

Natural and Cultural Resources Master Plan

2018 Summary Report





Message from the President

In 2014, we set a broad vision for restoring health to our preserves with our Next Century Conservation Plan. Since that time, the Forest Preserves of Cook County has been hard at work assembling all the tools needed to turn that vision into reality. With our partners at the Prairie Research Institute, we have made great strides toward our goals. This report summarizes all that good work, including the Forest Preserves' first comprehensive plan for managing our forests, prairies and wetlands; the first comprehensive assembly of our historical cultural resources; descriptions of our unique habitats; new insights into the pre-history of Cook County; among many more.

Message from the General Superintendent

We are pleased to present to you a progress report on our goal of protecting, preserving, and restoring our natural and cultural resources. Assembled by the Prairie Research Institute (PRI), the state's premier science consortium, this update highlights a long list of products and achievements spearheaded by PRI over the last five years. Working with PRI, we have been able to identify and describe the critical resources across the Preserves, prioritize and focus our conservation expenditures, and deliver lasting improvements to the Preserves. With the tools they have provided, we are measuring our progress toward our Next Century Conservation Plan goals in a way not possible a few short years ago. Please take a moment to read about the exciting developments made possible by this partnership.



In 2014, in celebration of the Forest Preserves of Cook County's 100-year anniversary, an ambitious vision—the Next Century Conservation Plan—was crafted to improve and sustain the health of the Preserves over its next 100 years. The Prairie Research Institute (PRI), home of the State Scientific Surveys at the University of Illinois at Urbana-Champaign, was enlisted to turn that vision into a plan for action.

The Forest Preserves contain some of the state's rarest natural resources and nearly half of the archaeological sites recorded to date in Cook County. PRI researchers began assembling information from thousands of historic documents, museum specimens, scientific literature, and interviews with experts in their fields. *In 2015, the Natural and Cultural Resources Master Plan was presented to the Forest Preserves.* This plan described the historic and current status of both natural and cultural resources in the Forest Preserves, identified threats

to our resources, and provided options for reducing the effects of those threats. *This was the first comprehensive resource plan ever written for the Preserves.*

PRI also provided a broad set of tools for successful execution of the plan and effective resource conservation into the future. Their science team assembled a detailed priority schematic for restoration, authored the Preserve's first seed policy, and created a robust system for measuring success toward conservation goals. PRI also devised a system for cataloging and prioritizing protection of our cultural resources. While more work remains to be done, *these efforts have positioned the Forest Preserves to pursue and meet our ambitious goals for the next century.*

We are pleased to provide this document as a five-year summary of the accomplishments of our partnership with PRI.



The Forest Preserves of Cook County...

Natural Resources

8



Water Resources

20



Cultural Resources

22



"We take seriously the responsibility we have to ensure that generations of Cook County citizens, born and yet unborn, will co-exist until time beyond mind with the inspiring diversity and beauty of plants and animals, places and processes unique to the world."

–FPCC Sustainability Doctrine 2012 and the Sustainability and Climate Resiliency Plan 2018

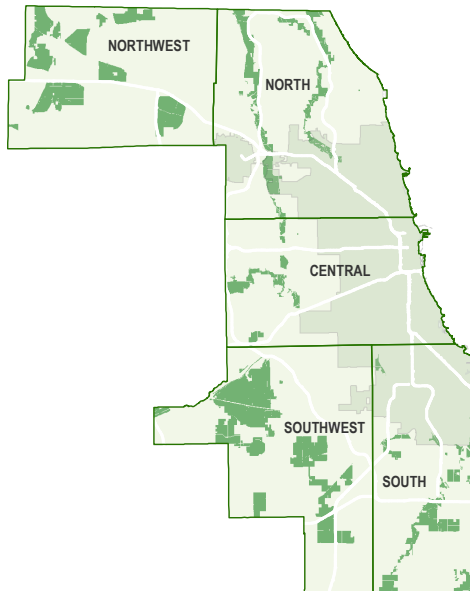


Next Century Conservation Plan

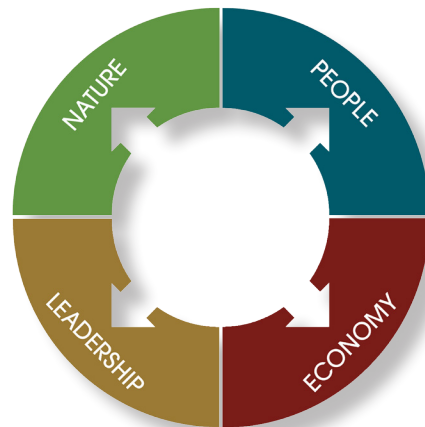
The nearly 70,000 acres owned and managed by the Forest Preserves of Cook County represent 11 percent of the county. The preserves contain some of the state's most biologically diverse flora and fauna, and nearly half of the county's archaeological sites. Successful management of these resources requires an understanding of the current status of these resources and current and potential threats to these resources.



Forest Preserves of Cook County



The Next Century Conservation Plan lays out a set of bold actions to make the Forest Preserves of Cook County a national leader in urban conservation and calls for a massive commitment to restore habitat, acquire and protect more land, and make the Preserves more inviting and accessible to all Cook County residents.



Natural and Cultural Resources Master Plan

The Natural and Cultural Resources Master Plan (NCRMP) was designed by PRI scientists to provide strategic guidance for implementation of the Next Century Conservation Plan, particularly Goals 1 and 2: **Nature and People**. The NCRMP assists with early stage planning decisions related to new land acquisition, habitat restoration, recreational development, educational programming, and private and public partnerships.

The Prairie Research Institute (PRI) is a world-class interdisciplinary research institute charged with the stewardship of Illinois' natural and cultural resources by providing objective and timely research, data, and expertise to decision makers and stakeholders.

