

# Natural Resources Inventory

## Cornish, New Hampshire

Cornish Conservation Commission  
2013

# Cornish Natural Resources Inventory

Adopted August 28, 2013

Prepared by the Cornish Conservation Commission

with assistance from

Upper Valley Lake Sunapee Regional Planning Commission



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# I. Introduction

The Cornish Conservation Commission has prepared this Natural Resources Inventory to serve as an index of natural resources and important natural areas for the Town of Cornish. This is the first update to the Town's Natural Resources Inventory since 1976, and this report has incorporated many new sources of maps and information that were not available forty years ago.

The purpose of the Conservation Commission, as defined by New Hampshire State Law (RSA 36-A), is to work toward "the proper utilization and protection of the natural resources and for the protection of watershed resources of said city or town." In order to do this successfully the Conservation Commission needs to know what types of resources exist and where they are located within Cornish. A Natural Resources Inventory is the recognized method for identifying and tracking natural resources in a municipality.

A Natural Resources Inventory can be used as:

- A baseline of information from which changes in the Town can be assessed
- A tool for public outreach to inform citizens about the Town's resources
- A source of information to support voluntary land protection and resource conservation
- A source of information to support land use decision-making
- A source of information to support sound decisions about Town and state projects such as siting new community facilities or planning for roadway improvements.

The status and significance of natural resources and their protections do change over time, and this inventory should not be construed as a "final product." The inventory includes a summary of what exists at the current time and recommends actions for the future; this document should be revisited periodically to update the inventory with newly available data, protections, and priorities for natural resources conservation. It may be most helpful to update the Natural Resources Inventory on a regular cycle in sync with Master Plan updates, so that the statistics and recommendations contained within the Natural Resources Inventory can be used in the development of the Master Plan.

## Acknowledgments

The Conservation Commission wishes to acknowledge with gratitude the constructive assistance and input of the following, whose past and present contributions were invaluable in developing this Natural Resource Inventory.

- Bill Lipfert, Chairman, Cornish Planning Board
- Heidi Jaarsma, Member, Cornish Planning Board and Town Treasurer
- Mary Curtis, Administrative Assistant to Cornish Board of Selectmen

- Richard Thompson, advisor to Selectmen on covered bridges
- Steve Walasewicz, Saint Gaudens National Historic Site: Chief of Resource Management and Maintenance
- Scott Gilroy, Director, Blue Mountain Forest Association
- Nancy Merrill, Director, Claremont Department of Planning and Development
- Wayne Leonard, Assistant Director, Claremont Department of Public Works
- Cover photograph and design by Deanna Meadow and Cory Fitch

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- |                  |                         |
|------------------|-------------------------|
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## II. A Tour of Cornish

In 1976 William F. Menke wrote the first Natural Resource Inventory for the Conservation Commission describing the Town's resources as he guided readers on an armchair tour of the Town. Rather than just listing the resources to be found here, he embedded his inventory into a narrative tour, highlighting the reasons why people have long been attracted to the Cornish landscape.

For the 2013 Natural Resources Inventory, the Conservation Commission follows a similar narrative style to bring the reader on a tour through Cornish. In doing so, the hope is to continue to show how humans have used, appreciated, and changed the natural resources to be found here. Humans have been responsible for many of the changes to resources over thousands of years and so humans continue to be part of the Town's biological diversity, not separate from it, as we move forward into the future as stewards of this place we call Cornish.

### Geologic History

Cornish lies within the Connecticut River basin, the largest watershed in New England. The general shape of the basin was formed through mountain building and erosion over millennia, but the current-day landscape was formed 10,000-14,000 years ago by glacial forces.

What is seen today as the Connecticut River Valley is the former Glacial Lake Hitchcock, which extended from a natural dam in Rocky Hill, CT northward to St. Johnsbury, VT. Over the 4,000 years of its existence, Lake Hitchcock deposited layers of sands and gravels along the valley floor (known as stratified drift).

On the higher terrain the glaciers eroded away the surface of the region's hills and mountains to expose the underlying bedrock; these bedrock outcrops are locally known as ledge. The overlying material was incorporated into the glacial ice and carried along as the glaciers grew and moved southward. When the climate warmed and the glaciers retreated northward, they dropped their load of boulders, cobbles, gravels, sands, silts and clays; these deposits are termed unstratified drift or glacial till. The surficial geology of Cornish is largely glacial till deposited on top of bedrock.

About 12,000 years ago, the natural dam in Rocky Hill, CT broke and Glacial Lake Hitchcock drained to what is now the Connecticut River. Seasonal floods deposited layer upon layer of rich alluvial sediments, creating the prime farmland that can be found in Cornish along the eastern bank of the river. With the construction of dams on the river's main stem and tributaries, the river's flow has become more and more regulated which minimizes seasonal flooding and alluvial deposits.

The Connecticut River in Cornish is approximately 280 ft above sea level, and the elevation in the Town climbs to 2,300 ft above sea level on Croydon Mountain. From the river's edge, the terrain rises into a pattern of hills and valleys where the highest points are between 1,000 and 2,300 feet above sea level (Figure 1).

## **Native American and Early Settlement History**

The first humans known to live in the Cornish area were part of the Western Abenaki tribe who inhabited lands in the Connecticut River Valley in New Hampshire, Vermont, and Massachusetts. The native Abenakis migrated seasonally, spending the winters in upland hunting grounds and moving down to the Connecticut River Valley in the spring to harvest salmon and shad running up from the Atlantic Ocean. The Abenaki planted corn and squash on the riverbanks near their summer villages. To trade with other settlements and to travel to their winter hunting grounds, they used the Connecticut River and its tributaries as their highway. Overland travel was done on foot, following well-worn paths that followed the river and the streams that ran from the highest elevations in the eastern part of Town to the lowest elevations along the river. Many of Cornish's current roads developed from these paths.

European and American explorers, trappers, soldiers and settlers used the Connecticut River as an important regional travel route in colonial America, connecting what would become New Hampshire and Vermont to the larger settlements in Massachusetts and Connecticut. Large tracts of land in today's Vermont, New York and eastern Canada were claimed by both France and England, which led to decades of war and conflict between Euro-American soldiers and warriors from allied Native tribes.

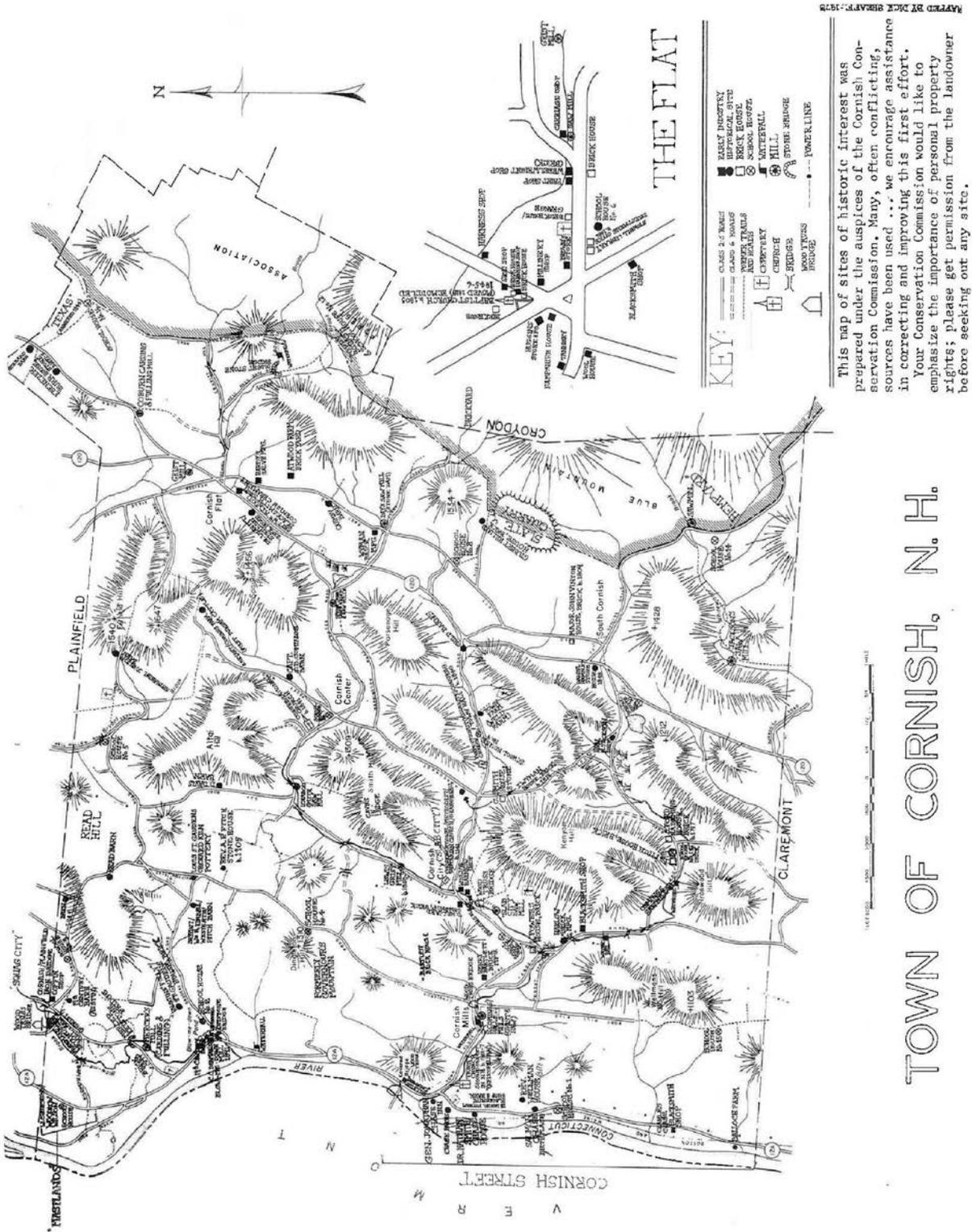


Figure 1. 1978 map of the Town of Cornish prepared by Dick Sheaff for the Conservation Commission.

In the first half of the 1700's, the northernmost English settlement was just down the river in Charlestown, NH where the Fort at No. 4 was constructed to protect the settlers. Widespread settlement of the upper Connecticut River Valley was delayed until 1760 when the French and Indian War ended, making the valley safe for English settlement.

Once peace was established in 1760, there was immediate movement northward with a flurry of new towns being chartered and settlers migrating up the river. Cornish was incorporated as a Town in 1763 and was first settled by people from Sutton, Massachusetts, south of Worcester. One of the first settlers, a man named Daniel Putnam, worked at a lumber camp called "Mast Camp" that was set up by the river in the northwest part of Town. The men cut massive white pines which were floated down river to Connecticut where they were loaded onto ships bound for England. The tall, straight trunks were used as masts for the King's Royal Navy.

Daniel Putnam was so impressed with what he saw in Cornish that he came back the next year with others to settle permanently as Massachusetts was becoming crowded, and there was much more competition for its natural resources. Putnam's group decided to settle along the river, most likely at the very same places that had appealed to Native Americans for thousands of years. There were open fields and abundant, easy-to-access water, there were vast woods where they could cut down trees and saw lumber with which to build their first homes and barns, and there were clay deposits for making bricks.

The area on the map where it is written Choice White Pines and Good Land is the area where Mast Camp was set up (Figure 2). With annexations of land in 1809 and 1844 the current Town boundaries were formed.

## **The Connecticut River Valley**

The Connecticut River Valley has been blessed with abundant and varied natural resources. This fact has not been lost on its inhabitants past or present. If you travel north today on Route 12A along the Connecticut River, the prime farmland soils that attracted the Native Americans and the first settlers in Cornish are still considered prime and they are being actively farmed today.

Route 12A runs north to south through Town along the river and is part of the Connecticut Scenic Byway. The views from this road will remain scenic in Cornish because much of this land has been permanently protected. In fact, as of May 2013, there are eight agricultural preservation restrictions or conservation easements along Route 12A in Cornish, all of which have been set up by private landowners to protect this farmland for future generations. New Hampshire's Cornish Wildlife Management Area and St. Gaudens National Historic Site also protect land along Route 12A.

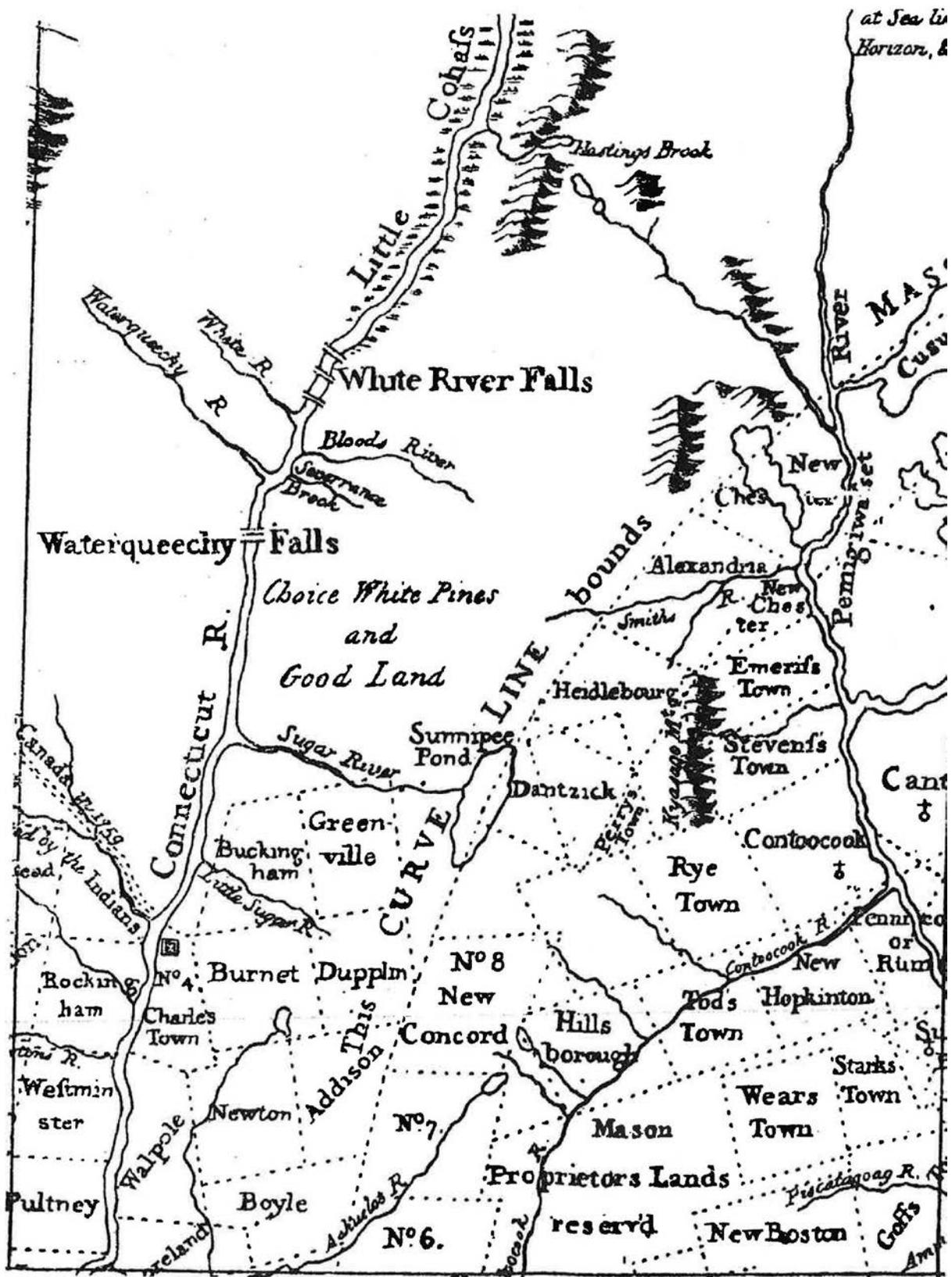


Figure 2. Map of the upper Connecticut Valley, c. 1760 (Cornish Historical Society collection)

With Mt. Ascutney in Vermont to the west, the hills of Cornish rise slowly to the Croydon Mountain range to the east. From the South on 12A is Ballock's Railroad Crossing where a historic farm was built around 1814. The Connecticut River at this point is rather shallow with steep sandy banks on either side. Looking north up the river from Ballock's Railroad Crossing, one can see one of the numerous islands that shift position from time to time. When traveling north on Route 12A from this point the road suddenly drops and crosses Mill Brook by the intersection of Townhouse Road.

Further North on Route 12A is the Cornish-Windsor Covered Bridge, the longest covered bridge in New England. Continuing North on 12A, the road follows the railroad along a narrow strip of land bounded by Wellman's Hill and the river until suddenly the land flattens out into a very nicely farmed piece of agricultural land. A number of very important early homes are within this area and just past St. Gaudens Rd is the beautiful Blow-me-down Mill and pond.

## The Cornish-Windsor Bridge

The first Cornish settlers relied on boats to travel across the Connecticut River until 1796 when the first Cornish-Windsor Bridge was built across the Connecticut River. This was an open bridge that survived twenty-eight years before the river brought it down. The second bridge was built in 1824, it also had an open design and it also was swept away by the river, twenty-five years later. In 1849 a third bridge was built but this one was a covered bridge. There were no flood control dams on the Connecticut River at this time so ice and high water carried away anything in its way, and the 1849 bridge, like its two predecessors, was no exception.

In 1866 James Tasker of Cornish and Bela Fletcher of Claremont put their skills together to build the current covered bridge, the longest covered bridge in the United States, at a cost of \$9,000. They built the bulk of it in a field on the Windsor side of the Connecticut River and then used oxen to pull it across the river to where it currently sits. James Tasker also built three other covered bridges in Cornish, listed in Table 1.

**Table 1: Covered bridges in the Town of Cornish (Source: Richard Thompson)**

<i>Bridge</i>	<i>Date</i>	<i>Structure</i>	<i>Location</i>
# 20 Cornish-Windsor Covered Bridge	1866	Town Lattice Truss Style - The bridge is 449'5" long spanning the CT River to Windsor, VT	Off Rte. 12A to Windsor, VT
#21 Blacksmith Shop Covered Bridge	1881	Multiple King Post Truss - The bridge is 91' 0" long with a clear span of 62' 0" across Mill Brook, and is closed to vehicular traffic.	Off Townhouse Rd
#22 Dingleton Hill Covered Bridge	1882	Multiple King Post Truss - The bridge is 77' 9" long with a clear span of 62' 9" across Mill Brook, and is open to only passenger cars.	Off Townhouse Rd to Root Hill Rd
#23 Blow-Me-Down Covered Bridge	1877	Multiple King Post Truss - The bridge is 85' 9" long with a clear span of 74' 6" across Blow-Me-Down Brook, and is open to only passenger cars.	Off Platt Rd to Squag City Rd

# Population

Cornish’s population grew dramatically from its incorporation in 1763 through 1840 (Figure 3). People began to strike out along the paths that followed the streams in search of places to live. Five villages were settled in the Town: Cornish Flat, Cornish Center, Cornish Mills, Cornish City and South Cornish. These villages were located in relatively flat valley areas near running streams (Map 1). The fine-grained sediments deposited by glacial meltwater streams and later by seasonal flooding created soils that were fertile and easily farmed. Currently these lands are still considered to have soil that is classified as being of statewide importance (Map 5). The streams where the five villages were settled were important to the settlers for waterpower and mills were constructed in or near the villages. The hilly terrain and ridges that run north-south through Town posed challenges, however, for road construction, particularly roads running east-west from the Connecticut River towards today’s Route 120 on the east side of Town.

