

## 8 Natural Resource Analysis

The consideration of the natural resource base is an essential element of land use planning. The natural resource base is defined and identified by physiographic, geologic, vegetative, and hydrologic characteristics, and includes the following elements:

- ◆ Topography and Soils
- ◆ Surface Water
- ◆ Floodplains
- ◆ Wetlands
- ◆ Groundwater
- ◆ Woodlands
- ◆ Areas of Critical Environmental Sensitivity

Land development patterns should be structured with consideration for impacts on the natural resource base elements. Land use plans and development policies, including specific development of housing, roadways, sewer/water, etc., must be based upon and compatible with the natural resource base.

This section of the plan is intended to analyze the influence of the natural resource base elements prior to making any decisions concerning future [land] development, and to encourage the preservation of the communities' natural environment. The protection of these resources is necessary for the welfare of both people and the environment. Certain natural resources have more than merely aesthetic and leisure activity values; they are essential to long-term human survival and general welfare. Therefore, it should clearly be in the public interest to preserve and protect the resources that serve as the catalyst for many who desire to live and own property in the northwoods.

### 8.1 Location

The town of Lincoln is located in the Southeast portion of Vilas County. It is bounded by the town of Washington (Vilas County) and Oneida County to the East, the town of Cloverland (Vilas County) to the West, the town of Conover (Vilas County) to the North, and Oneida County to the South. The Town covers approximately 23,766.23 acres of land, and had an estimated 1998 population of 2,447 people. Lincoln is primarily a forestry and recreational community. Approximately 65% of the land in the town is covered by forest land, including public-, private-, and industrial-owned forest land, while another 13.4% of the town is comprised of surface water. The City of Eagle River is located in the north central portion of the Town of Lincoln. The city covers approximately 1,713.54 acres of land, and had an estimated 1998 population of 1,438 people. Approximately 17.9% of the land in the city is forest land, while another 6.5% is comprised of surface water. Eagle River is primarily a tourist and seasonal/recreational community. Although the 1998 population estimate in Eagle River was only 1,438, the number increased dramatically to 5,589 during the summer months.

## 8.2 Topography

Part of the Northern Highland Physiographic region of Wisconsin, the Town of Lincoln is characterized by short, steep slopes and ridges, and by wet depressions, most of which have no outlet. The terrain is heavily forested, which is typical of many northern Wisconsin communities. The Town is included in what is called the Winegar moraine, a major end moraine that is dominantly undulating to steep, which extends across the northwest portion of Vilas County. Elevations in the town range from approximately 1,616 feet above mean sea level to 1,700 feet above mean sea level. Elevations in the City of Eagle River range from approximately 1,628 feet above mean sea level to 1,647 feet above mean sea level. Therefore, relief is generally low in both communities.

## 8.3 Soils

Soils provide the physical base for land development. Knowledge of the potentials and limitations of soil types is therefore necessary when considering construction of buildings, infrastructure, or other uses of land, or to evaluate crop production capabilities. Development may be limited on soils which are characterized by poor filtration, slow percolation, flooding/ponding, wetness, [steep] slope and subsidence.

A detailed study of the soils of Vilas County was conducted by the U.S. Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS - formerly Soil Conservation Service, SCS), in 1984 which resulted in the Soil Survey of Vilas County, Wisconsin, June, 1988. The survey includes a detailed identification of the specific soils found throughout the county, and also provides a grouping of soils into generalized soil associations or predominant soil patterns.

Important to land use planning, the study identifies the limitations of each soil type to certain forms of development. A soil which exhibits a "severe" limitation is one in which one or more soil properties or site features are so unfavorable, or difficult to overcome that a major increase in construction effort, special design, or intensive maintenance is required. For some soils rated severe, it may not be feasible to proceed with development.

The following provides a general discussion of the general soil associations found within the Town of Lincoln and the City of Eagle River. It should be noted however, that these general descriptions are only guidelines and should be referred to as such.

