

# Quail Valley #2 Storm Water Pond Retrofit

Gaithersburg, Maryland



Constructed in the early 1980s, the Quail Valley community stormwater pond was in good structural condition and well-maintained but provided few ecological benefits. Dry most of the year, the pond received runoff from nearby neighborhoods and flooded, before draining into the channel downstream, known as Cabin John Branch. Over time, the channel became eroded, incised, and largely disconnected from the floodplain.

The pond was slated for improvement by the Montgomery County Department of Environmental Protection

(DEP), in order to meet Municipal Separate Storm Sewer System (MS4) requirements. Montgomery County DEP selected Biohabitats as engineer and construction overseer, in a joint venture with Century Engineering, to retrofit the pond and help reduce stormwater pollution, thereby improving water quality, stream health, and ecological function in Cabin John Branch and downstream waters.

The outfall structures were removed and replaced with a cascade to allow overflow to pass between basins. The

*Water quality, stream health, and ecological function is improved by upgrading and restoring a stormwater pond and degraded stream.*

upper pond temporarily stores up to one-and-a-half feet of water until infiltration occurs (within 48 hours), improving groundwater recharge in the process. A new basin, featuring a sand berm with a gabion stone core (to allow for further filtration and erosion control), was created downstream. The lower basin briefly holds one-and-a-half feet of water before it drains through the sand filter and sand seepage berm to the floodplain. The restored pond treats about half of every one-and-a-half inches of rain, removing common pollutants such as nutrients, hydrocarbons, and metals.

Below the pond, 150 feet of the eroded stream was restored using a riffle pool sequence, making the water

non-erosive. The repaired corridor was replanted with native trees such as pin and swamp oaks.

Now revegetated, the system supports a variety of native species tolerant to periods of inundation as well as drought.

Serving as an innovative approach to stormwater management within the Cabin John Branch watershed and adjacent community, the design improved habitat for a variety of species and promoted healthier ecology and hydrology for the system.

## SERVICES

Assess  
Plan  
Engineer & Design  
Monitor

*conservation planning  
ecological restoration  
regenerative design*



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