Cornish’s population declined precipitously in the late 19th and early 20th centuries and reached a low of fewer than 800 souls around 1945. Following World War II, the Town saw significant and sustained population growth through the 1980’s (Figure 3). This growth was the result of improved road access to major employment centers in Claremont, Windsor, Lebanon and Hanover, as well as the advent of home-based occupations. Though Cornish growth was most pronounced in the 1970s (up ten percent) and 1980s (up nineteen percent), these growth rates nevertheless lagged state and national growth rates.

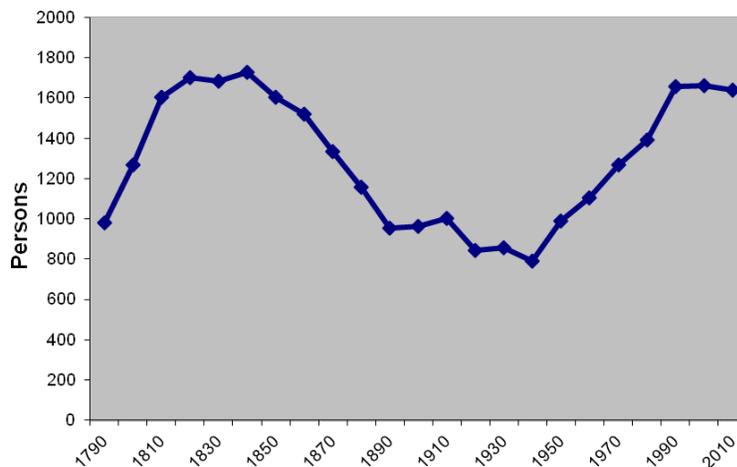


Figure 3. Population Trend for the Town of Cornish, 1790-2010 (U.S. Census)

## Cornish Flat

As you travel east on Townhouse Road from the Connecticut River Valley and then north onto Route 120, you can begin to appreciate what the settlers must have experienced migrating across Town from the river valley. They would have followed Mill Brook into the deep woods. Imagine how they felt when they first set eyes on what is

now Cornish Flat. The land was flat. Over the years, sediment deposited by valley streams had developed into topsoil and there was a fast-moving stream nearby suitable for mills. Abundant water could be found by digging shallow wells supplied by the large aquifer just a few feet below the surface (Map 4).

From 1763 to 1863, Cornish Flat became a major mercantile area. In addition to the mills most of the homes that you see today as you drive through the flat were locations for businesses. There was a tannery, harness maker, carriage shop, print shop, shoemaker, blacksmith, wool shop, millinery and general stores. The streams near Cornish Flat and the other villages became choked with sawdust and other byproducts from homes and businesses. Fortunately, Cornish streams are no longer being used for such purposes, and they are sparkling and clean again.

One can find out more about the Flat's mercantile history, as well as the rest of Cornish history, at the Historical Society building on School Street in Cornish Flat.

Today, the settlement patterns in Cornish continue to be dictated by its natural resources. As in the past, the steeper slopes and high ridges still pose significant challenges for development so that most homes are located along the roads that follow streams and in the flatter village areas.

## **Eastern Cornish and Corbin Park**

Traveling east out of Cornish Flat on West Pass Road are the ruins of several mill sites along Blow Me Down Brook but only a few stones remain. Continuing east, West Pass Road becomes a Class VI unmaintained road. On the left is a lovely waterfall cascading down the hill. When walking the path opposite the waterfall, one can look back over one's left shoulder to see a stone arch bridge built as a culvert by the Works Progress Administration (WPA) in the 1930's. Within a few hundred feet of this point are the ruins of the Jonathan Wyman Sawmill.

The Jonathan Wyman Sawmill site is one of many Upper Valley sites featured in books published by Vital Communities in White River Junction, Vermont. These publications titled, [Valley Quest](#), [Valley Quest 11](#) and [Best of Valley Quest](#), can be purchased at local bookstores or found online at [www.vitalcommunities.org](http://www.vitalcommunities.org). Valley Quest publications include treasure hunts or quests featuring places that are of natural or historic significance. All eight Valley Quests in Cornish were created by local Townspeople.

On the east side of Town is the aptly-named East Road. The combination of open space, productive farmlands, old homes and spectacular views make this area in Town one of the most pleasant drives. There are a number of nice ponds, selectively-cut forests, and mature sugar maples that line the road. In addition, there is an old mill, dam, and waterfalls to be viewed at the intersection of Clark Camp Road. East Road eventually drops into Cornish Flat.

As the Cornish population grew, the land above the villages and the surrounding hillsides began to be cleared for grazing animals and planting crops. Since the soils were much thinner and rockier in these areas, many of the homesteaders moved on. They were followed by an influx of sheep farmers in the 1800's and more old-growth forests were cut down to create more grazing land. During this time period Cornish was largely deforested.

Following the Civil War, the exodus from the hill-farms increased, as better farmland in the Ohio River Valley and Great Plains encouraged many to move west. The Industrial Revolution also provided economic opportunities and many moved to work in the textile mills and factories in New England's cities. The population in Cornish decreased from a peak of 1,726 in 1840 to 954 in 1900 and reached a low of 790 in 1940. One hundred years of declining population greatly changed Cornish's landscape, as abandoned fields grew back into forests. In the twentieth century, landowners have periodically harvested timber from the regrowth of former fields. Today, the woods in Cornish cover over 80% of the Town's land area; a walk through the woods will likely result in finding old stone walls and cellar holes, the only remains of hill farms and the people who lived there.

In recent years, there has been a resurgence of small upland farms, especially in those areas where the soil is categorized as being of statewide and local importance (Map 2 – Agricultural Soils). Many of the open views in Town look across farm fields and pasture, attesting to the fact that agriculture continues to be viable in Cornish.

If you continue to travel east from Cornish Flat, up West Pass Road beyond the waterfall, you will come to a locked gate and a high fence. It is one of five gates in Cornish that serve as an entrance to Corbin Park, a game preserve that was established in 1888 by Austin Corbin, II. As many of the farms in the eastern part of Cornish were abandoned, Corbin bought them to create a private game preserve which now extends into Cornish, Claremont, Plainfield, Grantham, Croydon and Newport.

Perhaps one reason that Cornish has not depleted or lost many of its natural resources to development is due to the fact that substantially all of its eastern boundary is inside Corbin Park, and its entire western boundary borders on the Connecticut River.

## **Northwest Cornish and the Cornish Artist Colony**

Beginning in 1885, prominent American painters, sculptors, writers, architects, musicians and naturalists were attracted to the western part of Cornish. They were inspired by Cornish's natural landscape and the collegiality of like-minded creative artists. Like Austin Corbin, they bought up many of the abandoned farmhouses and the surrounding land in the northwest part of Town. Charles A. Platt, a well-known architect, designed summer homes for the newcomers. Formal gardens were developed to enhance these houses' views of Mount Ascutney and the Connecticut River Valley. Many of these lovely landscapes with their gardens are maintained to this day.

Charles Beaman, a successful New York lawyer, bought up much of the land and many homes in the northwest section of Town. He then encouraged many of his friends to come from New York to spend their summers here. Additional people came from Boston to add to the thriving artist colony that developed.

The most famous artist to come from New York was Augustus Saint-Gaudens, a preeminent American sculptor. Route 12-A leads to Saint Gaudens Rd which is where Saint-Gaudens National Historic Site is located. This National Historic Site celebrates Saint-Gaudens life's work and preserves his house, studio, gardens and fields with open views to Mount Ascutney.

This section of Route 12A has unique scenic features such as Blow-Me Down Mill and its millpond. The mill was the last to be built on a brook in Cornish, and it is the only one still standing. Just south of the mill is the Blow-Me-Down Stone Arch Bridge. Originally this bridge spanned River Road which eventually became Route 12A. It was widened and realigned in 1927 and again in 1958, when they had to bury the south wall. Although it is no longer used as a bridge, the National Park Service restored and stabilized the original portion of the bridge to ensure the retention of its historic appearance. It enhances the scenic view of Blow-Me-Down Mill and Blow-Me Down Pond site as seen from Route 12A.

Traveling up Saint Gaudens Road, a Town-designated scenic road, there are very large white pines lining the road. These pines are growing in the same area where the first white pines were taken in the 1760's for the King of England's Royal Navy. On the approach to the Saint-Gaudens National Historic Site, it becomes very apparent that Saint-Gaudens paid great attention to the site's natural landscape. He maintained views to Mount Ascutney and enhanced these views with formal gardens. Every Sunday during the summer months, people come to listen to outdoor concerts as they sprawl over the grounds. Trails meander through the woods along a brook to the Blow-Me-Down Mill site and the brook is dammed in certain spots to form lovely pools.

The scenic views seen today from the roads in the northwestern part of Town are more wooded now but where there are clearings, you can view the same expansive vistas to the west and across the Connecticut River Valley into Vermont that appealed to the newcomers who came to summer in Cornish in the late 1800's and early 1900's. Several of their homes were along Route 12A, Lang Road, Platt Road and Saint-Gaudens Road, all of which are designated scenic roads. The artist colony, named the Cornish Colony, made a unique and lasting impact on the landscape in the northwestern part of Cornish.

On Platt Road there is a covered bridge known as the Blow-Me-Down Bridge because it crosses the brook that leads to Blow-Me Down Pond. This bridge is also known as the Bridge Over the Gorge because of the topography of the land where it is located, and was called the "Sparking Bridge" by Maxfield Parrish because it was totally enclosed. This area is called Squag City, a label thought to be an adaptation of a native term that means, "good fishing hole." This area was also good for mills and some remains of mills can be seen at the top of the waterfall here. Platt Road also travels over one of

three historic stone bridges in Cornish; the other two are located on West Pass Road and at Saint-Gaudens National Historic Site.

The rich and diverse history of Cornish can be seen in many of the historic structures and sites that are still intact today and by stone foundations and other ruins remaining from the past. The natural resources of Cornish have played an enormous role in dictating the development of Cornish, providing the Town with a unique and cherished history.

### **III. Cornish Today – Land Use Patterns**

Since 1990, the population of Cornish has been stable. From 1990 to 2000, the Cornish population increased by two persons according to the US Census. From 2000 to 2010, the population actually declined by 21 persons, or 1.3%. Although population declined in the most recent census reporting period, the number of homes in Town did not. The US Census reported that residences increased from 697 to 747 during the decade, an increase of seven percent. This seems to be the result of an aging population, more “empty nesters” and more single-parent households.

#### **Planning and Zoning**

The recent growth in population corresponds with the advent of formal planning in Cornish. This responsibility lies with the Cornish Planning Board which was formed in 1953. In that year a warrant article calling for the formation of a Cornish Planning Board was passed. Town voters adopted the first Cornish zoning ordinance in 1974. The ordinance, including provisions for minimum lot sizes in different parts of Town, grew out of concern regarding the density of a recent development and proposals for additional developments.

Since the initial 1974 adoption, voters have approved amendments to the ordinance sixteen times. Some of these amendments address legally-mandated changes such as flood zones while others attempt to keep the ordinance current with the needs of the Town. Changes resulting from the work of a Cornish Business Use Committee in 1993 added “Cottage Industry” and “Home Occupation” to the ordinance, reflecting a growing trend of residents working from their homes.

Today, the mission of the Planning Board is to ensure the current and future welfare of the Town, its residents, and visitors, through appropriate land use and long-range planning. Surveys of Town residents conducted for the Cornish Master Plan have shown a consistent sentiment to preserve the rural character of Cornish, a central focus of the Planning Board. The majority of readily buildable land in Cornish has already been built upon, has been protected from development with conservation easements, or is part of larger estates. In the last decade proposed subdivisions have typically involved two to four lots with more difficult access, such as longer driveways on steeper grades, than earlier Cornish subdivisions.

The Town is divided into three types of zoning districts – village, residential and rural. Village districts are located in Cornish Flat and in an area surrounding Parsonage Road just north of Townhouse Road. Village district zoning allows the Town’s densest development in keeping with the neighborhood feel of the Flat. Residential districts are located in an area surrounding Parsonage Road north of the Fair Grounds and in an area near the Trinity Church on Route 12A. The remaining land in Town is zoned rural with 5-acre minimum lot sizes.

Cornish zoning includes the following overlay districts:

- Regulatory Flood Plain District,
- Wetlands Conservation District,
- Shoreland Conservation District,
- Connecticut River Shoreline Conservation District and
- Non-manufactured Housing District.

In Cornish, the Select Board administers the Zoning Ordinance. The Planning Board acts on applications for land subdivisions, annexations and lot line adjustments. The Planning Board also holds Site Plan Review for new businesses in Town, maintains the Town Master Plan (most recently updated in 2009 and available on the Town web site) and proposes changes to the zoning ordinance to keep it current. With the Village District at the fairgrounds and the Residential District next to the Trinity Church on Route 12A effectively off-limits to development, the Master Plan suggests Mill Village as a possible location for a new Village or Residential Zone. To date, no action has been taken to advance this recommendation.

The Zoning Board of Adjustment (ZBA) holds hearings related to appeals of zoning-related decisions by the Select Board or Planning Board. The ZBA also holds hearings related to applications for variances and special exceptions, as detailed in the zoning ordinance.

Members of the ZBA are appointed by the Town Moderator while members of the Planning Board are appointed by the Select Board.

## **Current Use**

Post-war population growth and the rising demand to build new housing, industry and shopping fueled a rise in property values in New Hampshire in the 1950’s and 1960’s. Higher land values led to higher property taxes which farmers and timberland owners struggled to pay; the New Hampshire Constitution required all land to be taxed on its full market value. In 1968, the people of the State of New Hampshire voted to amend the State Constitution to allow a mechanism to tax land on its “current use value” not its “highest and best use value” – this amendment paved the way for the Current Use tax assessment law passed in 1973.

The first line of RSA 79-A elegantly states:

*“It is hereby declared to be in the public interest to encourage the preservation of open space, thus providing a healthful and attractive outdoor environment for work and recreation of the state's citizens, maintaining the character of the state's landscape, and conserving the land, water, forest, agricultural and wildlife resources.”*

The Current Use program is voluntary and landowners who enroll received a reduced tax assessment for parcels of:

- field, farm, forest, and wetland of 10 acres or more;
- natural preserves or recreation land of any size;
- farmland of any size generating annual revenues in excess of \$2,500.

The assessment is based on the income-producing capacity of the land, not the market value. The State Department of Revenue Administration manages the program.

The Current Use program has been extremely successful in maintaining open space across the State, with over 50% of privately-held land enrolled. Current Use applies only to private land and does not include the White Mountain National Forest or any other public lands owned by federal agencies, the State or municipalities.

Current Use is not a permanent protection for land as any landowner may remove land from Current Use and subdivide or otherwise develop it. Landowners who choose to withdraw their land from current use pay a penalty called the Land Use Change Tax. The Land Use Change Tax is often designated to permanently protect land elsewhere in town. In Cornish 60% of the Land Use Change Tax is placed into to the Town Conservation Fund. The Conservation Commission is authorized to use these funds to undertake conservation projects, such as assisting with the costs associated with conservation easements. The Conservation Fund is an important mechanism for assisting landowners who want to conserve their land.

Landowners in Cornish have seen the value of the Current Use program - nearly 83% of the land (22,264 acres) is enrolled in Current Use as of 2011. In the five year period 2007-2011 the acreage of land enrolled in Current Use increased by more than 1,100 acres while less than 100 acres was withdrawn.

The Current Use program also provides important information about how undeveloped land is used and managed. There are five classifications of Current Use assessments: forest, forest with stewardship, farmland, wetland, and unproductive land (Table 2).

Forest land with documented stewardship has a lower assessment to reflect the cost of active stewardship of the land. In order to qualify, a landowner must provide documentation of a Certified Tree Farm, a Forest Stewardship plan from a licensed forester, or a summary of a Forest Stewardship plan developed privately.

**Table 2: Current Use in Cornish by type, as of 2010 (NH Dept of Revenue Administration)**

<i>Current Use Type</i>	<i>Acreage</i>	<i>% of CU Land</i>
Forest	10,722	48%
Forest with stewardship	8,803	40%
Farmland	2,409	11%
Wetland	160	1%
Unproductive	169	1%
<b>Total in Current Use</b>	<b>22,264</b>	<b>100%</b>

## **Corbin Park**

Substantially all of the eastern highlands of Cornish are owned and managed by the Blue Mountain Forest Association and is known as Corbin Park. Austin Corbin II founded the Blue Mountain Forest Association in order to manage and maintain Corbin Park which remains privately owned. The Association manages the park as a nature refuge and a hunting preserve for its members and their guests. Corbin Park totals 25,000 acres and includes land in Cornish, Plainfield, Claremont, Newport, Croydon, and Grantham. In Cornish, the Blue Mountain Forest Association owns approximately 3,800 acres within the park fence and 250 acres outside the fence.

All of the parkland is managed as a registered tree farm. The tree farm designation ensures that it is managed for the long-term health of the forest and habitat. Wildlife abounds in the park, in addition to the two imported animals, elk and boar, there are other native mammal species including deer, bobcat, raccoon, mink, fisher, otter, porcupine, fox, coyote, and bear. Many species of birds, reptiles and amphibians are also present.

The Association has placed a restricted deed in Cornish on one parcel of land just outside the park fence in the area along the Class VI portion of Skyline Drive.

To further add to this area's significance is the fact that the sources for all of the water that flows through Cornish and eventually to the Connecticut River, are located within Corbin Park.

## **Land Conservation in Cornish**

Conservation-minded landowners have contributed greatly to protecting the open and undeveloped landscape of Cornish. Collectively they have protected just over 3,000 acres, over ten percent of the Town, through conservation easements that are held by land trusts or the Town of Cornish. Many conserved properties connect to other easements or public lands which has created large blocks of conserved land in Cornish, most notably in the north and northwest sections of Town (Map 2).

A conservation easement is a legally binding agreement between a landowner and a land trust or agency that restricts use of the land in order to protect its significant natural

features. Because the land remains in private ownership, taxes are still paid on these properties and conserved properties may be enrolled in Current Use.

