

**RESTORATION OF ROLLINS SAVANNA**  
**Lake County Forest Preserve District**

**I. INTRODUCTION**

**a. Location**

- i. North central part of Lake County, near Grayslake and Third Lake

**b. Acquisition**

- i. ~1225 acres acquired in pieces through 1990s
- ii. Part of 2,000+ ac Mill Creek corridor (which includes MacDonald Woods, Bonner Trail and Farm, and Fourth Lake Fen Forest Preserves)

**c. Site description – at time of acquisition**

- i. Riparian Mill creek corridor and associated wetlands (300 ac)
- ii. 700 ac of ag and pasture land
- iii. 225 ac of savanna/woodland
- iv. Noteworthy features:
  1. Several species of wetland birds breeding on-site (Ruddy ducks, blue-winged teal, yellow-headed blackbirds, least bittern, coots, marsh wrens, etc.)
  2. 16 state listed bird species
  3. State-threatened Iowa darter had been collected in Mill Creek
  4. State-threatened *Carex cryptolepis* was documented in one of the existing sedge meadow wetlands

**II. RESTORATION GOALS**

- a. At time of acquisition: 700 ac ag, 300 ac wetland, 225 ac savanna
- b. Long-term community goal: 475 ac prairie, 550 ac wetland, 200 ac savanna

**III. RESTORATION ACTIVITIES:**

**a. Drain tiles**

- i. Winter 2002, Summer 2002: disabled 13.3 miles of drain tile
- ii. As of 2003 re-hydration was not dramatic, 115,000 plugs planted (many were planted in drier than recommended conditions due to expected water)
- iii. Spring 2004 – Rains came, flooding many new plugs. Eventually hydrology settled, success of plant installation and wetland seeding TBD.
- iv. Lesson learned – wait as long as possible for planting. Ideal to wait until one season of “normal” hydrology before planting. (2003 was unusually dry, spring 2004 was unusually wet). Hydrology now, by fall 2004, is what we expected it to be.

**b. Invasive species control**

- i. Herbiciding – each year since acquisition of the property
  1. Primary species of concern are purple loosestrife, reed canary grass, thistle species, Phragmites, buckthorn
  2. In 2001, since the majority of the property was in ag or cover crop, we were able to aerially apply herbicide to wetlands with 100% purple loosestrife
- ii. Bio-controls
  1. LYTSAL beetles were introduced in 2002. Working.
  2. Thistle bio-control (a flea beetle species and fly species) were introduced in 2003. Insects are surviving, but too early to tell if it's working.

**c. “Reforestation”**

- i. Major projects were undertaken in 2001, 2003, 2004, and 2005.
- ii. Specifications written for rootballed trees – better survivability, less maintenance, and open grown character.
- iii. What to plant, where?

1. Consider soils
  2. Existing and expected hydrology
  3. Canopy cover conditions
  4. Existing savanna/woodland vegetation
- iv. These 4 projects were a mix (update w/05 spp) of 5 tree species (198 trees) and 6 shrub spp (373 shrubs) at planned densities. More like "re-savanna-ization" or shrub introduction.
- d. Seeding and prairie reconstruction – began seeding into cover crop in 2001, about 325 ac have been seeded w/permanent mixes to date.
- i. Cover crop & lessons learned– smooth brome, orchard grass, timothy, perennial rye, alsike clover
    1. Seed mix was "balanced" on paper to provide a diversity of structure (short & medium height), but ended up being dominated by the taller spp (brome & orchard grass).
    2. Chosen cover crops are apparently not "short-lived", at least w/o adequate competition from native spp.
    3. Non-native, cool-season grasses do not burn well under normal conditions
    4. Mowing after native seed installation is compromised b/c it must be mowed early in year to avoid nesting season, which is inevitably wet
  - ii. Cover crop – solutions/recommendations
    1. Worked in suppressing weeds (farm weeds, existing wetland invasives). If a cover crop is needed use cheap, quick-establishing native species such as Canada Wild Rye, Black-Eyed Susans etc.
    2. Consider if a temp cover crop is necessary. Seed directly with a full complement of native species, minus spp that are known to do poorly in bare soil
  - iii. Seeding methods – tried many with varied results, too early to evaluate what worked best
    1. Drill vs. broadcast experiment
    2. Different types of feeders
    3. Lilly seeder
    4. Broadcast seeder
    5. Truax seeder
    6. Summer fire
    7. Disking
- e. Continuing restoration projects
- i. Seeding and plant installation – esp pending wetland development
  - ii. Small clearing projects
  - iii. Enrichment – planting and seeding

