

Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin

MLRA Explorer Custom Report

R - Northeastern Forage and Forest Region

144A - New England and Eastern New York Upland, Southern Part

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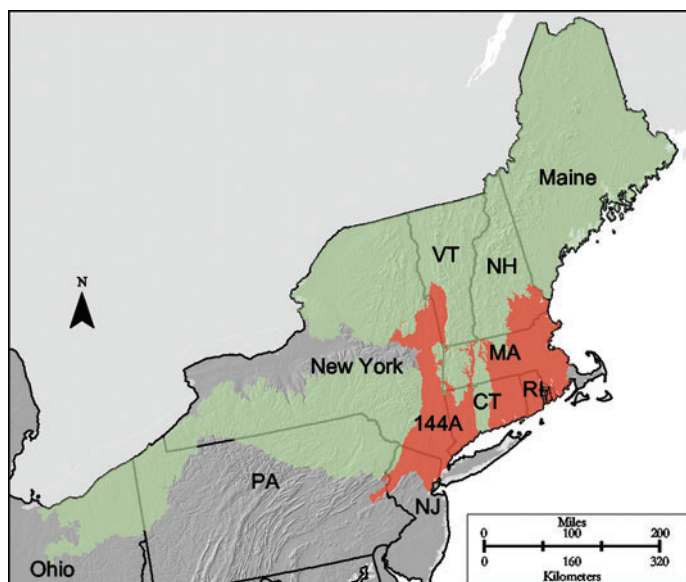


Figure 144A-1: Location of MLRA 144A in Land Resource Region R

Introduction

This area (shown in fig. 144A-1) is in New York (29 percent), Massachusetts (26 percent), Connecticut (20 percent), New Hampshire (10 percent), New Jersey (8 percent), Rhode Island (6 percent), and Vermont (1 percent). Also, Pennsylvania and Maine have a few square miles of this area. The MLRA makes up about 18,590 square miles (48,180 square kilometers). It consists of two separate parts, one east of MLRA 145 and one west of MLRA 145. The eastern part of MLRA 144A is primarily in Connecticut, Rhode Island, and Massachusetts, and the western part is primarily in southeastern New York. The western part includes the cities of Troy, Albany, and Poughkeepsie, New York, and the northern boroughs of New York City, in the Hudson River Valley. It also includes numerous cities on the New Jersey side of the Hudson River, across from New York City. The eastern part of the MLRA includes Storrs, Norwich, and New London, Connecticut; Providence, Rhode Island; Worcester, Boston, and New Bedford, Massachusetts; and Portsmouth, Concord, and Manchester, New Hampshire. The highways in the MLRA include Interstates 80, 84, 87, 89, 90, 93, and 95 and numerous extensions of Interstate 95.

This MLRA includes the West Point Military Academy in New York, the New London Naval Submarine Base and the United States Coast Guard Academy in Connecticut, and the South Weymouth Naval Air Station and Fort Devens Military Reservation in Massachusetts. It also includes the Saratoga National Historic Park in New York; the Cape Cod National Seashore, Minuteman National Historic Park, Wood's Hole Oceanographic Institution, and Martha's Vineyard State Forest in Massachusetts; and the first State forest in New England, the Meshomasic State Forest in Connecticut. A large number of State forests and State parks are throughout this MLRA.

Physiography

The eastern half of the eastern part of this MLRA is in the Seaboard Lowland Section of the New England Province of the Appalachian Highlands. The western half of the eastern part and the southeastern half of the western part are in the New England Upland Section of the same province and division. The northwestern half of the western part is in the Hudson Valley Section of the Valley and Ridge Province of the Appalachian Highlands. This MLRA is a very scenic area of rolling to hilly uplands that are broken by many gently sloping to level valleys that terminate in coastal lowlands. Elevation ranges from sea level to 1,000 feet (0 to 305 meters) in much of the area, but it is 2,000 feet (610 meters) on some hills. Relief is mostly about 6 to 65 feet (2 to 20 meters) in the valleys and about 80 to 330 feet (25 to 100 meters) in the uplands.