For active farmland, two parcels (Macleay and Weld) have Agricultural Preservation Restrictions that permanently limit the development of the land to agricultural operations and associated development such as farm buildings or a dwelling for farm workers. Agricultural Preservation Restrictions are monitored by the State Department of Agriculture, Markets and Food.

*Please note – Not all conservation lands are open for public recreation. Please consult with the easement holder or land-owning agency for information on public access.*

*The notation “LCIP” in Table 3 indicates that these lands were protected with state funding through the Land Conservation Investment Program; the land acquisition phase of LCIP ran from 1987 through 1993. Lands placed under easement through LCIP are monitored by the State Conservation Land Stewardship Program housed at the NH Office of Energy and Planning. LCIP should not be confused with LCHIP, the Land and Community Heritage Investment Program, which is a current funding program for land conservation and historic preservation.*

**Table 3: Private Land with Conservation Easements in Cornish**

<i>Name of Parcel, Original Grantor, Year Granted</i>	<i>Acreage</i>	<i>Current Land Owner/ Easement Holders</i>	<i>Location</i>
<b>Back Achers East</b> E. Leonard & Isabelle Barker 1988	16.6	Durwood & Suzanne Lenz - Town of Cornish/ Upper Valley Land Trust/ LCIP	Tiftt Rd
<b>Back Achers West</b> E. Leonard & Isabelle Barker 1988	39.4	James Barker - Town of Cornish/ Upper Valley Land Trust/ LCIP	Tiftt Rd
<b>Bulkeley</b> Grace Bulkeley 2007	773	Grace Bulkeley - Society for the Protection of NH Forests	Rte 12A & Slade Hill Rd
<b>Colby</b> Virginia Colby 1987	92	Gayle Davis - Town of Cornish/ Upper Valley Land Trust	St. Gaudens Rd
<b>Dewey</b> Sarah M. & William R. Dewey 2007	304	Sarah M. & Will Dewey - Upper Valley Land Trust	Gap Rd
<b>Fitch</b> James & Susan Fitch 2009	83.8	James & Susan Fitch - Upper Valley Land Trust/ Town of Cornish/LCHIP	Dingleton Hill Rd
<b>Fitch – East Woods</b> James & Susan Fitch, Martha Zoerheide & Orville B. Fitch II 2009	79.3	James & Susan Fitch, Martha Zoerheide - Upper Valley Land Trust/ Town of Cornish/LCHIP	Dingleton Hill
<b>Fern Hill</b> Carol Quimby Heath 2010	45	Carol Quimby Heath - Upper Valley Land Trust	Dingleton Hill Rd
<b>Jaarsma</b> Robert & Mariet Jaarsma 2007	86.7	Robert & Mariet Jaarsma - Society for the Protection of NH Forests	Dingleton Hill Rd
<b>Jenckes South</b> Estate of Harriet Ely Jenckes 1996	8	Peter & Caroline Storrs - Upper Valley Land Trust	St. Gaudens Rd
<b>Jenckes North</b> Estate of Harriet Ely Jenckes 1996	50.4	Charles Plimpton & Barbara Nyholm - Upper Valley Land Trust	St. Gaudens Rd
<b>King Elm Farm</b> William and Jennifer Lipfert 2012	86	William and Jennifer Lipfert - Upper Valley Land Trust/Town of Cornish	Rte 12A
<b>Macleay</b> D. Scott Macleay 1989	19.8	Mac's Happy Acres - NH Dept. of Agriculture, Markets & Food	River Rd
<b>Meyette</b> Brian Meyette 1991	24.98	Brian Meyette - Town of Cornish	Skyline Dr
<b>Meyette</b> Joseph & Margaret Meyette 1989	188.4	Joseph & Margaret Meyette - Town of Cornish/LCIP	Rte 120 & Jackson Rd.
<b>Neidecker</b> Anthony B. & Ann Hutchinson Neidecker 1990	13	Gillian Goodwin & Michael Paccione - Town of Cornish/ Upper Valley Land Trust	Rte 12A & Platt Rd

<i>Name of Parcel, Original Grantor, Year Granted</i>	<i>Acreage</i>	<i>Current Land Owner/ Easement Holders</i>	<i>Location</i>
<b>North Star Livery</b> John & Linda Hammond 2013	24.6	John & Linda Hammond - Upper Valley Land Trust/Town of Cornish	Rte 12A
<b>Nowicki</b> Sandra G. Nowicki 1999	24.45	Carolyn Cole - Upper Valley Land Trust	St. Gaudens Rd
<b>Queneau</b> Paul & Joan Queneau 2001	320.4 (198.4 in Cornish)	Josephine Queneau - New England Forestry Foundation	Burr Rd
<b>Root Hill</b> Helen Lovell 2005	12	Helen Lovell - Upper Valley Land Trust	Root Hill Rd
<b>Shurcliff</b> William A. Shurcliff 1985	10	William A. Shurcliff - Town of Cornish/ Upper Valley Land Trust	Rte 12A
<b>Snowden</b> Donald & Irmie Snowden 2008	23.23	George Erlanger - Upper Valley Land Trust	Dingleton Hill Rd
<b>Tracy</b> Anne Tracy 2007	36	Anne Tracy - Upper Valley Land Trust	Lang Rd
<b>Wade Estate</b> CT River Watershed Council 1996	35.9	Joanne Evarts - Upper Valley Land Trust	Rte 12A
<b>Weld</b> Clara & Fred Weld 1988	32.87	Fred Weld - NH Dept. of Agriculture, Markets & Food	Rte 12A
<b>Yatsevitch Forest</b> Michael M. Yatsevitch 1989	800 (622 in Cornish)	Society for Protection of NH Forests - NH Dept. of Resources & Economic Development	Fernald Hill Rd
<b>G. Yatsevitch</b> Gratian M. Yatsevitch III 1989	174 (80 in Cornish)	Gratian M. Yatsevitch III & Gail McKibben - NH Dept. of Resources & Economic Development	Fernald Hill Rd
<b>Total</b>	<b>2,957.16</b>		

## Public Lands in Cornish

Public lands are managed for the public's benefit – all public lands in Cornish offer multiple public benefits for local residents and those who come to visit the Town. Public land in Cornish provides recreation and timber management for the Town, supplies and protects the drinking water for its neighbors in the City of Claremont, and protects state wildlife resources. Notably, Cornish is the only Town in New Hampshire to have a unit of the National Park Service within its boundaries – Saint-Gaudens National Historic Site. Public undeveloped lands in Cornish cover just over 1,000 acres, or 4% of the Town's land area (Table 4).

**Table 4: Major Public Undeveloped Lands in Cornish**

<i>Public Land</i>	<i>Acres</i>	<i>Land Owner/Manager</i>	<i>Location</i>
Federal Lands			
Saint-Gaudens National Historic Site	190	National Park Service	St. Gaudens Rd
State Lands			
Chase Island Wildlife Management Area	13	NH Fish & Game	Connecticut River
Cornish Wildlife Management Area	42	NH Fish & Game	Rte 12A
Town/City Lands			
Whitewater Brook Reservoir Lands	474	City of Claremont	East of Rte 120
Cornish Recreation & Education Area	76	Town of Cornish	Parsonage Rd
Cornish Town Forest	270.5	Town of Cornish	Root Hill Rd
<b>Total</b>	<b>1,017.5</b>		

Cornish contains 190 acres of federal land, 47 acres of state land, 474 acres of land owned by the City of Claremont, as well as nearly 518 acres owned by the Town of Cornish. Of the Town's 518 acres, there are two main parcels managed as public open space: the 76-acre Cornish Recreation and Education Area (CREA) property and the 270.5-acre Cornish Town Forest. The remainder of Town-owned land is composed of smaller parcels, many of which are developed (Table 5). A detailed description of the major public undeveloped lands in Cornish and how they are managed is included in Appendix A.

**Table 5: Inventory of Town-Owned Properties in Cornish**

Map	Lot	Location	Acres	Usage	Maintained by
1	45A	Platt Road	0.55	Chase Cemetery	TOC - Cem Dep
2	15	732 Rte 12A	0.46	Cornish/Windsor Covered Bridge parking area	State of NH
3	42	833 Rte 12A	2.79	Trinity Church*	TOC / T Ch Trs
3	42A	833 Rte 12A	0.90	Trinity Cemetery	TOC - Cem Dep
3	68	Root Hill Rd	4.20	Comings Cemetery	TOC - Cem Dep
5	6	Tandy Brook Rd	270.00	Town Forest +	T Forest Comm
6	56	488 Town House Rd	1.70	Town Office*	TOC
6	58	482 Town House Rd	0.64	Unbuildable	TOC
6	67	255 Parsonage Rd	4.90	Highway Garage*	TOC
6	67A	294 Town House Rd	0.52	Town Hall*	TOC
6	69	Town House Rd	0.66	Hodgdon Lot	
6	70	Town House Rd	1.02	Fire Pond	TOC - Fire Dep
6	71	283 Town House Rd	4.00	Fire Station/Police Station*	TOC - Fire/Police
6	73	Parsonage Rd	76.00	Cornish Recreation & Education Area*+	TOC - CREA Com
6	89	Jackson Rd	36.00	part of town forest +	T Forest Comm
6	102	Town House Rd	0.40	unbuildable	
7	65B	Center Rd	9.10		
7	86	Center Rd	3.00		
8	32A	Whitten Rd	0.20	Whitten Cemetery	TOC - Cem Dep
9	7A	Huggin Cemetery Rd	0.30	Huggins Cemetery	TOC - Cem Dep
10	9	139 Harrington Rd	5.25		
10	79	Rte 120	4.50	Childs Cemetery	TOC - Cem Dep
11	7	Town House Rd	0.08	Hearse House*	TOC - Cem Dep
11	37A	Edminster Rd	1.25	Edminster Cemetery	TOC - Cem Dep
12	39	Rte 120	7.00	Reed Lot	
12	44	Claremont Town Line	63.00	Hart Lot +	
16	4C	Rte 120	6.30	Recycle Center*	TOC
16	14	Rte 120	4.00	Behind Childs Cemetery	
16	28	Leavitt Hill Rd	2.00	Butman Lot	
16	49	Leavitt Hill Rd	4.00		
18	17-1	School St	0.36	Library*	TOC
18	17-2	24 School St	0.00	Historical Society*	TOC / Hist Soc.
18	29	Leavitt Hill Rd	0.23	Fire Pond/Swimming Area	TOC/Fire Dep
18	34A	School St	0.50	Flat Cemetery	TOC - Cem Dep
18	43	187 Rte 120	0.75	Fire Station*	TOC - Fire Dep
18	51	Rte 120	1.20	Meeting House*	TOC / Mtg Trs.

Total Acreage of Town Properties 517.76  
 Hist Soc. = Cornish Historical Society  
 Mtg Trs= Meeting House Trustees  
 TOC = Town of Cornish  
 TOC - Cem Dep = Town Cemetery Department

\* = buildings; + = written management plan  
 TOC - CREA Com = CREA Committee  
 T Forest Comm = Town Forest Committee  
 T Ch Trs = Trinity Church Trustees

# IV. Water Resources

## Watersheds

Cornish drains to the Connecticut River through two major drainage pathways:

- to the Sugar River in Claremont and then to the Connecticut River, and
- directly to the Connecticut River through small tributaries in Cornish and Plainfield.

The Sugar River watershed covers the southeastern corner of Cornish westward to the Root Hill Road area and includes both Whitewater Brook and Whitewater Reservoir which is part of the City of Claremont's drinking water supply. There are several other small tributary streams in Cornish that flow into Whitewater Brook below the reservoir.

Major brooks in Cornish that flow directly to the Connecticut River include: Mill Brook and Blow-Me-Down Brook. Mill Brook and its tributary streams drain central Cornish. Mill Brook follows a course westward along Skyline Drive, Parsonage Road, Jackson Road, Tandy Brook Road, Mill Village Road and the west end of Townhouse Road passing through South Cornish and Cornish Mills. One major tributary to Mill Brook drains the area around Beechwood and Mace Roads and then flows along Townhouse Road past the school and Town offices and through Cornish City. Another major tributary known locally as Center Brook drains the area near Center Road, with the stream closely following the road and flowing through Cornish Center before emptying into the aforementioned stream at Cornish City.

Blow-me-down Brook drains northern Cornish and a large area of the Town of Plainfield, including the village of Meriden. Its headwater tributaries, including Notch, Leavitt and Wine Brooks, rise in northeastern Cornish and eastern Plainfield, flow through Cornish Flat and into Plainfield on its route to the Connecticut River near St. Gaudens National Historic Site. Blow-me-down Pond is an impoundment of the brook just east of Route 12A.

The Town's three major brooks originate within the Town's boundaries, therefore Cornish is not subject to the risk of water pollution from an upstream location. This factor is particularly advantageous as they are all small brooks. The Sugar River to the south, the Mascoma to the north, and the Mill Brook to the west were all subject to exploitation after the mid 1800's. Claremont, Lebanon, and Windsor all developed into industrial mill towns, which substantially changed their economy, appearance, and water quality. Cornish brooks, although subject to intense use by mills prior to the 1840's, were bypassed completely by industry during this later period. The rural character of Cornish has continued to be appealing to its present residents partially for this reason.

The brooks are by no means tame--they are subject to flash floods and occasionally become uncontrollable.

## **Floodplains**

Floods are the most common and most costly natural disaster in the United States, according to the Federal Emergency Management Agency. Rivers and streams are sculpted by floods and the land on either side of the water develops over geologic time into a floodplain, a relatively flat open or forested space which helps slow and absorb floodwaters. Floodplains also provide unique wildlife habitats and a transition between the river ecosystem and upland ecosystem. The Connecticut River floodplain is known for having some of the richest agricultural soils in the world.

Floodplains describe the area of land adjacent to a river or stream that may flood. The Federal Emergency Management Agency has mapped floodplain and flood-prone areas with their Flood Insurance Rate Maps, defining Special Flood Hazard Areas as those areas that would be inundated by a 1-percent annual chance flood, also referred to as the base flood or 100-year flood. The total acreage within the Special Flood Hazard Areas is 1,162 acres in Cornish. Floodplains have been mapped in four main areas:

- along the Connecticut River,
- along Center Road, Townhouse Road, Jackson Road and Tandy Brook Road,
- in Cornish Flat, and
- along Blow-me-down Brook.

The Connecticut River is a highly managed river, with hydroelectric dams on the main stem and flood control dams on the Black River and Ottauquechee River. These flood control dams keep the river from being the menace that it once was – the river washed away the first three bridges connecting Windsor and Cornish.

## **Groundwater**

As there is no reservoir or Town water supply, Cornish is crucially dependent upon groundwater. There are numerous shallow wells and springs in Town and groundwater resources appear to follow some patterns through the area.

Some of the earliest homes and farms in Cornish appear to have settled in locations where a more plentiful water supply was available. For example:

- On Route 12A, the Chase family area which consists of several early homes near the Trinity Church, has numerous shallow wells and a few springs and it was one of the first areas of settlement.
- S. Comings' house in Cornish Mills was built in 1796 and the water rights to the spring above the house has been traced to the early 1800's.

- The Smith farm on East Road was one of the first on the East side of town and was located near a spring.

It seems logical that a plentiful clear water supply was one of the primary considerations for early homes and farms although many current residents have drilled bedrock wells.

## Aquifers

Aquifers and groundwater water reservoirs are terms often used interchangeably. Aquifers consist of saturated rock materials (e.g. gravel) that are permeable enough so that the water can move through them by gravity and be withdrawn from them by wells. An aquifer recharge area occurs where water is purified by losing its pollutants on the way through these materials. Large quantities of water move slowly underground toward areas where they reappear in the form of:

- ponds (e.g. the fire pond at Cornish Flat),
- wetlands (e.g. the area at the junction of Center Road and Route 120), or
- springs (e.g. the well-known Herlackenden Springs in northwest Cornish) (Map 4).

There appear to be five major areas in Cornish that act as aquifers, holding and perhaps purifying groundwater. Each of these areas contain stratified drift made of sand and silt deposited by glacial outwash, and recent stream deposits often covering verves, thin layers of marine clay. Cornish was at one point submerged by the Atlantic Ocean. Locations of the Cornish aquifer areas are:

- Along the Connecticut River from the Claremont line to Mill Brook at the base of Wellman's Hill. There is little doubt that there is an aquifer here as numerous springs, shallow wells, and one medium-sized pond reinforce the surficial geological prediction. The wells and springs give plentiful clean water even during periods of severe drought. As mentioned previously, this is the area of earliest settlement in Cornish, and records of water rights and quality exist to the late 1700's.
- Along the Connecticut River in northwest Cornish to slightly east of Blow-Me-Down Brook and along the base of Dingleton Hill. This is another very prominent aquifer. Large sand and gravel deposits exist throughout the area, and numerous springs occur. The most famous spring is the Herlackenden Spring, which may be the largest private water supply in New Hampshire. This area of town was the well-known Wentworth-Chase grant, which the Chase family acquired after they found their prior grant in Croydon not to their liking.
- South Cornish beyond the junction of Whitewater and Redwater Brooks where the brook swings north into Cornish again crosses Route 120 and flows back into Claremont. This is a small aquifer and several springs occur in this area. In Addition, along Route 120 there are wetlands that stay moist or contain standing water year-round, and the Whitewater Reservoir at a higher elevation implies that plentiful groundwater would be available here.

- South Cornish between Route 120 and East Pond is another area of large deposits. There are springs in this area and it appears that there is plentiful groundwater here.
- Cornish Flat area north to the Plainfield line. There is no doubt that this is an aquifer as during wet periods some of the residents of Cornish Flat must use a sump pump continually to keep the water from filling their basements. The fire pond is a good indicator of the water level affecting the area, once when it was pumped dry the water level in several nearby wells dropped. Much of this area is in tillage or pasture, but Cornish Flat is also the most densely developed area of Cornish. The basin of Cornish Flat continues into Plainfield along the banks of the Blow-Me-Down Brook.

## Wetlands

Wetlands are defined as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetland areas include, but are not limited to, swamps, marshes and bogs. Until recently the tremendous ecological value of wetlands was little understood. Recent research is continuing to investigate the values of wetlands on the local, regional and international levels.

Cornish is especially dependent upon the many wetlands that line many of its roads. As there are no natural ponds or lakes and few large impoundments in Cornish, wetlands provide an invaluable service: they slow down the runoff from the snow and rain allowing water time to seep into the earth and replenish the water table upon which all Cornish residents depend so heavily.

In addition to this primary service wetlands are vital wildlife habitats. Wetlands may be cattail marshes, beaver ponds, sphagnum bogs, forested swamps, floodplain forests, vernal pools or shrub-covered wetlands, each of which provides a different type of wildlife habitat. Some wetlands, vernal pools in particular, support rare and endangered plants and animal populations.