#### IV. MANAGEMENT PHASE

- a. Gradually shifting to intensive management during establishment of native communities
  - i. Frequent prescribed fire, establish long-term burn rotation
  - ii. Monitoring bio-control effectiveness
  - iii. Herbiciding

#### V. MONITORING - efforts to quantify successes and failures

- a. Hydrology/veg/soils of new developing wetlands
- b. Groundwater and surface water
- c. Wildlife response (grassland birds, wetland birds, crane surveys, deer browse, stream fish)
  - i. Early success of project indicated by grassland bird response, esp Henslow's sparrows, Sandhill cranes, Short-eared owls, Upland plover
- d. Vegetative transects in upland habitats (success of clearing, prairie plantings)
- e. Grassland, wetland, migratory and breeding bird surveys

- f. Fish surveys of Mill Creek and restored wetlands

## VI. RESEARCH

- a. Blanding's turtle surveys and feasibility of a head-starting program
- b. Evaluation of grassland/wetland bird nest success
- c. Feasibility of Franklin's ground squirrel re-introduction
- d. Success of prairie seeding efforts

## VII. NATIVE SEED NURSERY

- a. Primary focus is cultivating beds to produce seed for restorations
- b. Opportunity to grow hard-to-buy/find species
- c. Grown in nursery setting for viable seed crops
- d. Excellent education opportunity

## VIII. EDUCATION

- a. Well-attended grand opening
- b. Interpretive signs and trails
  - i. Boardwalk – wetlands
  - ii. Savanna habitat

## IX. RESULTS SO FAR..

- a. 13.3 mi drain tile disabled = ~100 ac new wetland
- b. >1300 trees and shrubs planted
- c. >425 ac upland prairie seeded
- d. >190,000 wetland plugs planted
- e. Designated as an "Important Bird Area"
- f. 16 state listed bird species
- g. 79 open grassland, savanna and wetland bird species
- h. Plans to re-introduce Blanding's turtles and Franklin's ground squirrels

### Project Partners:

The Conservation Foundation  
Northeastern Illinois Wetland Conservation Account  
Ducks Unlimited, Inc.  
North American Waterfowl Conservation Act  
U.S. Fish and Wildlife Service  
U.S.D.A. Natural Resources Conservation Service  
Illinois Department of Natural Resources  
Lake County Map Division  
Lake County Stormwater Management Commission  
Lake County Division of Transportation

### Funding Programs:

NRCS – Wetland Reserve Program – Wetland Protection and Restoration  
NRCS – Conservation Practices Program – Wetland Buffer Protection and Restoration  
Northeastern Illinois Wetland Conservation Account – Wetland Restoration  
The Conservation Foundation – Wetland Restoration  
North American Waterfowl Conservation Act – Wetland Restoration  
IDNR Conservation 2000 Program – Mill Creek Riparian Wetland Restoration  
IDNR Open Space Land Acquisition and Development Grant – Public Access and Trails

**Project Budget:** Total project expenses and revenues were as follows:

<u>DU Expenses</u>	
Engineering Survey & Design	\$ 82,000
V3 Construction Contract	\$ 200,000
Materials	\$ 10,000
Construction Management	\$ 33,000
Total Project Delivery	\$ 325,000
DU Administration	\$ 40,000
Total Project Expenses	\$ 365,000

<u>LCFP Expenses</u>	
Contracts (Tile Removal, etc.)	\$ 60,000
Materials (Seed, etc.)	\$ 22,500
LCFP Manager	\$ 2,500
Other Restoration Expenses	\$ 209,500

**Total Restoration Costs \$ 1,099,500**

<u>Project Revenues</u>	
The Conservation Fund	\$ 103,560
Northeast Illinois (NEIL) Fund	\$ 75,000
National Fish and Wildlife Foundation	\$ 50,000
North American Wetlands Conservation Act	\$ 50,000
Lake County Forest Preserve District	\$ 15,000
Ducks Unlimited & Major Donors	\$ 30,000+
Total Project Revenue	\$ 323,560

