

TRAPROCK RIDGES



Talcott Mountain

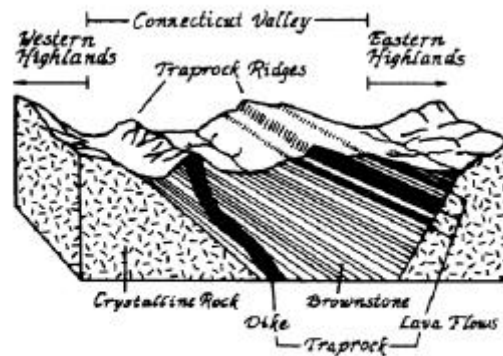
Through central Connecticut and Massachusetts, Interstate 91 runs past a series of long, prominent ridges. These elongated mountains with their dramatic rust colored cliffs have long caught the eye of Connecticut's residents and visitors. Adrian Block, the first European to sail Long Island Sound and see the Connecticut coastline, named one of his anchorages Rodenberg (red mountain) for the great red cliffs that dominated the landscape. That anchorage is now the port of New Haven, and the mountains that so impressed Adrian Block are East Rock and West Rock. These landmarks, as well as Sleeping Giant, the Hanging Hills of Meriden, Talcott Mountain, and other mountains of Connecticut's Central Valley are traprock ridges, so named for the hard rock of which they are made.

The traveler who leaves the highways to explore these high ridges will be rewarded by an outstanding panorama of the wide Connecticut Valley, with its houses, roads, farms, and rivers. Close by, the observant walker will see the distinctive habitats of the traprock ridges, from the hardy plants of the exposed ridgetops to the lush forest growth of the lower slopes.

GEOLOGY

Two great geologic forces formed the traprock ridges: volcanism and erosion. 200 million years ago, when dinosaurs still roamed the earth, volcanoes forced out great flows of lava through long cracks in the floor of the Connecticut Valley.

These volcanoes were not explosive, but rather were broad, liquid outpourings of lava. Three major lava flows covered the valley floor. Each one cooled and hardened into traprock (also called basalt) and was gradually covered by sand and mud eroded from the surrounding hills. Through time, these sediments were buried by new sediment and cemented into brownstone by the slow trickle of groundwater. The result was a massive layer cake of brownstone and traprock, assembled over millions of years.



geologic cross section of the Connecticut Valley

After the volcanic activity stopped, the whole region was fractured and tilted to the east. Since then, erosion has eaten away at the bedrock of the Connecticut Valley. Thousands of feet of brownstone have been washed to the sea, but the dense, hard, volcanic traprock eroded much more slowly, leaving the traprock layers as long ridge backs standing out far above the surrounding landscape.

Traprock is a dark, fine grained rock. When newly broken open it is dark grey, but after exposure to weathering, the iron contained in the rock rusts, causing it to turn a reddish color. The rock usually fractures into angular blocks or columns along a network of cracks that formed when the lava first cooled and shrank into rock.

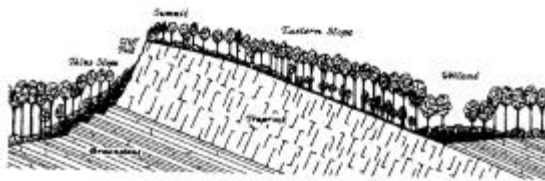
ECOLOGY

The geology and topography of traprock ridges create a set of interesting ecological habitats. From east to west, most traprock ridges have a distinctive profile with a gentle slope rising along the tilted surface of the lava slab, an exposed summit with little or no soil, a steep rocky cliff with scattered

small ledges and cracks, and a talus slope built up from boulders that have broken off the cliff.

Each of these areas has its own association of plants and animals. At the base of the *eastern slope* grows a rich forest with tall tulip poplars or sugar maples and white ash. In the spring, one can sometimes find jack-in-the-pulpit, trillium, and other flowers growing on the forest floor. Wetlands form in level areas, with red maples, spicebush and mosses.