### **Town of Lincoln**

The Rubicon-Sayner-Karlin association is the predominant soil classification in the town of Lincoln. This association includes nearly level to very steep, excessively drained and somewhat excessively, sandy soils on uplands, and consists of soils on glacial outwash plains, stream terraces, kames, eskers, and moraines. The landscape ranges from broad, nearly level plains to pitted outwash plains that have short, uneven slopes (0-35%), many closed drainageways, and common depressions. Approximately 42% of the county is made up of soils of this association. Primarily,

these soils are used as woodlands. In less sloping areas, the soils are well suited for residential development. Septic tank absorption fields function satisfactory, although effluent can pollute groundwater due to rapid or very rapid permeability in the substratum.

The Padus-Pence association comprises a rather large portion of the Town. This association includes nearly level to very steep, well-drained loamy soils on uplands, and makes up about 21% of the County's total land area. These soils are also used for, and suited to, woodlands. Less sloping areas of this association are suited to residential development, with septic tank absorption fields functioning satisfactorily. However, because of the rapid permeability of the soils, there is concern that effluent will pollute groundwater.

The Keweenaw-Karlin association is present only in the northeast portion of Lincoln. This association is characterized by nearly level to steep, moderately well-drained to somewhat excessively drained, loamy and sandy soils on uplands. This association makes up about 5% of the county's total land area. Keweenaw-Karlin soils are found on drumlins, water worked glacial moraines, and outwash plains. Most areas in this association are used as woodland. Nearly level to gently sloping areas of Keweenaw soils are poorly suited for residential development, whereas Karlin soils are suited for residential development in less sloping areas, although effluent may contaminate groundwater.

The last association found within the town is the Croswell-Dawson-AuGres, which is characterized by nearly level and gently sloping, moderately well-drained to very poorly drained sandy and peaty soils on flats and in upland drainageways and depressions. This association makes up about 8% of the county's land area. Most areas in this association are used as woodland, while some are used to support native wetland vegetation. Generally, these soils are poorly-suited to unsuited for residential development, which is primarily due to the seasonal high-water table.

### **City of Eagle River**

The City of Eagle is dominated by the Rubicon-Sayner-Karlin association, and although the general soil survey describes this association as being well suited for residential development in less sloping areas, a closer analysis of Eagle River's soils reveal some soil types that have severe limitations for residential development. However, since Eagle River provides public sewer and water service to its residents, on-site septic systems are not used, thus such development restrictions may not be applicable.

Further investigation is required for "site-specific" soils information, as is the case with individual soil tests. Soil tests (commonly called perk tests) are completed for each new building site application to determine the sites' capability to accommodate the septic loads.

At the time of this report preparation, the State of Wisconsin Department of Commerce was considering on-site sanitary system disposal code revisions. The revisions, called COMM 83, were recently passed by the State legislature (2000) and resulted in a change the private, on-site treatment system options allowed in the state septic system code by adding an assortment of

sewage treatment options for residential applications that have not been previously allowed. For example, previous state code allowed sanitary permits to be approved for conventional septic systems and certain types of above ground mound systems. Holding tanks were also allowed under state code, but counties and local municipalities had the authority to ban holding tanks within their jurisdiction. The COMM 83 revisions expanded treatment options to allow greater flexibility in siting and treating private septic system waste.

The implications of the state code revisions may have dramatic land use impact. According to the Department of Commerce, the previous state code regulations would allow for 47% of lands in the state to be permitted with conventional, in-ground septic systems due to the existing soil characteristics and depth to groundwater. The new COMM 83 revisions allow nearly 81% of lands in the state to be developable due to allowing the installation of treatment systems such as sand filters and aerobic treatment that require less restrictive depths to groundwater, while effectively treating wastewater at levels the same or better than current technology.

The revisions will have significant land use impacts in terms of how much land can be developed, where development can occur, and how dense the housing can be. However, code revisions and associated land use implications will be offset by the land use plan's ability to direct the location, use, and density of development.

#### **8.4 Surface Water**

A watershed is an area of land in which water drains to a common point, such as a stream, lake or wetland. In Wisconsin, watersheds vary in scale from major river systems to small creek drainage areas, and typically range in size from 100 to 300 square miles. In relation, river basins are defined within the state which encompass several watersheds. There are 32 river basins in Wisconsin which range in size from 500 to over 5,000 square miles. The WDNR prepares water quality management plans for each river basin which identify the sources of water quality problems and identify management objectives that the WDNR, local communities, counties and other agencies should take to protect and improve the water resources within the basin.