Wetlands also provide flood protection. Water entering wetlands is slowed by vegetation and the relatively flat terrain, diminishing the probability of flash flooding. Wetlands also allow sediment, such as topsoil carried by a stream, to be deposited safely. If sediments were dumped into the stream bed the probability of flash flooding would increase.

In New Hampshire a certified wetland scientist identifies the location of a wetland through field delineation taking the vegetation, hydrology and soil types into account. It has thus far been unfeasible to complete a nation-wide field delineation of wetlands and so the US Fish and Wildlife Service has mapped wetlands based on aerial photography. The resulting National Wetlands Inventory, or NWI mapped 306 acres of wetlands in Cornish. Also, the Natural Resources Conservation Service (NRCS) has identified and mapped soils with poor drainage, one of three wetland indicators, in their county soil

surveys. In Cornish the NRCS soil survey mapped 2,108 acres of poorly or very poorly drained soils. The large difference between the NWI and the NRCS maps demonstrates the limitations of relying on national data or county surveys alone. However, the maps that these programs have produced can be used to paint a general picture of the major wetlands in Cornish (Map 3).

## **Connecticut River**

The Connecticut River is an extraordinary resource for the New England states through which it flows. Over its history the river has served as a transportation corridor, fishery, power generator, sewer for industrial and human waste, and recreation destination. Efforts in the last thirty years since the passage of the Clean Water Act, have substantially improved the water quality in the Connecticut River.

In Cornish, all areas of the Connecticut River are now considered safe for swimming, boating and fishing. Until recently, the area of the river to the north of Blow-Me-Down Brook was considered unsafe for swimming due to combined storm water and wastewater sewer overflow in the wastewater system of Lebanon. The City of Lebanon has separated its storm sewers from its sanitary sewer system, resulting in cleaner water for everyone downstream.

Cornish lies downstream from the hydroelectric Wilder Dam and upstream from Bellows Falls Dam both of which hold back and release varying amounts of water depending on the terms of their operating licenses, water levels, and the regional energy market. In Cornish the northern half of the Connecticut River is free flowing and the southern half is part of the Bellows Falls impoundment. During extreme weather events flood control dams on the Black River and Ottauquechee River also regulate the flow of the river.

## **V. Agriculture**

### **Farmland Soils**

A vitally important resource for agriculture is the soil. The texture, drainage, depth and fertility of the soil all play a role in its capacity to support the cultivation of land for agriculture. The terrain and slope are also taken into consideration, as severe slopes and rocky outcrops limit some types of agriculture. In the Sullivan County Soil Survey there are three classes of agricultural soils categorized by their relative value for raising crops or livestock:

- Prime Nationally Ranked Farmland, covering 5% of Cornish,
- Farmland of statewide importance, covering 5% and
- Farmland of local importance, covering 9% (Map 5, Table 5).

**Table 5: Agricultural Soil Types in Cornish**

<i>Agricultural Soil Type</i>	<i>Acreage</i>
Prime Farmland	1,425.9
Farmland of statewide importance	1.425.1
Farmland of local importance	2,524.1
<b>Total Acres</b>	

Cornish has slightly lower than average percentage of agricultural soils acreage compared to other Sullivan County towns. Sullivan County as a whole has 6% prime farmland, 5% state farm soils, and 15% locally important farm soils. These classes represent the capability of the soil for agricultural production and not the current use of the land.

The best soils for agriculture (prime farmland) in Cornish consist of loams, sandy loams and silt loams with good drainage and a minimal slope (less than 8%), found primarily along the Connecticut River and the Route 120 corridor. Farmland soils of statewide importance located in Cornish are not found along the Connecticut River, but are scattered throughout the central portion of Town and in the Route 120 corridor. These soils are also well-drained or moderately well-drained silt loams or sandy loams, but typically have a steeper slope (8-15% grade). Farmland soils of local importance are a more diverse group of soils ranging from excessively-drained to poorly-drained, with slopes from 0% to 15%. Many of these soils are quite stony. In Cornish, farmland soils of local importance are well distributed throughout Town with a particular cluster in the northwestern corner of Town.

For a summary of all farmland soils in Sullivan County, please refer to Appendix B.

## **Commercial Farming**

Commercial farms are defined by the US Department of Agriculture as a farm operation that grosses \$1,000 or more in farm sales per year. In the past, dairy farms were the dominant type of agriculture but over the past few decades farmers have diversified their production (Table 6). In addition to these farms, some landowners lease their land for agricultural use by other farmers (approximately 500 acres currently), and many residents raise vegetables, fruits, trees, chickens and/or livestock, keep beehives for honey or engage in maple sugaring on a smaller scale. The Cornish Farmers' Market, held May-October, provides a local venue for small farmers from the region to sell their products to Cornish residents.

**Table 6: Commercial Farms in Cornish**

<i>Farm Name</i>	<i>Location</i>	<i>Product(s)</i>
John & Linda Hammond	Route 12A	Beef, forage crops, horses, honey
Putnam Farm (Sprague)	Route 12A	Silage corn, vegetables
Ann Tracy	Lang Rd.	Wool
Jim & Sue Fitch	Fitch Dr.	Beef, grain, horses
Bill Ladd	Center Rd.	Hay, beef, poultry, maple syrup
Dan & Rebecca Flynn	Jonesville	Beef
Many Summers Farm (Gallagher/Wellborn)	Paget Rd.	Beef, yogurt, cheese, breeding stock
Jean Hulbert	Harrington Rd.	Goats, creamery
Bob & Linda Rice	Burr Rd.	Dairy
Rob & Anne Marie Hier	Lovejoy Hill	Beef
Charles Stone	Cornish Stage Rd.	Beef, poultry, turkey, swine, lamb, silage, hay
Greg & Marsha Clark	Cornish Stage Rd	Dairy
Greg & Liz Clark	Cornish Stage Rd.	Purebred dairy cattle
Chuck & Kim Sullivan	Route 120	Maple syrup
Jim & Pamela Lukash	Route 120	Maple syrup
Chesten & Nancy Newbold	Dingleton Hill	Maple syrup
Ginny Prince	Hilliard Rd.	Lamb meat
Angle Ridge Farm (Scheuer)	Route 120	Goat milk soap, vegetables
Meadowledge Farm (Redlands)	East Rd	Lamb meat, wool products
Welsh Mountain Ponies (Atwater/Bulkeley)	Leavitt Hill Rd.	Welsh Mountain ponies
Bulkeley Farm	Slade Hill Rd.	Timber, pulp, firewood
Suzie Schad	Cornish Stage Rd.	Blueberries

## The Cornish Fair

The Cornish Fair is a yearly event held in August. It is located on the Cornish School grounds, on Townhouse Road. It did not begin as the large agricultural fair that we know today. It began as a two-day fair in 1950; and in 1954, it was expanded to a three-day fair, with one designated as 4-H Day.

Since that time, its connection to the natural resources of this area have grown to include animal husbandry, forestry, and gardening throughout Cornish and Sullivan County. There are horse, sheep, and other small animal judging competitions. There are horse pulls, horse shows, and many woodsmen competitions. Individuals submit vegetables and flowers from their gardens to be judged.

## VI. Forestry

### Commercial Forest Production Potential

The Sullivan County soil survey classifies soil types by their capability to support sufficient tree growth for commercial forestry operations which are broken into 5 classes: 1A, 1B, 1C, 2A, and 2B (Map 6, Table 8). The dominant tree species on these soil types varies depending on the successional stage of the forest or stand.

**Table 8: Forest Soils Groups in Cornish**

<i>Forest Soils Group</i>	<i>Cornish Acreage</i>
1A – hardwood production	7,807.4
1B – mixed forest	1,344.0
1C – softwood production	1,117.0
2A – management limitations	14,489.5
2B – poor drainage	1,828.0
<b>Total Acres</b>	<b>27,269.7</b>

Group 1 soils are the best soils for forest management and are the most favorable for growth. Group 1A soils are the best soils for hardwood production because they are relatively deep, fertile, and well-drained. Group 1B soils are slightly less fertile and sandier than Group 1A soils so tree growth is not quite as vigorous. Group 1C soils are composed of outwash sands and gravels and are ideally suited to softwood production.

Group 2 soils have significant limitations with regards to either tree growth or management because of more severe physical features. Group 2A soils are similar in productivity to Group 1A and 1B soils, but have physical features that make management more difficult such as steep slopes, erosion-prone soils, rocky outcrops, surface boulders or extreme rockiness. Group 2B soils are poorly drained and therefore generally have lower productivity and significant management limitations.

Compared to Sullivan County, Cornish has proportionally much more 2A forest soils than the surrounding towns due to the hilly and rocky terrain in Town. Cornish has similar proportions of 1A, 1C and 2B soils to the rest of the County, and significantly lower proportions of 1B soils (Figure 4).

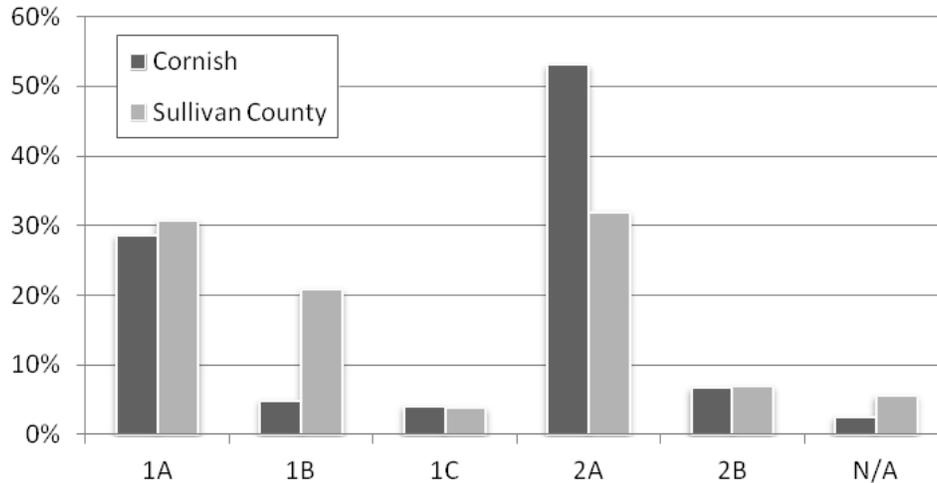


Figure 4. Forest Soils Groups by Percent, comparison of Cornish to Sullivan County, NH

## Managed Forests and Tree Farms

Today the Town of Cornish is dominated by a forested landscape covering more than 80% of the total landscape. As the hill-farms were abandoned 150 years ago their open fields have largely reverted to forest.

In Cornish over 19,500 acres are enrolled in Current Use as forest, and 8,803 acres have a stewardship plan. Current Use does not include public lands, most of which are forested in Cornish. The Whitewater Brook Reservoir lands, the Town Forest and Saint-Gaudens National Historic Site all have land management plans, and there is a management plan being developed for CREA.

In addition to land enrolled in current use, the back lots of many parcels are wooded, which can provide wood for personal use, fuel wood and maple sugaring.

The Town issues Intent to Cut permits for timber harvesting, which records the amount of acreage to be harvested (Table 9).

In 2003, Cornish experienced multiple ferrous summer storms with straight line winds as well as an ice storm and in 2010 another severe ice storm hit the area. Much of the cutting in these two years was clean up from those storms. In 2011, two large parcels (300 acres and 500 acres) were harvested.

Table 9: Intent to Cut Permit Activity in Cornish, 2002-2011

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
# of Requests	17	26	12	12	17	13	12	15	27	17
Acreage	213	640	197	310	369	348	489	244	952	1,141

# VII. Wildlife Habitat

## Habitat Types

New Hampshire is divided into three large natural regions: White Mountains, Lower New England and Vermont-New Hampshire Uplands. Cornish is located within the VT-NH Uplands section. Its land along the Connecticut River is in the subsection the Northern Connecticut River Valley (Figure 5). Within New Hampshire's large ecological sections there are many different natural communities which are groupings of plants that occur together in recurring patterns. Each type of natural community has a unique set of environmental conditions that support the plant and animal species adapted to those conditions.

The New Hampshire Natural Heritage Bureau and the New Hampshire Fish and Game Department both seek to understand and protect habitats in order to protect the plants and animals that live there.

The New Hampshire Fish and Game Department's wildlife habitat management strategies are outlined in the New Hampshire Wildlife Action Plan (2010). In that Plan habitat types were mapped and then ranked according to their condition and risk of degradation. Measuring habitat condition entailed analyzing various factors that impact wildlife: biodiversity, human recreation, development and land use, and air and water quality. The analysis resulted in four classes:

- Tier 1 - Highest ranked habitat in the state (top 10-15%);
- Tier 2 - Highest ranked habitat in the biological region;
- Tier 3 - Supporting landscapes important to highest ranked habitats;
- Habitat not highly ranked (Map 8).

Tier 1 wildlife habitat is of greatest conservation priority because it represents the top 10-15% of habitat in the entire state. Tier 2 wildlife habitat is also of high conservation priority because each part of the state has unique species and habitat types that are important on a regional scale. Tier 3 wildlife habitat helps maintain the high level of biological integrity of Tier 1 and Tier 2 habitat, e.g. the watershed surrounding a high-quality stream corridor. Figure 6 shows the distribution of Tier 1, 2 and 3 habitat around the state.

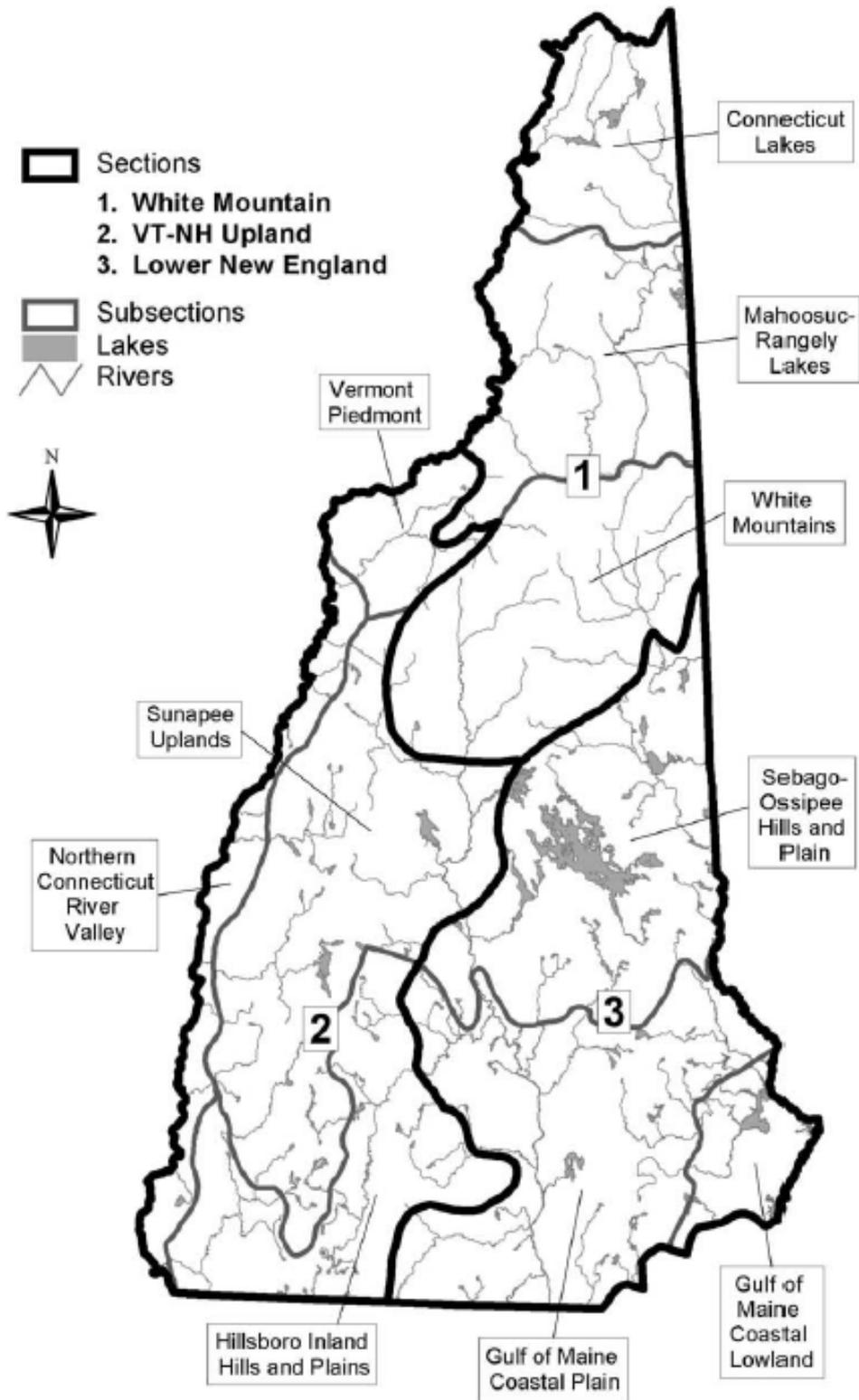
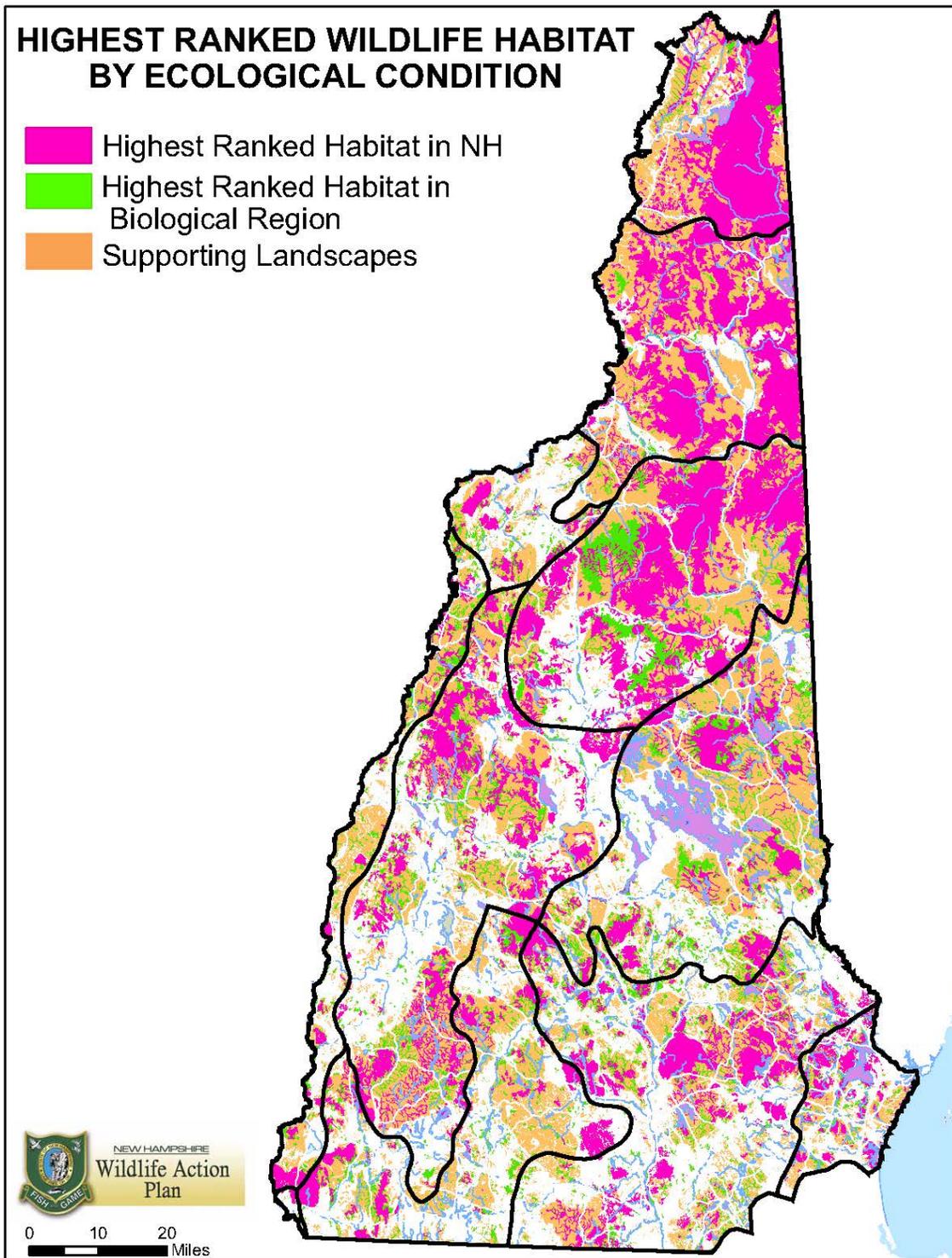


Figure 5. Ecoregions of New Hampshire, from *Natural Communities of New Hampshire* (2004) - reprinted with permission from NH Natural Heritage Bureau



**Figure 6. Tier 1-3 ranking of wildlife habitat from the 2010 Wildlife Action Plan**  
**Source: NH Fish and Game Department**

Cornish ranks very high in the Wildlife Action Plan analysis of wildlife habitat; almost 80% of Cornish is considered either highest-ranked habitat or supporting landscape:

- Tier 1 covers 2,250 acres, or 8% of the Town's area;
- Tier 2 covers 2,671 acres, or 10% of the Town's area;
- Tier 3 covers 16,230 acres, or 60% of the Town's area.

