

COUNTY FOREST COMPREHENSIVE LAND USE PLAN  
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**CHAPTER 300**  
**DESCRIPTION OF FOREST AND MANAGEMENT PLANNING**

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**300 DESCRIPTION OF FOREST**

### 300.1 COUNTY FOREST OWNERSHIP

The Bayfield County Forest is approximately 175,749 acres in size and is the third largest county forest in Wisconsin (see a map of the County Forest in the Appendix; also see the Appendix for a link to the WCFA website, which contains a complete listing of county forest lands).

It should be noted that the acreage listed above is based upon the land area listed in the recorded deed(s) for each parcel identified as the County Forest. As such, in calendar year 2020, 175,749 acres was the official total acreage of the County Forest, as recognized and referenced by the DNR in various formal documents.

However, throughout this Plan, most of the tables and graphs will reference the total digital acreage, which is generated from the Department's Geographic Information System (hereafter, "GIS") and is different from the total deeded acreage. The GIS database more accurately reflects the real, on the ground, total acreage of the County Forest. The GIS total land area of the County Forest is 173,171 acres.

From a landscape level perspective, the County Forest is divided into nine (9) Integrated Resource Management Units or IRMU's (see Chapter 3000 for more information on IRMU's; also see the Workplan for management goals planned in each unit). Each IRMU represents a unique or specific area of the County Forest.

To better facilitate management, the County Forest has been further divided or compartmentalized into a number of smaller units. Termed compartments, the County Forest is classified/divided into 203 different units. The size of each compartment is highly variable and ranges from as small as a few hundred acres to as large as a few thousand acres.

A County Forest Blocking Boundary was also created to establish the general location of county forest lands within the County (see Chapter 400 for more information on the County Forest Blocking Boundary).

A map of the IRMU's and compartments, as well as the County Forest Blocking Boundary, can be found in the Appendix.

## 300.2 NATURAL FEATURES

### 300.2.1 Topography

The County Forest is located in the NW corner of the state and is situated throughout nearly the entire length of Bayfield County. As such, the County Forest covers a broad range of physiographic region(s) of Wisconsin.

The topography of the County Forest and surrounding area has glacial origin. The glaciers eroded hilltops and filled valleys, thus reducing relief. Elevations range from 602 feet above sea level at Lake Superior to 1,610 feet on the western ridges of the Penokee Range in southeastern Bayfield County.

The terrain ranges from flat to gently rolling in the "Pine Barrens or Northwest Sands" of central Bayfield County to rolling in the Bayfield Peninsula in the north, as well as the Barnes and Cable blocks to the south.

See the Bayfield County Comprehensive Plan for more information on natural features located within the County (a link to the Bayfield County Comp Plan is located in the Appendix).

### 300.2.2 Geography

Bayfield County is the second largest county in the state (by land area) at approximately 945,000 acres, plus another approximately 24,000 acres of water included in lakes and streams. Approximately 85 percent of the land in the County is classified as forest land. The County Forest represents roughly 18% of the land area within Bayfield County.

### 300.2.3 Geology and Soils

The soils of Bayfield County have been derived largely from the weathering of glacial drift deposits and show a great variation within relatively short distances. Since the glacial period, the soils have been modified by water action, wind, and the accumulation and

incorporation of organic material.

Soil types on the County Forest range from outwash sands in the central portions of the county to Superior red clay complexes in the northern portions. Table 300-1 below summarizes the total amount of acres per generalized soil type located on the County Forest.

**Table 300-1: Generalized Soils Types on the County Forest**

<b>Surface Layer Texture</b>	<b>Acres</b>
Loamy Sand	60,296
Sand	44,271
Clay Complex	28,820
Sandy Loam	17,765
Silt Loam	11,050
Muck	10,218
Water	689
Pit	62
Total	173,171

A generalized soil map can be found in the Appendix. Detailed soils information is also available from the USDA Web Soil Survey (see the Appendix for a link to the NRCS website and view the Soil Survey).

#### 300.2.4 Ecological Landscapes

Ecological Landscapes are regions in Wisconsin containing similar ecology and management opportunities. Each landscape can present unique management opportunities and challenges.

These landscapes are essentially based on the National Hierarchical Framework of Ecological Units (NHFUE) (Cleland et al. 1997). More information on all of the Ecological Landscapes defined within Wisconsin is available on the DNR website (see the Appendix for a link to the DNR website).

The County Forest lies within three Ecological Landscape(s): Superior Coastal Plain;

Northwest Sands; and North Central Forest. A brief description of each is as follows:

Superior Coastal Plain – A far northern Wisconsin landscape adjacent to Lake Superior.