Illinois Natural History Survey

Illinois State Archaeological Survey

Illinois State Water Survey

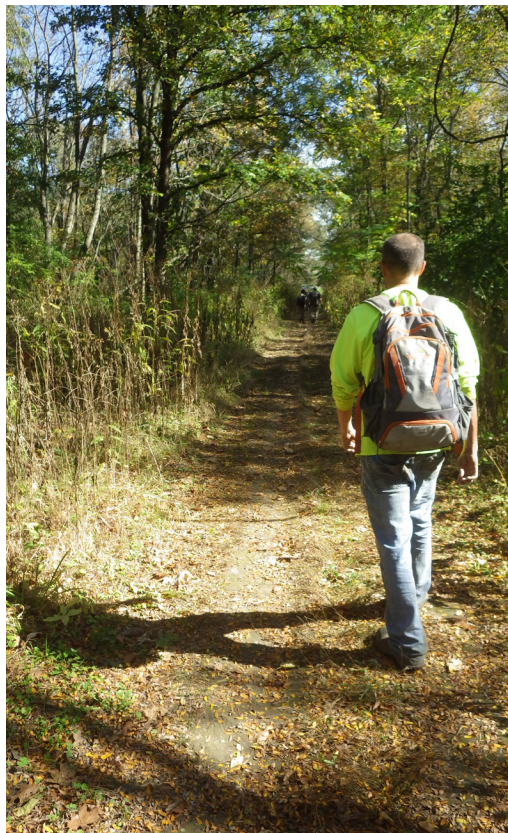
The NCRMP primary objectives include:

- Identifying areas where more information and research is needed
- Filling critical gaps in the data
- Developing land-cover maps and prioritize areas for natural and cultural resource conservation
- Creating a plan, based on the best available science, that can be shared with the public and conservation partners
- Providing management recommendations for preservation and enhancement of natural and cultural resources into the future

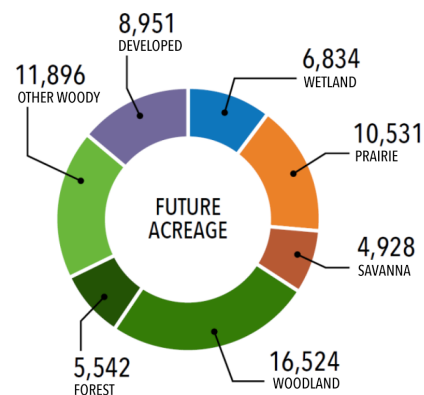
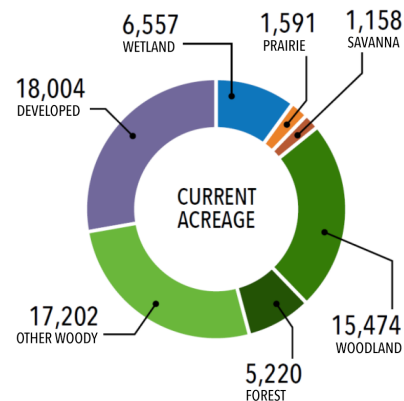
The NCRMP is an ongoing collaborative effort between FPCC staff and a multi-disciplinary team of scientists from the PRI at the University of Illinois at Urbana-Champaign.



Natural Resources in the Forest Preserves of Cook County



The roughly 70,000 acres within the Forest Preserves of Cook County include approximately 50,000 acres of natural areas. Currently, the majority of these lands are wooded habitats, including forests, woodlands, savannas, reforestation areas, and shrublands. Of these natural areas, around 700 acres have been recognized as high quality based on Illinois Natural Areas Inventory standards. PRI scientists identified about 4,300 acres with significant potential for restoration to high natural quality. To meet our goals of restoring 30,000 acres to high natural quality, future plans call for restoration of extensive woodland remnants, and substantial expansion of prairie and savanna areas within the preserves.

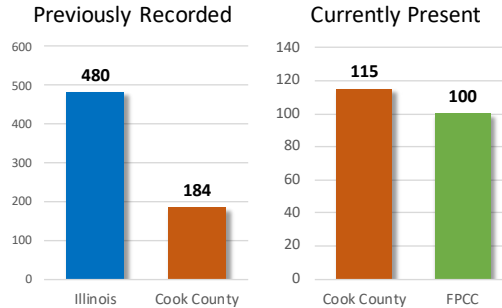


Importance of the Preserves for Natural Resources

In developing the Natural and Cultural Resources Master Plan, PRI scientists gathered extensive amounts of information on the biota of Cook County and the Forest Preserves of Cook County specifically. These scientists found that FPCC lands protect over 100 threatened and endangered species and more than 40 types of natural communities. In addition to information presented in the NCRMP, these efforts also resulted in the production of six technical reports containing nearly 700 pages detailing baseline information on:

- Amphibians and Reptiles
- Aquatic Communities
- Birds
- Natural Communities
- Natural Quality Assessment
- Stakeholder Engagement

Threatened and Endangered Species



Additional Regional Conservation Priorities:

- >700 Species in Cook County
- >500 Species on FPCC Lands

Many at-risk species in Cook County only reside on FPCC lands. FPCC lands are critical to the conservation of many of these species, and the potential for the conservation of additional priority species through restoration of degraded sites is high.



Role of the Preserves in an Altered Landscape

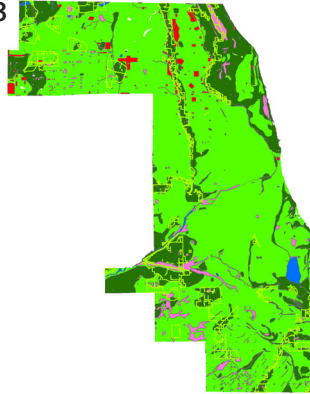
PRI scientists compiled historic information on land cover and found that, historically, Cook County was comprised of prairies, savannas, woodlands, forests, and wetlands. Prairie covered about 73%; savannas, woodlands, and forests accounted for 20%; wetlands and open water accounted for 7%.

Today, Cook County is 85% developed, with wooded areas comprising about 9%, and all other land-cover types combining to cover around 6% of the county. The change in land use over the last 200 years confirms the importance of FPCC lands for conservation of natural areas.

