Stream Restoration Design and Environmental Benefit

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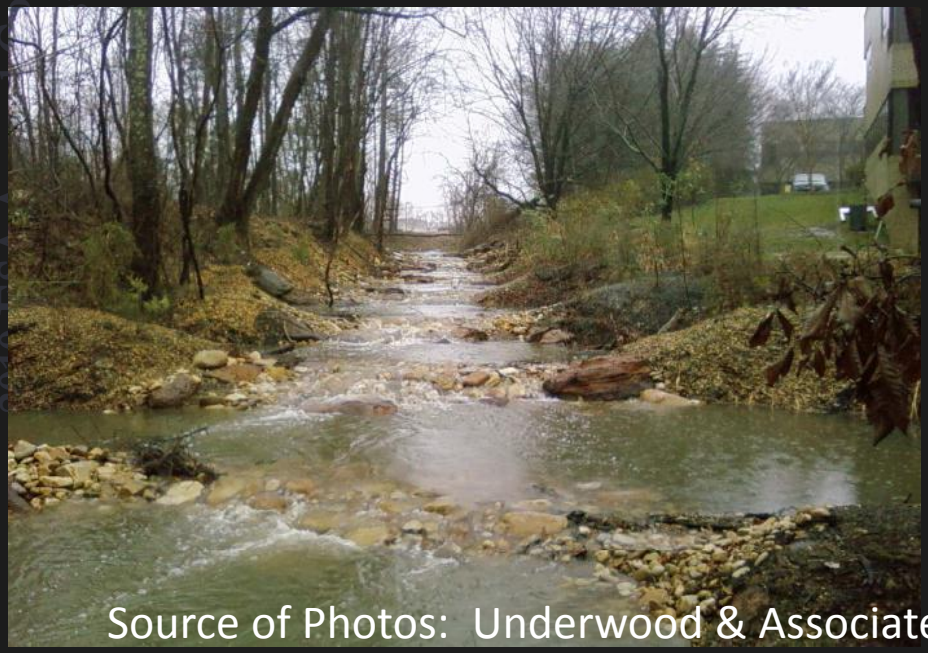
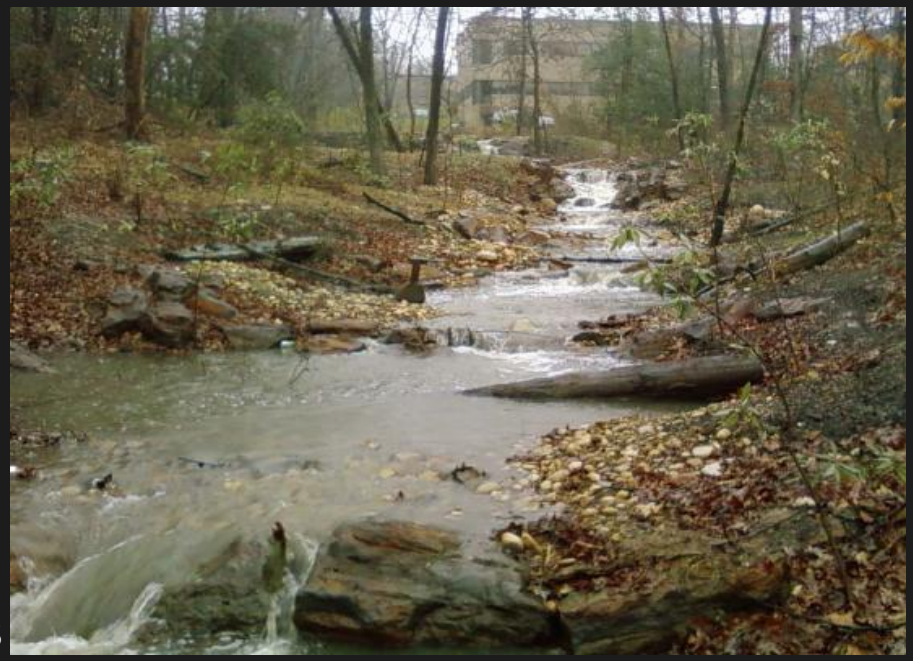
Biohabitats
Incorporated





