

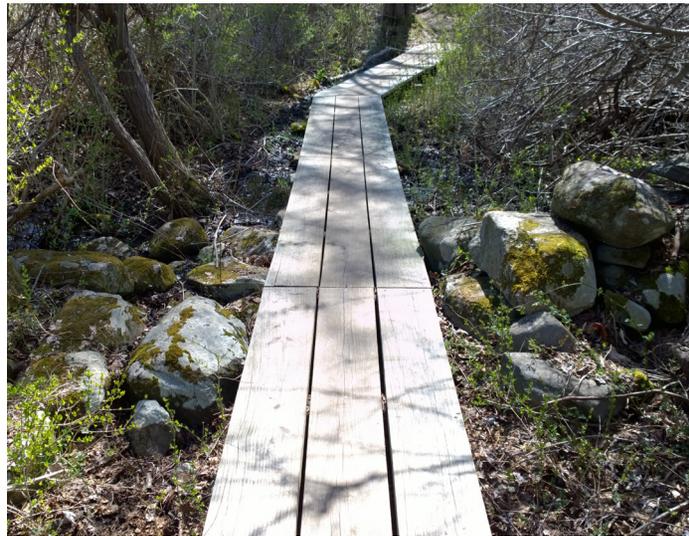


DR. JON CUSHING BOOTHROYD (1938-2015) was an acclaimed field geologist specializing in coastal geology, braided river processes, and glacial environments. He served as Rhode Island's State Geologist for more than a decade and held the title of Professor Emeritus at the University of Rhode Island. The research he conducted with his students provided the framework for the current beach-use and conservation regulations in Rhode Island. Dr. Boothroyd was developing the Canonchet Farm Geology Trail at the time of his death and was a loyal member of Friends of Canonchet Farm.



Above: Stone wall and bird sanctuary.
Front Cover: South County Museum and stone wall.
Photos by Caroline Amelse, Class of '17
Photo of Dr. Boothroyd, www.narrowriver.org/Boothroyd

The **RHODE ISLAND** landscape is dominated by landforms and sediment deposited during the Late Wisconsin glaciation, which culminated 26,000 years ago. The glaciers advanced from the north to the south and picked up, transported and deposited glacial material (till and stratified). Boulders from glacial till have been used to make stone walls, which are common in the area. Look for evidence of glaciation and human modification of stone along your hike!



Trailway over rocks.
Photo by Caroline Amelse, Class of '17

For more information, including a teacher's guide, kids' activities, Google Earth virtual tour, and more visit www.canonchet.org.

THE
UNIVERSITY
OF RHODE ISLAND
COLLEGE OF
THE ENVIRONMENT
AND LIFE SCIENCES



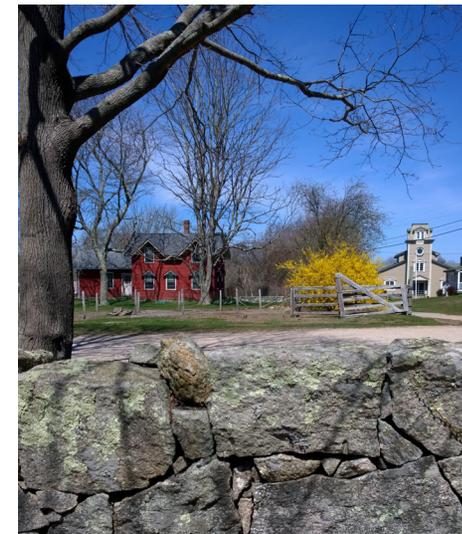
Brought to you by:
The Geology 210 Class of Spring 2016
at the University of Rhode Island
& Friends of Canonchet Farm

Design courtesy of Caroline Amelse

Narragansett, RI

Canonchet Farm Geology Trail

A self-guided tour for the naturally curious.



Enjoy **free** parking at the South County Museum parking lot

Trail start & finish:
SOUTH COUNTY MUSEUM
115 Strathmore Street
Narragansett, R.I.

1) ROCHE MOUTONNÉE This feature is a Roche Moutonnée, which means “sheep rock.” It is made mostly of Narragansett Pier Granite and is the result of glacial abrasion beneath the Laurentide Ice Sheet over 18,000 years ago. The smooth sloping surface (sheep’s back) is in the up-ice direction (north), and the plucked surface (sheep’s head) is in the down-ice direction (south).

2) HISTORIC CEMETERY The stone wall surrounding the graves is quarried stone. Markers within the cemetery are primarily slate and marble. The slate shows evidence of physical weathering (wedging) and the marble shows evidence of chemical weathering (dissolution). The carving on Sarah Robinson’s stone is a “cherub” or a “soul effigy.” The carving is consistent with the mid- to late-18th century Stevens family carving style of Newport.

3) STONE WALL Many of the stone walls along the trail are made of boulders from glacial till, remnants of the last glaciation of the area. The rock types present include igneous rocks (granite), sedimentary rocks (conglomerate) and metasedimentary rocks (metamorphosed sandstone). The granite contains quartz (glassy mineral), feldspar and mica (flat mineral).

4) CONGLOMERATE ERRATIC An erratic is a rock that has been transported a significant distance from its origin by a glacier and then deposited by melting of the ice. This erratic is a conglomerate, which is a type of sedimentary rock made of rounded rock fragments in a fine-grained matrix. Puddingstone is a popular name given to a conglomerate that has a sharp color contrast between the rock fragments and the matrix.

5) ERRATIC ON LOOP TRAIL Note the vegetation growing on top of this erratic. Physical and chemical weathering of the rock creates soil.

6) COVE OVERLOOK The water body you see is the southern portion of the Pettaquamscutt (Narrow) River known as Pettaquamscutt Cove. Glaciation formed this river valley millions of years ago. During the most recent glacial period, the river valley was modified. Approximately 1,700 years ago, marine water from Rhode Island Sound inundated the valley and the river changed from a closed freshwater system to a tidally-influenced estuary. A large opening in the stone wall was built to allow access for wagons to collect salt marsh hay.

7) STILE A stile, or step-like feature, was built into the stone wall so that people could easily cross over it.

8) GRANITE HITCHING OR FENCE POST Two quarried granite stones, one upright and the other on the ground, may have been used as fence posts or hitching posts.

9) STEP QUARRY Granite was quarried from this location. If you look closely, you can see drill marks in the granite. Quarried granite can be used to make stone walls, hitching posts and other structures.

10) LARGE ERRATIC This popular feature is an icon for Friends of Canonchet Farm. It is made of metamorphosed sandstone from the Rhode Island Formation and is Pennsylvanian in age (320 MYBP).

The natural breaks in the erratic are called joints. An attempt was made to quarry this rock. On the ground next to the large erratic you can see feathers and wedges stuck in the rock, which split on its own. Due to superstitious beliefs, the unsuccessful tools were abandoned.