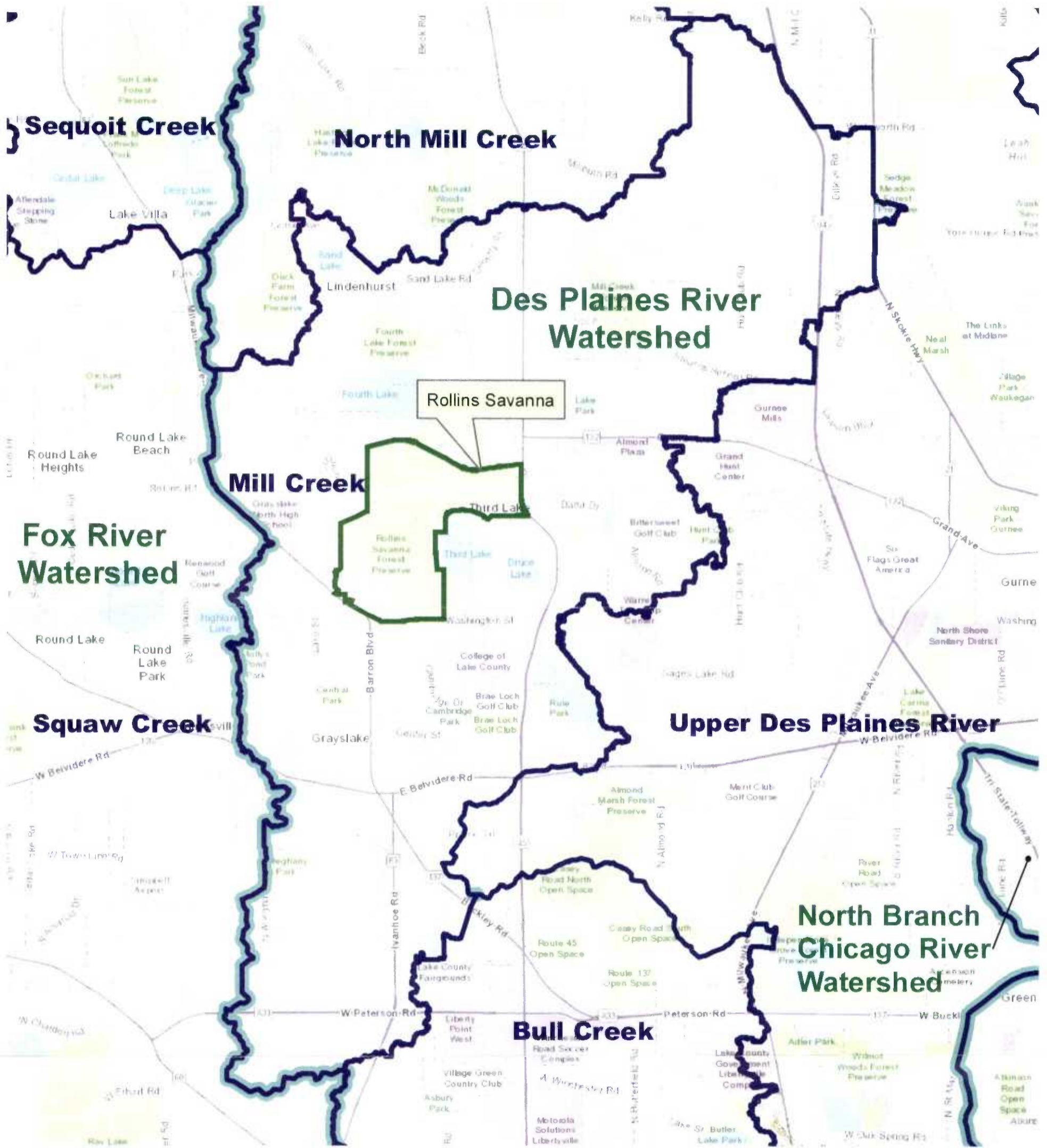
<u>Additional Grants</u>	
IDNR C2000 Funding	\$ 525,000

**Contact Information:**

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# Rollins Savanna Watershed Location



Lake County Forest Preserve District  
 1899 W Winchester Rd  
 Libertyville, IL 60048  
 847-367-6640  
 www.lcfpd.org



