

Quechee Gorge Geology

Legacy of the Ice Age

West of Quechee Village, Vermont, the Ottauquechee River flows eastward within a broad and shallow valley. At Dewey's Mills, just east of Quechee Village, the river turns abruptly southward and plunges into the narrow, rocky cleft of Quechee Gorge, 165 feet deep and over a mile in length.

What caused this deep and spectacular natural feature?

Long before Quechee Gorge was formed, the Ottauquechee River made a more gradual southward bend about a mile east of the present site of the Gorge (Fig. 1). About 100,000 years ago, Earth's climate cooled dramatically. The massive *Laurentide Ice Sheet* formed in northern Canada and flowed southward over New England (Fig. 2), burying the course of the Ottauquechee River under many feet of ice.

About 13,000 years ago the climate began to warm again, and the great ice sheet started to recede. When its southern margin retreated as far north as Quechee, the Ottauquechee River began to flow again, but instead of flowing directly into the Connecticut River as it had before, it flowed into an arm of a huge lake known as *Glacial Lake Hitchcock* (Fig. 3). This long, narrow lake backed up behind a gravel deposit left by the retreating ice sheet. The *Rocky Hill Dam* as it is known, blocked the Connecticut River Valley just south of Hartford, Connecticut. Glacial Lake Hitchcock extended nearly 200 miles from Rocky Hill, Connecticut all the way up to near St. Johnsbury, Vermont.

As the revived Ottauquechee River emptied into Glacial Lake Hitchcock, its muddy waters built a huge sandy delta over the present site of Quechee Gorge (Fig. 3; U.S. Route 4 now follows the top of this ancient delta.). The delta sand filled the old river valley to a depth of about 170 feet, gradually burying the eastern end of a broad, rocky ridge south of the river's old, pre-ice age channel (Fig. 1).

Soon after the ice margin retreated north from the Ottauquechee Valley, the Rocky Hill Dam broke. Glacial Lake Hitchcock drained, and the Connecticut River began to flow again. Instead of flowing in its old riverbed, however, the river was now coursing through a thick bed of mud that lined the bottom of Glacial Lake Hitchcock.

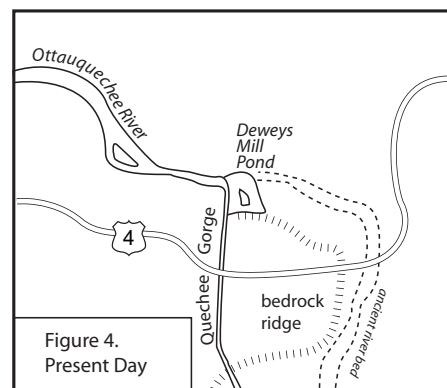
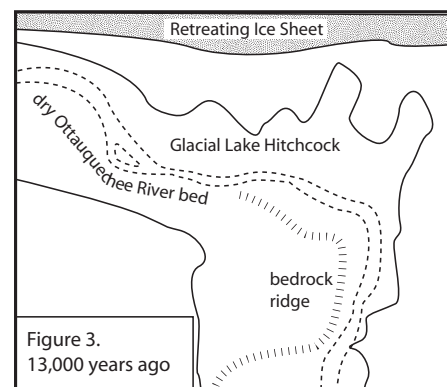
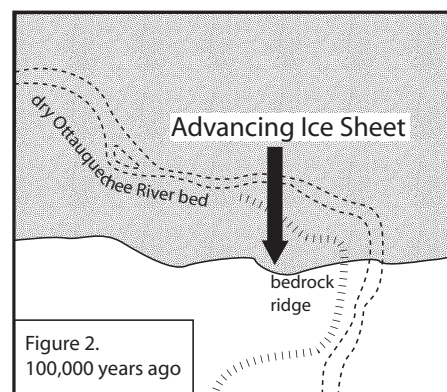
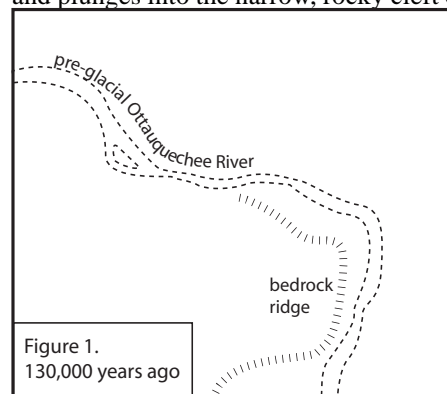
As the Ottauquechee River followed the draining waters of Glacial Lake Hitchcock to the sea, it turned south across the delta top at the future site of Dewey's Mills, establishing its present course (Fig. 4).

Meanwhile, a great waterfall had begun to migrate rapidly up the Connecticut River from the breached dam, eroding a deep canyon in the soft lake-bed sediment. Where tributaries joined the river, the migrating waterfall divided into halves, one eroding its way up the tributary. When the waterfall that migrated up the Ottauquechee, it began eroding not soft mud, but the tough metamorphic rock of the buried bedrock ridge (Fig. 4) at Dewey's Mills.