There are several large areas of top tier habitat, particularly the Connecticut River and the eastern highlands of Cornish; all Tier 1 and 2 areas are described in Table 10.

**Table 10: High-ranking wildlife habitat areas in Cornish, NH Wildlife Action Plan**

<i>Habitat Type</i>	<i>General Location(s)</i>
River and riparian area	Connecticut River
Floodplain forest	Blow-me-down Brook
Hemlock-hardwood-pine forest	Yatsevitch Forest area (Cornish and Plainfield)
	Whitewater Brook Reservoir area (Cornish and Claremont)
	South of School St/Leavitt Hill Rd; East of East Rd
	Slade Hill Rd
	Root Hill Rd near Claremont line, also near McSwain Dr
Grasslands (Open Fields)	West of Route 12A near St. Gaudens
	Littell Rd
	Fitch Dr
	Burr Rd (3 open field areas)
	Leavitt Hill Rd
	Lovejoy Hill Rd
	Clark Camp Rd and East Rd (3 open field areas)
	Skyline Dr and Maple Dr
	South Deming Rd

The Natural Heritage Bureau places particular emphasis on and gives conservation priority to “exemplary” natural communities, which are the best remaining examples of New Hampshire’s natural ecosystems. Exemplary natural communities include both rare habitat types and high-quality examples of common habitat types. The Natural Heritage Bureau targets small, unique habitats that are often not shown on maps and there remain many that are yet to be found. This report describes the larger-scale habitat as well as two exemplary natural communities that the Natural Heritage Bureau has found in Cornish: rich mesic forest and silver maple-wood nettle-ostrich fern floodplain forest.

## **The River, Riparian Areas and Floodplain Forests**

The Connecticut River and the land on its banks – riparian areas – are ever-changing environments affected by changing water levels and erosion from ice and flooding. Because of their dynamic nature, riparian areas have a wide variety of plant and animal communities. Wildlife reliant on these habitats includes reptiles and amphibians, waterfowl, songbirds, bats, mink, and otter, all of which have been seen in Cornish. Rivers and riparian areas are especially important for breeding and migration.

Riparian areas are important not only for the plants and animals that inhabit them, but also for what they provide to the waters near them. Mature trees in riparian areas provide shade to keep water temperatures cool to support fish and other aquatic life. Riparian vegetation protects water quality by filtering overland runoff and stabilizing stream banks.

Floodplain forests on the Connecticut River are interspersed with more open riparian areas. Shrub thickets and herbaceous meadows may occur on low floodplains and adjacent riverbanks. Aquatic beds, emergent marshes and shrub thickets may also occur and are typically flooded annually. Flood regimes have been altered considerably by dam control of major flood events, lengthening the return interval of medium and high floodplains along some sections of river.

The rare plant, Green Dragon, is listed as critically imperiled in the state of NH and is associated in NH singularly with silver maple floodplain forests of the Connecticut River Valley. The Green Dragon plant has been documented in Sullivan County and in Grafton County. Unfortunately, along with the possibility of uniqueness, this area can support a heavy population of non-native invasive plants particularly Asian bittersweet, Japanese barberry and garlic mustard which has been found carpeting areas of exposed stream beds. Other invasive plants that have been documented on the Connecticut River between Plainfield and Charlestown include water chestnut, Eurasian water-milfoil, curly-leaf pondweed, purple loosestrife, common reed (*Phragmites*) and yellow flag iris (Connecticut River Joint Commissions survey, 2006).

## **Silver Maple-Wood Nettle-Ostrich Fern Floodplain Forest**

Cornish has an exemplary natural community of Silver Maple-Wood Nettle-Ostrich Fern floodplain forest as identified by the New Hampshire Natural Heritage Bureau. Sperduto

and Nichols describe the silver maple-wood nettle-ostrich fern floodplain forest, “a rich, thick carpet of herbaceous growth creates an open, high-ceiling, cathedral-like appearance.” This is the most common type of floodplain forest along the Connecticut River. Typically, the understory is open and dominated by wood nettle and ostrich fern with relatively few grasses, shrubs and understory trees. In addition to silver maples, this forest typically contains white ash, American elm, eastern cottonwood, hackberry and butternut. In addition to wood nettle and ostrich fern, this forest type typically contains the herbaceous plants green dragon, false nettle, sensitive fern, northern lady fern and common woodreed.

Examples of the silver maple-wood nettle-ostrich fern floodplain forest in Cornish can be seen around Blow-Me-Down Mill especially along Platt Road, at the confluence of the Connecticut River and Blow-me-down brook, the area between the railroad track and the Connecticut River, Chase Island, and interspersed between the hay fields and corn fields through King Elm Farm and North Star Livery farm along the river to Claremont. Most of the land along the river is protected, providing a valuable resource for both plants and animals.

## **Hemlock-Hardwood-Pine Forest – Eastern Cornish**

New Hampshire Fish and Game has identified certain hemlock-hardwood-pine forests in Cornish as being important habitats for wildlife on a statewide or regional basis. Along the Town’s entire eastern boundary and approximately half of our southern boundary there is a predominantly hemlock-hardwood-pine forest with smaller areas of lowland spruce-fir and northern hardwood conifer interspersed. This area is part of a very significant, unfragmented block of land that totals 48,570.9 acres. It is almost twice the size of the Town of Cornish. The portion of this land within Cornish connects to Plainfield to the north, Claremont to the south and North Newport, Croydon and Grantham to the east. The vastness of this unfragmented forest block makes this area very significant for wildlife (Table 11).

The forest along the eastern boundary of Cornish extends west to the grasslands along Rte. 120, Burr Rd and East Rd and continues to the southern border of Cornish through the Class 6 portion of Skyline Drive to the Whitewater Reservoir. Some of the land outside Corbin Park has been placed under conservation easement, and much of the land is managed for forestry or maple sugaring. The Whitewater Brook Reservoir and the forest that surrounds it are owned and managed by the City of Claremont for water quality protection, forestry, recreation and wildlife habitat.

**Table 11: Habitat block size requirements for wildlife**

1-19 Acres	20-99 Acres	100-499 Acres	500-2,500 Acres	>2,500 Acres
raccoon	raccoon hare	raccoon hare	raccoon hare	raccoon hare coyote
small rodent	small rodent porcupine	small rodent porcupine	small rodent porcupine	small rodent porcupine bobcat
cottontail	cottontail beaver	cottontail beaver	cottontail beaver	cottontail beaver black bear
squirrel	squirrel weasel	squirrel weasel mink	squirrel weasel mink	squirrel weasel mink fisher
	woodchuck	woodchuck deer	woodchuck deer	woodchuck deer
muskrat	muskrat	muskrat	muskrat moose	muskrat moose
red fox songbirds	red fox songbirds	red fox songbirds sharp-shinned hawk	red fox songbirds sharp-shinned hawk bald eagle	red fox songbirds sharp-shinned hawk bald eagle
skunk	skunk	skunk Cooper's hawk harrier broad-winged hawk  kestrel  great-horned owl  barred owl osprey turkey vulture turkey	skunk Cooper's hawk harrier broad-winged hawk goshawk kestrel red-tailed hawk great-horned owl raven barred owl osprey turkey vulture turkey	skunk Cooper's hawk harrier broad-winged hawk goshawk kestrel red-tailed hawk great-horned owl raven barred owl osprey turkey vulture turkey
most reptiles	most reptiles garter snake ring-necked snake	reptiles garter snake ring-necked snake	reptiles garter snake ring-necked snake	reptiles garter snake ring-necked snake
most amphibians	most amphibians	most amphibians wood frog	amphibians wood frog	amphibians wood frog

Source: A Response to Sprawl: Designing Communities to Protect Wildlife Habitat and Accommodate Development, Report of the Patterns of Development Task Force, Maine Environmental Priorities Project, July 1997.

This forested land contains numerous streams, seeps, vernal pools and rocky ridges. It provides excellent habitat for the smallest organisms to the larger mammals and everything in between. Moose, bear, bobcat, fisher, snowshoe rabbit, beaver, otter, fox, coyote, and all of the more common mammals inhabit this area. Although the largest mammals in Corbin Park cannot cross the park fence, most other animals can. If they can fly, climb trees, or crawl through the fence or the many large culverts under the fence, they can move freely back and forth.

## **Hemlock-Hardwood-Pine Forest – Western to North-Central Cornish**

New Hampshire Fish and Game has identified several 1,000-acre unfragmented blocks of forest in Cornish. These blocks adjoin each other providing a large, mostly unbroken corridor through western Cornish that continues to north-central Cornish. It extends from half of the Town's southern border to Route 12A. It continues north to the Saint-Gaudens National Historic Site, over Dingleton Hill, and to the north central part of town at the northern border with Plainfield. The forests are predominantly hemlock hardwood-pine like the forests in the eastern part of town, but due to their lower elevation, Appalachian oak-pine forest is scattered throughout.

Fortunately, a large number of the private landowners of these forests have protected them with conservation easements; the Cornish Town Forest also falls into this forest area. As with the eastern part of town, many forest management plans are in place to maintain these forests' health for sustainable harvesting, recreation, and wildlife. Because these large blocks are adjacent to each other, mammals with large ranges can be found here like moose, black bear, bobcat, coyote and fisher (Table 11).

## **Rich Mesic Forests**

Rich mesic forests grow in patches within deciduous forests where the bedrock provides high amounts of calcium and nitrogen (rich) and the soil is moist but well drained (mesic). They are often located below 2,600 feet in elevation on slopes where soils can accumulate such as at the base of a slope, in ravines or coves. Rich mesic forests in New Hampshire are dominated by sugar maple with white ash and basswood mixed in; other trees species typical of this forest type are ironwood, yellow birch and American beech. These can be highly productive as sugar bushes, but this forest is also unique in its understory of flowering plants. Early-blooming spring wildflowers - blue cohosh, trillium, wild ginger and squirrel corn - are one of the key indicators of a rich mesic forest. Other typical herbaceous plants are wide-leaved sedges, silvery spleenwort, maidenhair fern, ostrich fern, wood nettle, mountain sweet cicely and Goldie's fern.

## **Grasslands or Open Fields**

Several large grassland areas in Cornish have been identified by New Hampshire Fish and Game as being important for wildlife on a statewide or regional basis. Their analysis focused on open fields that are greater than 25 acres in size as this size of field supports more types of wildlife, although smaller fields still provide valuable habitat. Grasslands in New Hampshire are the result of land clearing and are maintained by mowing, haying or pasturing. With the re-growth of forests after hill farms were abandoned, open field habitats are becoming increasingly rare.

Grasslands provide habitat for more than 70 species of wildlife in New Hampshire including snakes, small rodents, deer, turkey, grassland-nesting songbirds and hawks. The Natural Heritage Bureau database has an historical record of the vesper sparrow in Cornish, which is a grassland-nesting bird of special concern. Non-native grasses for agriculture are the dominant vegetation type, but grasslands also commonly have native grasses and wildflowers.

## **Local Records of Flora and Fauna**

A full inventory of all species living within a town is an enormous and difficult undertaking, as many animals are elusive or migratory and plants may only grow in a certain patch or are only visible in certain seasons. For this Natural Resource Inventory, we provide a summary of the existing records of plants and wildlife in the Town of Cornish. More details, including species lists and information on reporting wildlife sightings to the State Fish and Game Department, are included in Appendix C.

One hundred species of birds have been reported within the Town of Cornish by local residents and birders, who have submitted their birding lists to the online repository, NH e-Bird.

New Hampshire Fish and Game Department and a corps of volunteers have documented 15 different reptile and amphibian species in Cornish: four turtles, one snake, six salamanders, and four frog/toad species.

New Hampshire Fish and Game Department keeps records for each hunting season, which provides important information on changes in population for game species. Harvest reports are available by town for deer, black bear and wild turkey. Harvest totals for 2011 in Cornish were 76 deer, two black bear and 41 turkeys.

## **Rare, Threatened and Endangered Species**

The New Hampshire Natural Heritage Bureau has documented seven rare, threatened or endangered animals and nineteen threatened or endangered plant species (see Appendix C for a full list). The NH Natural Heritage Bureau maintains the NH Natural

Heritage Inventory (NHNHI) which tracks rare and endangered species throughout the state as well as natural communities that are threatened. The NH Fish and Game Nongame and Endangered Wildlife Program also tracks rare and endangered wildlife populations as they have jurisdiction over these species.

In Cornish, there has been no exhaustive study done to collect this information so the NHNHI listings are not likely to reflect all occurrences of rare and endangered species. Generally, it may be more important to identify and protect the habitats required for these species and work at protecting these habitats rather than to search for additional occurrences of a specific species. However, there is a report form in Appendix D should a rare or endangered species be found. In order to protect rare species the NH Natural Heritage Bureau does not give out exact locations of where they can be found.

## **Invasive Species**

The USDA defines an invasive species to be: 1) non-native (or alien) to the ecosystem under consideration; and, 2) a species whose introduction causes or is likely to cause economic or environmental harm, or harm to human health.

The USDA criteria were used to create the table in Appendix E, which lists NH invasive insects and plants, some of which are present in Cornish. These species are not native to New Hampshire and some have arrived uninvited while others were introduced. Generally, an invasive species has no natural predators or competitors so they can reproduce and spread easily. Many people may be unaware that some invasive plants (e.g., Autumn Olive) were, before 2000, part of planned plantings used for conservation purposes such as bird habitat improvement and soil stability. Others (e.g., Burning Bush which has beautiful red leaves in the fall) were sold in garden centers as landscape plants until recently. We all have a responsibility in helping to keep these invasive species out of our natural habitats.

Under the right conditions, invasive species can spread and cover a meadow or forest floor so completely that native plants no longer grow. The Town Forest and CREA both have areas where invasive species exist. The Town Forest Committee has had regular work parties to help control invasive plants and a similar program should be started for the CREA property.

Individuals can educate themselves and then monitor their own properties for invasive plants and take whatever action seems appropriate. Care should be taken to eradicate an invasive plant species properly. No method works effectively for all species and some can actually make the situation worse. New Hampshire has some excellent online resources to educate residents about invasive plant eradication (Appendix E).

New Hampshire's forests are threatened by numerous insect invasive species, but two are of special concern because of the extensive damage they can potentially cause. The emerald ash borer, which is devastating to ash trees, has now been found in Concord, NH. Following invasion, an ash tree will generally die in 3-5 years. Individual

landscape trees may be treated but, as approximately 6% of our forest is made up of ash trees, generalized treatment is prohibitively expensive and likely impossible. The second invasive of special concern is the Asian longhorned beetle. This insect has been found in Worcester, Massachusetts, only 40 miles from New Hampshire. While Maples may be the longhorned beetle's preferred food, it attacks other hard wood trees as well. Because of its life cycle which is predominantly deep inside the tree, pesticides are not effective. Cutting, chipping and burning infected trees is the most effective method of control.

As there are no known natural predators for either the emerald ash borer or the Asian longhorned beetle, the best protection we have is to prevent their spread. Importing firewood is probably the primary way the insects are spreading, therefore firewood should only be obtained locally and when camping, firewood should be purchased locally rather than transported in.

Invasive aquatic species are species that live in or near water and their presence can greatly alter the aquatic ecosystems they inhabit. Northern sections of the Connecticut River now have didymo, a microscopic algae also known as rock snot. It is critical that boats, fishing equipment, boat equipment as well as footwear and clothing, everything that comes in contact with the water, be washed thoroughly to help prevent the spread of didymo and other aquatic invasive species to other bodies of water.

For a complete list of invasive species of concern to New Hampshire, please refer to Appendix E.

## **VIII. Outdoor Recreation**

### **Trails and Lands open to Public Access**

In his 1976 natural resources inventory, William F. Menke reported that Cornish residents utilized their Class VI roads, old logging and hunting trails, and old roads leading to defunct farms for a wide variety of recreational purposes: hiking, nature study, cross-country skiing, snowmobiling, horseback riding and sleighing. There are over eleven miles of Class VI roads in Cornish.

Today, Cornish residents still value these old roadways and trails for recreation, and private landowners have remained gracious in permitting access over private land for recreation. In addition, conservation easements and public land acquisition have helped to maintain Cornish's recreational landscape. It is important to seek private landowner's permission to use their trails whether they are protected by an easement or not.

