, Autumn & Russian olive, Box Elder, Black Locust, Choke Cherry, Norway Maples, Tree of Heaven, Barberry, Multi Flora Rose, Chicory, Queen Anne's Lace, Giant Ragweed, Cattails

Invasive and Undesirable plant control options:

- Mechanical Removal (cutting, tilling, pulling)
- Herbicides (selective stump treatment, broadcast, spot-spraying, swiping)
- Burning

Control of invasive plants is an ongoing, labor intensive process due not only to the removal of the parent plant but also of overlapping generations of seed in the soil (seed bank).

Practices for treating large natural areas containing invasive and undesirable plants include:

- Prioritized control by:
  - Protecting the rarest and most diverse natural areas first
  - Cleaning areas of early invasion stages first; then most infected
  - Continuing to re-work previously cleaned areas to not let seed bank refresh itself
  - Clearing bad areas if near non-infected areas
- Controlling plants before they go to seed
- Maintaining a dense cover of native plants; a healthy stand of native plants will out-compete the undesirables
- Minimizing soil disturbance - it opens up spots for undesirables to germinate

See Appendix A for specific invasive plant species control

Prescribed Burns: Controlling Non-Native Plants, Encouraging the Growth of Native Plants, Controlling the Amount of Plant Litter, and Recycling Nutrients

Historically, much of the Illinois landscape was shaped by fire, either from lightning strikes or man-made. Plants that survived fires became part of the Illinois ecosystem. Since settlement, fire has been discouraged, and as a result, Illinois native plants have been pushed aside by plants that are more aggressive in non-fire ecosystems. With the loss of native plant communities also comes the loss of those organisms (large and microscopic) that were dependent upon them for shelter and food. Restoration practices throughout the state have shown that with the reintroduction of fire, native plants resurfaced once the competition was gone.

Prescribed fire practice in the State of Illinois is now regulated by certifying burn managers, Illinois Prescribed Burning Act [525 ILCS 37] Part 1565, and, through permit release on prescribed burn plans.

The Elmhurst Park District practices prescribed burns in several natural areas utilizing burn plans that follow Illinois law and the Illinois Environmental Protection Agency permit process.

- Prior to the burn:
  - Obtaining a burn prescription as per Section 1565.30 of the Illinois Prescribed Burning Act Illinois Prescribed Burning Act [525 ILCS 37]
  - Obtaining a burn permit issued by the Illinois Environmental Protection Agency
  - Notification of neighboring landowners, fire department, emergency dispatchers

- On burn day:
  - Checking with the national weather service
  - Checking temperature, wind speed and relative humidity before and during the burn
  - Notifying emergency dispatch of burn commencement
  - Reviewing burn plan with workers
  - Discussing escape routes and actions to be taken if fire escapes
  - Performing a practice/trial burn
  - Following smoke management plan
  - Mopping up

- After burn:
  - Filing a report according to Section 1565.60 Illinois Prescribed Burning Act [525 ILCS 37]

New Plantings Using Native Materials

Since 1993, the greenhouse has been actively growing native plants for natural area plantings.

Monitoring

Presently, monitoring is only performed on an informal basis by checking survival of plantings and invasive materials progression.

Habitat Construction

It has been estimated that nearly 20% of all forest fauna (animals) rely on dead and dying wood for food or other habitat. Of the many benefactors of dead and dying trees, one of the most obvious is the cavity-dwelling birds that live exclusively in the trunks of dead trees. Diverse forest flora provides food for pollinators (birds, insects, bees, and butterflies) and seeds & berries for birds and other small mammals.

In the past, dead and dying trees were viewed as unsightly and potentially hazardous and were removed by park maintenance. Even the logs were hauled out to give a clean appearance. Today, it is known that many species of animals depend on these for food and shelter and that they all make up a healthy ecosystem.

