



Unit 1: New Hampshire Geography

In this unit:

Section 1: Introduction

Section 2: New Hampshire's Physical Characteristics

Section 3: New Hampshire's Climate

Section 4: New Hampshire's Weather

Section 5: Features of the Land

Section 6: The Regions of New Hampshire

Section 7: "Writing" the Land

Section 1: Introduction

New Hampshire is the fifth smallest state in the country, covering just 9,351 square miles. But our geography has lots of different physical features, from the Atlantic Ocean to Mount Washington to the Connecticut River Valley. Geographical features are all around us, and they help us figure out where we are in the state. They also make New Hampshire different from any other state. There are 1.3 million people who live in New Hampshire, and most of them are in the southern part of the state. New Hampshire's state capital is the city of Concord, which is near the state's geographical center.



As you learn more about New Hampshire geography, think about the following questions:

- What physical and human characteristics define New Hampshire?
- How did New Hampshire's boundaries and regions come to be the way they are today?
- How has the way people explored and represented New Hampshire changed over time?
- How does where you live impact how you live?



Section 2: New Hampshire's Physical Characteristics

What gave the land of New Hampshire its features?

Millions of years ago, New Hampshire was covered with ice, as was most of the world. This period was called the Ice Age. When the ice receded, it left behind mountains, rivers, lakes, and valleys. These physical features are major landmarks that have shaped the way people have lived in New Hampshire for thousands of years.

Video: Mason Explains: Glaciers in New Hampshire

Shaping the land! New Hampshire has beautiful natural features like mountains, rivers, beaches, and lakes. Did you ever wonder how all these things were made? Glaciers, of course! Watch to learn how glaciers made the Granite State the way it is today.

New Hampshire's Mountains

The glaciers left behind many mountains in New Hampshire. Most of them are located in the middle of the state in a mountain range known as the White Mountains. The name was used by the early English colonists in New Hampshire, who could see the mountains from where they had settled along the coast. From that distance, the tops of the mountains always looked white, either because they were covered with snow or because of the rock that lies at the summit of each peak. The colonists started calling them the White Mountains or just "The Whites."

The White Mountain range covers one-third of the state. The mountain range has more than 48 mountains that are taller than 4,000 feet. The tallest is Mount Washington, which is 6,288 feet high and the tallest mountain in northeastern America.



In addition to these very tall mountains, there are also many other mountains in New Hampshire. In fact, there are almost 300 mountains in the state that are between 1,000 feet and 4,000 feet high. Many of them are in the White Mountains, but others are spread out around the state. For example, Mount Monadnock is a major landmark in the southeastern part of New Hampshire, and Mount Kearsarge to the north is just as important to the people who live in that area. The twin peaks of the Uncanoonucs near the Merrimack River in Goffstown are the tallest mountains in that part of the state.

New Hampshire's Waterways

New Hampshire has many lakes and rivers.

There are more than 1,300 lakes and ponds in the state. Many of these lakes are centered in the Lakes Region, including the state's largest lake, Lake Winnepesaukee. But there are many lakes and ponds all over the state, such as Lake Sunapee in the western part of the state and Pawtuckaway Lake near the seacoast. Tourists often came to New Hampshire to visit the state's beautiful lakes.

In addition, there are more than 40,000 miles of rivers and streams in New Hampshire, including several major rivers like the Connecticut, the Merrimack, and the Saco, all of which flow into other New England states. In fact, New Hampshire is sometimes called the "Mother of Rivers" since these three important New England rivers begin in the Granite State.



The Granite State

The glaciers of the last Ice Age also left all over the area large deposits of granite, for which New Hampshire later became famous.

Granite is a type of rock that is very hard, harder than other kinds of rocks. Although granite can be found in many states, New Hampshire's granite is famous because there is so much of it in the state. New Hampshire granite has been used in many of the country's most impressive buildings. That is why New Hampshire is known as the Granite State.

Soon after the ice age ended, plants like grasses, bushes, and trees began to grow. The plants provided food and shelter for animals, and animal life began to flourish too. New Hampshire had become a land rich in natural resources.

