

OPENLANDS PROPERTY MANAGEMENT PLAN

Santos Property

North Side of O'Brien Road, Hebron Township, IL (Hackmatack National Wildlife Refuge)

SECTION 1: PROPERTY INFORMATION

Property Address: North side of O'Brien Road, about three quarters of a mile west of Johnson Road, in Section 19, Hebron Township in unincorporated McHenry County, Illinois.

Legal Description (Section, Township, Range, County): Portions of the East 30 acres of the Southwest Quarter of the Southwest Quarter of Section 19, Township 46 North, Range 7 East of the Third Principal Meridian, in McHenry County, Illinois, described as follows:

Parcel 1

The North Half of the East 10 acres of the Southwest Quarter of the Southwest Quarter of Section 19, Township 46 North, Range 7 East of the Third Principal Meridian, in McHenry County, Illinois.

Parcel 2

The South Half of the East 10 acres of the Southwest Quarter of the Southwest Quarter of Section 19, Township 46 North, Range 7 East of the Third Principal Meridian, in McHenry County, Illinois.

Parcel 3

The North Half of the East 30 acres (excepting the North Half of the East 10 acres and the North Half of the West 10 acres therefrom) of the Southwest Quarter of the Southwest Quarter of Section 19, Township 46 North, Range 7 East of the Third Principal Meridian, in McHenry County, Illinois.

Parcel 4

The South Half of the East 30 acres (excepting therefrom the South Half of the East 10 acres and the South Half of the West 10 acres) of the Southwest Quarter of the Southwest Quarter of Section 19, Township 46 North, Range 7 East of the Third Principal Meridian, in McHenry County, Illinois.

Parcel 5

The North Half of the East 30 acres (excepting therefrom the North Half of the East 20 acres) of the Southwest Quarter of the Southwest Quarter of Section 19, Township 46 North, Range 7 East of the Third Principal Meridian, in McHenry County, Illinois.

Parcel 6

The South Half of the East 30 acres (excepting therefrom the South Half of the East 20 acres) of the Southwest Quarter of the Southwest Quarter of Section 19, Township 46 North, Range 7 East of the Third Principal Meridian, in McHenry County, Illinois.

Acreeage: 30 acres in six parcels (PINs 03-19-300-006 through 03-19-300-011) per ALTA survey.

Location Information and Regional Context:

e.g. regional project connections, geological or natural community history, etc.

The Santos property is located in rural Hebron Township, Illinois and falls within the Alden Sedge Meadow Core Area of Hackmatack National Wildlife Refuge ("Hackmatack"). The property is comprised

of six parcels totaling 30 acres. It is a pre-acquisition for Hackmatack and will eventually be transferred to the McHenry County Conservation District (“MCCD”) or the U.S. Fish & Wildlife Service (“USFWS”) for permanent protection.

McHenry County has a glaciated landscape with excellent farmland soils and variable topography. The county is home to 86 known species on the Illinois endangered and threatened list, with three of those species cross-listed as federally endangered or threatened. The County’s Nippersink Creek watershed serves as the anchor for Hackmatack’s footprint and it is designated as a Biologically Significant Stream in the state of Illinois, as well as a Class A stream of high quality.

The Santos property is surrounded by farmland, protected conservation land, and rural residences on large lots, all characteristic of this rural area of McHenry County. Most farmland in the area is under conventional corn and soybean production. MCCD’s Bailey’s Woods / Winding Creek Conservation Area borders the Santos property on its eastern boundary.

Land Use History:

e.g. past ownership history, adjacent land uses including public lands, potential adjacent threats, land use history such as agriculture or development, etc.

The land has historically been under agricultural use.

