Before the Berries: Maine's Glacial Past

To understand the history of the wild blueberry, you have to start at the land beneath your feet. There is a saying in Maine, "The first crop raised on the farm is rocks." You do not have to look far to find rocks in Maine, as is true throughout much of New England. Maine is famous for its rocky shoreline and shallow rocky soil that is a result of glacial activity during the last Ice Age. For hundreds of years farmers across Maine have continued to remove rocks from their fields, piling them to form fences and boundary markers in the form of stone walls. In fact, in 1939 mineralogist for the US government, Oliver Bowles estimated that there are approximately 246,000 miles of stone walls in the United States and of that 240,000 miles of them are in New England. To put that distance in perspective, that is nine times around the earth or just slightly longer than the distance from the earth to the moon.

In Maine, rocks often appear seasonally because of a process called "frost heaving."

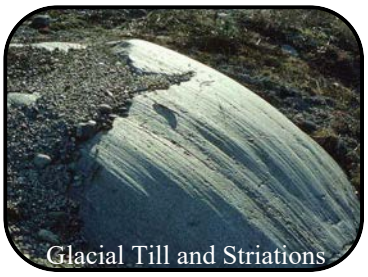
In Maine, some of the toughest soil grows one of its most iconic crops, the Maine wild blueberry. Maine's blueberry fields are called barrens. A **barren** refers to land that supports only a limited number of plant species. Most plants prefer deep, moist soil rich in nutrients but the wild blueberry prefers quite the opposite. The wild blueberry prefers the low nutrient, shallow, acidic, gravelly soil of a barren. In a landscape inhospitable to most plant species, the wild blueberry thrives.

Maine's blueberry barrens formed directly as a result of glacial activity during the last Ice Age which was approximately 25,000 years ago (23,000 BCE). Before the first peoples settled the land now known as Maine, the region was covered by a continental glacier called the Laurentide Ice Sheet. This massive glacier was one and a half to two miles thick and blanketed much of what is now Canada, New England, and other areas within the northern United States.

Glaciers aren't static; they move and behave as very slow-moving rivers of ice. As a glacier moves downhill, it bulldozes, scrapes, carves, shapes, and carries material as it advances. Rocks frozen to the glacier's base scoured the land, removed topsoil, and scraped the bedrock like a massive piece of sandpaper. Soil, small rock fragments, and even the largest boulders were pulled into the ice and moved great distances as the glacier slowly carved and shaped the underlying landscape.

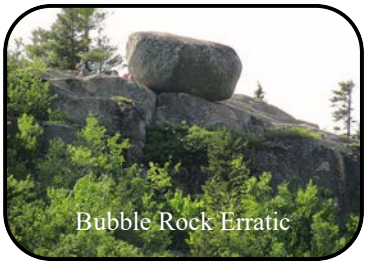
At its peak, the glacier covered about one-third of the North American continent. Its immense weight pressed down on Earth's crust, pushing much of coastal Maine underwater. As the ice melted, the land slowly rose from the sea through a process called **isostatic rebound.** It took thousands of years, but eventually the former ocean floor became dry land and defined the current shape of Maine.

In the map shown above, the black line shows the shoreline during glacial retreat. The blue area is land that emerged from the ocean during isostatic rebound. This sequence of glacial erosion, submergence, and long-term wave action helped create Maine's famously rocky coastline by removing fine sediments and leaving exposed bedrock.



Glacial Till and Striations

The image on the right, taken in Westbrook Maine, shows the abrasive power of a glacier as it moved over bedrock, grinding grooves called striations into the rock's surface. As the glacier melted, it left behind deposits of material. Some of this material was **glacial till**, which was dropped directly by the ice, creating a jumbled, unsorted **(unstratified)** soil profile. Other material was carried by meltwater and deposited as glacial outwash, which is sorted **(stratified)** by water and formed layered deposits of different-sized particles.



Bubble Rock Erratic

As the glacier retreated and melted, rocks of all sizes were deposited including very large boulders. These very large stones, called glacial erratics, are scattered across Maine's landscape. Many of them are in rather unusual and unexpected locations like Bubble Rock erratic within Acadia National Park. Additionally, as the glacier's edge advanced and retreated, cycles of freezing and thawing pushed rocks and glacial till into ridges called **moraines**. When the ice melted, moraines, till, and glacial outwash left behind inhospitable soil, which created the famous blueberry barrens located in the heart of Washington County, Maine.