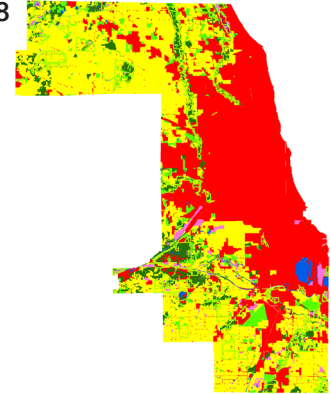
About half of Cook County's undeveloped lands are already in FPCC conservation.

The remaining undeveloped areas represent those places where opportunities exist for new land acquisition and new resource preservation efforts.

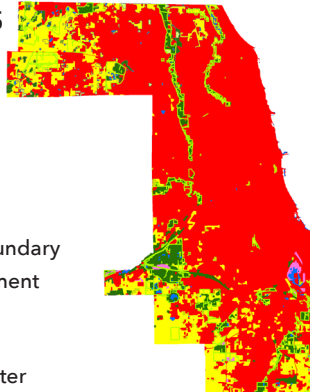
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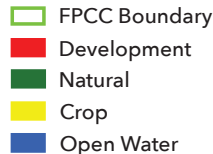
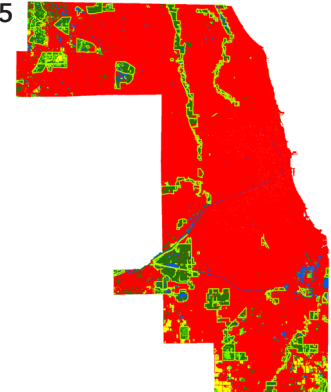
1938



1970-1985

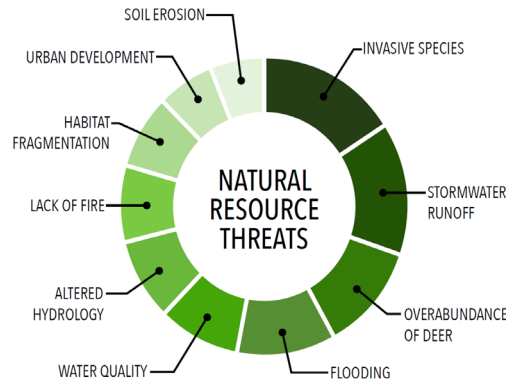


2015



Threats to Natural Resources

Another component of the work conducted by PRI scientists was an assessment of major threats to FPCC lands. Threats to natural resources include encroaching development, and the resulting fragmentation and changes to hydrological regimes. Changes in sources of historical disturbances, notably **lack of fire**, has negatively impacted ecosystems such as prairies, savannas, and woodlands that are dependent on periodic burning. These problems are compounded by the negative impacts of **overabundant species**, including **invasive species** that have been introduced outside their native range, and white-tailed deer that have become numerous in the **absence of natural predation** and exert considerable negative influence on many native plants.

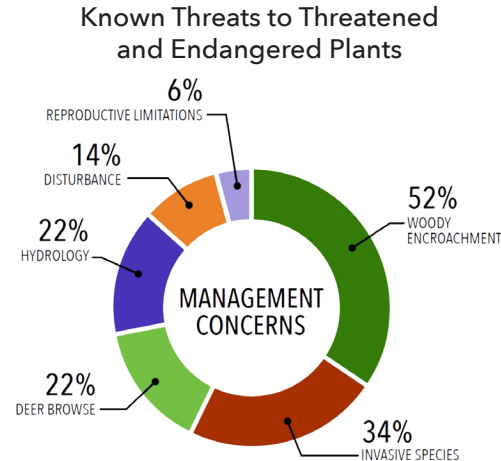


Natural Resource Information Gaps



Potential threats to natural resources are species specific and different management solutions are needed for different taxonomic groups.

For example, the list of threats to plant species highlights several important areas where additional information is needed, especially in the context of ultimately restoring 30,000 acres of FPCC lands to high natural quality.



PRI scientists have identified and begun filling knowledge gaps that provide information essential to managing our preserves into the future. Learning more about each species helps us manage resources more effectively. Filling these information gaps is needed in order to prioritize restoration areas, and restoration efforts, such as:

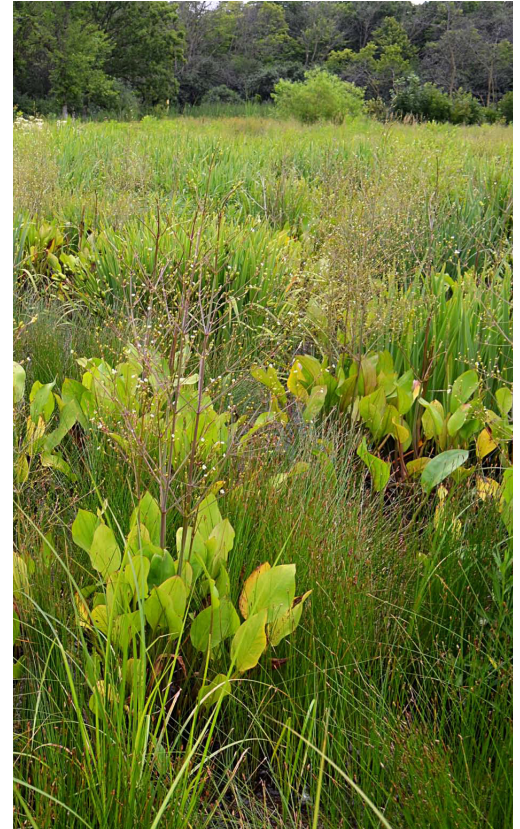
- Remove woody and/or invasive species
- Expand new populations of priority species
- Continue to refine best practices for burning preserves to ensure ecological health in an urban environment
- Educate public about best practices for managing deer populations

Working collaboratively, Illinois Natural History Survey (INHS) and FPCC staff identified objectives for achieving conservation and restoration goals, such as increased focus on conservation planning, information management, improved internal agency communication, development of actionable restoration policies, monitoring of outcomes, and providing appropriate education and training to FPCC staff and volunteers.

