

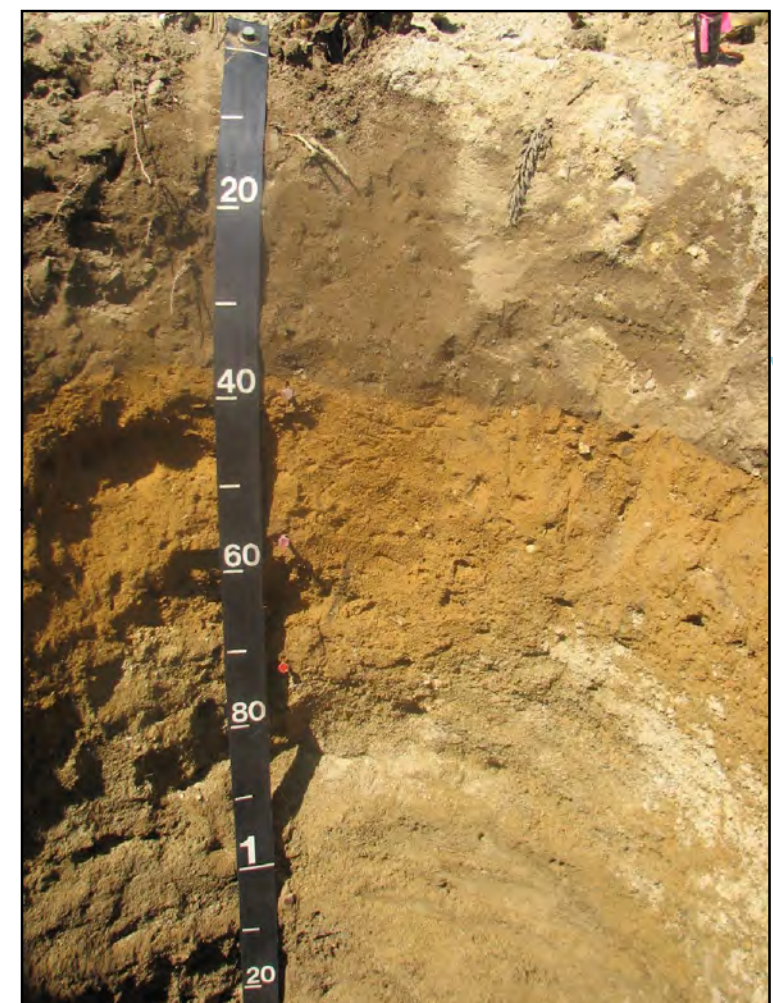
Soil Parent Materials of Rhode Island



Canton soil formed in sandy ablation till. This well-drained soil is found in association with finer textured Charlton soils and is common in the northwestern part of Rhode Island.



Narragansett soil is formed in windblown silts (loess) over ablation till. This unofficial Rhode Island state soil is a prime farmland soil.