New Hampshire's Borders

Where is New Hampshire, and what are its borders?

Video: Mason Explains: Where Is New Hampshire

Finding the Granite State! When you're in the Granite State, where in the world are you? Join Mason as he shows you where to find New Hampshire on a map and how people decided on its borders.

The borders of New Hampshire have not always been the same as they are today. In fact, there were no borders at all until the end of the 1600s. The Abenaki Native Americans lived in what is today Vermont, New Hampshire, Maine, and northern Massachusetts and did not have strict borders for their land.



Even the first English settlers did not define borders for New Hampshire. Instead, they lived in four towns that were near the seacoast. In 1679, people tried to make clear borders for New Hampshire, but they had lots of arguments with people in Massachusetts, Maine, and Vermont about where their borders were. Most of these arguments were settled by 1740. By then New Hampshire's borders were more or less the same as they are today.

New Hampshire's Counties

In 1769, New Hampshire divided the land into counties, which are units of government that are larger than a town but smaller than a state. There were originally five counties, all in the southern part of New Hampshire, which was the only area that had already been settled by the English.

The counties were called Cheshire, Grafton, Hillsborough, Rockingham, and Strafford. They were all named after people or places in Great Britain because New Hampshire was a British colony at the time, ruled by the British king. As more of New Hampshire was settled over the years, new counties in other parts of the state were added: Coos in 1805; Merrimack in 1823; Sullivan in 1827; Belknap in 1841, and Carroll in 1841.

New Hampshire's Towns and Cities

Within each county are towns and cities.

New Hampshire has 221 towns. Most of the people in the state live in them, and towns, not cities, were the earliest colonial settlements. From the 17th century to the 19th century, towns were founded throughout the state. Sometimes when towns became too big, they split into two towns. For example, the Town of Londonderry was founded in 1722. It grew so big that the



communities of Derry and Windham broke off to form their own towns.

Other times large towns became cities. The townspeople have to vote to turn their town into a city. When a town becomes a city it gets a new form of government. New Hampshire has 13 cities spread out around the state. Every county in New Hampshire has at least one city, except Carroll County.

The state capital of New Hampshire is Concord, which is located in the geographical center of the state. But Concord is not at the center of the state's population. Most of the people in New Hampshire live in the southern part of the state.

Let's Review!

What are the big ideas in this section?

1. The End of the Ice Age: Glaciers created many of New Hampshire's physical features. When the last ice age ended, plant and animal life started to come back to the land we call New Hampshire.
2. NH's Natural Resources: New Hampshire has many natural resources, and the land has been shaped by its mountains, lakes, and rivers. The state is best known for a type of stone called granite that can be found all over New Hampshire.
3. The Creation of NH's Borders: New Hampshire's borders changed during the colonial period. The borders it has today were set by 1740. Some of the borders are determined by physical features, like rivers and the ocean.



4. NH's Counties, Cities, and Towns: New Hampshire has 10 counties, 13 cities, and 221 towns. Most of the population lives in the southern part of the state.



Section 3: New Hampshire's Climate

What is New Hampshire's climate like?

An area's climate describes the expected weather conditions over a long period of time. How cold does it usually get in January in New Hampshire? How much rain does New Hampshire typically get in the spring? How many sunny days does New Hampshire normally have in the summer? These are questions about the state's climate.

The climate and the weather are not the same thing, although they are closely related. The weather describes what the conditions were on a specific day. For example, knowing if it rained yesterday is part of an area's weather. But knowing how many inches of rain an area gets on average every year is part of its climate.

One way to look at it is that climate is understanding the conditions you should expect based on the time of year (sunny, cloudy, snow, etc.), but weather is what kind of conditions you actually get on any given day (today is breezy and warm).

New Hampshire has a temperate climate, which means it is not too hot or too cold. It doesn't always feel that way to the people who live here, though! The winters can be very cold, and the summers can be very hot. But compared to other parts of the world, New Hampshire's climate is considered a comfortable one for people.

There are four seasons in New Hampshire: winter, spring, summer, and fall. These four seasons can bring some wild weather to the Granite State.