- Identify areas where management efforts will be most effective for restoring 30,000 acres
- Develop a policy for movement and establishment of native plant materials
- Develop and implement a computerized system for information management
- Examine barriers to electronic information sharing within FPCC

- Synthesize scientific literature related to effective deer management
- Review and promote use of best management practices for prescribed burning in an urban environment
- Develop monitoring protocols to measure progress of plant and animal conservation, staff training, collection of field data, data analysis, and reporting results

The following pages describe the tools developed to accomplish some of these objectives.



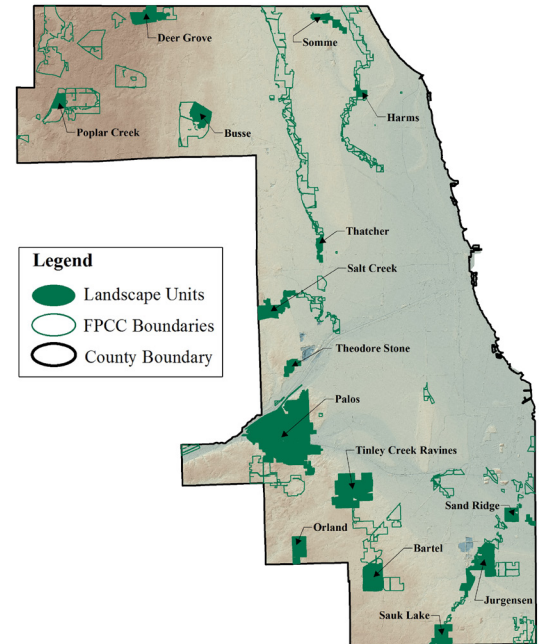
Prioritizing Areas for Restoration

Prioritizing Conservation Areas in the Forest Preserves of Cook County



Effective management of our natural resources into the next century requires prioritizing our efforts. INHS scientists have developed a plan that:

- Lays out principles and processes for selecting 30,000 acres to be restored to high natural quality
- Focuses on persistence of native communities, potential for restoration to high quality, preservation of endemic, rare, or vulnerable species
- Identifies and prioritizes lands for restoration based on their quality and restoration potential
- Assists with determining where to use limited resources most effectively
- Was developed with FPCC staff, based on the criteria identified by partner agencies, organizations, and volunteers

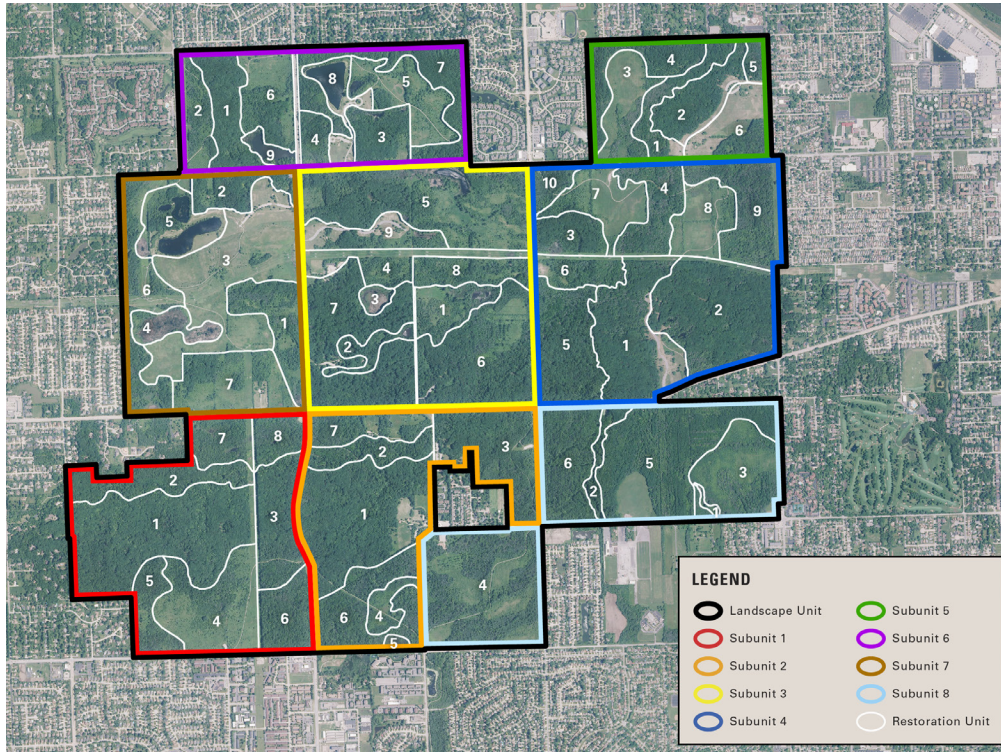


Landscape Management Units

Prioritizing Areas for Restoration

For example, this map shows where management efforts should be focused within the Tinley Creek area. The INHS report also:

- Identifies and prioritizes 15 large-scale “Landscape Units,” each containing Subunits and Restoration Units
- Includes high-quality sites outside of the 15 identified Landscape Units
- Provides a detailed description of each Landscape Unit, Subunit, and Restoration Unit, along with maps and lists of represented natural communities



Tinley Creek Landscape Unit: Restoration Subunit Priorities

Project Spotlight



PRI scientists developed products that move our restoration priorities forward. Products were developed with input from FPCC staff, partners, volunteer stewards, and experts in plant ecology and genetics. These products, which are critical to effective natural resource management, include guidance on seed policy, deer population management, implementation of prescribed fires, and monitoring plants and animals.

