Property Identifiers

Property Name: Dunbar Barrens State Natural Area (SNA No. 104)
County: Marinette
Property Acreage: 1,409 acres
Forestry Property Code: 3804
Master Plan Date: Dunbar Barrens State Natural Area Management Plan, 1995

Part 1: Property Assessment
General Property Description

Dunbar Barrens State Natural Area (SNA) features a Pine Barrens community that is part of a large, open landscape located on a gently rolling pitted glacial outwash plain. Aspen, oak, and jack pine forests surround the barrens openings and low granitic outcrops are found scattered throughout the area. Aspen, oak, and jack pine are also scattered throughout the open areas of the barrens. Dominant vegetation consisting of grasses and sedges, and a well-developed shrub layer is present including blueberry, beeberry, prairie willow, sweet fern, sand cherry, hazelnut, and serviceberry. Herbaceous plants include rice grass, poverty oat grass, wintergreen, barren strawberry, and hawkweeds. The site is similar in composition to pre-settlement barrens with broad sweeping prairie vistas and a distinctive panorama. Dunbar Barrens was designated a State Natural Area in 1973.

- **Landscape and regional context**

Dunbar Barrens SNA is located in northern Marinette County in T37N-R18E, Section 16, 17, 20, 21, and 28. The 1,409 acre property is approximately 4-miles west of Dunbar, WI. The entire property is within the Northeast Sands Ecological Landscape (NSEL), which occupies a narrow, diagonal area of northeast Wisconsin. This ecological landscape formed in glacial outwash sand plains (some of them pitted), and has steep outcropping Precambrian bedrock knolls of basalt, rhyolite, or granite. Sandy ground moraines and end moraines are also interspersed in the ecological landscape. This property is part of the globally significant Dunbar Barrens Conservation Opportunity Area (COAs) identified in Wisconsin's Wildlife Action Plan.

Historically, extensive oak/jack pine-barrens and jack pine forests were found in the outwash sand portions of this ecological landscape. Moraines supported forests of hardwoods, red pine, and white pine. Outwash plains often contained pitted depressions, resulting in numerous wetlands and kettle lakes. Most of this area is still forested; aspen predominates, followed by northern hardwoods. Jack pine remains on the outwash plains along with scrub oak. There are several ecologically significant examples of jack pine/oak barren communities. A small percentage of this ecological landscape contains spruce-fir-cedar forest and lowland hardwood forest.

The NSEL contains several important river systems as well as extensive wetlands. The Menominee is the largest river, located on the Michigan-Wisconsin border. The two original state Wild Rivers that were designated in 1965 under the then-new State Wild Rivers Act are in this ecological landscape; the Pine and Pike rivers. A 24-mile reach of the Menominee County section of the Wolf River, from the Langlade/Menominee County line to Keshena Falls, was designated a National Wild and Scenic River in 1968. The Upper Peshtigo River runs through the ecological landscape’s center and includes the Caldron Falls Flowage and the High Falls Reservoir. Water quality in free-flowing rivers and streams is generally good across this ecological landscape, due to a combination of generous forest cover and a lack of significant industrial and other development. This is underscored by the fact that 221 individual rivers and streams, and one impoundment, are designated as either Outstanding Resource Waters (ORW) or Exceptional Resource Waters (ERW).
Dunbar Barrens State Natural Area
Interim Forest Management Plan

Dunbar Barrens SNA lies just to the east of the headwaters of the North Branch Pike
Wild River.

Land ownership surrounding Dunbar Barrens SNA is dominated by Marinette County
Forest, large tracts of private ownerships, and some industrial forest.

- **History of land use and past management:**

  Historically, logging, grazing, and periodic fires maintained the open character of
  Dunbar Barrens SNA in addition to the action of frost in low pockets. Originally
  recognized as being attractive habitat for sharp-tailed grouse, the bird is now absent
  from the barrens after a population peak in the 1950’s. The last recorded observation
  was in 1976.

  To date, maintaining the desired early successional habitat characteristics,
  prescribed fire, along with selective cutting, brushing/mowing firebreaks and interior
  patches, and tree girdling have been used to reduce woody brush and tree species.
  The Pine Barrens is comprised of several actively managed burn units and timber
  stands. However, the number of burn units, burn unit boundaries, and timber stand
  boundaries has changed over time with the acquisition of land and management
  objectives.