The Town of Lincoln lies within the Upper Wisconsin River Northern Sub-basin, including the Tamarack Pioneer River Watershed, Eagle River Watershed, and the Sugar Camp Creek Watershed. The City of Eagle River shares the same watersheds, with the Eagle River Watershed occupying the majority of the city, the Tamarack Pioneer River Watershed located in the northwest portion, and the Sugar Camp Creek Watershed in the eastern and northwest portions of the City. All surface water and groundwater discharge moves through each watershed and eventually enters the Wisconsin River.

The Town of Lincoln contains approximately 3,190.93 acres of surface water, including lakes and streams, which comprises approximately 13.4% of the town's total land area. The City of Eagle River contains approximately 111.78 acres of surface water, which comprises approximately 6.5% of the city's total land area. Maps 8-1 and 8-2 illustrate the hydrographic features located within the Town of Lincoln and City of Eagle River, respectively.

There are approximately 22 named lakes and 35 unnamed lakes of various sizes within the Town of Lincoln. Major lakes include Catfish Lake (1,012 acres), Eagle Lake (572 acres), Yellow Birch Lake (202 acres), Otter Lake (217 acres), and Duck Lake (108 acres). The Town also shares several lakes with neighboring towns, including Meta Lake (175 acres) located along the southeastern border of the Town. The City of Eagle River contains Silver Lake (61 acres), located in the northeastern portion of the city.

As high levels of development exist on some water bodies and increased pressure for development of shorelands on many others, and given the varied sensitivity of lakes, Vilas County developed a Lakes Classification System as part of the Vilas County Shoreland Zoning Ordinance (See Map 8-3). Each lake in Vilas County greater than 50 acres in surface area was individually evaluated and classified (low, medium, high) based upon its sensitivity to development and the level of existing development along privately-owned shoreline. Minimum lot size and setback requirements for specified uses were then developed based on the lakes' sensitivity level. Lakes 50 acres and less in surface area were not individually evaluated, but were classified as warranting the highest level of protection (minimum 60,000 sq. ft lot area, 300' frontage width, and 270' lot width).

The intent of the Lakes Classification Ordinance was to control further development as determined by the waterways ability to accommodate the development, and thus protect and preserve surface water quality, fish and aquatic life, shoreland communities and natural beauty, and compatibility of proposed development with existing land and water usage. The ordinance will also maintain safe and healthful conditions, prevent and control water pollution and soil erosion, and control building sites and the placement of structures and other land uses.

Table 8-1 identifies the lake classifications for those lakes within the town of Lincoln which are 50 acres or greater in surface area.

The lakes classification system identified that 80% of the lakes in the Town of Lincoln and City of Eagle River which are 50 acres or greater in size have a low sensitivity level, and 10% are rated as having a medium sensitivity level. Only 10% have a high sensitivity level. In addition, the majority of lakes in this area are already heavily developed. Therefore, the concern for lakes in this area will be generally be geared toward remediation efforts.





In addition to the numerous lakes in these communities there are several creeks, some of which interconnect lakes within the town. The most significant streams in the town are Bloom Creek, which flows into Watersmeet Lake from the south, Eagle River, which connects Watersmeet Lake and Yellow Birch Lake, and the Wisconsin River which flows through the northwest portion of the town and also flows through Watersmeet Lake. Eagle River, which borders the Wisconsin River in the northwest portion of the City, is the predominant waterway flowing through the City of Eagle River.

**Table 8-1**  
**Classification of Lakes 50 Acres and Greater**  
**Town of Lincoln**

Lake Name	Sensitivity Level	Level of Existing Development	Minimum Lot Area	Minimum Frontage Width	Minimum Lot Width
Watersmeet Lake	Low	Medium	30,000 ft <sup>2</sup>	150 feet	135 feet
Silver Lake*	Medium	High	30,000 ft <sup>2</sup>	150 feet	135 feet
Eagle Lake	Low	High	30,000 ft <sup>2</sup>	150 feet	135 feet
Otter Lake	Low	High	30,000 ft <sup>2</sup>	150 feet	135 feet
Duck Lake	Low	High	30,000 ft <sup>2</sup>	150 feet	135 feet
Yellow Birch Lake	Low	High	30,000 ft <sup>2</sup>	150 feet	135 feet
Dollar Lake	Low	Medium	30,000 ft <sup>2</sup>	150 feet	135 feet
Catfish Lake	Low	High	30,000 ft <sup>2</sup>	150 feet	135 feet
Meta Lake	Low	High	30,000 ft <sup>2</sup>	150 feet	135 feet
Seventeen Lake	High	Low	60,000 ft <sup>2</sup>	300 feet	270 feet