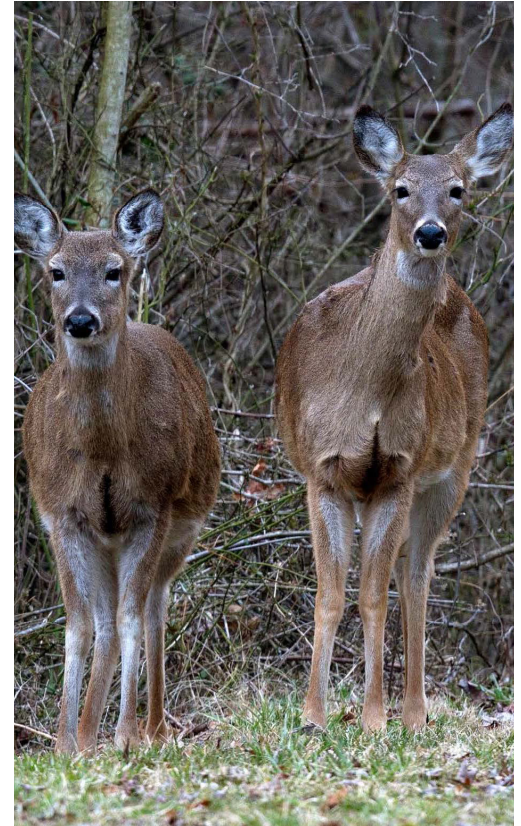
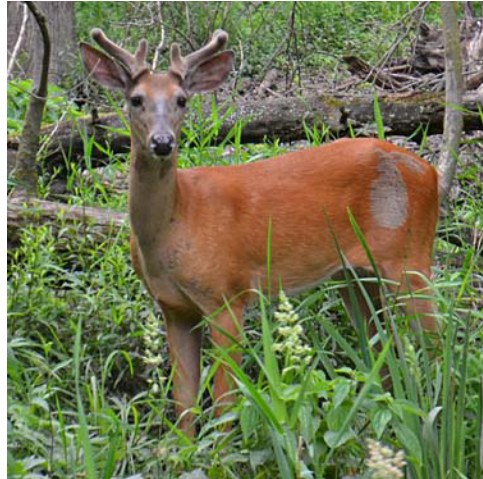


Seed Policy and Guidelines

- Recognizes the need for augmentation of plant populations to achieve restoration goals
- Provides guidance for achieving augmentation goals while balancing risks of inbreeding depression and loss of local adaptation
- Recognizes that closer sources for native plant materials are generally preferred but that flexibility is needed
- Provides guidance for documentation of introducing plant materials, including guidance for working with vendors, and for monitoring outcomes
- Gives guidance specific to FPCC sites and includes consideration of changes in future conditions with climate change
- Includes list of plant species native to Cook County

Deer Populations: Impacts and Management Solutions

- Economic impacts associated with deer overabundance include damage to crops and ornamental plants
 - Economic damages also include deer-vehicle collisions
 - High densities of deer create a heightened risk of disease transmission between deer (e.g., Chronic Wasting Disease) and support large populations of disease vectors, such as ticks that spread Lyme disease
 - Deer overabundance negatively impacts the native plant and animal communities and encourages the spread of exotic species
 - Beyond disease transmission, deer overabundance has numerous other negative impacts on deer health
- Alternatives to population control were evaluated: repellents, contraception, capture and translocation, and culling
 - Alternatives are examined by looking at scientific literature, and the strategies and results of other land-management programs





Implementing Prescribed Fire

Fire is a widely used management tool to maintain high natural quality in disturbance-dependent ecosystems, such as prairies, savannas, and woodlands.

- The smoke created by burning may lead to concerns, particularly in areas where preserves are in close proximity to residential and commercial development



- Emissions from prescribed burning are considerably less than many common sources in developed environments, such as lawn mowers, and well below limits established for workers by the Occupational Health and Safety Administration (OSHA)
- Natural resource managers go to great effort to limit the overall impacts of controlled burns and to limit burns to safe wind conditions, thereby limiting the spread of smoke

When proper procedures are followed, the short-term emissions of potentially harmful gases and particulates associated with prescribed burning are minimal and unlikely to affect public health.

Monitoring Natural Resources

Effective conservation and management decision making requires tracking the condition of natural resources, and tracking progress made toward our management goals.

- Given the ambitious FPCC goal of restoring 30,000 acres to high natural quality, monitoring protocols have been designed to help track the current and changing condition of FPCC lands
- PRI developed monitoring guidance for plant and bird communities
- Plant-monitoring efforts include comprehensive written guidance, hands-on staff training, and assistance with data collection, quality control, and data analysis
- Future monitoring plans will provide guidance on additional taxonomic groups

- Monitoring plans will integrate monitoring efforts with restoration priorities and the computerized information management system

Taxon-specific and comprehensive monitoring plans drive informed management decisions and facilitate the use of web-based tools for sharing restoration progress with conservation partners and the public.



Water Resources in the Forest Preserves of Cook County



Effective management of hydrology and stormwater issues in the Forest Preserves requires descriptions of the watersheds. PRI provided FPCC with an interactive digital tool that describes water resources in the Preserves. Illinois State Water Survey (ISWS) scientists evaluated areas upstream and downstream of 15 selected landscape units within the Preserves. The methodology and tools used for identifying the best locations for additional study can be adapted for use by watershed or community planners to locate sites with the greatest potential to serve their development priorities and achieve the desired ecosystem benefits.

The analysis includes:

- **Definition of tributary drainage areas, land use, soil types, and topography**
- **Metropolitan Water Reclamation District waterways data**

- **Information from Forest Preserve staff about known stormwater and flood related problems**
- **Information from other watershed stakeholders about stormwater and flooding concerns**
- **Compilation and integration of data into a geospatial database platform, using Geographic Information System (GIS) tools**

Primary Objectives

Identify, quantify, and prioritize areas for stormwater management efforts that will benefit multiple drainage systems and multiple stakeholders simultaneously.

Identify those Forest Preserve priority landscape units with greater potential for benefiting from management efforts.