**Site Specifics**

- **Timber harvest history and other history:**

  For over 40 years, the department has been harvesting timber from the barrens.
  Most harvests are set-up to expand and maintain the barrens area.

- **Current forest types, size classes and successional stages:**

  About 743 acres (52%) of Dunbar Barrens SNA is forested, with several of the
  stands overlapping into the burn units. Of the forested acres, about 201 acres (27%)
  are scheduled for timber management over the course of the next 50 years. The
  remaining acres are not scheduled for one of the following reasons: it is unsuitable
  for harvest due to low productivity, it is inaccessible, silviculture guidelines need to
  be developed, it is being passively managed, or it is a natural community type where
  timber harvest is not a management approach.

  Aspen is the most abundant timber type, covering about 59% (440 acres) of the
  forested acreage and occurs in seven stands. About 95% of the aspen acreage is
  less than 10 years old, 2% is about 50 years old and the remaining 3% is about 15
  years old. Notable is about 95% of the aspen is located in burn management units
  and is slowly being managed as barrens habitat.

  Scrub oak is the second most abundant forest type on the property making up about
  29% (212 acres) of the wooded acreage and occurs in seven stands. About 79% of
  the scrub oak is less than 20 years old and the remaining 21% is about 100 years
  old. Only 40% or 86 acres of the scrub oak is scheduled for timber management
over the next 50 years. The rest of the scrub oak is located in burn management units and is being managed as barrens habitat.

The third largest forest cover type is red oak at 9% (66 acres) of the forested area. About 52% is less than 10 years of age and 48% is about 75 years old.

The remaining forest cover types represent much smaller components as follows: jack pine 3% and red pine <1%.

- **Biotic Inventory Status:**

Biotic inventory has not taken place on this property.

- **Deferral/Consultation Sites:**

None have been designated.

- **High Value Conservation Forests (HCVF) or other resources/natural community types limited in the landscape:**

A large portion of the SNA includes an Element Occurrence for Pine Barrens, which is considered rare in northern Wisconsin and an example of HCVF 1.1 (rare both globally and in the state and with a high quality ranking).

- **Rare species:**

At present on the property, the Wisconsin Department of Natural Resources Natural Heritage Inventory (NHI) system documents a threatened bird, several species of concern of terrestrial invertebrates, a rare natural community, a rare mammal, and a species of concern plant. The NHI Database will be screened prior to any management activities taking place, and necessary avoidance measures will be followed to avoid conflict and protect and preserve the resource. Publicly available version for those reports can be viewed on-line from the Wisconsin Department of Natural Resources website.

- **Invasive species:**

Non-native invasive plants are present at Dunbar Barrens SNA and in the surrounding landscape. Fortunately, populations of these species are small. Invasive species tend to be associated with recreational and anthropogenic disturbance. They pose the greatest immediate threat to native species diversity, rare species habitats, and/or high-quality natural communities.

Spotted knapweed, white sweet clover, and leafy spurge occurs primarily along, roads, trails, and disturbed firebreaks on the property. Spot treatments of herbicide have been used in these areas to control the invasive species, which is monitored and recorded annually.
Forestry best management practices guidance for invasive species are followed along with additional precautionary measures to limit the occurrence and spreading of any invasive species on the property.

- **Soils:**

  Dunbar Barrens SNA is found within the Sand Lake Plains (212Tc17) Land Type Association. The characteristic land form pattern is undulating outwash plain and morainic knolls. Soils are predominantly excessively drained loamy sand over non-calcareous sand or gravelly sand outwash. Sand Lake Plains soil association is Vilas-Pence-Loxley and Sarona-Padus.

**Cultural and Recreational Considerations**

- **Cultural and archeological sites:**

  The area of northeastern Wisconsin in which Dunbar Barrens SNA is located is almost completely unknown to the cultural historian. Robert J. Salzer in his paper entitled “An Archaeological Survey of the Pine, Pike, and Popple Rivers” (November 1, 1969) reported great difficulty in locating archaeological sites due to the dense forest vegetation, lack of access to the rivers, and the few numbers of active farms adjacent to the rivers.

  As a result of Salzer’s survey, he concludes that the Pike River drainage, which Dunbar Barrens is associated with, was exploited by aborigines in both recent and prehistoric times. It is a reasonable assumption that then and now, the area was sparsely settled and did not support a large number of people. Since these areas have not been investigated thoroughly, any statement as to the early cultures is conjectural and extrapolated from studies done to the south and east.

