Gnome Hollow, a 132-acre preserve, is primarily a deciduous hardwood forest. It also contains a small former Christmas tree farm. The property has a mix of native hardwoods, including mature oak and black birch, hickory, and emerging sugar maple. These dense stands of forest are important habitat for migrating songbirds and large mammals, such as black bear and bobcat. The mix of evergreens and hardwoods also makes for suitable owl habitat.

Several large vernal pools, which flood in spring then drain in summer, are found throughout the forest. These temporary pools are important habitat for amphibians, which can breed in them without having fish eat their eggs. The vernal pools are also important recharge areas for the aquifer. Groundwater seeps into the forest floor in these pool areas, and then gradually flows through the bedrock to streams, wetlands, and the Paulinskill River. Protection of the forest helps to protect the Paulinskill Watershed.

Gnome Hollow Preserve and its trail connect with Frelinghuysen Forest Preserve, owned by Frelinghuysen Township. The Gnome Hollow trail can also be followed back down to Stillwater Road, about a mile west of the parking area, to a small connector trail that leads through state-owned lands to the Paulinskill Valley Trail. See map for details.