The extent of the major Hydrologic Unit Areas (identified by four-digit numbers) that make up this MLRA is as follows: Upper Hudson (0202), 22 percent; Connecticut Coastal (0110), 20 percent; Massachusetts-Rhode Island Coastal (0109), 19 percent; Merrimack (0107), 12 percent; Lower Hudson-Long Island (0203), 11 percent; Connecticut (0108), 9 percent; Saco (0106), 3 percent; Delaware (0204), 2 percent; and Richelieu (0201), 2 percent. The Hudson River flows south down the center of the long, narrow western part of this MLRA. The Housatonic and Connecticut Rivers are in the part of the MLRA in Connecticut. The Pawtuxet, Pawcatuck, Blackstone, and Wood Rivers are in the part in Rhode Island, and the Blackstone, Merrimack, Nashua, Mystic, and Charles Rivers are in the part in Massachusetts.

Geology

This area has been glaciated and consists almost entirely of till plains and drumlins dissected by narrow valleys with a thin mantle of till. The southernmost boundary of the area marks the farthest southward extent of glaciation on the eastern seaboard. The river valleys and coastal plains are filled with glacial lake sediments, marine sediments, and glacial outwash. The bedrock in the eastern half of the area consists primarily of igneous and metamorphic rocks of early Paleozoic age. Granite is the most common igneous rock, and gneiss, schist, and slate are the most common metamorphic rocks. In the parts of the MLRA in northeastern Pennsylvania and in eastern and southeastern New York, Devonian- to Pennsylvanian-age sandstone, shale, and limestone bedrock is dominant. Carbonate rocks, primarily dolomite and limestone, are the dominant kinds of bedrock in the part of this MLRA in northwestern Connecticut.

Climate

The average annual precipitation is 35 to 45 inches (890 to 1,145 millimeters) in the Hudson Valley, which is in the northern half of the western part of this area. It is 45 to 54 inches (1,145 to 1,370 millimeters) in the south end of the western part of the area and in most of the eastern part of the area. The precipitation generally is evenly distributed throughout the year. Near the coast, however, it is slightly lower in summer. It is slightly higher in spring and fall in inland areas. Rainfall occurs as high-intensity, convective thunderstorms during the summer. During the winter, most of the precipitation occurs as moderate-intensity storms (northeasters) that produce large amounts of rain or snow. The average annual temperature is 44 to 54 degrees F (6 to 12 degrees C), increasing from north to south. The freeze-free period averages 190 days and ranges from 145 to 240 days, increasing in length to the south.

Water

The total withdrawals average 6,950 million gallons per day (26,305 million liters per day). This MLRA ranks eighth among all of the MLRAs in total amount of water used. About 9 percent is from ground water sources, and 91 percent is from surface water sources. Abundant precipitation, many perennial streams, and many natural lakes and ponds are important sources of surface water in this area. Many large and small reservoirs provide municipal and industrial water to urban areas that may lack sufficient water. For example, aqueducts that divert water from reservoirs in the basin of the Merrimack River provide half of the public water for Boston and many of its suburbs in eastern Massachusetts. The surface water in the area is suitable for almost all uses.