Soils are generally poorly drained clay complexes with cover types dominated by aspen and boreal forest. This Ecological Landscape is located within the northern most portions of the County Forest, generally in proximity to Lake Superior.

Northwest Sands – Found in a relatively narrow band across various counties in northwest Wisconsin. Soils consist of primarily well drained sands or loamy sands with forest types dominated by pine, aspen-birch and oak. This Ecological Landscape is primarily located within the central portions of the County Forest, with a small portion extending into the north.

North Central Forest – Found across northern Wisconsin. Soils are generally dominated by sandy loams, sands and silts with forest types dominated by northern mesic forest types such as northern hardwood, aspen-birch and spruce-fir. This Ecological Landscape is located in the southern most blocks of the County Forest.

See the Appendix for more detailed information on the Ecological Landscapes located within the County Forest. More information on Ecological Landscapes can also be located on the DNR website.

#### 300.2.4.1 Land Type Associations

Land type associations are units of the National Hierarchical Framework of Ecological Units (NHFEU) classification system. They are much smaller than Ecological Landscapes and are generally based on glacial features. They can be useful for planning at finer scales within a broader landscape.

See the Appendix for a map and listing of Land Type Associations (LTA's) that are present within the Ecological Landscapes found on the County Forest. More detailed information on LTA's is located on the DNR website within the description of each Ecological Landscape (see the Appendix for a link to the DNR website).

### 300.2.5 Vegetative Cover Types

Approximately 86 percent of the County Forest land base is forested, consisting of both upland and lowland types. Aspen, northern hardwoods (generally dominated by sugar maple and basswood), red oak, red maple, red pine, jack pine, and white pine are the primary timber types located on the forested uplands. While swamp hardwoods (primarily black ash), swamp conifer (primarily tamarack and black spruce), cedar and fir-spruce are the primary timber types located within the forested lowlands.

Approximately 14 percent of the County Forest is classified as non-forested. The non-forested land base includes types such as lowland brush, upland brush, grass openings, open water, wetlands, rights-of-way, kegs and bogs.

### FORESTED COMMUNITIES

The forested cover types are made up of a variety of size classes (regeneration, sapling, pole, and saw timber) and structure (canopy, layers, ground vegetation, dead and downed material and inclusions).

See Chapter 800 for detailed summaries of and management objectives for each of the major timber types located on the County Forest. See the annual Workplan for details pertaining to more specific management goals and objectives for each type.

Table 300-2 below summarizes the different forested cover types located on the County Forest:

**Table 300-2: Forested Cover Types on the County Forest.**

Cover Type	Acres	% of Total Ac.	Stands (No.)	Avg Ac/Stand
Aspen	77,995	48.7%	1,847	42
Red Pine	18,363	11.5%	604	30
Northern Hardwoods	17,409	10.9%	502	35
Red Oak	14,641	9.1%	471	31

Jack Pine	11,772	7.3%	421	28
Scrub Oak	5,866	3.7%	194	30
Swamp Hardwoods	3,210	2.0%	122	26
Red Maple	2,730	1.7%	101	27
White Pine	2,648	1.7%	96	28
Black Spruce	1,531	1.0%	56	27
Tamarack	1,008	0.6%	50	20
White Birch	915	0.6%	47	19
Balsam Fir	577	0.4%	23	25
Fir-Spruce	519	0.3%	13	40
White Cedar	382	0.2%	16	24
White Spruce	287	0.2%	17	17
Hemlock	230	0.1%	13	18
Swamp Conifer	149	0.1%	9	17
Miscellaneous Conifer	39	0.0%	5	8
Miscellaneous Deciduous	26	0.0%	5	5
<b>Total</b>	<b>160,297</b>	<b>100.0%</b>	<b>4,612</b>	<b>35</b>

#### NON-FORESTED COMMUNITIES

Non-forested habitats are equally valuable components of the County Forest. Upland and wetland non-forested communities provide important habitat for distinct groups of wildlife species and provide critical resources to help maintain overall ecosystem health and function.

Table 300-3 below summarizes the different non-forested cover types situated on the County Forest:

**Table 300-3: Non-Forested Cover Types on the County Forest.**

<b>Cover Type</b>	<b>Acres</b>	<b>% of Total Ac.</b>	<b>Stands (No.)</b>	<b>Avg Ac/Stand</b>
Lowland Shrub/Alder	4,449	34.6%	58	77
Marsh/Bog	2,883	22.4%	76	38
Grasses	2,306	17.9%	154	15
Right of Way	1,697	13.2%	137	12

Water	914	7.1%	72	13
Upland Shrub	492	3.8%	35	14
Industrial	125	1.0%	6	21
Other	8	0.1%	2	4
Total	12,874	100.0%	540	24

## Upland Non-Forest

Upland non-forest areas of the County Forest include:

Grass Openings: consist of upland grasses such as brome, quack, bluegrass, timothy, big and little bluestem, and Indian grass.