Winter

In winter, New Hampshire experiences cold temperatures, snow, ice, and high winds. Much of the state's wild weather comes during the winter in blizzards, nor'easters, and ice storms.

On average, New Hampshire gets 64 inches of snow every year. It is common to have snow on the ground all winter long. Snow sports, such as skiing, snowshoeing, and snow-mobiling, are very popular in New Hampshire. The state is crisscrossed with trails for these activities. Ice fishing is popular in New Hampshire as well, and it is a common sight in winter to see small shacks on frozen lakes that provide some shelter for ice fishermen.

Traveling in snow presents real challenges. People used to get around in winter on sleighs since the wheels on wagons or carriages couldn't move over snow. When cars were invented in the early 1900s, they were built to swap out the tires and install skis in their place in the winter months. Can you imagine a car on skis? At about this same time, towns started using giant rollers, pulled by horses, to flatten the snow so that sleighs and cars (with skis) could get around more easily. It was not until the late 1920s that towns began to plow snow off the roads so that cars could keep their tires on all year.

The White Mountains draw thousands of tourists and Granite Staters every winter, as they tend to get more snow than the rest of the state and have colder temperatures. Many of the downhill ski resorts are located in this region of the state. There is no skiing on Mount Washington, but it usually gets 260 inches of snow a year!



Spring

Spring is sometimes known as “mud season,” because the melting snow makes the ground wet and muddy. Spring can be almost as cold as winter, or it can be as hot as summer. There’s an old saying about spring in New Hampshire: if you don’t like the weather, just wait a few minutes because it will change! People never know what to expect with the weather during New Hampshire springs, although there are always lots of bugs, especially black flies.

Although it rains in spring, summer, and fall in New Hampshire, most of the state's precipitation comes in the spring. On average, New Hampshire gets 37 inches of rain a year, spread out over several rainfalls. Spring is when it is most likely to flood in this part of the country. New Hampshire is the 20th wettest state in America, which means it gets more precipitation than 30 other states!

In early spring, people in New Hampshire tap maple trees and collect sap to make maple syrup, which is available in pancake houses around the state.

Late spring brings out beautiful purple flowers called lilacs, which are the New Hampshire state flower. Lilacs grow in large bushes and appear all over the state, although mostly in the southern part of New Hampshire. There is a governor's commission, formed in 1984, to promote the growing of lilacs in New Hampshire, and every spring, the historic Wentworth-Coolidge Mansion in Portsmouth holds a lilac festival in late May.



Summer

Summers tend to be hot and humid in New Hampshire, but it is great weather to enjoy the outdoors in the Granite State, especially by visiting its many lakes and rivers. There are 93 state parks in New Hampshire, offering swimming, boating, hiking, camping, fishing, bird-watching, and all sorts of outdoor activities.

Berry-picking is also popular in the state in the summer. New Hampshire is also well-known for its ice cream, especially flavors like maple walnut.

Many tourists come to New Hampshire for vacation during the summer, and lots of people in Massachusetts and New York have summer homes here. Children have been going to summer camps in New Hampshire since the 1880s. People from other states all over the country send their children to New Hampshire for the summer so they can swim, fish, hike, and enjoy all the fun of living near the state's lakes and mountains.

Fall

Fall, also called autumn, is the favorite season of many people in New Hampshire. The state is known for the beautiful colors of its trees during this time.

Why does New Hampshire have such gorgeous falls? The state is full of deciduous trees. This kind of tree drops its leaves every fall and grows them back in the spring. The shorter days of fall cause the pigments in the trees' leaves to change, making the leaves turn from green to yellow, orange, or red. Birch, maple, hickory, and ash are all deciduous trees. When there's less sunlight in the fall because of the shorter days, the leaves of New Hampshire's trees turn brilliant colors.



Thousands of people visit New Hampshire to see the leaves change color every year. They are called “leaf peepers,” and their arrival in the Granite State every fall makes the fall one of New Hampshire’s best tourist seasons. The visitors stay in inns and hotels, eat in restaurants, visit tourist attractions, and buy souvenirs.