## Legend

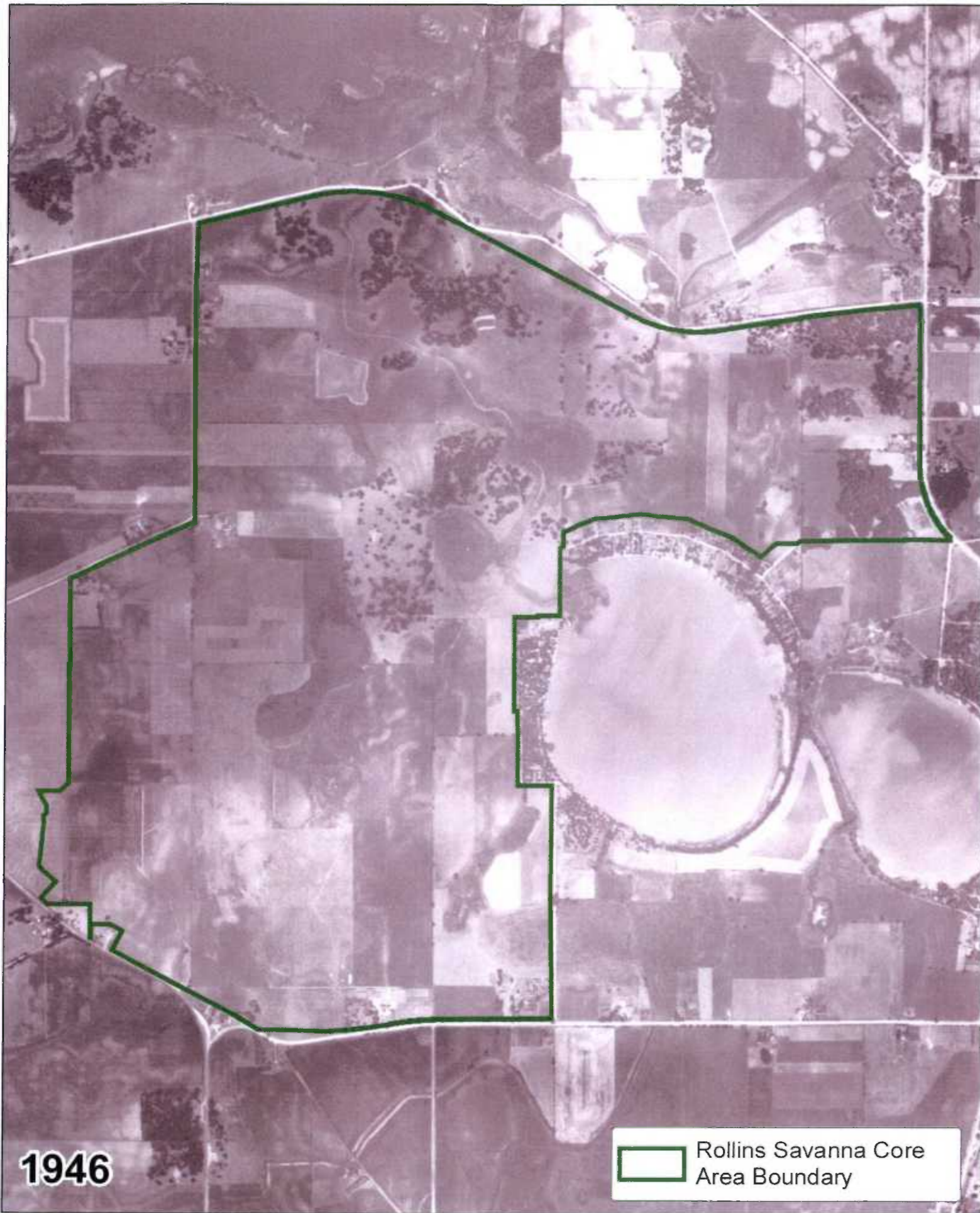
-  Rollins Savanna Core Area Boundary
-  Basin Boundary
-  Watershed Boundary