Herbaceous Vegetation: ground cover predominated by herbaceous species with bracken fern, sweet clover, giant ragweed, sting nettle, upland aster, goldenrod, and prairie dock being common.

Shrub Opening: primarily upland site less than 10% stocked with tree species but having 50% or more of the area stocked with taller growing, persistent shrubs. This includes hazel, dogwood, juneberry, sumac, alder, willow, and prickly ash.

Rock Outcrops: include rocky talus and bedrock.

See Chapter 800 for detailed discussion on Biological Community Types.

## Wetlands

Wisconsin State Statutes define a wetland as “an area where water is at, near, or above the land surface long enough to be capable of supporting aquatic or hydrophytic vegetation, and which has soil indicative of wet conditions.”

Wetland communities are recognized to be a complex association of plants and animals, soils and water levels having special natural values. They provide many functional values including shoreline and flood protection, water quality protection, groundwater recharge,



and animal and plant habitat.

Therefore, it is the policy of Bayfield County to preserve, protect, and manage wetlands under its jurisdiction in manner that recognizes the natural values of wetland and their importance on the environment. Scientists distinguish dozens of wetland types, characterized by vegetation, soil type and degree of saturation or water cover.

Some of the more prominent wetland types found on the County Forest include:

Aquatic bed: plants growing entirely on or in a water body no deeper than 6 feet. Plants may include pondweed, duckweed, lotus and water-lilies.

Marshes: characterized by standing water and dominated by cattails, bulrushes, pickerelweed, lake sedges and/or giant bur-reed.

Sedge or “wet” Meadows: these wetlands more often than not have saturated soils rather than standing water. Sedges, grasses and reeds dominant, but may also have blue flag iris, marsh milkweed, sneezeweed, mint and several species of goldenrod and aster.

Scrub/shrub: these areas, which include bogs and alder thickets, are characterized by woody shrubs and small trees such as tag alder, bog birch, willow and dogwood.

Forested: these areas, include bogs and forested floodplain complexes, are characterized by trees 20 feet or more in height such as tamarack, white cedar, black spruce, elm, black ash, green ash and silver maple.

Forest management is conducted on many of the forested wetlands with activities occurring primarily during frozen conditions.

See Chapter 800 for a detailed summary of non-forested community types located on the County Forest.

### 300.2.6 Fish and Wildlife

Wisconsin supports over 650 different types of mammals, birds, reptiles, amphibians and fish as well as millions of invertebrates. Management of county forest lands and the biotic communities they support provide a mix of habitat types and ages for a wide range of wildlife species. Each species, or interacting group of species, do best under different conditions.

County forest lands provide a full range of habitats from open grasslands/barrens to mature forests, from bogs to forested wetlands, from spring ponds to lake shorelines. Department professionals work closely with DNR fish and wildlife managers and conservation organizations to identify and manage critical habitat for breeding, migrating and wintering fish and wildlife.

While the County Forest provides habitat for a wide range of fish and wildlife species, current management strategies, programs and/or projects have emphasized the following species and/or communities: sharp-tailed grouse, Kirtlands warbler, and other pine barrens dependent species within the in the Barnes Barrens Management Area (see Chapter 800 and the Appendix for more information on Barrens Management); ruffed grouse and other wildlife species will utilize drumming logs that are designated in many timber sales, especially aspen; in 2008 through 2011 a complete breeding bird survey was conducted throughout the County Forest, with a total of 1,200 plots inventories (see the Appendix for a summary of the Breeding Bird Surveys).

Specific wildlife projects and/or objectives on the County Forest are addressed in greater detail and summarized in the Workplan, as well as Chapter 800 of this Plan.

### 300.2.7 Rare and Endangered Resources

A review of the Natural Heritage Inventory (NHI) indicates the presence of a number of rare species, natural communities and unique natural features on the Forest. All land disturbing projects will include an evaluation phase, to determine whether an NHI screening is required.

The NHI Database is the most comprehensive source of rare species data for Wisconsin.

These data are used for a variety of purposes including research, land management, state land master planning, community planning, conservation planning and review of public and private activities across the state. The NHI Portal is currently available to DNR staff and County Forest staff who hold a data sharing license.

The Wisconsin Historical Preservation Database is the most comprehensive source of cultural resources for Wisconsin. These data are used for a variety of purposes including research, land management, state land master planning, community planning, conservation planning and review of public and private activities across the state, The Wisconsin Historical Preservation Database is currently available to DNR staff and County Forest staff.

