Property Identifiers
Property Name and Designation: QUINCY BLUFF AND WETLANDS STATE NATURAL AREA
County: ADAMS
Property Acreage: WDNR – 3696, The Nature Conservancy (TNC) - 1652 (transfer to WDNR spring 2013)
Forestry Property Code(s): #109
Master Plan Date: None. Estimated start date for an NR44 compliant Master Plan: 2020.

Property Assessment

GENERAL PROPERTY DESCRIPTION

Quincy Bluff and Wetlands State Natural Area (Quincy) is a mix of state and TNC-owned property that lies 6 miles south of the City of Adams, 2 miles east of Lake Petenwell, and is bounded by mainly privately owned woodland and some farmland to the west. The property has an irregular boundary where County F can be found to the north, Hwy 13 to the east, the village of White Creek to the south and County Z to the west. Three small parking areas are located off 14th Drive, 14th Court and 16th Ave.

See attached aerial photo ("quincy 2010") and topo map ("quincy topo").

LANDSCAPE AND REGIONAL CONTEXT

Quincy lies within the Central Sand Plains Ecological Landscape/Wisconsin Central Sand Plain sub-section, and primarily within Land-type association (LTA) 10 - Adams County Bluffs. This area is characterized by an extensive, nearly level expanse of lacustrine and outwash sand that originated from a huge Glacial Lake Wisconsin. Exposures of eroded sandstone bedrock remnants as buttes, mounds and pinnacles are unique to this Ecological Landscape. These types of geological features are not found elsewhere in the state and some of them support rare and specialized plants and animals.

Extensive oak and pine forests are common and can be managed at all scales and age classes. Good opportunities exist to develop and maintain old-growth characteristics for the mixed Central Sands Pine-Oak Forest as well as some of the drier oak and pine types at certain locations. Early successional forest management opportunities are also good here, for jack pine, "scrub" oak and, locally, aspen. Subsequently, integration of forest and barrens management is possible and highly desirable in some areas because of the type, suitability, and condition of the habitats present, the extensive acreage of public lands, and the relatively low levels of development. Use of prescribed fire as a management tool may be more feasible at large scales here than elsewhere in southern WI, and is appropriate for many forest, savanna, grassland, and wetland communities. The spread of invasive plants threatens natural communities and other habitats and is a growing management concern.

Rare communities such as Oak and Pine Barrens, Coastal Plain Marsh, White Pine-Red Maple Swamp, are well-represented in the Central Sand Plains and support many rare species. Remnant barrens warrant additional recognition, protection, restoration and expansion, and in many areas could be managed compatibly with dry forests of jack pine and oak. East of the Wisconsin River extensive "surrogate grasslands" are managed for rare and declining grassland animals, including Wisconsin's best populations of the Greater Prairie-chicken and regal fritillary. In general, there are numerous opportunities to connect high-quality remnants of barrens, dry forest, sand prairie and other habitats and manage at multiple scales.

Abundant wetlands provide excellent large-scale management opportunities, especially in and around the bed of the former Glacial Lake Wisconsin. Large acid peatland complexes support many species (plants and animals) known mostly from northern Wisconsin, along with species that are rare in the north. These wetlands can be managed in ways that are compatible with surrounding forest and/or open habitats, to maximize their utility for sensitive species.
The Central Sand Plains is a major concentration area, of rare species, including several that are globally imperiled. A number of disjunct species, sometimes far from their primary ranges, are present. In addition, the landscape's location and its wide variety of habitats allow many plants and animals to occur near their southern or northern range limits.

**Hydrology:** Large areas of wetlands and a number of generally low-gradient streams that range from small coldwater streams to large warmwater rivers. Natural lakes are rare, and are limited to riverine floodplains and a few scattered ponds within the bed of extinct Glacial Lake Wisconsin. The hydrology of this Ecological Landscape has been greatly disrupted by past drainage, channelization, impoundment construction, and groundwater withdrawal.

**Current Land Cover:** The eastern portion of the Central Sand Plains, in which Quincy lies, is a mosaic of cropland, managed grasslands and scattered woodlots of pine, oak, and aspen. Many of the historic wetlands in the east were drained early in the 1900s and are now used for agricultural purposes.