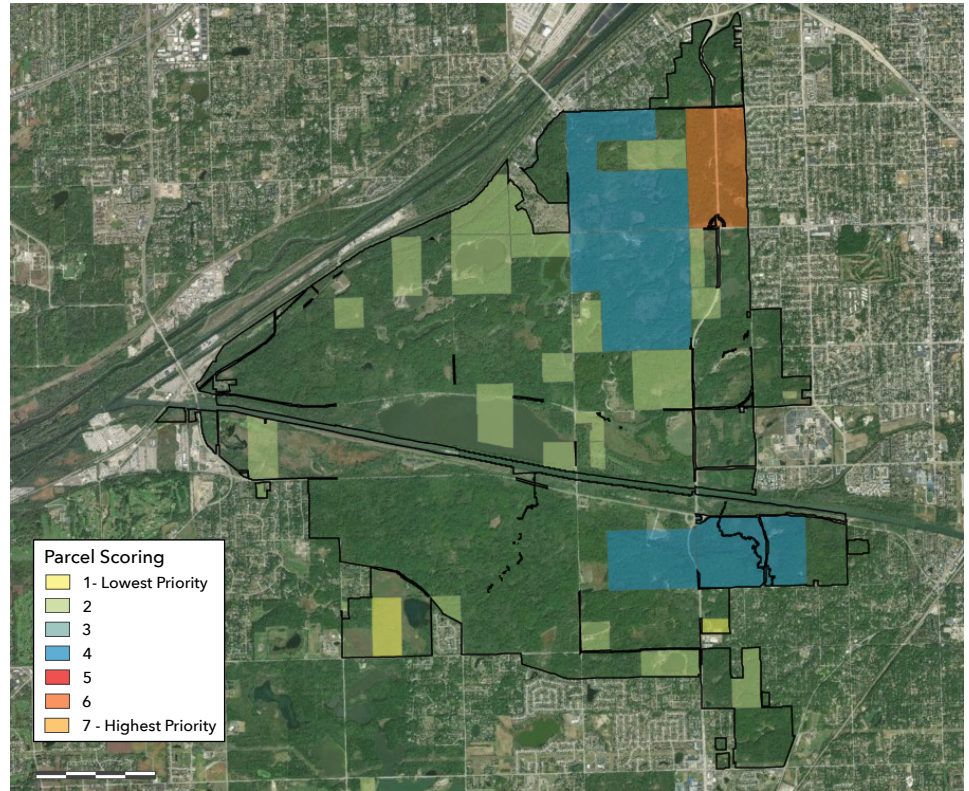
Benefits of Water Resource Analysis

Multiple objectives can be evaluated with this data, depending on the goals of the stakeholders.

The interactive GIS database can be manipulated to respond to changing opportunities, stakeholder priorities, single events, and long-term management goals.

The GIS model identifies areas outside the Forest Preserve where interagency cooperative management efforts can improve ecological and economic benefits for the shared watershed.

Stormwater management is a critical issue in Cook County. This tool allows us to make informed decisions affecting multiple stakeholders.



Palos Landscape Unit: Watershed Basin Priority Analysis

Cultural Resources in the Forest Preserves of Cook County



People have been living in the Chicago region continuously for over 12,000 years and the entire history of human occupation in Cook County is found in the archaeological sites preserved within the Forest Preserves—

from the first Paleoindian travelers who entered the area 12,000 years ago after retreat of the glaciers to families living in large villages along the rivers in AD 1200 to early European explorers trading with Native American entrepreneurs to German prisoners-of-war living in barracks on Forest Preserve property during WWII.

These archaeological sites contain information about how we lived and organized ourselves in the past and how we used and altered our natural environment.



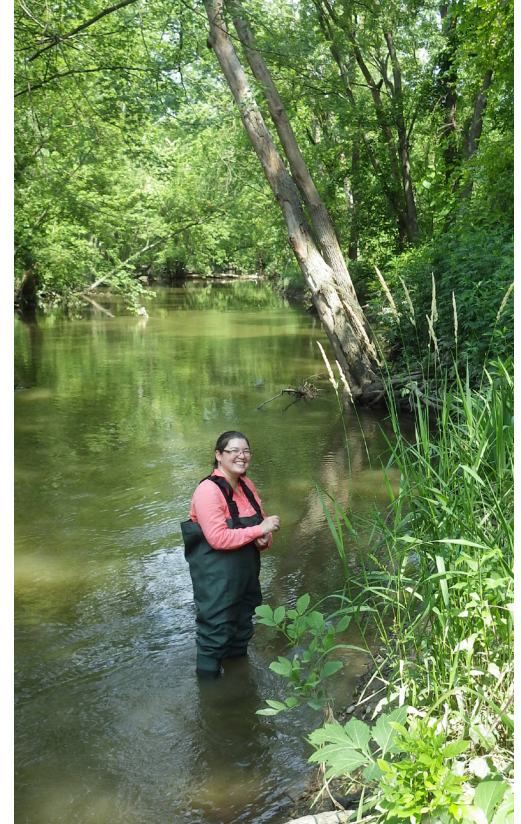
The Forest Preserves contain nearly half of the known archaeological sites in Cook County. The majority of sites located outside the Preserves have been destroyed or severely impacted by urban development. Cultural resources are non-renewable resources. *Once destroyed, the information they contained about our collective past is gone forever.* Protection of our cultural resources is critical to the FPCC mission.

When these non-renewable cultural resources are destroyed, we lose connections with the past, to our common heritage, and to our shared sense of place.



Illinois State Archaeological Survey (ISAS) scientists identified the following management goals for protecting our cultural resources:

- Evaluate the condition and significance of known sites
- Find and evaluate new sites through scientific searches and analysis
- Assist FPCC in necessary compliance with state and federal legislation
- Develop immediate and long-term management recommendations
- Maintain and update resource maps and databases
- Educate the public, FPCC staff, and partners about prehistory and early history of Cook County and importance of cultural resource preservation



2014 Cultural Resource Baseline

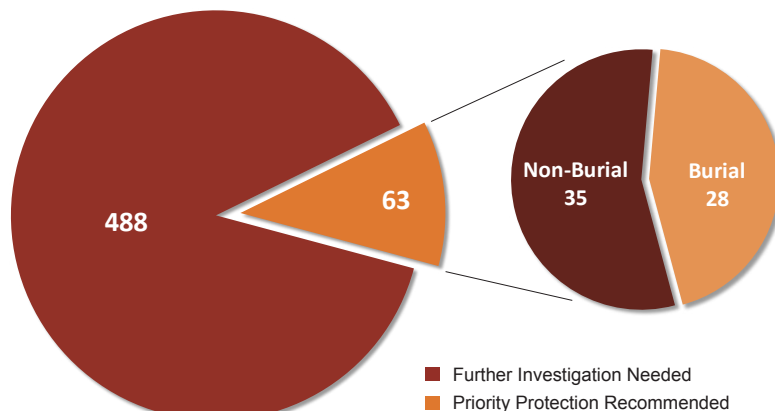
In 2014, the boundaries, integrity, and significance of most of the 551 recorded archaeological sites in the Preserves were unknown. At least *63 sites were placed into High Priority Protection status* because they either contained human burials or were sites of regional significance.