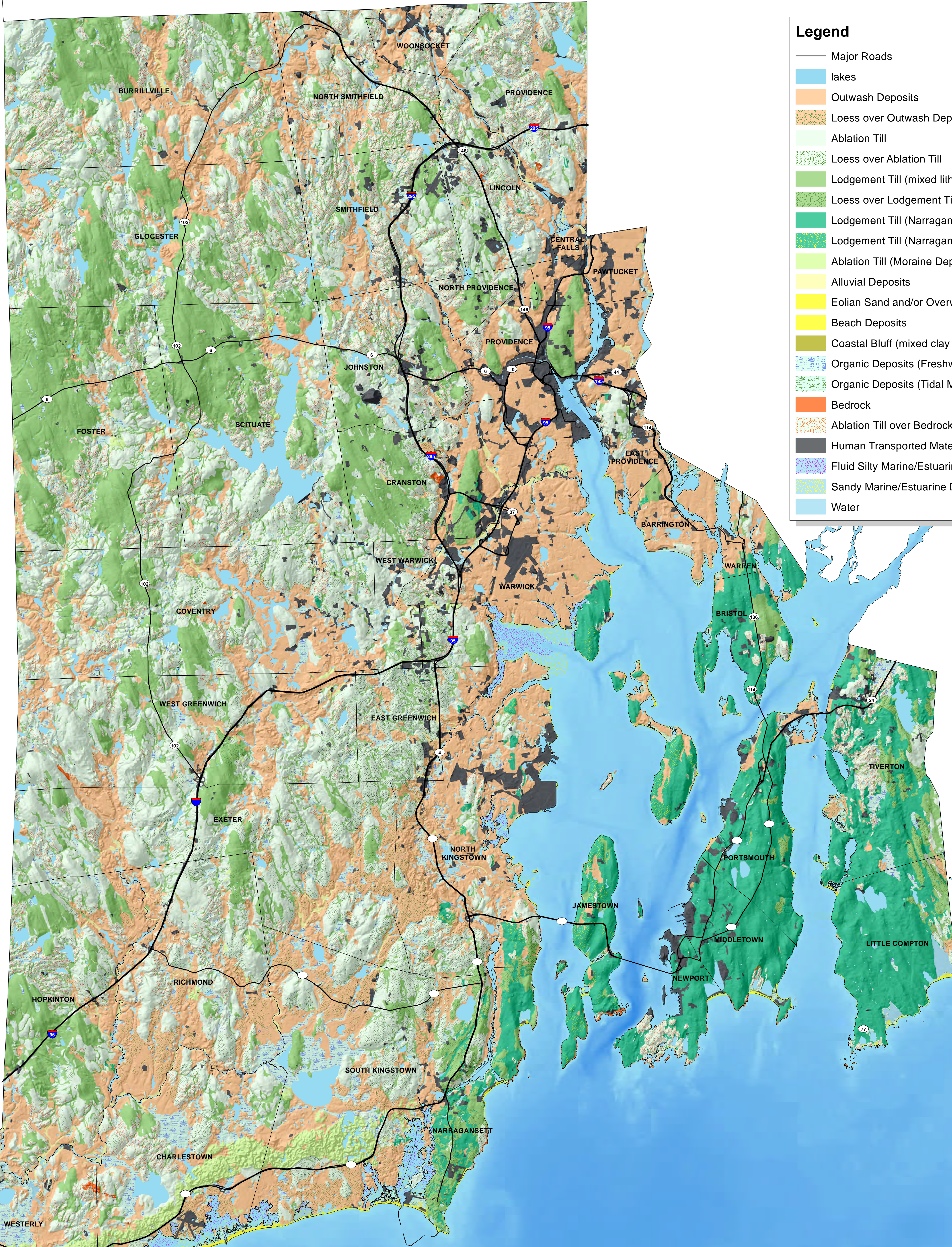
Merrimac soil formed in stratified sands and gravels from glacial outwash deposits. These excessively drained soils do not retain water well and can become very dry.



Enfield soil formed in stratified sand and gravel outwash with a silt loam windblown loess surface. The finer materials at the surface make this a prime farmland soil.



Newport soil formed in dense glacial till derived from dark colored materials of the Narragansett structural basin.



Legend

- Major Roads
- lakes
- Outwash Deposits
- Loess over Outwash Deposits
- Ablation Till
- Loess over Ablation Till
- Lodgement Till (mixed lithology)
- Loess over Lodgement Till (mixed lithology)
- Lodgement Till (Narragansett Basin Lithology)
- Lodgement Till (Narragansett Basin Lithology, sandy mantle)
- Ablation Till (Moraine Deposits)
- Alluvial Deposits
- Eolian Sand and/or Overwash Deposits
- Beach Deposits
- Coastal Bluff (mixed clay and till)
- Organic Deposits (Freshwater)
- Organic Deposits (Tidal Marsh)
- Bedrock
- Ablation Till over Bedrock
- Human Transported Materials
- Fluid Silty Marine/Estuarine Deposits
- Sandy Marine/Estuarine Deposits
- Water

GEOLOGY

Two major geologic formations dominate the bedrock geology of Rhode Island: the Narragansett Structural Basin, and the granitic upland of the north and western part of the state. The Narragansett Basin consists mainly of carboniferous materials such as dark colored metasediments, phyllite, and shale. The granitic upland of Rhode Island consists of acidic crystalline rocks including granite, gneiss, granodiorite, and shist. The gray area on the map to the left shows the general area covered by the Narragansett Basin.