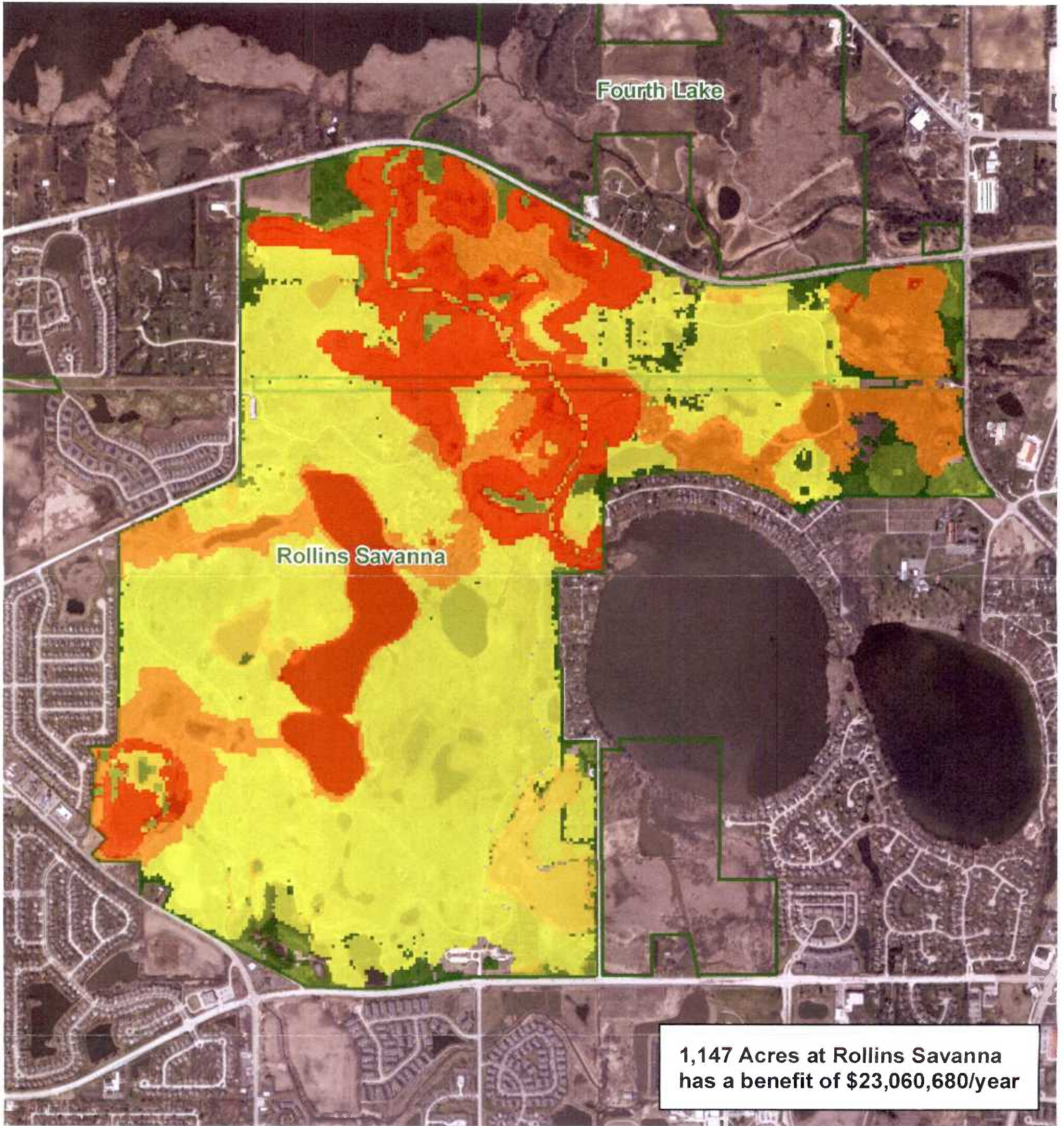
Prepared using information from:  
 Lake County Department of Information  
 & Technology: GIS/Mapping Division  
 18 North County Street  
 Waukegan, Illinois 60085-4357  
 847-377-2373

Map Prepared 15 May 2018

# Rollins Savanna Forest Preserve

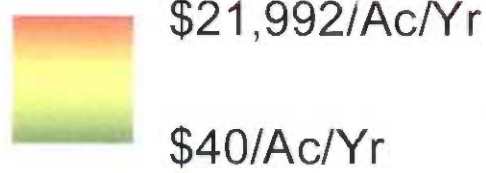


# Rollins Savanna Ecological Services Values



Lake County Forest Preserve District  
1899 W Winchester Rd  
Libertyville, IL 60048  
847-367-6640  
www.lcfpd.org

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