Farms in New Hampshire are also busy spots in the fall. Apple-picking and pumpkin patches are some of the most popular Granite State attractions every September and October.

Elevation in New Hampshire

Even though the state is small, it has a varied climate, mainly because of the White Mountains, which are very tall. The tallest peak in the White Mountains is Mount Washington, which reaches more than 1 mile into the sky. Mount Washington has its own climate, and conditions on the summit are often very different from conditions at the base of the mountain.

The climate in these mountains is much cooler than it is in the rest of the state because the mountains are so high. That means that even though the mountains have the four seasons like the rest of the state, the summers and the winters are both cooler than in other places in New Hampshire. At high elevations, the wind speeds up, which cools down the air and can make it rain or snow. That’s why it can be cold in the White Mountains on the same day it is hot on New Hampshire’s coast.

Climate Change

Over the past several decades, the climate of New Hampshire—and the world—has been changing too quickly. Most of this change is due to things that people do, especially activities that



burn a lot of fuel, like powering factories and driving cars. Because of these activities, the earth is warming up faster than it should, which is called global warming. If the world gets even a few degrees warmer, it can have a big impact on plant and animal life. It can also lead to geological change, like the melting of the glaciers that are the world's polar ice caps, which would affect the climate here in New Hampshire and everywhere else.

Let's Review!

What are the big ideas in this section?

1. Climate vs. Weather: Climate refers to the expected conditions in an area (summers are usually hot). Weather refers to the conditions that actually occur (yesterday was hot).
2. NH's Four Seasons: New Hampshire has four distinct seasons: winter, spring, summer, and fall. Each season has typical weather conditions, and Granite Staters have developed different traditions that are associated with each season.
3. NH's Mountains: There are many tall mountains in New Hampshire, including 48 mountains that are over 4,000 feet. These mountains bring a big change in elevation to the state.
4. Climate Change: New Hampshire's climate, like the rest of the world's, is heating up too fast. This is called climate change, and it can cause all sorts of problems for the people, plants, and animals that live here.



Section 4: New Hampshire's Weather

What is New Hampshire's weather like?

New Hampshire's four seasons, and its weather, are determined by its climate. Although each season has typical weather, sometimes the state's weather can get a little wild. New Hampshire has had all kinds of weather throughout its history, even major weather events like floods, hurricanes, ice storms, and blizzards (sometimes called nor'easters).

Floods

Floods tend to happen in the spring. They happen when an area gets more water from rain or melting snow than it can handle. Rivers overflow their banks, and too much water causes mudslides and damage by getting into places it normally doesn't belong.

In the spring of 1936, too much rain fell too quickly, creating floods all over the state. The mighty Merrimack River, which runs through the center of New Hampshire, overflowed and flooded cities like Manchester and Nashua.

New Hampshire also had a big flood on Mother's Day in 2006, which brought damage to all parts of the state. Many people were without power for weeks after the Mother's Day flood.



Hurricanes

Hurricanes usually occur in the late spring, summer, or early fall. Hurricanes are huge storms that move in a big circle, bringing high winds and lots of rain. They usually start in the warm waters of the south Atlantic Ocean, and they often hit the southern part of the United States first, especially states like Florida, South Carolina, and Louisiana. Every once in a while, though, a hurricane sweeps up the east coast and hits New England.

The biggest hurricane to ever hit New Hampshire was in September 1938. It had winds of over 100 miles per hour when it reached New Hampshire, and it destroyed many buildings throughout the state. It even blew down hundreds of thousands of trees in New Hampshire. The storm destroyed 10 bridges in New Hampshire and killed 13 people.

Ice Storms

Ice storms sometimes happen in winter in New Hampshire. They occur when rain falls and freezes almost immediately, creating ice on every surface from roads to trees. Ice storms tend to cause power outages because the ice weighs down power lines and tree branches, causing them to fall. They also cause car accidents because they make the roads slippery and dangerous. Although the ice usually melts within a day or two, the impact of an ice storm can be felt for a long time, maybe even weeks.