There are a few recreational uses on old roads and trails that Menke did not include in his first inventory such as hunting, snowshoeing, mountain biking, and off-highway recreational vehicle riding, which includes four-wheelers and dirt bikes. The Town

prohibits four wheelers, dirt bikes and other power driven mobility devices on Class VI roads from March through June.

Since Menke's Cornish inventory was written, the Town has acquired the Town Forest and the Cornish Recreation and Education Area (CREA), adding to the Town's recreational opportunities. The Town Forest has many trails for mountain biking and hiking. One section of trail is open to motorized vehicles during certain times of the year when conditions are dry. During the winter, these trails are used for snowshoeing and cross-country skiing. CREA has trails used for non-motorized recreational activities similar to the Town Forest. In addition, CREA, which was created to be a recreation area, has baseball and soccer fields that add to the older sports fields on the Cornish Elementary School property.

Saint-Gaudens National Historic Site and Whitewater Brook Reservoir Forest are both managed for recreation. Saint-Gaudens offers walking trails that meander through the woods down the hill to Blow-Me-Down Pond. Whitewater Brook has trails for both motorized and non-motorized recreation and is part of a large network of snowmobile trails. For more information about these public properties, please see Appendix A.

## **Snowmobiling**

Blow-Me-Down Snowriders (BMD) is the local nonprofit volunteer snowmobile club that oversees over 50 miles of connected recreational trails, approximately 18 miles of which are located within the Town of Cornish. These trails are groomed by the club to ensure the safety and enjoyment of responsible wintertime sports enthusiasts. The BMD club was established in 1970 and raises necessary money predominantly through annual membership dues, operation of the BMD food booth at the Cornish Fair, and applying for and receiving Grant in Aid money from the State derived from mandated state snowmobile registrations.

The BMD club purchases snow grooming equipment as needed and trail grooming occurs when at least 8 inches of snow cover exists from December 15th until the end of the winter season each year. All operators are trained and certified by the state. The BMD club builds their network of trails by first and foremost obtaining permission of generous private landowners and Class VI roads are also utilized wherever practical. After the establishment of the trail system, ongoing construction of bridges, improving land terrain, rerouting of trails, clearing of trails of downed trees are ongoing activities performed by members throughout the season. The club is always open to expanding its network of trails.

Snowmobile registrations are required by the state and it is required to join a snowmobile club or pay an additional fee (currently \$30) when annual registrations are purchased. Club membership can be obtained via the BMD club locally.

## Swimming

Although all brooks in Cornish have numerous shallow pools, the only public swimming pond in Cornish is located at Leavitt Hill Road. This pond in the Blow-Me-Down Brook is made by a dam that is about 150 years old. It was deeded to the Town in 1967 and in 1975 the Town received a grant from the Division of Resources and Economic Development (DRED) to help pay for dam repairs and to help maintain the area as a recreational swimming area.

## Boating

With remarkable improvements in water quality in the last three decades, the Connecticut River has transformed from “America’s best landscaped sewer” into a wonderful recreation asset. The Connecticut River has been recognized as both an American Heritage River and a National Blueway.

Fishing, hunting and boating access are provided at the Cornish State Wildlife Management Area just north of the Cornish-Windsor Bridge. The boat launch is an unimproved, car-top boat launch, most suited to kayaks and canoes. It is not conducive to motor boats due to dam releases upstream and the fluctuating depth of the river as a result. Fishermen who are wading into the river also need to be aware of fluctuating water levels.

North Star Canoe Rentals at Balloch’s Crossing is located 3 ½ miles south of the boat launch on Route 12A. It rents both canoes and kayaks and ferries people upriver to begin their paddle.

In New Hampshire and Vermont, the river serves as the Connecticut River Paddlers’ Trail; the nearest campsite for river travelers is located in Windsor, VT, and is managed by the Upper Valley Land Trust.

## Bicycle Touring and Scenic Drives

The natural beauty and tranquility of Cornish provide a great bicycling experience. Within Cornish the New Hampshire Department of Transportation has designated four roads as regional bicycle routes:

- NH Route 12A
- Townhouse Road
- NH Route 120 (from the Claremont City line to Cornish Stage Road)
- Cornish Stage Road (from NH Route 120 to Plainfield Town line).

Cyclists can also follow the booklet, *Bicycling the Town History of Cornish, New Hampshire*, which guides cyclists for 22 miles through many of the historic structures and sites throughout Cornish. This booklet may be found in the Town office.

Whether in a car or on a bike, Cornish's public roads provide many scenic vistas and beautiful scenery. The Connecticut River Byway, a tri-state scenic drive in Massachusetts, Vermont and New Hampshire, follows the Connecticut River through Cornish along Route 12A. Cornish is also included in the Connecticut River Heritage Trail, a 77-mile driving/biking/walking tour of history and architecture in Claremont, Cornish, Plainfield, Windsor and Hartland; the tour guide brochure was published in 1999 by the Connecticut River Joint Commissions.

The Conservation Commission has compiled a list of scenic viewpoints from public roads, describing the unique scenery that Cornish provides (Table 12).

**Table 12: Scenic viewpoints from public roads in Cornish**

<i>Road</i>	<i>Direction</i>	<i>Description</i>
West Pass Road	East from Cornish Flat	Follow a stream on your right. Go onto Class VI road for a short distance (not maintained in winter). A waterfall is on your left.
Route 120, just past Burr Road	North from Cornish Flat	View of farmland and up the valley to the west.
Cornish Stage Road	West from Cornish Flat	Views of fields and wetlands to the northwest.
Cornish Stage Road	East towards Cornish Flat	Views of farmland in the valley to the north and Corbin Park and Croydon Mountain to the east.
Dodge Hollow Road	North	Part way up the hill, views to Corbin Park and Croydon Mountain to the east.
Route 120, near Clark Camp Road	South	Just before Clark Camp Road, view of wetlands to the west and fields to the east and west.
East Road	South from Cornish Flat	At crests of several hills, views of farms and fields, one with a view of hills and Mount Ascutney to the west.
Townhouse Road	West	View to wetland on your right and Mount Ascutney to the west.
Townhouse Road	East	Just past Tandy Brook Road, view of Mount Ascutney to the west.
Gap Road	South	Road lined by woods and stone walls, opening up to views of hills and Mount Ascutney to the west.
Dingleton Hill Road	North	Road lined by woods and open fields. Just past Nelson Road, opening up to views to Mount Ascutney and beyond to the west.
Whitten Road	North	Narrow road lined with trees arching over, with an old cemetery to your left. (Not maintained in winter)
Lang Road	Northwest	Narrow road lined with trees arching over and stone walls, opening up to Mount Ascutney and beyond to the west.

## Hunting and Fishing

Located in the State of New Hampshire's Wildlife Management Unit H1, Cornish offers many opportunities for wildlife viewers and hunters alike. Almost any type of game that lives in the State can be found in Cornish.

For the hunter, the State categorizes game in two main classes, big and small. The prominent big-game species found in Cornish are white-tailed deer, moose and black bear. The small game category includes species like turkey, ruffed grouse (or partridge),

pheasant, rabbits and gray squirrels. The pheasant hunting in New Hampshire exists through stocking only as the birds cannot tolerate New Hampshire winters. Because of its proximity to the Connecticut River, Cornish also offers opportunity to the waterfowl hunter with geese and ducks in accordance with State and Federal hunting regulations. Old beaver ponds and swampy areas offer the hunter a chance to “jump shoot” ducks as well. Like many other towns throughout the state, Cornish has a very stable coyote population, thus offering the opportunity to hunt predators. The most sought-after game animals in Cornish are most likely deer and turkey with moose and bear close behind.

Cornish has many streams that hold trout, both stocked and native, and sometimes even the smallest of streams will hold fish. On its western border, the Connecticut River holds many species of fish including large and smallmouth bass, rainbow and brown trout and walleye, the main game fish here, along with other non-game species as well.

Some publicly-owned land is open to hunting. They include the Town Forest, the Cornish State Wildlife Area managed by Fish and Game, and the Whitewater Reservoir Forest owned by the City of Claremont. Many private landowners, including some who have conservation easements on their property, allow hunting, on their property. Two in particular, the Yatsevitch easements, mention hunting in their easement deeds. They are part of a larger forest named the Yatsevitch Forest now owned by the Society for Protection of NH Forests. It is always wise to seek permission from the landowners, even if their property is not posted, before entering. Good manners, ethics and morals should be at the forefront of anyone looking to gain access to property.

Corbin Park, the private hunting preserve which spans Cornish’s eastern boundary, does not permit the public to hunt within the fence.

It has often been said that the Town of Cornish has “everything anyone could want” and this holds true for the sportsmen as well.

## **Wildlife Viewing**

One spot that has been recently created, specifically for sitting quietly and observing wildlife, is on the Cornish Recreation and Education Area (CREA). A viewing platform has been built on the edge of the wetland. It also includes a structure that acts as a blind, so that observers can watch the wildlife but the wildlife cannot see them.

Whether walking its many trails, canoeing down the Connecticut River, or biking its many scenic roads, Cornish provides many opportunities for viewing its plentiful wildlife.

# IX. Cornish Conservation Plan

## Co-occurrence Analysis

Map 11 shows where multiple natural resources overlap in the same place, also called a co-occurrence analysis. This map is one tool that may be used for town-wide conservation planning and land management and is particularly useful when combined with site-specific information.

## Next Steps for the Cornish Conservation Commission

The Natural Resources Inventory establishes an important baseline of information about the natural resources of Cornish. The Conservation Commission reviewed the inventory and discussed how to use this information to promote land stewardship and protect the town's natural resources. The Commission identified education, water resources and scenic roads as priorities to address first.

Education: The Commission will provide education on an on-going basis, such as;

- ✓ Educate landowners on the use of herbicides on their land and on utility right-of-ways.
- ✓ Conduct three or four seminars a year on topics such as invasive species, water quality, herbicides, wildlife management, etc.
- ✓ Educate landowners on best practices for wildlife habitat.
- ✓ Monthly news on ConnectCornish
- ✓ Rotating information box updates

Water Sub-Committee: This sub-committee will develop a water plan for the town.

- ✓ Develop a plan for the management and protection of the town watersheds and for handling pollution.

Scenic Roads Sub-Committee: This sub-committee will develop petitions for additional town roads to be designated as scenic roads, per RSA 231:157

- ✓ Identify roads that meet the standards of "scenic roads" and develop a petition to have these roads formally designated as scenic roads at Town Meeting.

## **Appendix A. Management of Public Lands in Cornish**

### **Saint-Gaudens National Historic Site**

Visitors to Saint-Gaudens Historic Site can appreciate the efforts that have been made over the years by the National Park Service to maintain Saint-Gaudens' wishes to create works of art in a setting that preserves and enhances its natural beauty. The gardens, interspersed with additional sculptures, look much like they did when Saint Gaudens lived there. The view of Mt. Ascutney and beyond is still expansive. A boardwalk has been built along Blow Me Down Pond as an extension of their trails, providing a place to do environmental studies of the pond and wetland.

The grounds are officially open from Memorial Day to the end of October, when an entrance fee is collected. In the off-season, people are welcome to walk the interpretive trails and grounds at no cost. No motorized vehicles or bicycles are permitted.

Today, the site consists of 190.75 acres. The National Park Service recently purchased Blow-Me-Down Farm, located across from the site on Route 12-A, along the Connecticut River. The farm is 42.6 acres. It includes bottomland forest, with about a quarter-mile of riparian zone along the river. 16.5 acres are farmed, with twelve acres along the river in corn and 4.5 acres on the upper terrace is mowed for hay.

Saint-Gaudens National Historic Site maintains an active natural resource management program. As early as 1979, the park began conducting its first natural resource inventories and has now amassed a large body of knowledge. In 1994, the park hired a natural resource manager and implemented long-term monitoring programs for water resources and forest health, implemented a GIS system, and embarked on an ongoing program to manage invasive vegetation. In addition, the park began to more actively incorporate environmental education as part of its regular interpretive offerings.

Since the 1990s, it has become part of one of the National Park Service's Inventory & Monitoring (I&M) networks. These networks of national parks are grouped, based on geography and shared natural resource characteristics. Saint-Gaudens National Historic Site became part of the Northeast Temperate Network (NETN). Since the NETN was established, they have completed updated inventories of the site's mammals, fish, reptiles & amphibians, birds, and vascular plants.

In an effort to better understand the overall health and condition of park resources, the National Park Service has also initiated a program known as "Vital Signs Monitoring." This allows them to track the overall condition of natural resources in the park and to provide early warning of situations that require intervention. The scientifically sound information obtained through this systems-based monitoring program will assist the park with decision-making, park planning, research, education, and promoting public understanding of park resources. The park has involved students from schools in the area to assist with some of their monitoring programs.

## **Chase Island and Cornish State Wildlife Management Areas**

New Hampshire Fish and Game owns and manages the Chase Island and Cornish Wildlife Management Areas, which is located on 12A near the Cornish-Windsor Covered Bridge. Just north of the bridge, it includes the boat launch area, the farm fields adjacent to it, and land on the east side of Route 12A. Chase Island is located just south of the bridge. The cartop boat launch and surrounding area and fields are actively managed by Fish and Game.

A Wildlife Management Area is a parcel of undeveloped land designated as an area for wildlife resource conservation, hunting and fishing. These lands are open to the public year-round for the purpose of hunting, trapping, fishing, birding, and wildlife observation – the State’s hunting and fishing seasons and licensing requirements apply. Overnight camping is not permitted.

New Hampshire Fish and Game Department reports in its Wildlife Action Plan that the cobblestone tiger beetle, a State threatened species, has been documented on the pebbly beach areas on Chase Island and several nearby islands in the Connecticut River; however, the report also states the beetle’s population distribution is uncertain and data is insufficient and dated.

## **Whitewater Brook Reservoir Lands**

The Whitewater Brook Reservoir lands, along Cornish’s southern border near Corbin Park, are owned by the City of Claremont. It is 471.4 acres, which includes a 17 acre water reservoir. The bulk of this area is in Cornish, with only the southern 50 acres in Claremont. This forest is part of a very large, ecologically significant tract of unfragmented land totaling 48,723 acres.

In 2008, a forest management plan was written for the area. The forest is described in the plan as a mix of white pine, hemlock and hardwoods. It varies from dry, south-facing oak dominated sites, to a mix of pine, hemlock and hardwood on the mid-slopes, and hemlock-dominated areas elsewhere. The terrain is variable, but generally includes gentle to moderate slope with some rocky ground. Whitewater Brook and associated wetlands bisect the forest, draining into the reservoir.

The area includes a popular trail network accessed by ATV’s in the summer and snowmobiles in the winter. Non-motorized recreation also occurs including hiking, cross-country skiing, snowshoeing and mountain biking.

The forestry management plan written for this area is more than just a blueprint for how to manage the forest for responsible silvicultural practices. It also describes in detail its natural communities, and stresses the importance of not fragmenting them. It adopts a holistic view of natural systems which places human activity within, rather than apart from, the natural environment.

The Claremont Public Works Department maintains an Emergency Action Plan with the Department of Environmental Services (DES), for the Whitewater Reservoir and dam. There are annual inspections conducted by DES. Any deficiencies found must be corrected by the Claremont Department of Public Works.

The City of Claremont recently completed a Natural Resources Inventory, which identified the Whitewater Brook Reservoir lands as part of a much larger Ecologically Significant Area in the northeastern corner of Claremont, with diverse wildlife habitats, unfragmented forest and important water resources.

### **Cornish Town Forest**

The Town Forest is an undeveloped property of 270.5 acres at the southern boundary of the town. It is located on the south end of the north-south ridge next to the Connecticut River, known as "Wellman's Hill." It is bounded on the west by Root Hill Rd, on the south by the Cornish-Claremont town line, and in part on the east by Tandy Brook Road. A deed restriction has been placed on the property, which prohibits future development of the land.

The terrain is hilly and undulating. Forest types include mesic forest and abandoned pasture overtaken by mixed hard and softwood forest. The Town Forest also includes exposed rock ledges, vernal pools, seasonal streams and wetlands. A National Grid (formerly Granite State Power Company) right-of-way roughly bisects the property. The property was heavily logged in the mid 1970s and has active regrowth with clumps of dense small hemlocks and hardwoods. There are various types of wildlife browse, den trees, and snags.

The Town Forest has a management plan to preserve this undeveloped land for the benefit and enjoyment of the residents of Cornish. The management plan recognizes the many uses and benefits of the Town Forest, such as recreation, water quality protection, wildlife habitat, and timber harvesting.

The Town Forest Committee and other volunteers maintain the trails, work to control invasive plants, and keep open a scenic overlook to the Connecticut River Valley. A lean-to has been built as an Eagle Scout project with the assistance of Boy Scouts of America Troop 332.

### **CREA (Cornish Recreation and Education Area)**

The Cornish Recreation and Education Area (CREA), covers 77 acres located on South Parsonage Road and Townhouse Road across from the Cornish Elementary School. The purpose of CREA is to provide recreational opportunities; a deed restriction ensures that the land will be managed as such. The CREA Committee advises the Board of Selectmen on the management of the area, and a written management plan is currently being developed.

Its many habitats include hemlock/hardwood/pine forests, meadows/hay fields, streams, and one of the largest wetlands in Cornish. Beavers residing in the CREA wetland have flooded some areas that have been developed for other purposes and the Town's Wetlands Wildlife Committee works to counteract the impact of the beavers' industriousness. Many of the shrubs on the edges of the fields and wetland provide berries for birds and other wildlife.

Recreation facilities include baseball and soccer fields and trails for walking, snowshoeing and cross-country skiing. The school uses CREA for sports and environmental education, including the Four Winds Nature Institute program for grades K-4.

Boy Scouts of America Troop 332 has built and placed benches, bird boxes, an informational kiosk, and a cupboard for sports equipment in the barn. They have planted shrubs that will attract turkeys and have released apple trees for other wildlife. Eagle Scout projects include dugouts, a boardwalk, new trails, a viewing platform/ blind on the edge of the wetland, and the rebuilding of the footbridge that crosses the stream.

CREA's "1912 Elmhurst" barn has been preserved, thanks to the efforts of a Barn Committee, which was formed to raise funds and oversee the project. It is ready to support the recreational and educational activities that take place on CREA.

The Cornish Fair Association uses CREA for parking and other activities during its annual Cornish Fair held in August.