**QUINCY BLUFF SPECIFICS**

Quincy Bluffs and Wetlands has been designated a State Natural Area (SNA) because it features a significant vast wetland complex with low sandy ridges, wetlands, and seepage ponds situated between sandstone mesas and buttes that rise 100-200 feet. The mosaic of communities here includes northern wet and wet-mesic forest, northern and southern sedge meadow, shrub-carr, pine and oak barrens, and sand prairie. The uplands are forested with jack pine and Hill's oak with a shrub layer dominated by huckleberry, American hazelnut, and early low blueberry. Pennsylvanian sedge is the dominant herb with wild lupine and spreading dogbane common constituents of the understory. Grasses and forbs characteristic of barrens and sandy prairies are found here including big blue-stem, June grass, needle grass, poverty grass, goat's-rue, prairie coreopsis, and rough blazing-star.

Quincy Bluff, which rises 200 feet high and extends for approximately two miles, contains northern dry forest and open cliff communities. Lone Rock, an excellent example of a Driftless Area mesa, features one hundred-foot Cambrian sandstone cliffs. These types of geological features are not found elsewhere in the state and some of them support rare and specialized plants and animals.

Due to its large size and heterogeneous landscape, Quincy Bluff and Wetlands contains essential habitat for a great diversity of species, as evidenced by the numerous designations that have placed upon it:

- Quincy is a designated Land Legacy area, recognizing that its lands and waters will be critical in conserving Wisconsin’s native plants and animals, and their habitats.
- Quincy is a designated Important Bird Area (IBA), noting that: *This site is important to birds of both wetland and barrens habitats, including northern harrier, sandhill crane, whip-poor-will, red-headed woodpecker, willow flycatcher, brown thrasher, sedge wren, blue-winged warbler, field sparrow, swamp sparrow, and bobolink. Several thousand sandhill cranes can be found staging in the sedge meadows in the fall, and golden eagles occur in winter.*

In addition, Quincy has been designated a Conservation Opportunity Area (COA) in the Wisconsin Wildlife Action Plan (WAP) primarily for its “Large Meadows, Fens, and Prairies”. Species of Greatest Conservation Need (SGCN) associated with the plant communities within Quincy include:

Quincy Bluff and Wetlands State Natural Area Interim Forest Management Plan

Dusted Skipper, Mottled Duskywing, Persius Duskywing, Olympia Marble, Bina Flower Moth, Phlox Moth, Graceful Clearwing, Phyllira Tiger Moth, Sprague’s Pygarctia, Limottetix Leafhopper, and Pale Tiger Beetle.


**High Quality Wetland Communities:** Solitary Sandpiper, Blanding’s Turtle, Northern Long-eared Bat, Spatterdock Darner, Ringed Boghaunter, Sand Snaketail, Warpaint Emerald.

**Bedrock communities:** Bullsnake, Yellow-bellied Racer Dusted Skipper, Frosted Elfin, Karner Blue Butterfly.

**CURRENT FOREST TYPES, SIZE CLASSES AND SUCCESSIONAL STAGES**

See attached map of current forest compartments (“quincy cmpts”).

**Oak Forest:** Seedling/Sapling Stands – Young forest type with good mix of black oak, white oak, white pine, jack pine, aspen, and red maple. These stands are early successional areas that, through disturbance, are regenerating nicely and will mature over time.

- **Pole Stands** – Maturing forest types that are middle aged stands, co-dominated by black oak, white oak, white pine and red maple. These areas are middle successional stands where the aspen and jack pine are falling out and red maple, oak and white pines are taking over the sites. Oak Wilt is also present in small pockets within these sites, creating small open areas of low tree densities, within the forest types.

- **Sawtimber Stands** – Mature and over-mature forest type, co-dominated by black oak, white oak, white pine. These areas are middle to late successional stands where the mature black oak is falling out of the system due to Oak Wilt. White pine, jack pine and oak understories usually take over these areas where sunlight can reach the forest floor.

**Aspen Forest:** Seedling/Sapling Stands – Young forest type with usually mixed densities of aspen, red maple, and birch. These stands are early successional areas that, through disturbance, are regenerating nicely and will mature over time.