In December 2008, the northeastern states, including New Hampshire, had the worst ice storm in a decade. More than 1.7 million people lost power during the storm, and hundreds of thousands of trees fell under the weight of the ice.



Blizzards

A few blizzards occur every winter in New Hampshire. Blizzards are big snow storms with high winds that usually sweep in from Canada bringing very cold air. Nor'easters are storms that also bring lots of snow, wind, and cold temperatures, but they move in from the Atlantic Ocean.

Although all Granite Staters are used to blizzards and nor'easters, a few have been big weather events, like the blizzard of 1888 and the blizzard of 1978. Both of these storms dropped several feet of snow on New Hampshire, and it took a long time for people to dig out afterward.

Let's Review!

What are the big ideas in this section?

1. The Impact of Climate: New Hampshire's four seasons and its weather are determined by its climate.
2. NH's Wild Weather: Each season in New Hampshire has typical weather, but sometimes in New Hampshire the weather can get a little wild.
3. Winter Weather Events: Blizzards and ice storms can happen in the winter.
4. Spring, Summer, and Fall Weather Events: Floods occur the most in the spring, and hurricanes can happen in the spring, summer, or fall.



Section 5: Features of the Land

How does the geography of New Hampshire support plant and animal life?

New Hampshire has 27 habitats that support 500 species of plants and animals. These habitats are grouped into six different categories that appear throughout the state.

Forests

New Hampshire is covered with thick forests containing a wide variety of trees such as birch, hemlock, spruce, fir, hickory, oak, maple, and white pine. Most of these types of trees change color in the fall and lose their leaves for the winter, growing new leaves in the spring. A few of these types are evergreen trees, though, meaning that they keep their leaves or needles all year long and the trees themselves always stay green.

New Hampshire's trees cover 80% of the state. In fact, New Hampshire is the second most forested state in the country, after Maine. The Granite State's forests support many different types of animals, including black bears, lynx, moose, bats, purple finches (the state bird), eagles, turtles, snakes, salamanders, and toads.

Alpine, Rock, and Cave

High in the White Mountains, starting at an elevation of about 5,000 feet, the habitat is called alpine tundra. There are no trees in this habitat but lots of rocks and even some caves, like the polar caves in Rumford, which were created during the Ice Age out of massive granite boulders. There are also rock formations, like the Old Man of the Mountain, which is New Hampshire's state symbol. The weather in the alpine tundra is cold and often has



high winds. Few animals live this high up, although there are bobcats, rattlesnakes, and eagles.

Lakes, Ponds, and Rivers

New Hampshire has thousands of lakes, ponds, rivers, and streams throughout the state. These waterways used to be full of fish, including trout, salmon, shad, and sturgeon. The Merrimack River had so many fish that an Abenaki legend claimed a person could walk across the river on top of the fish and not fall in. The state's lakes also provide food and shelter for a large number of loons, which are a kind of bird.

New Hampshire's waterways have always been important to the people who lived here. The Abenaki used the rivers like highways and traveled up and down them in canoes. People who lived here in the 19th century did the same, especially along the state's two main rivers, the Merrimack and the Connecticut. They would have used flatboats to transport goods on the rivers. Later in the century, the rivers supplied power to make the machines work in New Hampshire's factories during the Industrial Revolution. The state's lakes have been popular tourist destinations since the 19th century as well.

Wetlands

Much of southern New Hampshire lies at low elevations and is wetlands. Swamps can be found throughout this area and are basically forested areas with soggy ground. Swamps support all kinds of wildlife, including snakes, toads, salamanders, bugs, and bats.

Floodplains are also common in New Hampshire. They are low-lying areas next to rivers that are likely to flood when the river gets too high. When floodplains are not covered in water, they



make good farming land. They tend to be home for animals like beavers, minks, and otters, who live on land but like wet environments like rivers and streams.

Coastal

New Hampshire has 18 miles of coastline along the Atlantic Ocean. This area has not just beaches but also islands, sand dunes, estuaries, and salt marshes. When the tide comes in, the ocean often floods coastal areas. Lots of birds, seals, sea otters, fish, and ocean life like crabs live in these types of areas.