#### 300.2.8 Water

Bayfield County has approximately 964 lakes, totaling roughly 23,000 acres. Of the total number of lakes, roughly 359 are named.

Bayfield County also contains roughly 1,035 miles of streams. Of this total, roughly 305 miles are classified as Class I trout streams, 192 miles as Class II and 102 miles as Class III. Within the County Forest boundaries there is a variety of fishery resources. Approximately 37 named and 270 unnamed lakes have all or portions of their shoreline within or adjacent to the County Forest. In addition, the County owns frontage on over 330 miles of rivers and streams. Of that total, approximately 56 miles are classified as Class I trout streams; 11 miles as Class II; and 12 miles as Class III.

A complete inventory of the surface water resources in Bayfield County can be found in the Appendix.

The DNR also maintains a list of Outstanding and Exceptional Water Resources for Bayfield County. The list is periodically revised, with the most current being found on the DNR website (a link to the website can also be found in the Appendix).

Note: An entire listing of the outstanding and exceptional resource waters can be found in Wisconsin Admin. Code NR102.10 and 102.11 and on the DNR website. A link to the

DNR surface waters webpage can be found in the Appendix.

### 300.3 CULTURAL FACTORS

#### 300.3.1 Economy

The importance of the County Forests to Wisconsin's economic health continues to rise. County Forests sustain over 60,000 full-time jobs derived from logging, trucking, paper production, manufactured building materials, and lumber. Many other jobs are created in such businesses as the expanding printing industry and are located far from the forested northland. County Forests contribute to the 24 billion dollar forest industry in Wisconsin.

In addition, the lands managed by these 30 counties provide an important recreation resource to complement our state's valuable tourism industry. Tourists spend valuable money at local businesses. By providing 2.4 million acres of public recreation land, County Forests attract tourist to Wisconsin.

As population increases and public access to privately owned forestland decreases, the need for accessible lands will assume an ever more important role. More information on the economic impact of the County Forest program can be found on the WCFA website (see the Appendix for a link to the website).

Forest products derived from the sustainable management of the County Forest, as well as recreation and various other secondary uses and industries supported therein are vitally important to Bayfield County's economic well-being. Information on the economic importance of public forest lands, including various analyses, can be found on the DNR website (see the Appendix for a link to the website).

#### 300.3.2 Education and Research

Education and research continue to be critical components in making decisions that affect our natural resources. As public needs and demands of our forest and its products increase, we must be prepared to assure that sound decisions result.

To this end, Bayfield County encourages and supports research efforts that have the potential to improve, or otherwise pertain to, the sustainable management of the Forest or forestlands in general, and provide and/or produce educational opportunities that will promote a better understanding of forest communities and management.

#### 300.4 OTHER PUBLIC LANDS OWNERSHIP

The County Forest shares a common boundary with a variety of other public lands, including the U.S. Forest Service (Chequamegon-Nicolet National Forest), the Parks Service (Apostle Islands National Lakeshore), numerous state properties, and various municipally owned parcels.

Table 300-4 summarizes the total amount of public lands located in Bayfield County. See the Appendix for a map of the various public ownerships.

**Table 300-4: Bayfield County Acreage by Ownership**

<b>Ownership</b>	<b>Acres</b>	<b>% of Total</b>
Private	470,374	48.6%
Federal - National Forest	270,258	27.9%
County - County Forest	173,171	17.9%
State	27,056	2.8%
Municipal	8,814	0.9%
Federal - Other	8,539	0.9%
Apostle Islands National Lakeshore	5,837	0.6%
County - Other	2,334	0.2%
National Scenic Riverway	1,287	0.1%
Total	967,670	100.0%
Total Public Lands	497,296	51.4%

As per Table 300-4, over 51% of Bayfield County land is in public ownership. Bayfield County contains more public land (by acreage) than any other county in Wisconsin. Even though most of the public land is forested, with many public ownerships sharing common boundaries, each entity has developed a different suite of goals and objectives to help guide the management of each respective property.

The vast amount of public lands in Bayfield County creates a relatively unique opportunity

when developing direction and various management strategies of the County Forest. Because the goals and objectives of each public entity are often highly variable, many needs, issues and/or concerns raised when developing management strategies of forestlands, in general, may already be addressed on other public ownerships.

To that end, it is important to consider the management strategies actively employed on other publicly owned properties when exploring needs and/or perceived obligations on or of the County Forest, all while acknowledging the mission of the Department and parameters of County Forest Law. The significance and importance of the various public lands located in Bayfield County will be summarized and addressed throughout this Plan.

Bayfield County will continue to foster and develop relationships with other adjacent public landowners.