  The Archaeological Sites Inventory database does not contain any records of archaeological or historical sites on this property. Any future discoveries of historical, cultural, or archeological significance within the project boundary will be protected.

**Part 2: IFMP Components**

**Management Objectives** (Outline primary forest management objectives):

1. Manage the site as a Pine Barrens reserve, maintaining the open area, and as an ecological reference area. Natural processes and prescribed vegetation manipulation (see below) will determine the structure of the barrens.

2. Provide opportunities for research and education on the highest quality native pine barrens.

3. Where appropriate, forest stands surrounding open barrens lands should act as a transition between barrens and forested landscape, creating a buffer of a savanna like state.
Methods for maintaining the Pine Barrens community type, include forestry prescriptions, cutting, mowing, invasive species control and/or prescribed burning. The objectives for management activities may include:

- Identifying the needs of specific species, a group of species, or a natural community,
- Managing for understory (sub-canopy) vegetation,
- Mimicking natural disturbances,
- Managing for pre-settlement vegetation,
- Managing for later successional species,
- Managing suitable sites for under-represented communities,
- Creating scientific study/observationmonitoring areas and opportunities,
- Determining how specific management schemes may benefit specific plan of animal species (including non-game species),
- Converting/creating/maintaining:
  - Cover types (in the context of a local [stand or property] or landscape level)
  - Nesting/mating/feeding areas,
  - Habitat suitable for specific flora or fauna,
- Controlling and/or monitoring of invasive species, and
- Preservation of a successional stage.

Forest products may be a secondary benefit but shall not be the primary goal of management activities on State Natural Areas.

**Property Prescriptions** (Identify specific and pertinent prescriptions by area or forest type, including passive management areas, extended rotation, and other information that will help achieve the objectives):

The North-central Wisconsin District Ecologist and Marinette County Wildlife Biologist should be contacted prior to establishment of timber sales on Dunbar Barrens SNA.

1. Stands surrounding the open barrens are actively managed through timber harvests; mainly scrub oak then red oak, followed by aspen, jack pine, and then red pine. A majority of trees on Dunbar Barrens SNA are not harvested, but are managed mainly through prescribed burning, to some extent brushing/mowing and girdling, to maintain early successional stages. Aspen is the largest stand type, but is mainly managed through prescribed burning. Pockets of jack pine are established throughout the open barrens as well as oak. To mimic natural disturbance patterns, thinning of the canopy via harvest, prescribed fire, and brushing/mowing and girdling will continue.

2. Woody brush varies from scattered to heavy in some areas. Prescribed fire, along with selective cutting and brushing/mowing may be used as a means of reducing woody brush from encroaching.

3. Control of invasive plants and animals, maintenance of existing facilities (roads, trails) will continue for management, use, and the ability to suppress fires.
4. Salvage of trees after a major wind event can occur if the volume of woody material inhibits fire prescriptions. Although potentially allowed, manipulation and removal of vegetation and soil disturbance should be minimized to the extent possible.

Aspen: About 5% of the aspen is being managed on an even-aged basis with coppice regeneration harvests conducted at rotation age, and will be consistent with the guidance of the silviculture handbook. Green tree retention guidelines will be followed. General snag, den and mast trees will be retained during harvest. The other 95% of the aspen is located in burn units with the objective of managing as barrens.

Northern pin oak and red oak: About 29% of the scrub oak is being managed on an even-aged basis with clearcut (relying on regeneration by seed) regeneration harvest conducted at rotation age, and will be consistent with the guidance of the silviculture handbook. Extended rotations to may be desirable where the oak remains healthy. The other 71% of the scrub oak is located in burn units with the objective of managing as barrens. The red oak will be managed on an even-aged basis by using a shelterwood harvest and be consistent with the guidance of the silviculture handbook. Snag, den and mast/seed trees will be maintained during the final harvest. Green tree retention guidelines will also be followed.

Jack Pine: The jack pine will be harvested with the guidance of the silviculture handbook. Snag, den and mast trees will be retained. Green tree retention guidelines will be followed.
Dunbar Barrens State Natural Area
Interim Forest Management Plan

Approvals:

Regional Ecologist
2/27/17

Forester
02/17/17

Property Manager
02/17/17

Area/Team Supervisor
02/15/2017