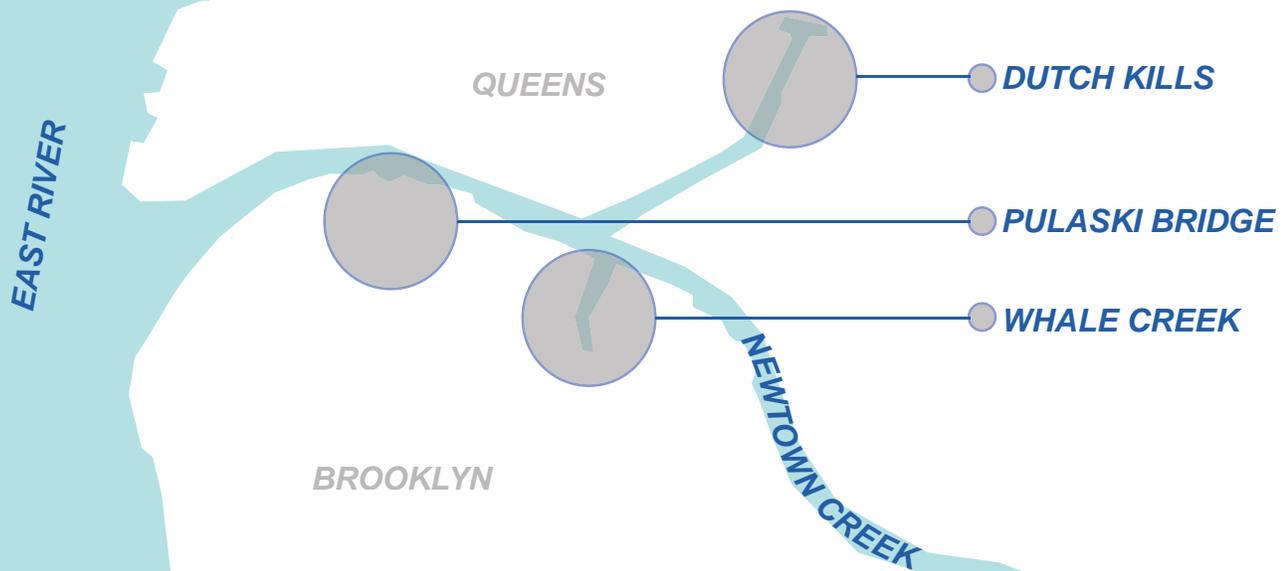


# Newtown Creek Bulkhead Habitat Project

is an Environmental Benefits Project, awarded \$0.5M in April 2011 by the New York State Department of Environmental Conservation and Attorney General's Office. City Parks Foundation administers the project, which offers modular, meter-long habitat frames for suspension from Newtown Creek bulkheads. Each module holds a sediment basin and an underlying tray for ribbed mussel, the most common bivalve of the Creek. The project aims to: 1) provide the environmental services of a salt marsh and 2) enable the communities of Newtown Creek to experience the native salt marsh ecosystem whether educationally or aesthetically.



The bulkhead prohibits the formation of intertidal wetland, the salt marsh of the estuary, and opposes wave, tidal and biological forces with its mass and rigidity.

Over time, the bulkhead wall is overcome either by wave impacts that scour and shear the surface or by storm surges that exceed the height of the bulkhead wall.

Salt marsh once formed the shore of Newtown Creek, an urban waterway that was declared a Superfund Site by USEPA in 2010. Landfill and construction filled and destroyed the Creek's otherwise natural shore and intertidal zone.



Wetland restoration is a strategy for urban shoreline remediation and for slowing bulkhead erosion. Salt marsh grasses and associated microbes can remove, sequester and detoxify many industrial toxins. Ribbed mussels, the most common bivalve of the Creek, filter the water of algal and bacterial cells. The grasses and sediments slow and absorb storm surges before remaining water reaches structures landward of the marsh community.



**UPLAND**

Rhus typhina – Staghorn Sumac  
Source: Willow Haven Outdoor  
<http://bit.ly/1qfMIES>



**MARSH BORDER**

Rhus Copallina – Winged Sumac  
Source: Southern Living  
<http://bit.ly/1yrOs8Q>



**HIGH MARSH**

Juncus Gerardii – Saltmeadow Rush  
Source: Free Nature Images  
<http://bit.ly/1l426a1>



**LOW MARSH**

Spartina Alterniflora – Smooth Cordgrass  
Source: Arm of the Sea  
<http://bit.ly/Uac2HN>

**Bulkhead Habitat Frame: a pocket wetland.**

The NYCDEP has offered the water treatment plant bulkhead of upper Whale Creek as the site to pilot bulkhead habitat frames. The west bulkhead here supports bumper units of approximately one meter in length.

The NYCDEP Bureau of Communication and Intergovernmental Affairs has proposed incorporating the pocket wetland project into Phase 2 and 3 of the Nature Walk, which will be an extension of the Walk to the head of Whale Creek. The bulkhead bumpers along the west wall will be redundant once the planned dolphin block is constructed at the bend of this waterway (shown at left, bottom). Replacement of the bumpers with the wetland frames will enable visitors to walk along salt marsh vegetation as they traverse the proposed over-water walkway of the Nature Walk.



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