**Jack Pine Forest:** Seedling/Sapling Stands – Young forest type with good mix of jack pine, black oak, white oak, white pine, aspen, and red maple. These stands are early successional areas that, through disturbance, are regenerating nicely and will mature over time.

- **Pole Stands** – Maturing forest types that are middle aged stands, co-dominated by jack pine, black oak, white oak, aspen and red maple. These areas are middle successional stands where the aspen and jack pine are falling out and red maple, oak and white pines are taking over in the understory. Oak Wilt is also present in small pockets within these sites, creating small open areas of low tree densities, within the forest types.

**White Pine Forest:** Sawtimber Stands – Maturing forest types that are middle aged, dominated by white pine. These stands are late successional species that will mature over the next 100 years. These stands are the seed source for volunteer white pine that are starting to take over surrounding young forest types and barrens restoration projects.
Quincy Bluff and Wetlands State Natural Area Interim Forest Management Plan

**Red Maple Forest:** Seedlings/Saplings - Young forest type with good mix of red maple, white oak, white pine, aspen, and birch. These stands are early successional areas that, through disturbance, are regenerating nicely and will mature over time. Usually these forest types are located where depth to groundwater is shallow and water availability isn’t limited through the growing season.

**Barrens:** Early successional barrens restoration has been an ongoing process within the property boundaries. Natural disturbance along with timber harvest operations induced the habitat restoration areas. Through periodic fire along with timber sale establishment, to control undesirable forest species, barrens restoration will be an ongoing project where sites allow.

**RARE SPECIES:** Within this vast ecosystem are numerous rare plant and animal species including 1 bird, 3 dragonflies, 1 turtle, 2 butterflies, and 9 plants. Some examples include: cross milkwort (polygala cruciata), virginia meadow beauty (rhexia virginica), fragile prickly pear (opuntia fragilis), ringed boghaunter dragonfly (williamsonia lintneri), ebony boghaunter dragonfly (williamsonia fletcheri), warpaint emerald dragonfly (somatochlora incurvata), and a tiger beetle (cicindela patruela huberi).

**HIGH VALUE CONSERVATION FORESTS (HCVF) OR OTHER RESOURCES/ NATURAL COMMUNITY TYPES LIMITED IN THE LANDSCAPE**

Ecological sites containing globally, regionally or nationally significant concentrations of biodiversity values (e.g. endemism, endangered species) and forests that are in or contain rare, threatened or endangered ecosystems meet Wisconsin’s criteria for HCVF. Quincy meets many of these standards as demonstrated above. These justifications include: 1) Habitat for species classified endangered, threatened, or priority species of greatest conservation need, 2) globally rare savannas, including oak openings, oak woodland, oak barrens, and pine barrens, 3) large intact examples of otherwise more common natural ecosystems, 4) geological Features of Significance, and 5) animal Concentration Spots.

**BIOTIC INVENTORY STATUS:** Master plan biotic inventory not completed.

**CULTURAL AND ARCHEOLOGICAL SITES (INCLUDING TRIBAL SITES):** There are no known archeological/historical sites of concern in the project area per DNR archeologist Mark Dudzik.

**RECREATIONAL USES:** Hunting, trapping, birding and hiking are the primary recreation uses of this property. A snowmobile trail provides access into the eastern interior of the property. Hiking trails provide access to the western areas of the property. The area consists of gently rolling, sandy upland soils interspersed with lowland peat and marshlands. Three dominant sandstone outcrops are found on Quincy, named Quincy bluff, Rattlesnake Mound and Lone Rock.

**INVASIVE SPECIES:** Knapweed is a common invasive on the property with black locust and garlic mustard being found at some access points. There is high potential for invasive establishment due to the access by recreationists.

Known invasives throughout the site include: multi-flora rose, exotic bush honeysuckle, autumn olive, glossy buckthorn, common buckthorn, garlic mustard, thistle, sweet-clover, spotted knapweed, exotic cool-season grasses, purple loosestrife, reed-canary grass, giant reed-grass, and narrow-leaved cattail.