Source: Vilas County Shoreland Zoning Ordinance, Article III, 3.4, A.

\*City of Eagle River, not regulated by Vilas County Shoreland Zoning Ordinance.

The Vilas County Shoreland Zoning Ordinance separates rivers and streams into two classes for management and development purposes, based upon factors set forth in the Vilas County Lake and River Classification Study, February 1999. A Class 1 stream was designated as those water bodies that had low or limited adjacent development or potential for development, were classified as outstanding or exceptional resource waters by the WDNR, and those which were cold water trout streams. Development regulations affected by class 1 streams and rivers include a minimum lot area of 60,000 square feet, 300' frontage, and 270' lot width. All others are designated Class 2 (minimum 30,000 sq. ft lot area, 150' frontage width, and 135' lot width). All of the streams in Lincoln and Eagle River are classified as Class I streams, except for Eagle River and the Wisconsin River downstream of Hwy. G, which are Class II.

**Map 8-3 Lakes Classification, Town of Lincoln**

The Vilas County Shoreland Zoning Ordinance and Lakes Classification System has the regulatory impact of determining lot size, lakeshore frontage requirements, and buildable area within the shoreland zone of the towns in the county. The surface water implications relate to the amount and location of development that can occur within the town, which has a direct impact on the resulting surface water quality.

## **8.5 Floodplain**

Areas susceptible to flooding are considered unsuitable for development because of risks to lives and property. Therefore, from a planning perspective, floodplains are a very important land use feature. Construction or development within these areas should be limited to uses which are associated with the floodplain, such as recreational activities or wildlife applications.

The most recent source for identifying areas subject to flooding in the Town of Lincoln and the City of Eagle River is the Flood Hazard Boundary Map (FHBM) for Vilas County developed by the Federal Emergency Management Agency (FEMA) which became effective in 1981. The areas within Lincoln identified on the FHBM as special flood hazard areas are: along the shorelines of Watersmeet Lake, Catfish Lake, Eagle Lake, Yellow Birch Lake, Otter Lake, Duck Lake, Lynx Lake, along the shoreline of Eagle River, the Wisconsin River North through Sucker Creek, and Mud Creek South to the county line boundary. The only flood hazard area in the city of Eagle River is the shoreline along Eagle River. The flood hazard along these areas do not extend much beyond the immediate shore except along the Wisconsin River and Sucker Creek, where it extends significantly outward from the shore in certain areas.

The FHBM's are intended to be interim maps prior to the completion of a more detailed FEMA study, and therefore may not include all flood hazard areas in the town. Additional field checking may be required to determine whether or not a given area is in the floodplain before development is authorized or denied.

## **8.6 Wetlands**

Wetlands are defined 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 soils indicative of wet conditions. Most wetlands are dominated by plants which can tolerate various degrees of flooding, with species composition and productivity dependent on the variations in water patterns.

Wetlands are critical elements of the natural resource base as they serve several significant functions, including:

- ◆ Wetlands act as a natural filtering system for nutrients such as phosphorus and nitrates, and thus aid in maintaining surface water and groundwater quality.
- ◆ Wetlands are very productive wildlife habitat, and consequently provide recreational activities such as hunting, trapping and bird watching.
- ◆ Wetlands provide open/green space.

- ◆ Wetlands recharge groundwater supplies, the source of drinking water for town of Lincoln and City of Eagle River residents.
- ◆ Wetlands attenuate flood flows which decreases the risk of flood damage to property owners.
- ◆ Wetlands maintain base flows of streams and watercourses which is important to the continued well-being of aquatic ecosystems and associated wildlife habitat.
- ◆ Wetlands reduce soil erosion.
- ◆ Wetlands serve as a natural buffer protecting shorelines and streambanks.