Further up the slope the forest becomes drier and more open. Oaks and hickories replace the tulip poplars, and mountain laurel and blueberries grow under the smaller, more scattered trees.



cross section of a traprock ridge

Only a few stunted trees grow on the *summit*. Red cedar, dwarf oak, hickory, and white ash are the species most commonly seen here. Although the ashes and hickories are less than half as tall, they may be as old as or older than their relatives down below. Several factors keep them from growing tall. Bare rock is exposed along much of the ridgeline, and the thin soils that cling to the rock retain little moisture. The ridge is exposed to the full force of west winds, and treetops often break in winter storms. During hot, humid days in the valley, the ledges are almost always subject refreshing breezes, but these breezes further intensify the dryness of this habitat. Notable plants along the ridge are yellow foxgloves, birdfoot violets, late purple asters, staghorn sumac, and scrubby bear and chinquapin oaks.

The harshest environment for plants prevails on the *cliff face*, a zone almost devoid of soil and stored water. Yet seeds become lodged in crevices and germinate in tiny pockets of soil and dust. Some of the more interesting plants in this precarious environment are bluebells and woodsia ferns. Occasionally, black oaks, red cedars, hemlocks, or other trees cling to the cliff face.

The forested *talus slope* at the base of the cliffs supports the most diverse and lush plant growth of the traprock habitats. The forest cover is dominated by trees typical of northern areas such as sugar maple, ash, and basswood. During a brief period in the spring, when the trees are still leafless and

sunlight warms the talus, a host of flowers appears. These spring ephemerals mature and produce seed in this brief period. Most noteworthy are Dutchman's breeches, wild ginger, bloodroot, jack-in-the-pulpit, red trillium, and spring beauty.

Some talus slopes are too unstable to collect the rich soil necessary for dense plant growth. On the shifting rocks of Higby Mountain and the bare boulders beneath Sleeping Giant's chin few plants grow; only lichens, poison ivy, Virginia creeper, and some tenacious flowers such as herb robert.



falcate orange tip butterflies feeding on low rock cress; close-up of butterfly is twice life size

Because they are relatively undeveloped, traprock ridges harbor many animals. Deer, raccoons, and other woodland creatures live on the forested slopes. The wetlands and moist forest at the bottom of the slope also attract frogs and salamanders. The bare, sunny rocks and shaded crevices of the talus make good habitat for a variety of reptiles. One rarely sees these shy animals, but copperhead snakes, garter snakes, and black rat snakes occasionally make their homes in traprock talus and on the rocky ledges. Copperheads are venomous, but they are not aggressive, and their bites are rarely fatal.

In addition to the common plants and animals already described, traprock ridges provide critical habitat for a number of rare species. Torrey's mountain mint, northern and southern wild comfrey, downy arrowwood, Virginia snakeroot, and the delicate purple hairgrass are all plants rarely seen in

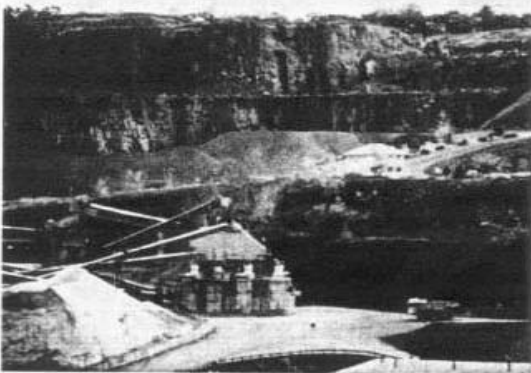
Connecticut, except on relatively undisturbed traprock ridges. Several types of butterflies are also found only on traprock ridges, including the falcate orange tip.

Rare and endangered species are so uncommon that the casual observer is unlikely to find them. One should never collect rare plants and animals since the removal of even a few individuals might endanger the entire population.