**SOILS:** Most soils formed from deep sand deposits of glacial lacustrine or outwash origin or in materials eroded from sandstone hillslopes and sometimes with a surface of wind-deposited (aeolian) sand. These soils are excessively drained, with very rapid permeability, very low available water capacity, and low nutrient status. In lower-lying terrain where silty lacustrine material impedes drainage, the water table is very close to the surface.
HISTORY OF LAND USE AND PAST MANAGEMENT

Prior to settlement, large areas of marshland covered the area, as well as sand and pine-oak barrens in the slightly elevated areas, and dry forests on top of the bluffs. During the settlement era, the entire region was subject to timber harvest and was probably subsequently burned over by wildfire. Marshlands were drained. The DNR and The Nature Conservancy (TNC) began purchasing acreage in ~1991 and the Quincy Bluff and Wetlands State Natural Area was established in 1993.

To date, forest management has included limited timber harvesting and tornado cleanup (2004). A ~138 acre whole-tree harvest occurred in the winter of 2012-13.

Invasive species control has occurred in various portions of the site, focusing on access lanes/trails. See below for known invasives.

Finally, some prescribed burning has occurred, focusing on an area in the center of the site in which the 2004 blowdown, and subsequent harvest, occurred. TNC has been conducting prescribed burns for many years on their parcels.

FUTURE MANAGEMENT

Overall site objectives are to manage for the long-term perpetuation of a largely open, native community landscape, including a vast wetland complex with low sandy ridges, seepage ponds situated between sandstone mesas and buttes that rise 100-200 feet, and sandy uplands between the two. The mosaic of communities here include northern wet and wet-mesic forest, northern and southern sedge meadow, shrub-carr, oak woodlands, pine and oak barrens, and sand prairie.

Forest Management Objectives:

Forest management objectives are to restore and enhance the full range of barrens seral stages, from very open barrens to oak woodland, as well as some areas with old-growth characteristics, and finally, early successional stages that would be maintained by timber harvests primarily (e.g., jack pine, aspen) – see attached map for reference (“quincy goal”).

Specific Forest Management objectives include:

Open barrens/sand prairie: The condition would be a few scattered trees and many oak grubs with abundant prairie/prairie-like vegetation. Oldfields would be planted to a diverse sand prairie mix. Areas currently forested would have extensive timber harvests, replacing timber with short grubby wooded areas, scattered larger trees and regular 4-7 year fire management cycles.

Oak-pine barrens: These areas would have classic savanna-like canopy structure, with a 10-50% canopy closure composed mostly of oak, especially favoring the white oak group. The canopy would also contain many jack pine. Areas currently forested would be extensively thinned, preferably with a whole tree (biomass) harvest operation, then followed with occasional 8-15 year burns and ground layer species augmentation.

Oak Woodland: These areas will have 50-90% canopy cover with very few saplings and poles present and a few scattered patches of short-statured shrubs. The composition would be mostly oaks, favoring the white oak group, and several white pines with a few jack pines. Areas forested would be thinned from below, removing mostly poles and smaller canopy trees. These areas would receive low-intensity burns approximately every 20 years. Some groundlayer augmentation may occur.

Jack pine/Aspen: These areas are managed primarily with timber harvests, and are primarily jack pine and aspen stands. They would be managed primarily to regenerate jack pine. Upon completion of the harvest, a regenerative fire would occur to stimulate the ground layer and to establish a superb bed for the jack pine seeds.
Old-growth: These areas are to be managed for the development of old-growth forests to provide habitat for those species preferring this late seral stage. These areas tend to occur on islands, or areas otherwise somewhat protected from intense fires that often came from the southwest. The area northeast of Lone Rock is mostly jack pine and would need a regenerative harvest to keep jack pine in the system, but the harvest would be well beyond the normal rotation times.
Approvals:

____________________________________________________         _________________________
Regional Ecologist                                                                              Date

____________________________________________________ __________________________
Forester                                                                                                Date

____________________________________________________ __________________________
Property Manager                            Date

____________________________________________________ __________________________
Area/Team Supervisor                          Date
AIR PHOTO OF QUINCY BLUFF AND WETLANDS STATE NATURAL AREA

Quincy Bluff SNA
QUINCY BLUFF AND WETLANDS STATE NATURAL FUTURE GOALS

Quincy Bluff SNA
Future Goals