Maps 8-3 and 8-4 delineate wetlands (2.5 acres and greater) within the Town of Lincoln and City of Eagle River as determined by the WDNR's digital Wisconsin Wetland Inventory (WWI) maps, which were updated in spring 1999. These wetlands may not reflect all areas considered wetlands by the U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS), or the U.S. Army Corps of Engineers.

As indicated on the map, wetlands of varying size are scattered throughout the Town. These wetlands include a wide diversity of wetland types ranging from [emergent/wet meadow to scrub/shrub, to deciduous and coniferous forested. Wetlands comprise approximately 5,499 acres of land in the Town of Lincoln, or 23% of the Town's total land area. Wetlands incorporate approximately 101 acres in the City of Eagle River, or 5.9% of the City's total land area. The largest wetland in the City of Eagle River is located on the airport property. There is also a large wetland west of the Industrial Park that will limit westward expansion of the park, as well as any airport expansion. Small wetlands are present throughout the City as well, and will need to be addressed individually at the time of development. The WDNR updated the 1987 WWI maps in 1999, and is in the process of determining wetland loss rates that occurred over the last 20 years. It is expected that the information will be available sometime in 2001.

Due to the significant environmental functions served by wetlands, there is a complex set of local, state and federal regulations which place limitations on the development and use of wetlands (and shorelands). Counties are mandated to establish shoreland-wetland zoning districts. The Vilas County Shoreland Zoning Ordinance regulates use and development in all shoreland areas (300' of navigable streams, 1000' of lakes), including all shorelands which are designated as wetlands on the WWI maps. The WDNR regulates the placement of structures and other alterations below the ordinary high water mark of navigable streams and lakes. In addition, the U.S. Army Corps of Engineers has authority over the placement of fill materials in virtually all wetlands, while the USDA incorporates wetland preservation criteria into its crop price support programs. Therefore, prior to placing fill or altering a wetland resource, the appropriate agency(ies) must be contacted to receive authorization.

## 8.7 Groundwater

Together with the lakes, streams and wetlands comprising surface water resources, groundwater is contained in subsurface aquifers. During periods of increased precipitation or thaw, this vast resource is replenished with water moving by gravity through permeable soils. In the north central Wisconsin region, major areas of recharge occur in outwash sand and gravel deposits and glacial till composed of unstratified sand, gravel, and clay. Less expansive recharge areas also are found where decomposed and fractured granite lies at or near the surface.

Municipalities overlying the aquifer pump the available groundwater for use in public, domestic, industrial and recreational supplies. Rural wells supply the outlying population. Under natural conditions, the aquifers generally receive clean water from rainfall percolating through the overlying soils. However, contamination of groundwater reserves can result from such sources as percolation of water through improperly placed or maintained landfill sites, private waste disposal (septic effluent), excessive lawn and garden fertilizers and pesticides, leaks from sewer pipes, and seepage from mining operations into the aquifer. Runoff from livestock yards and urban areas, improper application of agricultural pesticide or fertilizers, and leaking petroleum storage tanks and spills can also add organic and chemical contaminants in locations where the water table is near the surface. Protection of these groundwater reserves is necessary to ensure adequate quality water to all users.

Groundwater in Lincoln is found primarily at 1,620 - 1,650 feet above mean sea level. This indicates that the water table is very high in the town as land elevations range from approximately 1,616 to 1,700 feet above mean sea level. Groundwater in Eagle River is found primarily at 1,620 feet above mean sea level. The water table is also very high in Eagle River with land elevations ranging from 1,628-1,650 feet above mean sea level. Therefore, the groundwater in both communities is highly susceptible to contamination. This can be confirmed by viewing the map (not included in this report) titled Groundwater Contamination Susceptibility in Wisconsin, 1989, which was prepared by the U.W. Extension, Geological and Natural History Survey. Nearly all of Vilas County is identified on the map as being most susceptible to groundwater contamination.

Groundwater flow in the town varies by location, depending on which watershed an area belongs to. However, contamination that enters the groundwater today in Lincoln and Eagle River can have serious consequences tomorrow in other areas.