~~<ADD ADDITIONAL HISTORICAL OWNERSHIP DATA>~~

~~Nearby-Adjacent protected conservation lands include the following Winding Creek Conservation Area owned by McHenry County Conservation District (“MCCD”) landholdings: Alden Sedge Meadow Conservation Area (adjacent to the south) and Winding Creek Conservation Area (2.2 miles to the southeast) and the Wexler property, owned by Openlands. Several private conservation easements held by both The Land Conservancy of McHenry County and MCCD are also located in the surrounding areas of Alden and Hebron, not adjacent to the Santos property. Alden Sedge Meadow, owned by the McHenry County Conservation District, is located nearby to the north.~~

Topography:

e.g. dominant landforms or glacial features

~~The property has a rolling topography, dropping in elevation about 70 feet from the hilly central portion of the parcel down to the lower, flatter areas in the southernmost third of the site. is sloping from west to east, dropping about 30 feet in elevation from the west side to the east. Evidence of the channel cut by the flow of water from west to east across the northern PINs is clearly evident on the topographic map.~~

Soils:

e.g. soil type description, drainage, runoff and erosion potential, agricultural potential, etc.

The property contains the following soil types: 198A (Elburn silt loam); 297B (Ringwood silt loam); 310B (McHenry silt loam); 361C2/D2/D3/E (Kidder loam); and 153A (Pella silty clay loam).

All of the above-listed soils, with the exception of 153A, are considered well-drained, upland soils. 153A is only considered prime farmland if drained and are subject to issues with water ponding and poor tilth. The site consists of about 90 percent cropland, about 7.5 percent other farmland and about 2.5 percent right-of-way.

Hydrology:

e.g. presence of surface water on property such as streams or wetlands, potential for flooding, general water quality, etc.

The property is located in a Zone-X floodplain which is not a high flood risk zone. About six percent of the site is designated as an ADID Farmed wetland, located on Parcels 1, 2, and 3. <ADD HISTORIC DATA RELATED TO CREEK>

Natural Communities and Wildlife:

e.g. natural community type, evidence of remnant communities, endangered or threatened species, known wildlife species, etc.

<TO BE COMPLETED DURING SITE VISIT>

Exotic Species:

e.g. species observed, distribution, frequency, etc.

<TO BE COMPLETED DURING SITE VISIT>

Cultural and Aesthetic Resources:

e.g. historic structures, archaeological resources, etc.

No structures are located on the property and no known archaeological or cultural resources are present.

Restrictions:

e.g. any leases, mineral rights, right-of-ways, easements, etc. associated with the property, if applicable.

There is a farm lease on the property's croplands for the 2019 growing season. The lease will be negotiated to an acceptable termination date during the purchase transaction. <UPDATE AFTER TITLE WORK>

SECTION 2: MANAGEMENT PLAN

General Restoration and Management Goals:

Provide a brief overview of project vision and purpose, e.g. maintain land health, restore pre-settlement vegetation, target habitat for key species, etc.

The Spha-Santos property can be divided into three natural community management units: the Stream Unit, consisting of the tertiary stream corridor and surrounding riparian area; the Wetland Unit, consisting of the pocket wetland area in the southeastern across the northern portion quadrant of the property; and the Prairie Unit, consisting of cropland awaiting restoration into grassland bird habitat.

The purpose of restoration and management is to create resilient wildlife habitat in Hackmatack. This includes restoration activities that support recreated and remnant pre-settlement natural communities. It also moves beyond pre-settlement conditions into the unknown future, where we must plan ahead for adaptive management as the region is altered by climate change. Potential adaptive management approaches for the ~~Sphar Santos~~ property include stream and wetland restoration aimed at reducing sediment transport to the Nippersink Creek, bank grading and riffles in the creek to create cooler microclimates for aquatic species that could be affected by higher temperatures and longer drought periods. It also includes a focus on high-quality, resilient grassland habitat that supports declining bird species affected by climate change and offers opportunities for carbon sequestration. This management plan will continue to be refined and updated as adaptive management plans are created, implemented, and measured.

Goals for each unit are as follows:

1. Stream Unit: Reestablish native wetland habitat where feasible and use stream-bank and in-stream methods to reduce sediment transport into the Nippersink Creek. Assess and enhance aquatic habitat to support native fish and mussel populations.
2. Wetland Unit: Clear invasive brush and reestablish appropriate herbaceous layer. Assess surrounding hydrology to determine whether expansion of wetland area, removal of tiles, and other substantial hydrological work is desirable; if so, implement this work.
3. Prairie Unit: Reestablish native mesic prairie habitat to encourage soil regeneration and provide diverse native vegetation that supports grassland bird species and other wildlife highlighted as priorities in Hackmatack's federal refuge goals.

