

= Fonteynkill =

The Fonteynkill (alternatively written Fonteyn Kill and also known as Fountain Kill and Mill Cove Brook) is a 1 @. @ 5 @- @ kilometer @- @ long (0 @. @ 93 mi) urban stream (or kill) flowing through Dutchess County , New York , onto the campus of Vassar College , and into the Casperkill . The stream was first on land inhabited by the native Wappinger band before being transferred to the Dutch and then the British . A mill was built along the kill by 1714 and the stream 's presence influenced Matthew Vassar 's decision to locate his college in the area . The artificial Vassar Lake lies midway down the Fonteynkill and was once used for ice skating and boating .

While historically pure , the stream now suffers from urban stream syndrome , partially due to the amount of impervious surfaces within its watershed . Flowing over glacial till , the stream 's bed is rich in cobbles and the kill supports populations of benthic macroinvertebrates , trees , shrubs , fish , birds , snapping turtles , and frogs . As of 2016 , a Vassar ? Cornell University program is monitoring the water quality of the Fonteynkill .

= = Course = =

The Fonteynkill is 1 @. @ 5 kilometers (0 @. @ 93 mi) long . Historian Helen Wilkinson Reynolds reported in 1924 that the stream is fed by a spring in Arlington , New York . More recently , the exact source of the kill has been reported as unknown . Historical records indicate a variety of courses once followed by the stream . A 2010 study observed that the Fonteynkill flows from a culvert beneath Park Avenue in an eastward direction through an urban zone before turning southward and feeding into the artificial Vassar Lake . It then flows southeastward beneath Raymond Avenue through the campus of Vassar College , beneath the college 's Bridge for Laboratory Sciences , and into the Casperkill just below Sunset Lake at a location once dubbed " The Meeting of the Waters " . The Fonteynkill is the only perennial tributary of the Casperkill , itself a tributary of the Hudson River . In 1924 , the Fonteynkill was noted as having several small tributaries , primarily " small meadow @- @ runs , largely surface @- @ water " .

= = Watershed and hydrology = =

Historically , the Fonteynkill 's water has been noted for its cleanness . In 1924 , the stream 's " purity " was noted while an 1867 book describes the kill 's waters as " pellucid " . More recently , the stream has been cited as suffering from urban stream syndrome . Surfaces surrounding the Fonteynkill are highly impervious ; the stream drains an urban zone of the city of Poughkeepsie , New York , of which over 60 % is impervious . The exact size of the kill 's watershed is not known ; an area at least as large as the known watershed is presumed to contribute to the stream 's flow in the form of storm drainage . In spite of this , the stream itself is bordered by a combination of residential lots and forested swaths ranging from 4 ? 70 meters (13 ? 230 ft) in width . On Vassar 's campus , the kill runs along the 4 @- @ acre (1 @. @ 6 ha) outdoor Edith Roberts Ecological Laboratory and past the school 's Shakespeare Garden .

A 2010 study of the stream found that the Fonteynkill 's specific conductance , a measure of the amount of dissolved road salt in the stream 's water , was nearly 1 @. @ 0 mS / cm , higher than any value recorded in the Casperkill . Sites upstream of Vassar Lake were recorded in a separate study as having specific conductances twice as high as locations downstream of the lake , suggesting a regulating effect caused by water mixing and retention in Vassar Lake . The total inorganic nitrogen in the kill , which is usually correlated with surrounding green cover , was about 0 @. @ 6 milligrams per liter (2 @. @ 2 × 10 ? 8 lb / cu in) , average for measurements taken in the Fonteynkill and Casperkill in that study . The study also found that the Fonteynkill 's score on the Hilsenhoff family biotic index (HBI) , a scale measuring pollution based on the tolerance of endemic benthic macroinvertebrates , was approximately six , indicating fairly poor water quality , with scores for the rest of the Casperkill ? Fonteynkill watershed were as high as seven (poor water quality) to as low as four (very good water quality) . In 2015 , Riverkeeper was alerted of a sewage leak in the kill ,

noting high levels of bacteria indicating the presence of fecal matter . A New York State Department of Environmental Conservation investigation found nearby private sewer pipes and manholes to be filled with sludge ; they were cleaned and plans have been instated to ensure that sewers would stay clear henceforth .

Efforts are being made to monitor the water quality of the Fonteynkill , led by Vassar College 's Environmental Research Institute and the Cornell University Cooperative Extension Dutchess County Environment Program . Three sites are regularly sampled for water quality while devices such as sondes continuously record temperature , conductivity , and pH . Benthic macroinvertebrates are frequently counted and fecal coliform counts are also run .