## 8.8 Woodlands

The Town of Lincoln, like Vilas and most other northern Wisconsin counties, is comprised primarily of significant tracts of woodland and forest cover. Overall, forest cover comprises approximately 65% of the total area of Lincoln and approximately 17.9% of the City of Eagle River.

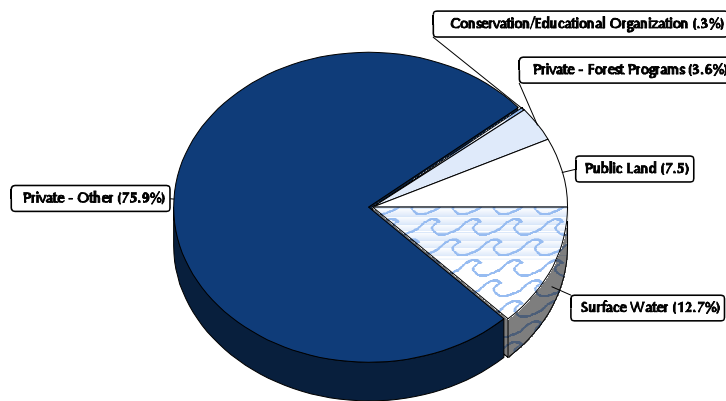
Woodland cover plays a key role in the function and value of sensitive environmental areas like steep slopes, wetlands and floodplains. Regulations of the removal of woodland vegetation is

necessary to protect scenic beauty, control erosion, provide (critical) wildlife habitat, and reduce effluent and nutrient flows into surface water bodies/courses.

Woodlands or forest covered areas in the Town are owned and managed by several different entities including public, conservation/educational organizations, private landholders for industrial forest, and other private landholders. Some private landowners may have their wooded land enrolled in one of the management programs offered by the WDNR, including the Managed Forest Law (MFL) program, or the Forest Crop Law (FCL) and Woodland Tax Law (WTL) programs (no longer open to new enrollment). Such programs have been established to preserve and protect woodlands through practicing proper management techniques. Information about these programs is provided in Appendix 8-1.

Table 8-2 (and Figure 8-1) identifies the total acreage of wooded land within the Town of Lincoln and City of Eagle River which is owned and managed by the public sector, conservation/educational organizations, privately-held industrial forests, and private lands enrolled in forest management programs. The acreage owned by entities in the public sector includes all publicly-held lands for forestry or other uses such as administration buildings and service facilities. These lands are referred to as property under some form of land and resource protection. This information is depicted in Maps 8-4 and 8-5 for the Town of Lincoln and City of Eagle River, respectively.

**Figure 8-1**  
**Land and Resource Protection Acreage**  
**Town of Lincoln and City of Eagle River**  
**1999**



Source: Vilas County Mapping Department; North Central Regional Planning Commission.



**Map 8-5 Land of Resource Protection, City of Eagle River**

**Table 8-2  
Land and Resource Protection Acreage  
Town of Lincoln  
1999**

Land/Resource Protection Entity	Acreage	Percent of Total
<b>Public</b>	<b>1,760.5</b>	<b>7.5</b>
National Forest*	32.1	0.1
State Lands/Forest (NHAL State	942.5	4.0
County Lands/Forest	706.9	3.0
Town Lands/Forest	79.1	0.3
Tribal Lands	0.0	0.0
School Forest	0.0	0.0
<b>Private - Industrial Forest</b>	<b>0.0</b>	<b>0.0</b>
MFL	0.0	0.0
WTL	0.0	0.0
FCL	0.0	0.0
<b>Private - Forest Programs</b>	<b>843.8</b>	<b>3.6</b>
MFL	803.3	3.4
WTL	0.0	0.0
FCL	40.4	0.2
<b>Conservation/Educational Organization</b>	<b>77.6</b>	<b>0.3</b>
<b>Private - Other</b>	<b>17,917.6</b>	<b>75.9</b>
<b>Surface Water**</b>	<b>2,995.9</b>	<b>12.7</b>
<b>Total</b>	<b>23,595.4</b>	<b>100</b>

Source: Wisconsin Department of Natural Resources; Vilas County Mapping Department, North Central Regional Planning Commission.