Also, given the relatively small amount of scientifically investigated area within the Forest Preserve completed to date, it was evident that *the Preserves likely contain hundreds of as yet undiscovered archaeological sites.*

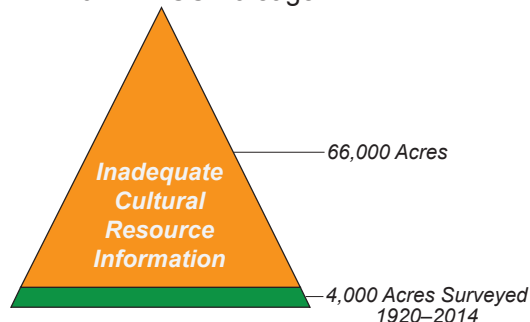
Cultural Resource Management Threats:

- Erosion
- Recreation
- Capital Development
- Looting and Vandalism

2014 Archaeological Site Status: 551 Sites

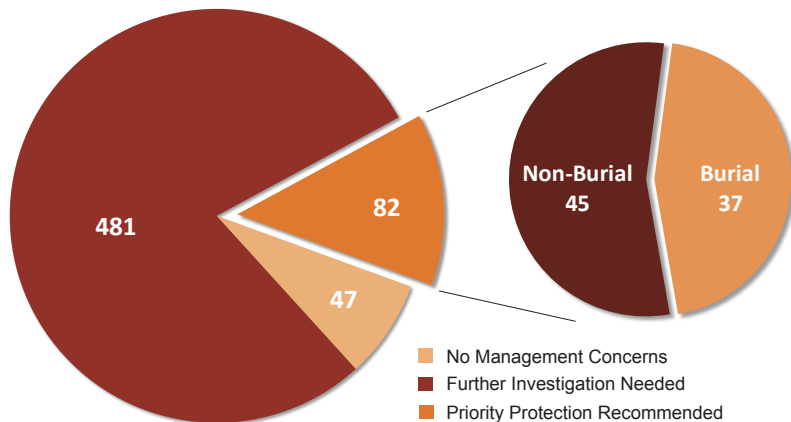


2014 FPCC Acreage



2018 Cultural Resource Status

2018 Archaeological Site Status: 610 Sites

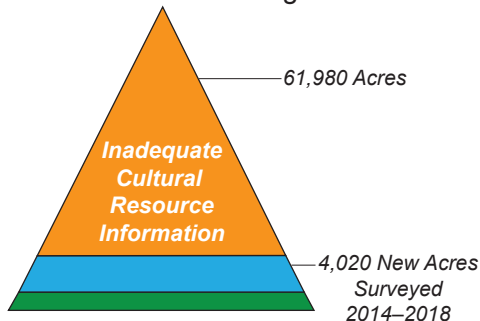


Management efforts over the last 5 years include *field survey of 4,020 new acres, and identification of 59 new sites.*

Management priorities and protocols have been developed for all 610 archaeological sites currently known to be present on FPCC lands.

Archaeological sites cannot be protected if Forest Preserve staff do not know where they are located or know the nature of current or potential threats to these sites.

2018 FPCC Acreage



State and Federal Legal Compliance:

56 Technical Reports Submitted

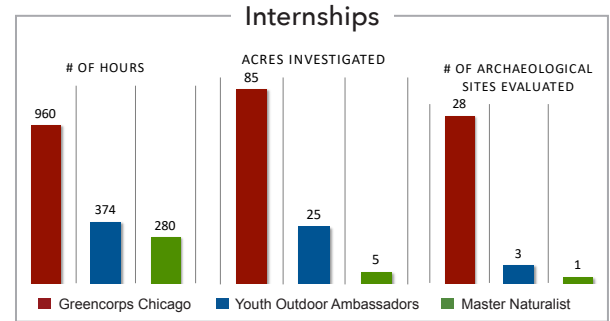
137 Site Documents Submitted

29 Sites Added into INPC Protection 2014-2018

Public Engagement



- 47 Public Events Reaching 6,740 People



Developing Community Connections to Cultural Resources

Blue Star Memorial Woods: North Zone

Camp Skokie Valley was the largest Civilian Conservation Corps (CCC) camp in the United States in the 1930s.

- Over 2,000 men housed
- Men built many public facilities in the Chicago Area, including Skokie Lagoons
- Barracks, latrine, and shower foundations, roadways, walkways, and landscaping from camp are still present

In 2016, the FPCC on-site manager uncovered the shower/latrine foundation for CCC African American Company 605, one of two African American companies housed at Camp Skokie Valley.

ISAS archaeologists are giving public tours of these sites. Local residents are leading research, preservation, and interpretation efforts.

Camp Glenview was a WWII German prisoner-of-war camp that reused a small portion of the older CCC Camp Skokie Valley facility

- About 200 POWs lived here for 2-3 years toward end of WWII
- POW guard tower foundation, brick walkways, and other remains of this camp are still present

*These sites are uniquely situated
for hands-on community
preservation and interpretation
projects*





Integrating Natural and Cultural Resource Management Solutions

McMahon Woods: Southwest Zone

The **Palos Archaeological Site** is one of the most important archaeological sites held by the Forest Preserves of Cook County.



The site dates from the early 1600s onward, and contains significant amounts of information about the initial interactions of Europeans and Native Americans in the Chicago area.