Note that ~~additional restoration activities will be required upon removal of the buildings on the property, including grading of post-demolition areas, removal of trash and debris, and restoring the Santos property may require seeding with an appropriate cover crop prior to seeding native prairie plants, followed by a seed mix and management activities. This area contains some mature trees. These should be assessed as far as species type, age, and condition to determine whether arborist care is required or if the trees should be removed to eliminate hazards or facilitate long-term habitat restoration goals in this area.~~

Key Objectives:

List specific tasks that are instrumental in reaching goals, e.g. discourage brush encroachment, control invasive species, restore native vegetation, etc., and include reason for each objective

It is recommended that management objectives related to the above goals include the following:

1. Stream Unit: Survey existing natural communities. Perform aggressive invasive species control and long-term follow-up in areas dominated by ~~reed-canary grass and other~~ problematic species. Assess and enhance aquatic habitat to support native fish and mussel populations, e.g. potential for building riffles, addressing erosion with bank grading and stabilization measures, etc.
2. Wetland Unit: Clear invasive brush and assess condition and distribution of any native tree species. Reestablish appropriate herbaceous layer. Assess surrounding hydrology to determine whether expansion of wetland area, removal of tiles, and other substantial hydrological work is feasible, desirable, or necessary. If so, additional plans will be required to implement this work.

3. **Prairie Unit:** Install cover crop after farm lease terminates. Plant a custom native prairie mix to encourage soil regeneration and establish a baseline prairie habitat. Ongoing management activities such as prescribed burning and invasive species control will be required. Over-seeding may be performed as necessary.

~~The specific tasks required to restore the building area once structures are removed will be dependent on a variety of factors related to the demolition process, County and local ordinances, historic preservation law, and so on. This management plan should be updated accordingly once more information is provided by the Phase 1 Environmental Assessment and other surveys during due diligence.~~

Recommended Management Practices:

Provide overview of tools and methods used to complete objectives, e.g. prescribed fire, herbicide treatment, selective thinning, etc.

Management should be performed in accordance with regional industry practices. Tools and methods may include prescribed burning; herbicide application; selective thinning; mowing; use of a brush hog or other machine for heavy brush overgrowth; hand or machine seeding; erosion control measures such as erosion matting, blanket, or rip rap; plant plugs; and tree and shrub installation.

Timeline (per funding availability):

Task	Anticipated Completion
Stream Unit:	TBD
1) Conduct a survey of water quality conditions and aquatic biodiversity	TBD
2) Use collected data to develop a riparian restoration plan	TBD
3) Implement restoration plan activities (TBD, but expected to include aggressive invasives management and planting/seeding, as-well-as in-stream and stream bank restoration to reduce sediment transport)	TBD
4) Perform follow-up monitoring of water quality conditions and aquatic biodiversity	TBD
5) Perform follow-up management as needed	TBD
Wetland Unit:	TBD
1) Assess existing native tree-plant species, condition, and distribution, if applicable	TBD
2) Perform invasive species management, including brush removal	TBD
3) Perform seeding and planting to reestablish herbaceous layer	TBD
4) Perform follow-up management as needed	TBD
5) Assess feasibility of expanding wetland area, removing tiles, etc.	TBD
6) If wetland expansion is determined desirable, engage a consultant to provide further assessment and planning	TBD
Prairie Unit:	TBD

1) Install cover crop after farm lease terminates	TBD
2) Install a custom prairie seed mix	TBD
3) Perform invasive species control and follow-up management as needed	TBD
Building Demolition Area Restoration:	TBD
1) Tasks to be determined at a later date when more information is available	TBD

Additional Remarks:

This management plan serves as a working document that may be revised as necessary. The management plan was created on December 9, 2019 by

Last updated on December 9, 2019

SECTION 3: MAPS

<UNDER PRODUCTION>