The coastline was the first part of New Hampshire settled by the English when they arrived in the 17th century. They came to New Hampshire to catch the fish that lived in the ocean off the coast, like cod and herring. There were so many fish in the Atlantic Ocean that the English thought they would never be able to catch them all, but by the 19th century, the fish population was much smaller.

Let's Review!

What are the big ideas in this section?

1. NH's 27 Habitats: There are 27 different habitats in New Hampshire, meaning different types of places where animals live and plants grow. New Hampshire supports more than 500 species of plants and animals in these habitats, not counting bugs!
2. NH's Forests Cover the State: The largest habitat in New Hampshire is forests, which cover 80% of the state. New Hampshire is the second most forested state in the country.



3. The Importance of Lakes, Rivers, and Ponds: Lakes, rivers, and ponds have always been important to the people who live here. They have been used as highways, power sources, and tourist destinations.

4. Other Habitats in New Hampshire: The other four categories of habitats in New Hampshire are alpine, rock, cave; grass, shrub, developed land; wetlands; and coastal. Each one supports different kinds of life.



Section 6: Regions of New Hampshire

What are the regions of New Hampshire?

Scientists consider New Hampshire to have three geographic land types: the Coastal Lowlands, Eastern New England Uplands, and the White Mountains. These land types are defined by their terrain and the animal and plant life they support.

Most of the people who live in New Hampshire, though, recognize seven different parts or regions of the state. These regions are sometimes called "tourist" regions. Each region is associated with specific physical features that make them unique.

Video: Mason Explains: The Regions of New Hampshire

Different parts of the state! Do you like to go hiking and camping? How about shopping? Or maybe you want to go relax on the beach? In New Hampshire you can do all these things! Learn about all the different regions of New Hampshire and what makes them special.

Let's Review!

What are the big ideas in this section?

1. Understanding Regions: A region is an area that has a lot of things in common but no official borders. New Hampshire has 7 different regions, sometimes called "tourist regions."
2. New Hampshire's 7 Regions: New Hampshire's 7 tourist regions are Great North Woods, White Mountains, Dartmouth-Sunapee, Monadnock, Lakes, Merrimack Valley, and Seacoast.



3. Each Region Is Unique: Each region in New Hampshire has special features that define and describe it and different things to do and see.

4. NH Land Types: There are 3 geographic land types in New Hampshire: Coastal Lowlands, Eastern New England Uplands, and the White Mountains.



Section 7: “Writing” the Land

How do people document what they know about the land?

For centuries, people have used maps to show where things are. They can be used to show all kinds of physical features like borders, rivers, mountains, cities, and roads. The earliest map of New Hampshire was created by an explorer named Bartholomew Gosnold in 1602. His map, which covered the coastline of New England from Maine to Rhode Island, was used by the first English explorers to visit and settle in New Hampshire. But none of them knew very much about New Hampshire other than what they could see along the coast. It would be years before mapmakers could fill in more information about the rest of New Hampshire.

To make maps, these early Americans used surveying tools like chains, tripods, and compasses to measure distances and create the best maps they could. Sometimes their maps were wrong and had to be corrected. But eventually, they created maps that showed New Hampshire’s physical features (such as mountains and lakes) and human features (like buildings and roads). Now, mapmakers use satellites and digital technology to create very precise maps of New Hampshire and all its features. And people continue to use maps every day to find their way and learn about the state.

To learn more about reading maps, watch this video.

Video: Understanding Maps

Check it out! Find out more about maps—their history, how to analyze them, what to do with them—by watching this video.



Let's Review!

What are the big ideas in this section?

1. **Maps Share Information:** Maps can be used to show all different types of things, like physical and human features.
2. **First Map of NH:** The first map of New Hampshire was created in 1602, but the mapmaker only saw the coastline. Later explorers used his map to visit and settle the area.
3. **Surveyors' Tools:** Surveyors use different tools to help them create maps and measure distances. In the past, they only had tools like a Gunter's chain, compasses, and tripods to make their maps.
4. **Modern Technology Makes Maps:** Today, mapmakers use satellites and digital technology to create precise maps.