Excavations from 1968 to 1985 found over 70,000 artifacts including:

- Pottery
- Stone Tools
- Bone and shell tools and ornaments
- Food remains
- European trade goods like glass beads and brass artifacts

Decades of illegal looting and off-road vehicle traffic have damaged this site and caused the irreplaceable loss of important information.

The removal of invasive species improved the quality of this Illinois Nature Preserve Buffer Parcel and now discourages illegal looting and vehicle traffic.

Including Cultural Resources in Early Stage Development Plans

Camp Shabbona Woods: South Zone

7 Prehistoric Archaeological Sites

Fieldwork completed by ISAS archaeologists in advance of Shabbona Campground construction identified 7 archaeological sites in and around the campground area.

The artifacts found tell us that people have been living on these ancient sand ridges for almost 5,000 years: from 3,000 BC through AD 1600.

Over 15,000 artifacts were found, during field survey and excavations, including:

- Pottery
- Stone tools
- Animal (food) remains

The original campground construction plans would have destroyed parts of these important archaeological sites.

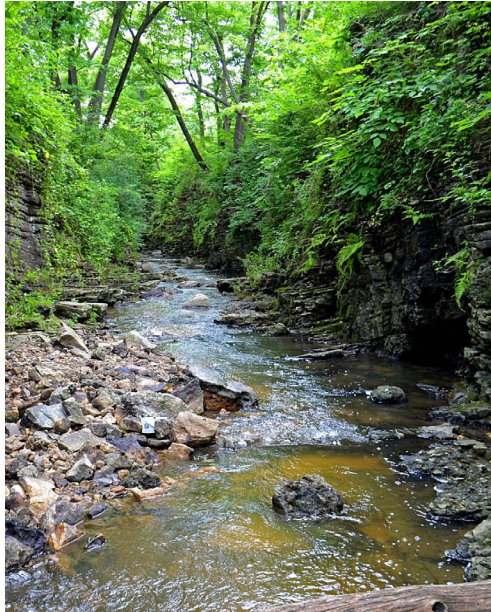
ISAS and FPCC staff worked with campground engineers and contractors to redesign the campground well before construction began.

Campground plans were easily redesigned to avoid and protect these important cultural resources.



Measures of Success

The Natural and Cultural Resources Master Plan, and our partnership with the Prairie Research Institute, provides the Forest Preserves of Cook County with interdisciplinary solutions to complex resource management issues.



- **30,000** acres of land identified for habitat restoration
- **7** large-scale restoration projects initiated based on prioritization analysis
- Identified at least **3** areas eligible for Illinois Nature Preserve status
- **4,000** acres surveyed and **610** archaeological sites evaluated
- **203** resource-specific management documents completed
- over **50** public events reaching more than **6,800** constituents
- **100** interns working with PRI scientists in resource management efforts

FPCC Continues as National Leader in Urban Conservation Movement

Our present and future depend on the coexistence of our natural and urban areas. In a county of 5 million people, the FPCC is uniquely positioned to build upon its century-long commitment to urban conservation.

Effective stewardship requires dedicated financial resources, broad scientific expertise, strong community support, and the means to measure results.

There are significant economic, environmental, and human benefits to investing in long-term resource management. The integrated management approach developed within the NCRMP is a critical component to achieving our Next Century Conservation Plan goals.

Prairie Research Institute
University of Illinois at Urbana-
Champaign
615 E. Peabody Drive, MC-650
Champaign, IL 61820
<http://www.prairie.illinois.edu>

Illinois Natural History Survey
1816 South Oak Street, MC-652
Champaign, IL 61820
<http://inhs.illinois.edu>

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Contributors

Illinois Natural History Survey
Thomas J. Benson, Senior Wildlife Ecologist

Illinois State Archaeological Survey
Paula Porubcan Branstner, Coordinator, NIFS
Paula Bryant, Staff Archaeologist, NIFS
Jenny Benish, Staff Archaeologist, NIFS

Illinois State Water Survey
George Roadcap, Hydrogeologist
Glenn Heistand, Senior Hydraulic Engineer

Illinois State Archaeological Survey
Central Business Office
209 Nuclear Physics Lab, MC-571
23 East Stadium Drive
Champaign, IL 61820
<http://www.isas.illinois.edu>

Northern Illinois Field Station (NIFS)
21 North Union Street
Elgin, IL 60123

Publication Design
Marcia L. Martinho, Graphic Designer/Illustrator/
Photographer, ISAS

Forest Preserves of Cook County
John McCabe, Director of Resource Management
Charles O'Leary, Deputy Director of Resource
Management

Illinois State Water Survey
2204 Griffith Drive, MC-674
Champaign, IL 61820
<http://www.isws.illinois.edu>



About the Forest Preserves of Cook County

The Forest Preserves of Cook County is the oldest preserve system in the nation, maintaining more than 69,000 acres of open land for the education, pleasure, and recreation of the public. We strive to protect and restore the county's diverse ecosystems, so all our unique native plants and animals can live and thrive. Each year, millions of people use these lands and facilities to enjoy or study nature, bicycle, hike, fish, cross-country ski, picnic, golf, canoe, or simply relax in a large preserve that leaves urban life behind.

Forest Preserves of Cook County

General Headquarters, 536 N. Harlem, River Forest, IL 60305

fpdcc.com

Toni Preckwinkle, President

Forest Preserve District Board of Commissioners

Richard Boykin, 1st District

Dennis Deer, 2nd District

Jerry Butler, 3rd District

Stanley Moore, 4th District

Deborah Sims, 5th District

Edward M. Moody, 6th District

Jesus G. Garcia, 7th District

Luis Arroyo, Jr., 8th District

Peter N. Silvestri, 9th District

Bridget Gainer, 10th District

John P. Daley, 11th District

John A. Fritchey, 12th District

Larry Suffredin, 13th District

Gregg Goslin, 14th District

Timothy O. Schneider, 15th District

Jeffery R. Tobolski, 16th District

Sean M. Morrison, 17th District

Arnold Randall, General Superintendent