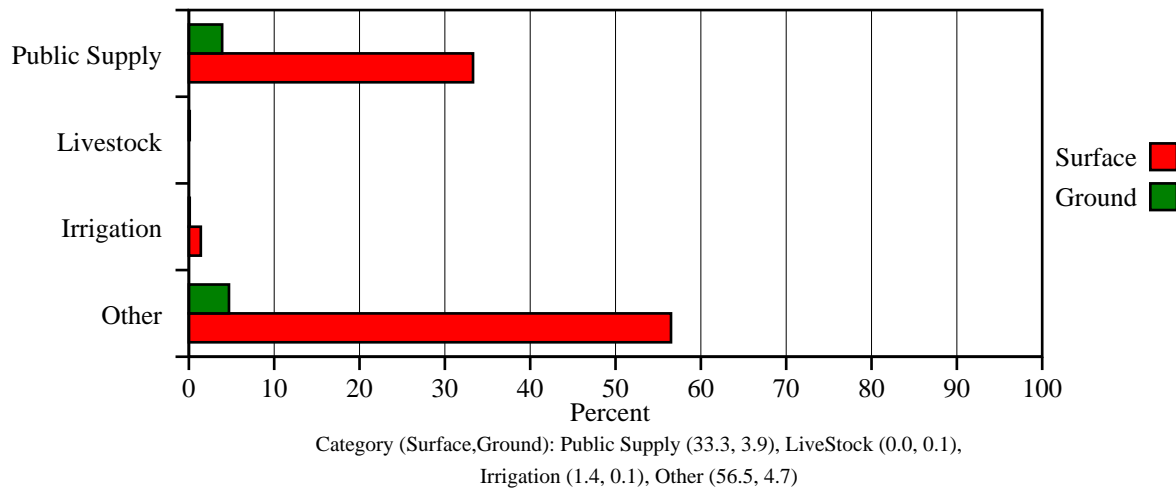
Some ground water is pumped for domestic use from the glacial till that covers most of this area. The quality of the ground water in the till is the same as that of the water in the stratified drift and valley fill aquifer. The stratified drift and glacial outwash deposits that fill the river valleys throughout this MLRA are the primary sources of most of the public water supply. Water from these units is very fresh. The water has not remained in this shallow aquifer for a very long period, and almost all of the unconsolidated sediments consist of quartz and feldspars, which offer few minerals for dissolution in water. The level of total dissolved solids typically ranges from 50 to 150 parts per million (milligrams per liter). The water is typically soft, but it can be hard in local areas where the more soluble minerals occur in the drift, for example in western Connecticut, where glaciers eroded the carbonate bedrock. High, naturally occurring levels of iron and manganese can occur, but the median levels of these metals generally are below the national and State primary standards for drinking water. Ground water in the valley fill generally is acidic. Corrosion of iron, lead, and concrete water lines is common in this area.

Many wells provide good-quality ground water from fractures, bedding planes, and joints in the crystalline igneous and metamorphic bedrock underlying almost all of this area. This aquifer provides water mainly for domestic use but also for public supply and industrial uses. This ground water is slightly alkaline. It has a low level of total dissolved solids, about 120 parts per million (milligrams per liter). In some areas the water has high levels of naturally occurring iron and manganese that exceed the national and State secondary standards for drinking water of 300 and 50 parts per billion (micrograms per liter), respectively. Water from wells that penetrate granite with high amounts of muscovite and biotite can contain high levels of a naturally occurring radionuclide, radon-222. This radionuclide can produce an odorless and inert gas that can cause health problems for humans when it collects in showers, bathrooms, and basements of residences.

Some younger carbonate and sandstone bedrock units are aquifers in the parts of this area in eastern New York, northwestern Connecticut, and northwestern Pennsylvania. Water from the sandstone units typically has 200 or less parts per million (milligrams per liter) total dissolved solids and commonly is soft. Water from the carbonate units typically has 250 or more parts per million (milligrams per liter) total dissolved solids and typically is very hard. Water from carbonate units in eastern New York is the only water from aquifers in the area that exceeds the national secondary drinking water standard for total dissolved solids of 500 parts per million (milligrams per liter). The water from both types of bedrock is slightly alkaline.

Because of a shallow depth to water and the openings in the rocks, all of the aquifers in this MLRA are susceptible to contamination from surface activities.