The following management practices have changed for wildlife habitat provision:

- Leave dead, dying trees upright, (snags)
- Snags can be made through a culling, thinning, and canopy opening
- Downed logs are left to weather and rot
- Tree limbs can create brush piles
- Avoid burning near snags and downed logs
- Prune trees and shrubs after flowering
- Create and leave "edges"
  Edges are areas where two different habitats meet. The edge is a buffer strip of different species of plants, midway in size between the two different habitats. It provides nesting, brooding, feeding and escape cover.
  - Managing the edge:
    - Mow or disk low vegetation nearest the open area every year
    - Mow or disk medium height vegetation midway between the open and forest areas every two to three years
    - Mow or cut tall shrubs and saplings nearest the forest on a rotation of five to ten years
    - For the med-tall levels, do not perform maintenance on more than one-third of an area in the same year
    - Avoid edge maintenance from April through August, the period when many edge species are nesting

Fostering Stewardship

There is dependency on volunteer stewards to help with the effort. Approximately 40% of the plantings and almost 80% of the invasive removals in the last twelve years have been done by volunteers. Thirty percent of the work on the Great Western Prairie is volunteer time.

Appendix A
Control Measure Recommendations for Specific Invasive Plants

Common Buckthorn (Rhamnus cathartica)
Small tree or large shrub from Eurasia, brought to U.S. as an ornamental plant for hedges and wildlife attractor. It is able to grow in many conditions, has a rapid growth rate, and is a prolific berry producer with a long growing season remaining green into November.

- Control Measures:
  - Burn seedling trees with a propane torch early spring/fall
  - Chemical brush killer on leaves in late fall while still green
  - Cut & spray stumps with brush killer year round

Canada Thistle (Cirsium arvense)
Perennial forb from Eurasia with lavender flowers producing 1500 to 5000 seeds per plant. Its main means of reproduction is the root system which can spread six feet and twelve inches deep. New shoots can arise from any part of the root system and root fragments.

- Control Measures:
  - Repeated mowing just prior to bud formation (June, August, September)
  - Chemical: Roundup® six to ten inches, bud stage, rosettes in the fall

Garlic Mustard (Alliara petiolate)
Biennial herb, almost evergreen; first year basil rosette, second year flowering shoot April-May It grows in shaded areas with roots that have shoot buds on them in case the top is removed. It has the ability to become totally dominant in five to seven years. Seeds drop in July and are viable for up to seven years.

- Control Measures:
  - Manual pulling first year growth and before flowering
  - Burns only if fire is hot enough
  - Chemical Roundup® in early spring

Teasel (Dipsacus sylvestris)
Perennial, but dies after seeding. Teasel grows in open sunny areas with disturbed soil. There are about 2000 seeds per plant. The rosettes remain green early spring through late fall.

- Control Measures:
  - Dig rosettes like a dandelion
  - Cut stalks just before flowering
  - Chemically spray with Roundup® or Garlon® in early spring before natives start or late fall after natives go dormant

Sweet Clovers (white & yellow) (Melilotus officinalis & Alba)
Biennial herbs brought from Eurasia for forage and hay, nitrogen fixing. There are about 350,000 seeds per plant.

- Control Measures:
  - Burning of the entire area stimulates germination so a second year propane torching is needed when six to eight inches tall to wither the plants
  - Pull second-year plants.

Wild Parsnip (Pastinaca satvia)
Perennial that dies after setting seed in disturbed areas. It is the first to green up on the prairie. Its seeds are viable for 4 years.
Exposure to Wild Parsnip juices in the sunshine may cause allergic reactions.

- Control Measures:
  - Cut one to two inches below soil surface or cut stalks before seed dispersal
  - Burning may stimulates germination
  - Chemical: Roundup® , Pathfinder®, Trimec®

Common Reed Grass (Phragmites australis)
Tall (eight feet), warm season grass with large feather-like plumes. It grows in wet areas with dense stands that crowd out everything else. It spreads by rhizomes that can go six feet deep. It can be seen along much of the highway system around Chicago. It is beginning to take hold in Berens retention area between the artificial and turf soccer fields and spots along the Eldridge Lagoon.

- Control Measures:
  - Cut and treat individual stalks (Roundup®) when dealing with small stands.

Reed Canary Grass (Phalaris arundinacea)
Sod-forming, cool season perennial grass. It grows in moist, sunny areas and spreads by seed and creeping rhizomes. Implement close mowing three times per year (spring to retard growth, at flowering to prevent seed, and in late fall to repress next year's growth.) This plant has a foothold in Eldridge Park along the Salt Creek.

- Control Measures:
  - Mow plus Roundup® spray when new growth starts