= = Geography and geology = =

Cambrian to Ordovician @-@ age dolomite , part of the Wappinger Group , and calcareous shales from the Hudson River Group underlie the Fonteynkill . Between 15 ? 20 kya , a glacial lake covered the land that would become the Fonteynkill . Till and to a lesser extent other glacial sediments today sit atop the dolomite and shale . Surrounding soils are loamy , either silt loam or gravelly loam depending on the underlying surficial geology . The streambed is composed of about 25 % sand , silt , and clay and approximately 75 % cobbles . Quicksand was once common around the Fonteynkill and its minor tributaries . The distance covered by the stream is noted as being relatively flat , descending between 6 @.@ 1 ? 9 @.@ 1 meters (20 ? 30 ft) over the course of its run .

Vassar Lake , through which the kill passes , is a shallow body of water , measured in 2013 with a maximum depth of 1 @.@ 8 meters (5 ft 11 in) and an average depth of 0 @.@ 55 meters (1 ft 10 in) .

= = Biology = =

The Fonteynkill and its riparian zone are home to a variety of species . Caddisflies , clams and mussels , crayfish (Astacidae) , damselflies , gammarids , isopods (Asellidae) , oligochaetes , black flies , leeches , chironomids , bladder snails , and other snails were recorded in the stream in 2010 . Trees along the banks of the Fonteynkill include American elms , sugar maples , black cherries , Norway maples , and red maples , while barberry , privet , holly , Japanese knotweed , honeysuckle , spicebush , common reeds , and Japanese roses make up the kill 's riparian shrubs . Carp , mallards , great blue herons , frogs , snapping turtles , and other birds also reside in and around the stream . A 1924 source observed that trout fishing on the kill .

= = History = =

The Fonteynkill flows through land originally inhabited by the Wappinger band which , throughout the 1600s , came under Dutch control . The Dutch lost control of the territory to the British in 1664 and Dutchess County was established . In 1688 , Pieter Schuyler was granted a title to the land through which the Fonteynkill runs . He split that land and sold the Fonteynkill tract (soon to be known as Het Oosten or " Eastward Neighborhood ") in 1699 to Myndert Harmense and Robert Sanders .

A mill was built along the stream before 1714 ; in that year , Sanders 's son Thomas sold the structure to Isaac Tietsoort who in turn sold it to March Van Bommel in 1717 . In 1721 , an accurate survey of the land was conducted . The mill on the Fonteynkill was discovered to be the property of Catharine Brett who claimed the land and sold a farm parcel that included the mill in 1754 to Johannes Swartwout . The land remained in Swartwout 's hands until he died in 1805 . From his heirs , the land came to be owned in 1812 by Matthew Westervelt and then Reuben Tanner in 1815 . Tanner controlled the Fonteynkill land until 1844 when Caleb Morgan acquired the title to the space . In 1854 , the land was transferred to Matthew Vassar , for whom " the presence of fresh water was an important factor in deciding the college 's location " . In 1861 , the year of Vassar College 's founding , the land through which the Fonteynkill runs came under the ownership of the

college proper . A millstone from the Fonteynkill mill is preserved on the Vassar College campus in front of Rockefeller Hall .

As Vassar developed , the area around the Fonteynkill was gradually built up . The old mill became the college 's pumping station , capable of pumping 20 @,@ 000 US gallons (76 @,@ 000 l ; 17 @,@ 000 imp gal) each day . An ice house was also in place just south of the kill by 1867 , along with a garden storehouse upstream of Vassar Lake on the stream 's west side . During the winter , ice was cut from Vassar Lake and moved to the college 's Main Building to keep the school 's supply of food cold . Conflict occasionally arose between students who desired a smooth skating rink and staff at the college who were tasked with refrigerating Vassar 's foodstuffs . In 1916 , the college built its Shakespeare Garden , using seeds from many plants referenced in William Shakespeare 's plays , just north of the stream . In the 1920s and 1930s , the Edith Roberts Environmental Laboratory was developed south of the kill , across from the Shakespeare Garden . The college constructed Olmsted Hall along the stream in 1972 and more recently , the Bridge for Laboratory Sciences which opened in 2016 .

= = = Etymology = = =

The name " Fonteynkill " is derived from the Dutch Fonteyn Kil , literally meaning " Spring Brook " . The stream 's name is also sometimes written with a space as " Fonteyn Kill " . The kill has also been known as the Fountain Kill , a hybrid name of English and Dutch origins . In the 1800s , the stream was also recorded as Mill Cove Brook .

= = Recreation = =

The Fonteynkill and Vassar Lake have been used recreationally since Vassar College 's establishment in the 1860s . Benson John Lossing recorded Vassar students in 1867 using Vassar Lake , then known as " Mill Cove Lake " , for rowing and boating in the summer months ; a simple dock was built to allow access to the water . In the winter , the lake froze over and students at the college would ice skate upon the surface . The shallowness of the lake became an obstacle to recreational use , and while it was suggested by Vassar 's Miscellany News that the lake be dredged or removed entirely , neither of these options were employed and the lake is no longer a recreation site . By the 1920s , the Fonteynkill 's source spring was being dammed in wintertime , flooding a nearby hollow to create an ice skating pond .

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