MLRA 144A Water Use by Category



Soils

The dominant soil orders in this MLRA are Entisols, Histosols, and Inceptisols. The soils in the area dominantly have a mesic soil temperature regime, an aquic or udic soil moisture regime, and mixed mineralogy. They generally are very deep, somewhat excessively drained to poorly drained, and loamy or sandy. Udorthents (Hinckley series) and Udipsamments (Windsor series) formed in outwash deposits on outwash plains, terraces, kames, and eskers. Haplosaprists (Freetown series) formed in organic material in depressions on uplands and outwash plains. Dystrudepts formed in till, loamy sediments over till, and dense till on till plains, hills, and ridges (Canton, Charlton, Chatfield, Gloucester, Hollis, Montauk, Paxton, Scituate, Sutton, and Woodbridge series) and in outwash deposits on outwash plains and terraces (Merrimac series). Endoaquepts (Leicester and Ridgebury series) and Epiaquepts (Ridgebury series) formed in till in depressions on hills and in drainageways. Fragiudults (Rockaway series) formed in till on hills.

Biology

This area was cleared for agriculture in colonial times. The agricultural land was abandoned at the turn of the last century and then was reforested. The area is currently undergoing suburban and rural development. Historic and modern types of vegetation are similar. The area supports a mixture of northern and central hardwoods. Sugar maple, birch, and beech, as well as oaks and hickories, are the major species. White pine and hemlock are the dominant conifers. Pitch pine and red pine grow on sandy soils that formed in outwash. Red maple grows on the wetter sites. Northern white-cedar reaches its northern limit in bogs in this area. The nonnative, invasive plants include Japanese barberry, Asiatic bittersweet, and Norway maple. The most common understory plants are moosewood and hobblebush in the northern part of the MLRA and dogwood in the southern part. Abandoned agricultural land is dominated by white pine and paper birch in the northern part of the area and red cedar and gray birch in the southern part.

Numerous unique habitats are in scattered areas throughout this MLRA. Some of the maritime habitats include coastal grasslands, heaths, and dunes; tidal wetlands of estuaries; and freshwater tidal reaches of the major rivers. Away from the coast, freshwater marshes, swamps, flood plains, lowlands, areas of peat, sand barrens, rocky summits, limestone fens, and glades occur.

Black bear, beaver, fisher, wild turkey, vultures, and forest songbirds are woodland species that are increasing in population in this area. Animals that are tolerant of human settlement also are increasing in population. Examples are white-tailed deer, opossum, skunk, raccoon, and coyote.

The species that are decreasing in population are animals that inhabit more open areas, such as woodchuck, vole, and red fox, and such birds as bobolinks, meadowlarks, whippoorwills, and nighthawks. The species of fish in the area include brook trout, brown trout, rainbow trout, largemouth bass, chain pickerel, flounder, bluefish, and striped bass.

Land Use

About one-half of this area is in hardwood and pine forests. Most of the forests are in small holdings. Some are State forests or other large holdings. The forests in the MLRA are used for wood products and for hunting and other kinds of recreation. The acreage used for urban development is increasing rapidly in this area. Agriculture in the area is dominated by dairy, nursery, and greenhouse stock, much of which is driven by the increase in residential development and the demand for landscaping materials. Some forage crops for dairy cattle are still grown, and truck crops, small fruits, and apples are grown on some farms, mainly near the larger towns and cities. Many farmsteads are used as rural residences, and the residents earn their living from nonfarm occupations.

The major soil resource concerns on cropland and forestland are sheet and rill erosion, maintenance of the content of organic matter and productivity of the soils, and management of soil moisture. Storm-water runoff and subsequent erosion and sedimentation are the primary concerns in managing areas of urban expansion.

Conservation practices on cropland generally include systems of crop residue management, especially conservation tillage; winter cover crops; rotations of annual crops and grasses and legumes; contour farming; irrigation water management; compost facilities; and nutrient, manure, and pesticide management. Excluding dairy cattle from wetlands and watercourses and developing rotational grazing systems help to control erosion and protect water quality. Storm-water management and erosion- and sediment-control practices are needed in the rapidly expanding urban areas.

MLRA 144A Land Use by Category