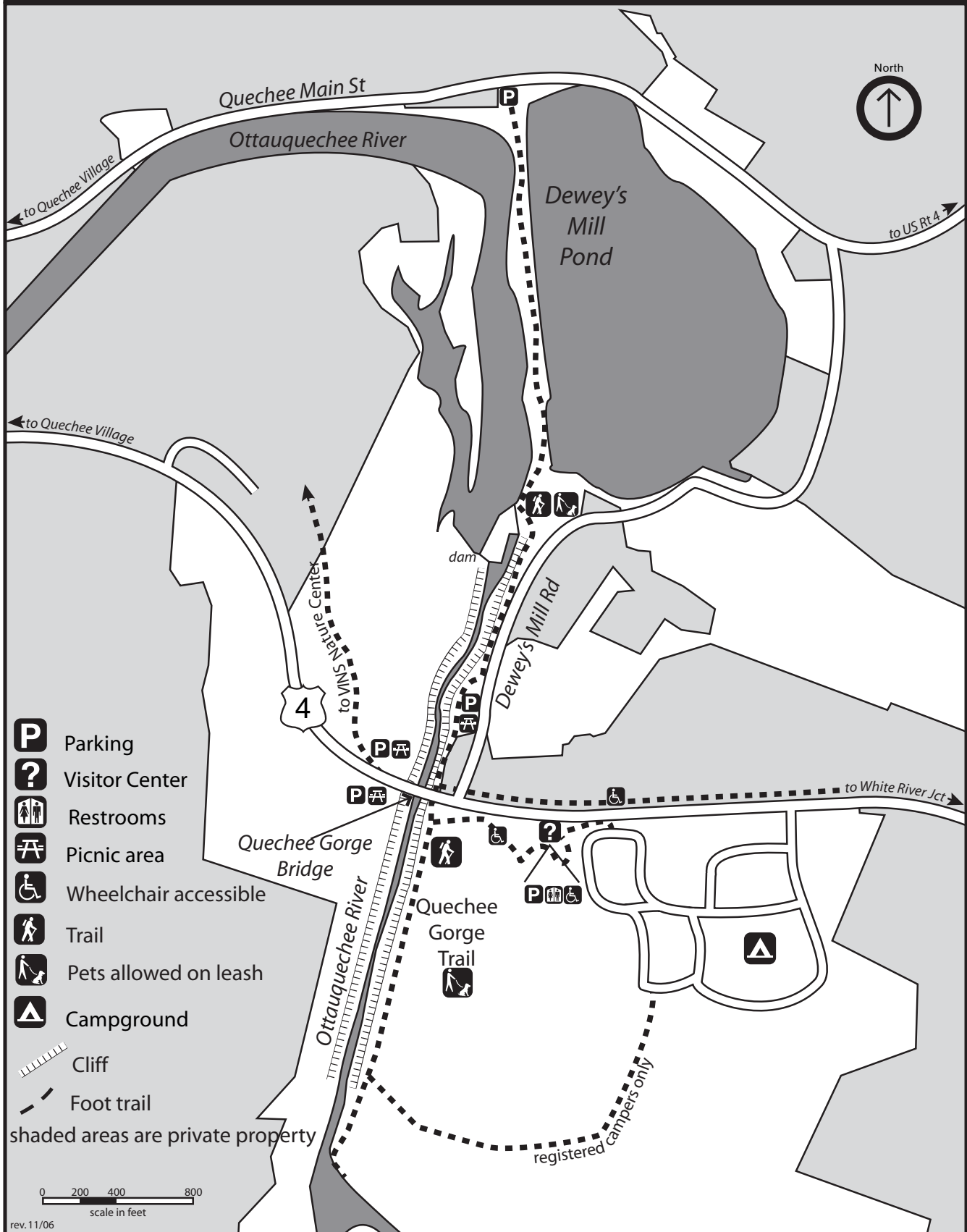
The river wore slowly away at the hard schist of the bedrock ridge. Over thousands of years, the waterfall carved its way northward with the grain of the rock until the formidable barrier was cut clean through, creating Quechee Gorge, the most spectacular river gorge in Vermont.

Adapted from David Laing, Consulting Geologist, 152 Christian Street, White River Junction, VT 05001

Quechee Gorge is part of the 612-acre Quechee Gorge State Park and is managed for multiple recreational uses by the Vermont Department of Forests Parks & Recreation. Much of the park is under long-term lease from the US Army Corps of Engineers.



Quechee Gorge State Park Trail System



- Parking
 - Visitor Center
 - Restrooms
 - Picnic area
 - Wheelchair accessible
 - Trail
 - Pets allowed on leash
 - Campground
 - Cliff
 - Foot trail
- shaded areas are private property



rev.11/06



*Variable trail conditions may exist; please use caution.
Check with the Quechee Gorge Visitor Center for current conditions.*