## Appendix B. Farmland Soils of Sullivan County

Map Unit Symbol	Map Unit Name	Farmland Class	Map Unit Acres
AgA	AGAWAM VERY FINE SANDY LOAM, 0 TO 3 PERCENT SLOPES	All areas are prime farmland	650
AgB	AGAWAM VERY FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES	All areas are prime farmland	730
BdB	BERNARDSTON SILT LOAM, 3 TO 8 PERCENT SLOPES	All areas are prime farmland	1,965
DtB	DUTCHESS SILT LOAM, 3 TO 8 PERCENT SLOPES	All areas are prime farmland	670
Ha	HADLEY SILT LOAM, FREQUENTLY FLOODED	All areas are prime farmland	175
Hb	HADLEY SILT LOAM, OCCASIONALLY FLOODED	All areas are prime farmland	515
HcA	HAVEN VERY FINE SANDY LOAM, 0 TO 3 PERCENT SLOPES	All areas are prime farmland	980
MaB	MARLOW LOAM, 3 TO 8 PERCENT SLOPES	All areas are prime farmland	4,500
McB	MONADNOCK FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES	All areas are prime farmland	1,345
NnA	NINIGRET FINE SANDY LOAM, 0 TO 5 PERCENT SLOPES	All areas are prime farmland	465
Of	ONDAWA FINE SANDY LOAM	All areas are prime farmland	730
PcA	PERU LOAM, 0 TO 3 PERCENT SLOPES	All areas are prime farmland	600
PcB	PERU LOAM, 3 TO 8 PERCENT SLOPES	All areas are prime farmland	2,670
PtA	PITTSTOWN SILT LOAM, 0 TO 3 PERCENT SLOPES	All areas are prime farmland	310
PtB	PITTSTOWN SILT LOAM, 3 TO 8 PERCENT SLOPES	All areas are prime farmland	1,970
SdA	SCIO SILT LOAM, 0 TO 3 PERCENT SLOPES	All areas are prime farmland	400
SnA	SUNAPEE FINE SANDY LOAM, 0 TO 3 PERCENT SLOPES	All areas are prime farmland	305
SnB	SUNAPEE FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES	All areas are prime farmland	1,210
Wn	WINOOSKI SILT LOAM	All areas are prime farmland	305
<b>Total Prime Farmland Acres</b>			<b>20,495</b>
BdC	BERNARDSTON SILT LOAM, 8 TO 15 PERCENT SLOPES	Farmland of statewide importance	2,590
DtC	DUTCHESS SILT LOAM, 8 TO 15 PERCENT SLOPES	Farmland of statewide importance	1,040
HcB	HAVEN VERY FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES	Farmland of statewide importance	1,540
HcC	HAVEN VERY FINE SANDY LOAM, 8 TO 15 PERCENT SLOPES	Farmland of statewide importance	1,055
MaC	MARLOW LOAM, 8 TO 15 PERCENT SLOPES	Farmland of statewide importance	4,830
McC	MONADNOCK FINE SANDY LOAM, 8 TO 15 PERCENT SLOPES	Farmland of statewide importance	1,360
PtC	PITTSTOWN SILT LOAM, 8 TO 15 PERCENT SLOPES	Farmland of statewide importance	655
Pw	PODUNK FINE SANDY LOAM	Farmland of statewide importance	1,620
SdB	SCIO SILT LOAM, 3 TO 8 PERCENT SLOPES	Farmland of statewide importance	385
UnB	UNADILLA VARIANT SILT LOAM, 3 TO 8 PERCENT SLOPES	Farmland of statewide importance	620
UnC	UNADILLA VARIANT SILT LOAM, 8 TO 15 PERCENT SLOPES	Farmland of statewide importance	270
<b>Total Acres of Statewide Importance</b>			<b>15,965</b>
AdA	ADAMS LOAMY SAND, 0 TO 3 PERCENT SLOPES	Farmland of local importance	440
AdB	ADAMS LOAMY SAND, 3 TO 8 PERCENT SLOPES	Farmland of local importance	990
BeB	BERNARDSTON STONY SILT LOAM, 3 TO 8 PERCENT SLOPES	Farmland of local importance	420
BeC	BERNARDSTON STONY SILT LOAM, 8 TO 15 PERCENT SLOPES	Farmland of local importance	2,010
CaB	CARDIGAN-KEARSARGE SILT LOAMS, 3 TO 8 PERCENT SLOPES	Farmland of local importance	880
CoA	COLTON SANDY LOAM, 0 TO 3 PERCENT SLOPES	Farmland of local importance	790
CoB	COLTON SANDY LOAM, 3 TO 8 PERCENT SLOPES	Farmland of local importance	2,050
CyA	CROGHAN LOAMY FINE SAND, 0 TO 5 PERCENT SLOPES	Farmland of local importance	810
DuC	DUTCHESS STONY SILT LOAM, 8 TO 15 PERCENT SLOPES	Farmland of local importance	2,200
Lk	LIMERICK SILT LOAM	Farmland of local importance	690
MbB	MARLOW STONY LOAM, 3 TO 8 PERCENT SLOPES	Farmland of local importance	3,390
MbC	MARLOW STONY LOAM, 8 TO 15 PERCENT SLOPES	Farmland of local importance	13,680
MfB	MONADNOCK STONY FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES	Farmland of local importance	2,390
MfC	MONADNOCK STONY FINE SANDY LOAM, 8 TO 15 PERCENT SLOPES	Farmland of local importance	11,520
MvB	MONADNOCK-LYMAN STONY FINE SANDY LOAMS, 3 TO 8 PERCENT SLOPES	Farmland of local importance	2,310
Ra	RAYNHAM SILT LOAM	Farmland of local importance	960
Ru	RUMNEY LOAM	Farmland of local importance	3,050
Su	SUNDAY LOAMY SAND	Farmland of local importance	300
WdA	WINDSOR LOAMY SAND, 0 TO 3 PERCENT SLOPES	Farmland of local importance	800
WdB	WINDSOR LOAMY SAND, 3 TO 8 PERCENT SLOPES	Farmland of local importance	1,680
<b>Total Acres of Local Importance</b>			<b>51,360</b>
<b>Total Acres of Prime, Statewide and Locally Important Soils</b>			<b>87,820</b>

Source: US Department of Agriculture, Natural Resources Conservation Service (2000)

# Appendix C. Species and Communities Documented in Cornish

## Rare, Threatened and Endangered Species

The NH Natural Heritage Bureau maintains the NH Natural Heritage Inventory (NHNHI) which tracks rare and endangered species as well as natural communities that are threatened; below is the NHNHI listing for the Town of Cornish, as of July 2013.

NH Natural Heritage Bureau 

Town Flag	Species or Community Name	Listed?		# reported last 20 yrs	
		Federal	State	Town	State
<b>Cornish</b>					
Natural Communities - Terrestrial					
***	Rich deciduous forest	--	--	1	50
Natural Communities - Palustrine					
*	Silver maple - wood nettle - ositch fern floodplain forest	--	--	1	14
Plants					
**	American bladdernut ( <i>Staphylea trifolia</i> )	--	T	1	6
***	American ginseng ( <i>Panax quinquefolius</i> )	--	T	2	77
**	Appalachian barren's hawberry ( <i>Oxycoccus fragaroides</i> )	--	T	1	12
	Canada sarside ( <i>Sanicula canadensis</i> )	--	E	His torical	2
**	eastern waterleaf ( <i>Hydrophyllum virginianum</i> )	--	T	4	16
	greater yellow lady's-slipper ( <i>Cypripedium parviflorum var. makasin</i> )	--	E	His torical	10
**	Large-flowered Bellwort ( <i>Uvularia grandiflora</i> )	--	E	2	7
**	large-fluted sarside ( <i>Sanicula trifoliata</i> )	--	T	1	16
	Leary Bulrush ( <i>Scirpus polyphyllus</i> )	--	E	His torical	3
	Loesel's white-lipped orchid ( <i>Liparis loeselii</i> )	--	T	His torical	25
**	long-leaved pondweed ( <i>Potamogeton nodosus</i> )	--	T	1	24
**	Northeastern Bulrush ( <i>Scirpus andirochaetus</i> )	E	E	1	7
	ram's-head lady's-slipper ( <i>Cypripedium arietinum</i> )	--	E	His torical	13
**	Sago false pondweed ( <i>Stuckenia pectinata</i> )	--	E	1	9
**	showy orchid ( <i>Galeaia spectabilis</i> )	--	T	1	16
**	slender rock-brake ( <i>Cryptogramma stelleri</i> )	--	E	1	6
	small-headed rush ( <i>Juncus brachycephalus</i> )	--	E	His torical	6
	Vasey's Pondweed ( <i>Potamogeton vaseyi</i> )	--	E	His torical	13
	walking spleenwort ( <i>Asplenium rhizophyllum</i> )	--	E	His torical	6
**	white bear sedge ( <i>Carex albustrata</i> )	--	E	1	2
Vertebrates - Mammals					
***	Northern Long-eared Bat ( <i>Myotis septentrionalis</i> )	--	SC	1	9
Vertebrates - Birds					
**	Bald Eagle ( <i>Haliaeetus leucocephalus</i> )	--	T	1	88
	Vesper Sparrow ( <i>Poocetes gramineus</i> )	--	SC	His torical	12
Vertebrates - Reptiles					
**	Wood Turtle ( <i>Drystemys insculpta</i> )	--	SC	1	193
Vertebrates - Amphibians					
	Jefferson Salamander ( <i>Ambystoma jeffersonianum</i> )	--	SC	His torical	4
Vertebrates - Fish					
	Northern Redbelly Dace ( <i>Phoxinus eos</i> )	--	SC	His torical	12
Invertebrates - Beets					
***	Cobbles lone Tiger Beetle ( <i>Cicindela marginipennis</i> )	--	E	1	5
Invertebrates - Mollusks					
***	Dwarf/Wedge Mussel ( <i>Alasmidonta heterodon</i> )	E	E	3	14

Listed? E = Endangered T = Threatened SC = Special concern

Flags \*\*\* = Highest importance These flags are based on a combination of (1) how rare the species or community is and (2) how large or healthy its examples are in that town. Please contact the Natural Heritage Bureau at (603) 271-2214 to learn more about approaches to setting priorities.  
 \*\* = Extremely high importance  
 \* = Very high importance  
 - = High importance

## Reptiles and Amphibians

Compiled from the New Hampshire Fish and Game Department's Volunteer Reptile and Amphibian Reporting Program

<i>Turtles</i>	<i>Salamanders and Newts</i>	<i>Frogs and Toads</i>
Eastern painted turtle (H)	Dusky salamander (H)	Bullfrog (H)
Snapping turtle (H)	Eastern red-spotted newt (H)	Green frog
Spotted turtle (H)	Jefferson salamander (H)	Pickerel frog (H)
Wood turtle	Mudpuppy	Wood frog (H)
	Redback salamander (H)	
<i>Snakes</i>	Spotted blue salamander (H)	
Common garter snake (H)		
* H – last recorded sighting prior to 1988		

## Birds

Compiled from the New Hampshire eBird records website at <http://www.ebird.org/nh>, as of Jan. 2012

	St. Gaudens	Cornish Flat	Hier Pond	Town House Rd	Blow Me Down Pond	Penniman Rd	East Road	Jackson Rd	Route 12A	Cornish Stage Rd
American Bittern						X				
American Black Duck				X				X		
American Crow		X		X	X	X	X	X	X	
American Goldfinch		X		X				X		
American Kestrel									X	
American Redstart				X		X				
American Robin		X	X	X	X			X		
American Tree Sparrow								X		
Baltimore Oriole			X	X						
Barn Swallow				X		X				
Belted Kingfisher						X				
Black-and-White Warbler				X						
Blackburnian Warbler				X						
Black-Capped Chickadee		X	X	X		X	X	X	X	
Blackpoll Warbler				X						
Black-throated Green Warbler				X						
Blue Jay				X	X		X		X	
Blue-headed Vireo				X	X					
Bobolink			X	X						
Broad-winged Hawk				X						
Brown-headed Cowbird				X				X		
Canada Goose						X	X		X	X

	St. Gaudens	Cornish Flat	Hier Pond	Town House Rd	Blow Me Down Pond	Penniman Rd	East Road	Jackson Rd	Route 12A	Cornish Stage Rd
Cape May Warbler				X						
Cedar Waxwing		X	X	X		X				
Chestnut-sided Warbler				X						
Chimney Swift				X						
Chipping Sparrow		X		X						
Common Grackle				X				X		
Common Raven					X			X		
Common Redpoll				X						
Common Yellowthroat				X						
Cooper's Hawk				X				X		
Dark-eyed Junco				X				X	X	
Downy Woodpecker				X			X			
Eastern Bluebird				X				X		
Eastern Kingbird				X						
Eastern Phoebe		X		X		X		X		
Eastern Wood-Pewee				X						
Empidonax				X						
European Starling		X		X					X	
Evening Grosbeak				X						
Fielded Sparrow	X									
Golden-crowned Kinglet				X				X	X	
Gray Catbird		X	X	X		X				
Great Blue Heron		X	X			X				
Great Crested Flycatcher				X						
Green Heron		X								
Hairy Woodpecker				X		X		X		
Hermit Thrush					X			X		
Herring Gull				X						
House Finch				X						
House Sparrow		X				X				
House Wren				X						
Indigo Bunting				X						
Least Flycatcher				X						
Louisiana Waterthrush					X					
Magnolia Warbler				X						
Mallard					X			X	X	
Mourning Dove		X	X	X		X		X		X
Northern Cardinal				X				X		
Northern Flicker				X				X		
Northern Pintail									X	
Northern Shrike				X						

	St. Gaudens	Cornish Flat	Hier Pond	Town House Rd	Blow Me Down Pond	Penniman Rd	East Road	Jackson Rd	Route 12A	Cornish Stage Rd
Northern Waterthrush				X						
Ovenbird		X	X	X						
Philadelphia Vireo				X						
Pileated Woodpecker				X	X			X		
Pine Warbler				X						
Purple Finch				X				X		
Red-breasted Merganser				X					X	
Red-breasted Nuthatch		X	X				X			
Red-eyed Vireo				X						
Red-tailed Hawk				X					X	
Red-winged Blackbird		X		X				X		
Rey-eyed Vireo				X						
Rock Pigeon		X		X		X		X	X	
Rose-breasted Grosbeak				X						
Ruby Throated-Hummingbird	X	X	X	X						
Ruby-crowned Kinglet				X						
Ruffed Grouse				X			X			
Rusty Blackbird				X				X		
Scarlet Tanager				X						
Sharp-Shinned Hawk						X				
Solitary Sandpiper		X								
Song Sparrow		X		X	X			X		
Tree Swallow				X						
Tufted Titmouse				X						
Turkey Vulture				X				X		
Veery			X	X						
Warbler				X						
Warbling Vireo				X						
White-breasted Nuthatch				X				X		
White-throated Sparrow								X		
Wild Turkey		X		X				X		X
Winter Wren				X				X		
Wood Duck				X	X			X		
Wood Thrush				X						
Yellow Warbler		X		X						
Yellow-bellied Sapsucker				X						
Yellow-rumped Warbler				X		X				

## Appendix D. Rare Species and Exemplary Natural Community Reporting Forms

## Rare Species Occurrence Record

Please fill out this form to report the location of a rare plant or animal species to the New Hampshire Natural Heritage Bureau. Required information is indicated by an asterisk; other items are desirable but not required. Rare species lists are at: [www.dred.state.nh.us/divisions/forestandlands/bureaus/naturalheritage/listsforms.htm](http://www.dred.state.nh.us/divisions/forestandlands/bureaus/naturalheritage/listsforms.htm). Call (603) 271-2214 with any questions. Thank you!

### What and When

* Scientific Name:	
Common Name:	
* Date(s) Observed:	
* Who Observed It:	Phone # or email:

### Location

Town Name:
* Map. Attach a map with the location marked. Ideally, use a USGS topographic map. If you hand-sketch the map, be sure to include a north arrow, scale, and landmarks such as roads and major water bodies. If you provide GPS coordinates, please tell us the model of the unit and the datum (e.g., WGS 84 or NAD 83). Directions. Write this as if you are telling someone how to get back to the exact site:

### Taxonomy

* How did you identify the species? What traits helped you decide that you had seen this species? What similar species did you consider and how did you exclude them? Photos showing key characteristics are welcome. A specimen is usually required to document a new plant population, however, an entire plant should never be collected if there are < 20 plants present.
* Certainty of ID (1=dubious, 5=absolutely positive):
If a specimen was collected, collector, collection number, and where the specimen is stored:

Send to: Data Manager, DRED / NHNHI, P.O. Box 1856, Concord, NH 03302-1856 ([scairns@dred.state.nh.us](mailto:scairns@dred.state.nh.us))

### Exemplary Natural Community Reporting Form

Please provide the following information when reporting the location of a natural community to the New Hampshire Natural Heritage Bureau (NHNHB). *Particularly important information is indicated by an asterisk; other items are desirable but not required.* Call (603) 271-2214 with any questions. Thank you!

#### Location

\*Town: \_\_\_\_\_ County: \_\_\_\_\_

\*Site Name \_\_\_\_\_

\*Directions: \_\_\_\_\_

\*Please attach a map. USGS Quad Name: \_\_\_\_\_

**Note:** A xeroxed portion of a USGS topographic map is **required**, with an outline of the area you actually visited. Optional: add another outline of what you believe to be the full extent of the natural community, beyond the area actually visited.

#### Identification

\*Your ad hoc name (e.g., *Typha* emergent marsh): \_\_\_\_\_

NHNHB Community Name: \_\_\_\_\_

Classification document used (name, date): \_\_\_\_\_

Other classification (NWI, SAF, etc): \_\_\_\_\_

\*Broad ecological group (e.g., riparian forest and woodland; coastal marsh): \_\_\_\_\_

#### \*Community Structure

_____ Forest (canopy cover >60%)	_____ Herbaceous (herb dom; <25% woody)
_____ Woodland (canopy cover 25-60%)	_____ Nonvascular (lichen, bryophyte, or algae dom.)
_____ Shrubland (<25% trees; >25% shrubs or shrubs the dom. life form)	_____ Sparse vege. (substrate-dominated; <25% vege.)

Cover type: \_\_\_\_\_ Generally coniferous-dominated  
(of upper or dominant stratum) \_\_\_\_\_ Generally mixed (ca. 25-75% each)  
\_\_\_\_\_ Generally deciduous-dominated

Cover class or %: closed (>75%); high (50-75%); moderate (25-50%); low (5-25); sparse (1-5%); scattered (<1%); absent (0%); if uncertain, use a range (e.g., "moderate to high").