\*Located in City of Eagle River.

\*\*Includes islands.

This information reveals that nearly 80% is in private ownership, while the remaining 20% is either publicly-owned (7.4%) or surface water (13.4%). Public ownership in Lincoln is minimal when compared to other towns in Vilas County, where public ownership averages over 40%. Publicly-owned land in Lincoln includes state lands/forest, county lands/forest, and town lands/forest. The majority of publicly-owned land in the town is owned by the state of Wisconsin which is managed as part of the Northern Highland American Legion State Forest. The total acreage in the town which is owned by the state is approximately 942.51 acres or 4% of the Town.

Vilas County owns approximately 706.85 acres (3%) in the town, some of which is included in the Vilas County Forest. The Town of Lincoln also owns property within the town which is utilized for Town administration and services.

As mentioned previously, nearly 80% of land in the town is privately held, the majority of which is wooded. It is important to identify how the privately-owned woodlands are (or are not) managed or protected, and the value which private landowners place on maintaining these woodlands in a natural state. Approximately 843.75 acres of land were enrolled in WDNR forest management programs in 1999, totaling approximately 3.6% of the Town's total acreage. These programs provide tax relief to landowners of enrolled property in return for the landowner entering into a contract to manage the land as forest land for a specified length of time. Most property enrolled in these programs will likely remain under management throughout the planning period, and possibly beyond, as many of the contract agreements associated with these programs are 25 years or longer in length. It is important for the town to encourage private landowner participation in these programs in order to ensure the current aesthetics of the community still exist in the future.

Conservation and/or educational organizations own approximately 76.62 acres within the Town comprising approximately 0.3% of the Town's total area. Such ownership in Lincoln includes the property owned by Northland Pines School District, located just north of the City of Eagle River.

The remaining acreage, which comprises approximately 75.3% of the town, is under private ownership however is not enrolled in any type of formalized management program. This land includes existing intensive development (i.e., residential, commercial, industrial) which occupies approximately 15.7% (see Table 9-1) of the Town. The Town of Lincoln has the greatest percentage of land under private ownership of all municipalities in the county, and therefore has the greatest potential for development impacts in terms of changing the landscape of the town which could threaten the town's rural character. Therefore, private landowners in the town should be encouraged to participate in the Managed Forest Law program, or engage in some other form of formalized forest management practices, to ensure the preservation and health of the town's woodlands which define its "northwoods" character. There are numerous benefits which result from properly managing woodlands, including:

- ◆ Protection against overcutting.
- ◆ Low regular property tax (MFL).
- ◆ Protection against annual property tax hikes (MFL).
- ◆ Technical assistance for private forest lands (MFL).
- ◆ Predictable property tax (MFL).
- ◆ Long term forestry investment.
- ◆ Encourages woodland expansion.
- ◆ Preserves and manages wildlife habitat.
- ◆ Preserves "Northwoods" character.

## 8.9 Areas of Critical Environmental Sensitivity

Areas of critical environmental sensitivity are those unique elements/areas of the natural resource base which should be preserved, and therefore excluded from urban/intensive development. Typically, areas of critical environmental sensitivity include wetlands, floodplains/floodways, shorelands, areas of steep slope (especially those adjacent wetlands and shorelands), publicly-owned scientific and natural areas (i.e., fish and wildlife habitats), and identified archaeological sites. The protection of such areas is intended to 1) protect the health, safety, and welfare of the general public, 2) protect surface water and groundwater quality, 3) reduce damage from flooding and stormwater runoff, and 4) maintain important wildlife habitats or recreational areas.

Most of the areas of critical environmental sensitivity within the town of Lincoln are already managed/regulated at the federal, state, and/or county level, such as wetlands, floodplains, shorelands, and publicly-owned scientific and natural areas.

The Bureau of Endangered Resources, located within the Department of Natural Resources, administers the State Natural Areas Program for the State of Wisconsin. These areas are formally designates sites which are devoted to scientific research, the teaching of conservation biology, and especially to the preservation of their natural values and genetic diversity for future generations. They are not intended for recreational uses such as picnicking or camping. There are no State Natural Areas in the Town of Lincoln or the City of Eagle River.