LAND USE

Historically, traprock ridges have been some of the least developed areas in the state. Because of their steep slopes and thin, rocky soils, traprock ridges were rarely cultivated, even around 1800 when over two thirds of southern New England was under the plow or in pasture. Steep slopes and shallow soils have also discouraged people from building houses on traprock (although recently the shortage of open space in the Central Valley has led to construction on some traprock ridges). The ridges were logged for timber and firewood during the last century, but since then the forest has grown back.

However, traprock ridges have by no means escaped use by people. The same qualities that make traprock resistant to erosion also make it an excellent material for several types of construction. From the mid 1800's to the present, traprock in this state has been quarried to produce gravel for building roads. Crushed traprock is also used to prevent erosion in streambeds and roadcuts, to help drainage, and is mixed with sand for use in concrete. Although they can be fascinating places, both active and abandoned quarries are dangerous because of loose rock.



traprock quarry

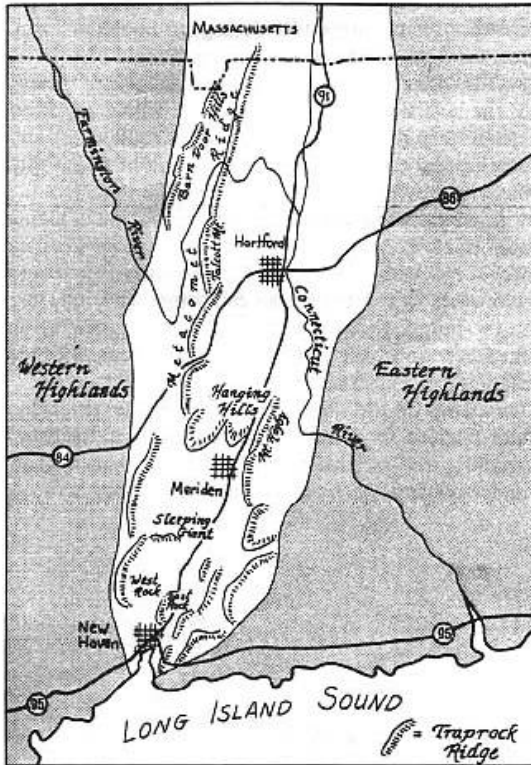
Traprock ridges are also heavily used for recreation. Some, like East Rock in New Haven, act as urban parks with planted lawns and easy road access. Others, like Sleeping Giant, Talcott Mountain, and West Rock State Parks have been left in a more natural state with a diverse network of trails.



Mount Higby, Middlefield

Recreation is an excellent use of these ridges, but it can bring problems. Trampling of the ridgetop may kill the plants, including rare species. In some areas graffiti on the rocks and littering have greatly detracted from the beauty of this habitat. Also, climbing around the talus slopes and cliffs can be dangerous because pieces of rock may break off the cliff and start rock slides in the slope below.

Most traprock ridges, whether or not they are officially designated as recreation areas, are heavily used by all kinds of people, from school children to bird watchers and cross country skiers to couples out for a quiet stroll. These people come because the view is superb and the area varied, interesting, and free from development.



traprock ridges in the Connecticut Valley

Traprock ridges are a critical habitat for several species of plants and animals. In addition they are areas of special geologic interest and high aesthetic value. For these reasons it is important that some of these ridges be protected in their natural condition. The Connecticut Natural Heritage Program in cooperation with a number of environmental organizations is working to identify and protect good examples of traprock ridges in the state. For more information about the Connecticut Natural Heritage Program, call (860) 566-3540 or write to:

Natural Heritage Program Coordinator
 Natural Resources Center
 Department of Environmental Protection
 165 Capitol Avenue
 Hartford, CT 06106

The preparation of this brochure was financed in part through a planning grant from the Department of the Interior, under the provisions of the Land and Water Conservation Fund Act of 1965.