PARENT MATERIALS

Glacial tills and glacial outwash deposits are the two most common parent material types in Rhode Island. Till can be either subglacial lodgement till or supraglacial flow till. Lodgement till is very dense and often impedes water movement through the soil. Flow, melt-out, or ablation till is generally more friable and allows water to move through the soil. Outwash or glaciofluvial deposits consist of stratified sands and gravels and allow for rapid water movement through the soil. Many soils in Rhode Island have a loess or eolian mantle that consists of 6 inches to over 4 feet of silty material that overlies both glacial till and glaciofluvial deposits. This loess mantle was formed shortly after the glaciers retreated as wind picked up and redeposited the fine sands and silts over the landscape. Other soil parent materials in RI consist of alluvium, organic material, overwash and beach deposits, and human transported material.

Visit: <http://www.ri.nrcs.usda.gov/technical/soils.html> for more information.

Parent Material	Description
Outwash Deposits	Stratified deposits of sand and gravel deposited by glacial melt-water streams (also includes fluviodeltaic deposits).
Loess over Outwash	Silt loam textured loess (windblown material) overlying glaciofluvial deposits.
Ablation Till	Unsorted, non-stratified material deposited by glacial ice and consisting of a heterogeneous mixture of clay to boulder size particles. Ablation till is very variable, but tends to be loose and dominantly sandy and may have lenses of firm loamy material.
Loess over Ablation Till	Silt loam textured loess (windblown material) overlying sandy, ablation till.
Lodgement Till (mixed lithology)	Unsorted, non-stratified material deposited by glacial ice and consisting of a heterogeneous mixture of clay to boulder size particles. Lodgement till is usually found on drumlins and till ridges. Lodgement till tends to have a higher percentage of silt and clay than ablation till and is usually very dense.
Loess over Lodgement Till	Silt-loam textured loess (windblown material) overlying lodgement (dense) till deposits (mixed lithology).
Lodgement Till (Narragansett Basin Lithology)	Unsorted, non-stratified material deposited by glacial ice and consisting of a heterogeneous mixture of clay to boulder size particles. Lodgement till is usually found on drumlins and till uplands. Lodgement till tends to have a higher percentage of silt and clay than ablation till and is usually very dense. This group is for areas of lodgement till with dark colored mineralogy associated with the Narragansett Basin Bedrock (Carboniferous in age).
Lodgement Till (Narragansett Basin Lithology, sandy mantled)	Same as above but these map units have a sandy to loamy sand mantle (Poquonock and Birchwood Soils). NOTE: This coding does not include those areas where the sandy mantle is very thick and was mapped as glacial fluvial soils (Windsor and Agawam) these areas will show up as fluvial soils even though they are underlain by carboniferous till or bedrock.
Bedrock	Areas almost entirely consisting of bedrock and shallow to bedrock soils. Refer to the bedrock geology map of RI for information about the type of bedrock in the area.
Ablation Till over Bedrock	These map units consist of bedrock-controlled landforms. The soils formed in ablation till (described above) and have ledge or bedrock typically within 6 feet of the surface. These soils are mapped in a complex of shallow, moderately deep, and very deep soils.
Ablation Till (Moraine Deposits)	Areas of ablation till mapped on moraines such as the Charlestown End Moraine.
Alluvial Deposits	Material deposited in modern-day floodplains.
Coastal Bluff (mixed clay and till)	Used only along the shoreline escarpment of Block Island. These deposits consist of mixed thrust coastal plain clays and till material.
Eolian Sand and Overwash Deposits	Dune and back barrier Holocene deposits adjacent to beaches along the south shore and shoreline areas.
Beach Deposits	Sand, gravel, and boulder beaches along the coastline.
Human Transported Material	Commonly referred to as till, human-altered/transported material includes a variety of soil and geologic material deposited by human activity.
Organic Deposits	Includes both fresh and tidal organic soils formed in more than 16 inches of organic material. For tidal organic areas, Matunuck soils are included even though the organic thickness is less than 16 inches.
Fluid Silty Marine/Estuarine Deposits	Areas that are permanently submerged beneath salt or brackish water in coastal ponds, lagoons, and bays. These areas have more than 20 inches of highly fluid silts deposited in the marine environment.
Sandy Marine/Estuarine Deposits	Areas that are permanently submerged beneath salt or brackish water in coastal ponds, lagoons, and bays. These areas generally have a sandy or gravelly surface.

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Rhode Island Soil Survey Version 6 - 9/27/2012

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