Canopy cover: \_\_\_\_\_

Shrub layer cover: \_\_\_\_\_

Herb layer cover: \_\_\_\_\_

Nonvascular cover: \_\_\_\_\_

Bare substrate cover: \_\_\_\_\_ Substrate type (outcrop, boulder, cobble etc): \_\_\_\_\_

#### Community Composition

\*Dominant canopy species: \_\_\_\_\_

Other common canopy species: \_\_\_\_\_

Dominant understory species: \_\_\_\_\_

Dominant shrub layer species: \_\_\_\_\_

Dominant herb layer species: \_\_\_\_\_

\*Other characteristic species (indicators of distinctive conditions, e.g., high pH soil, elevation, geographic region, other particularly abundant species): \_\_\_\_\_

**Environment**

\*Topographic position (e.g., ridge crest, toe slope): \_\_\_\_\_

Geology/rock type: \_\_\_\_\_

Soil texture or type (peat, muck, sand, silt etc or NRCS name): \_\_\_\_\_

\*Moisture regime

\*Flood regime

Hydric \_\_\_\_\_  
Wet-mesic \_\_\_\_\_  
Mesic \_\_\_\_\_  
Dry-mesic \_\_\_\_\_  
Dry (xeric) \_\_\_\_\_

Inundated \_\_\_\_\_  
Seasonally flooded \_\_\_\_\_  
Temporarily flooded \_\_\_\_\_  
Saturated \_\_\_\_\_

Other important environmental factors (e.g., steep slope, wind exposure):  
\_\_\_\_\_

**Quality**

\*Estimated size of community (contiguous or close together in natural landscape): \_\_\_\_\_

\*Confidence in size estimate: High \_\_\_\_\_ Medium \_\_\_\_\_ Low \_\_\_\_\_

Size of surrounding natural landscape (total natural area): \_\_\_\_\_

\*Quality of surrounding landscape (e.g., natural high quality; natural low quality, residential)

Within 1/4 mile: \_\_\_\_\_

Within 1 mile: \_\_\_\_\_

\*Maturity (for forests/woodlands: age &/or DBH of canopy trees; density of large snags/acre; time since last major disturbance): \_\_\_\_\_  
\_\_\_\_\_

\*Evidence or knowledge of human disturbance (logging, old roads, ditches, foot trails):  
\_\_\_\_\_

How much has human disturbance impacted the integrity of the natural community?: \_\_\_\_\_  
\_\_\_\_\_

Exotic species (species, abundance, ecological effect): \_\_\_\_\_  
\_\_\_\_\_

\*Disruption of natural disturbance regime (e.g., fire suppression, flood alteration): \_\_\_\_\_  
\_\_\_\_\_

**Other Site Information**

Other natural community types present: \_\_\_\_\_  
\_\_\_\_\_

Rare species present: \_\_\_\_\_  
\_\_\_\_\_

\*Owner/manager of site: \_\_\_\_\_  
Current protective designation? (TNC Preserve, State Park, etc.):  
\_\_\_\_\_

**Documentation**

\*Name of contributor: \_\_\_\_\_  
Describe any additional information or documentation you have for this occurrence/site:  
\_\_\_\_\_

Others knowledgeable about the community or site: \_\_\_\_\_

\*Date natural community last observed: \_\_\_\_\_

## Reporting Wildlife Sightings at <http://nhwildlifesightings.unh.edu>

### “Why was NH Wildlife Sightings developed?”

Many potentially useful observations of wildlife are made by landowners, recreationists, birders, hunters and fishermen, foresters, and general wildlife enthusiasts. Through *NH Wildlife Sightings*, professionals and other citizens can report their wildlife observations. Following an intensive quality control and review process, observation data will be used by the NH Fish & Game Department to help assess the status of wildlife and evaluate appropriate conservation strategies.

### “What can I do at *NH Wildlife Sightings*?”

- Report your observations of wildlife species.
- Report animals killed or observed on roadways.
- Use a mapping tool to identify the location of your observation.
- Upload photographs with your observation to allow wildlife professionals to verify your species identifications.
- View records that you have submitted to the website and add new observations to ‘Sites’ you have already established.
- View town distribution maps for wildlife species.
- Track your wildlife observations for a particular area over time.

### “Which wildlife species can I report to *NH Wildlife Sightings*?”

Not all species found in NH can be reported through this website but many can. Species not currently listed on the website may be added over time as the need and interest arises. Initially, *NH Wildlife Sightings* is focused on: (a) species identified in the NH Wildlife Action Plan as Species in Greatest Conservation Need (SGCN) and (b) taxonomic groups with existing reporting programs in NH. For example, all reptiles and amphibians can be reported through the *NH Wildlife Sightings* because NH Fish & Game has coordinated a citizen based Reptile and Amphibian Reporting Program (RAARP) since 1992.

*NH Wildlife Sightings* was created through a joint effort of the NH Fish & Game Department, UNH Complex Systems Research Center, NH Natural Heritage Bureau, NH Audubon Society, and UNH Cooperative Extension. The site is being hosted by GRANIT at the UNH Complex Systems Research Center.

*NH Wildlife Sightings* was first developed in 2002 thanks to a grant from the Samuel P. Pardoe Foundation. Site improvements in 2008 were made possible by funding from the New Hampshire GIS Conservation Collaborative Fund for Geospatial Technologies and US Fish & Wildlife Service State Wildlife Grants provided by the NH Fish & Game Department.”

Source: New Hampshire Wildlife Sightings website, <http://nhwildlifesightings.unh.edu>

## Appendix E. Invasive Species Information

The following link may be found helpful in obtaining specific information on some of our invasive species.

[http://agriculture.nh.gov/divisions/plant\\_industry/documents/invasive-species.pdf](http://agriculture.nh.gov/divisions/plant_industry/documents/invasive-species.pdf)

Below is a listing of invasive species of concern for New Hampshire; if you are viewing this online, the links will take you to species descriptions at [invasive.org](http://invasive.org).

<u>Subject Name</u>	<u>Scientific Name</u>	<u>Family</u>	<u>Order</u>
<a href="#">honey bee mite</a>	<a href="#">Acarapis woodi (Rennie)</a>	Tarsonemidae	Acari
<a href="#">Norway maple</a>	<a href="#">Acer platanoides L.</a>	Aceraceae	Sapindales
<a href="#">hemlock woolly adelgid</a>	<a href="#">Adelges tsugae Annand</a>	Adelgidae	Hemiptera
<a href="#">city longhorn beetle</a>	<a href="#">Aeolesthes sarta (Solsky, 1871)</a>	Cerambycidae	Coleoptera
<a href="#">emerald ash borer</a>	<a href="#">Agrilus planipennis Fairmaire, 1888</a>	Buprestidae	Coleoptera
<a href="#">tree-of-heaven</a>	<a href="#">Ailanthus altissima (P. Mill.) Swingle</a>	Simaroubaceae	Sapindales
<a href="#">garlic mustard</a>	<a href="#">Alliaria petiolata (Bieb.) Cavara &amp; Grande</a>	Brassicaceae	Capparales
<a href="#">European chafer</a>	<a href="#">Amphimallon majale (Razoumowsky, 1789)</a>	Scarabaeidae	Coleoptera
<a href="#">Asian longhorned beetle</a>	<a href="#">Anoplophora glabripennis (Motschulsky, 1853)</a>	Cerambycidae	Coleoptera
<a href="#">Japanese barberry</a>	<a href="#">Berberis thunbergii DC.</a>	Berberidaceae	Ranunculales
<a href="#">European barberry</a>	<a href="#">Berberis vulgaris L.</a>	Berberidaceae	Ranunculales
<a href="#">Japanese cedar longhorn beetle</a>	<a href="#">Callidiellum rufipenne (Motschulsky, 1860)</a>	Cerambycidae	Coleoptera
<a href="#">oriental bittersweet</a>	<a href="#">Celastrus orbiculatus Thunb.</a>	Celastraceae	Celastrales
<a href="#">spotted knapweed</a>	<a href="#">Centaurea stoebe ssp. micranthos (Gugler) Hayek</a>	Asteraceae	Asterales
<a href="#">black dog-strangling vine,</a> <a href="#">black swallowwort</a>	<a href="#">Cynanchum louiseae Kartesz &amp; Gandhi</a>	Asclepiadaceae	Gentianales
<a href="#">dog-strangling vine,</a> <a href="#">European swallowwort</a>	<a href="#">Cynanchum rossicum (Kleopov) Barbarich</a>	Asclepiadaceae	Gentianales
<a href="#">Siberian moth</a>	<a href="#">Dendrolimus sibiricus Chetverikov</a>	Lasiocampidae	Lepidoptera
<a href="#">autumn-olive</a>	<a href="#">Elaeagnus umbellata Thunb.</a>	Elaeagnaceae	Rhamnales
<a href="#">winged burning bush</a>	<a href="#">Euonymus alatus (Thunb.) Sieb.</a>	Celastraceae	Celastrales
<a href="#">Japanese knotweed</a>	<a href="#">Fallopia japonica Sieb. &amp; Zucc.</a>	Polygonaceae	Polygonales
<a href="#">glossy buckthorn</a>	<a href="#">Frangula alnus P. Mill.</a>	Rhamnaceae	Rhamnales
<a href="#">giant hogweed</a>	<a href="#">Heracleum mantegazzianum Sommier &amp; Levier</a>	Apiaceae	Apiales
<a href="#">damesrocket</a>	<a href="#">Hesperis matronalis L.</a>	Brassicaceae	Capparales
<a href="#">goldenhaired bark beetle</a>	<a href="#">Hylurgus ligniperda (Fabricius, 1787)</a>	Curculionidae	Coleoptera
<a href="#">European spruce bark beetle</a>	<a href="#">Ips typographus (Linnaeus, 1758)</a>	Curculionidae	Coleoptera
<a href="#">yellowflag iris</a>	<a href="#">Iris pseudacorus L.</a>	Iridaceae	Liliales
<a href="#">perennial pepperweed</a>	<a href="#">Lepidium latifolium L.</a>	Brassicaceae	Capparales

<a href="#">border privet</a>	<a href="#">Ligustrum obtusifolium Sieb. &amp; Zucc.</a>	Oleaceae	Scrophulariales
<a href="#">Japanese honeysuckle</a>	<a href="#">Lonicera japonica Thunb.</a>	Caprifoliaceae	Dipsacales
<a href="#">Morrow's honeysuckle</a>	<a href="#">Lonicera morrowii Gray</a>	Caprifoliaceae	Dipsacales
<a href="#">Tatarian honeysuckle</a>	<a href="#">Lonicera tatarica L.</a>	Caprifoliaceae	Dipsacales
<a href="#">Bell's honeysuckle</a>	<a href="#">Lonicera x bella Zabel [morrowii x tatarica]</a>	Caprifoliaceae	Dipsacales
<a href="#">gypsy moth</a>	<a href="#">Lymantria dispar (Linnaeus)</a>	Lymantriidae	Lepidoptera
<a href="#">nun moth</a>	<a href="#">Lymantria monacha (Linnaeus)</a>	Lymantriidae	Lepidoptera
<a href="#">Japanese stiltgrass</a>	<a href="#">Microstegium vimineum (Trin.) A. Camus</a>	Poaceae	Cyperales
	<a href="#">Polygonum perfoliatum L.</a>	Polygonaceae	Polygonales
	<a href="#">Polygonum x bohemicum (J. Chrtek &amp; Chrtkov�) Zika &amp; Jacobson [cuspidatum x sachalinense]</a>	Polygonaceae	Polygonales
<a href="#">Bohemian knotweed</a>			
<a href="#">Japanese beetle</a>	<a href="#">Popillia japonica Newman, 1841</a>	Scarabaeidae	Coleoptera
<a href="#">viburnum leaf beetle</a>	<a href="#">Pyrrhalta viburni (Paykull, 1799)</a>	Chrysomelidae	Coleoptera
<a href="#">European buckthorn</a>	<a href="#">Rhamnus cathartica L.</a>	Rhamnaceae	Rhamnales
<a href="#">multiflora rose</a>	<a href="#">Rosa multiflora Thunb. ex Murr.</a>	Rosaceae	Rosales
<a href="#">brown spruce longhorn beetle</a>	<a href="#">Tetropium fuscum (Fabricius, 1787)</a>	Cerambycidae	Coleoptera
<a href="#">honey bee varroa mite</a>	<a href="#">Varroa destructor Anderson &amp; Trueman, 2000</a>	Varroidae	Acari

Below is a listing of aquatic invasive species of concern for New Hampshire; if you are viewing this online, the links will take you to species descriptions at [invasive.org](http://invasive.org).

<a href="#">Subject Name</a>	<a href="#">Scientific Name</a>	<a href="#">Family</a>	<a href="#">Order</a>
<a href="#">flowering rush</a>	<a href="#">Butomus umbellatus L.</a>	Butomaceae	Alismatales
<a href="#">fanwort</a>	<a href="#">Cabomba caroliniana L.</a>	Cabombaceae	Nymphaeales
<a href="#">Carolina fanwort</a>	<a href="#">Cabomba caroliniana var. caroliniana A. Gray</a>	Cabombaceae	Nymphaeales
<a href="#">Carolina fanwort</a>	<a href="#">Cabomba caroliniana var. pulcherrima Harper</a>	Cabombaceae	Nymphaeales
<a href="#">forked fanwort</a>	<a href="#">Cabomba furcata Schult. &amp; Schult. f.</a>	Cabombaceae	Nymphaeales
<a href="#">fishgrass</a>	<a href="#">Cabomba haynesii Wiersema</a>	Cabombaceae	Nymphaeales
<a href="#">swamp stonecrop</a>	<a href="#">Crassula helmsii A. Berger</a>	Crassulaceae	Rosales
<a href="#">Brazilian waterweed</a>	<a href="#">Egeria densa Planch.</a>	Hydrocharitaceae	Hydrocharitales
<a href="#">hairy willowherb</a>	<a href="#">Epilobium hirsutum L.</a>	Onagraceae	Myrtales
<a href="#">reed mannagrass</a>	<a href="#">Glyceria maxima (Hartman) Holmb.</a>	Poaceae	Cyperales
<a href="#">hydrilla</a>	<a href="#">Hydrilla verticillata (L. f.) Royle</a>	Hydrocharitaceae	Hydrocharitales
<a href="#">common frogbit</a>	<a href="#">Hydrocharis morsus-ranae L.</a>	Hydrocharitaceae	Hydrocharitales
<a href="#">miramar weed</a>	<a href="#">Hygrophila polysperma (Roxb.) T. Anders.</a>	Acanthaceae	Scrophulariales
<a href="#">swamp morningglory</a>	<a href="#">Ipomoea aquatica Forssk.</a>	Convolvulaceae	Solanales
<a href="#">yellowflag iris</a>	<a href="#">Iris pseudacorus L.</a>	Iridaceae	Liliales
<a href="#">oxygen weed</a>	<a href="#">Lagarosiphon major (Ridley) Moss</a>	Hydrocharitaceae	Hydrocharitales
<a href="#">limnophila</a>	<a href="#">Limnophila sessiliflora (Vahl) Blume</a>	Scrophulariaceae	Scrophulariales
<a href="#">purple loosestrife</a>	<a href="#">Lythrum salicaria L.</a>	Lythraceae	Myrtales

<a href="#">European pepperwort</a>	<a href="#">Marsilea quadrifolia L.</a>	Marsileaceae	Hydropteridales
<a href="#">true forget-me-not</a>	<a href="#">Myosotis scorpioides L.</a>	Boraginaceae	Lamiales
<a href="#">alternateflower watermilfoil</a>	<a href="#">Myriophyllum alterniflorum DC.</a>	Haloragaceae	Haloragales
<a href="#">parrot feather milfoil</a>	<a href="#">Myriophyllum aquaticum (Vell.) Verdc.</a>	Haloragaceae	Haloragales
<a href="#">Farwell's watermilfoil</a>	<a href="#">Myriophyllum farwellii Morong</a>	Haloragaceae	Haloragales
<a href="#">twoleaf watermilfoil</a>	<a href="#">Myriophyllum heterophyllum Michx.</a>	Haloragaceae	Haloragales
<a href="#">western watermilfoil</a>	<a href="#">Myriophyllum hippuroides Nutt. ex Torr. &amp; A. Gray</a>	Haloragaceae	Haloragales
<a href="#">low watermilfoil</a>	<a href="#">Myriophyllum humile (Raf.) Morong</a>	Haloragaceae	Haloragales
<a href="#">lax watermilfoil</a>	<a href="#">Myriophyllum laxum Shuttlw. ex Chapm.</a>	Haloragaceae	Haloragales
<a href="#">eastern watermilfoil</a>	<a href="#">Myriophyllum pinnatum (Walter) Britton, Sterns &amp; Poggenb.</a>	Haloragaceae	Haloragales
<a href="#">Andean watermilfoil</a>	<a href="#">Myriophyllum quitense Kunth</a>	Haloragaceae	Haloragales
<a href="#">northern watermilfoil</a>	<a href="#">Myriophyllum sibiricum Kom.</a>	Haloragaceae	Haloragales
<a href="#">Eurasian watermilfoil</a>	<a href="#">Myriophyllum spicatum Linnaeus</a>	Haloragaceae	Haloragales
<a href="#">watermilfoil</a>	<a href="#">Myriophyllum spp.</a>	Haloragaceae	Haloragales
<a href="#">slender watermilfoil</a>	<a href="#">Myriophyllum tenellum Bigelow</a>	Haloragaceae	Haloragales
<a href="#">Russian water-milfoil</a>	<a href="#">Myriophyllum ussuriense (Regel) Maxim.</a>	Haloragaceae	Haloragales
<a href="#">whorled watermilfoil</a>	<a href="#">Myriophyllum verticillatum L.</a>	Haloragaceae	Haloragales
<a href="#">brittleleaf naiad</a>	<a href="#">Najas minor All.</a>	Najadaceae	Najadales
<a href="#">yellow floatingheart</a>	<a href="#">Nymphoides peltata (Gmel.) Kuntze</a>	Menyanthaceae	Solanales
<a href="#">common reed</a>	<a href="#">Phragmites australis (Cav.) Trin. ex Steud.</a>	Poaceae	Cyperales
<a href="#">curlyleaf pondweed</a>	<a href="#">Potamogeton crispus L.</a>	Potamogetonaceae	Najadales
<a href="#">arrowhead</a>	<a href="#">Sagittaria sagittifolia Linnaeus</a>	Alismataceae	Alismatales
<a href="#">threeleaf arrowhead</a>	<a href="#">Sagittaria trifolia L.</a>	Alismataceae	Alismatales
<a href="#">horn nut</a>	<a href="#">Trapa bicornis Osbeck</a>	Trapaceae	Myrtales
<a href="#">water-chestnut</a>	<a href="#">Trapa natans L.</a>	Trapaceae	Myrtales
<a href="#">singhara nut</a>	<a href="#">Trapa natans bispinosa (Roxb.) Makino</a>	Trapaceae	Myrtales
<a href="#">caltrop</a>	<a href="#">Trapa natans natans L.</a>	Trapaceae	Myrtales
<a href="#">water chestnut</a>	<a href="#">Trapa spp. L.</a>	Trapaceae	Myrtales
<a href="#">cattail</a>	<a href="#">Typha laxmannii Lepech.</a>	Typhaceae	Typhales
<a href="#">cattail</a>	<a href="#">Typha lugdunensis P. Chabert</a>	Typhaceae	Typhales
<a href="#">cattail</a>	<a href="#">Typha minima Funck ex Hoppe</a>	Typhaceae	Typhales