Source of Photos: Underwood & Associates

Conveyance Channel

Well connected, but no water storage on the landscape

Make Opportunities for Storage

Integrated Stream and Wetland

Set weirs to retain water on landscape

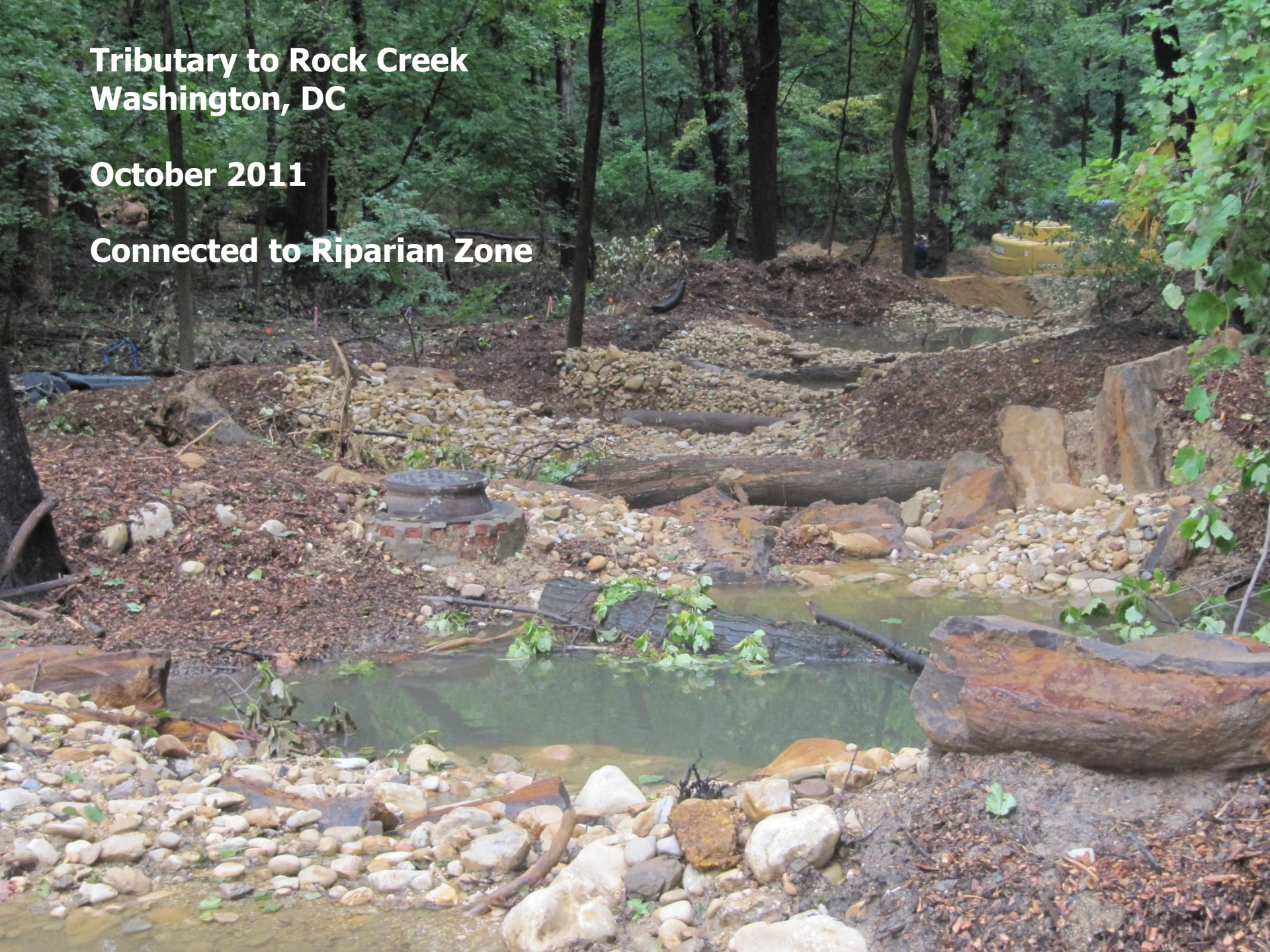
2010 ESA Annual Conference Pittsburgh, PA
August 1- 6, 2010

Tributary to Rock Creek
Washington, DC

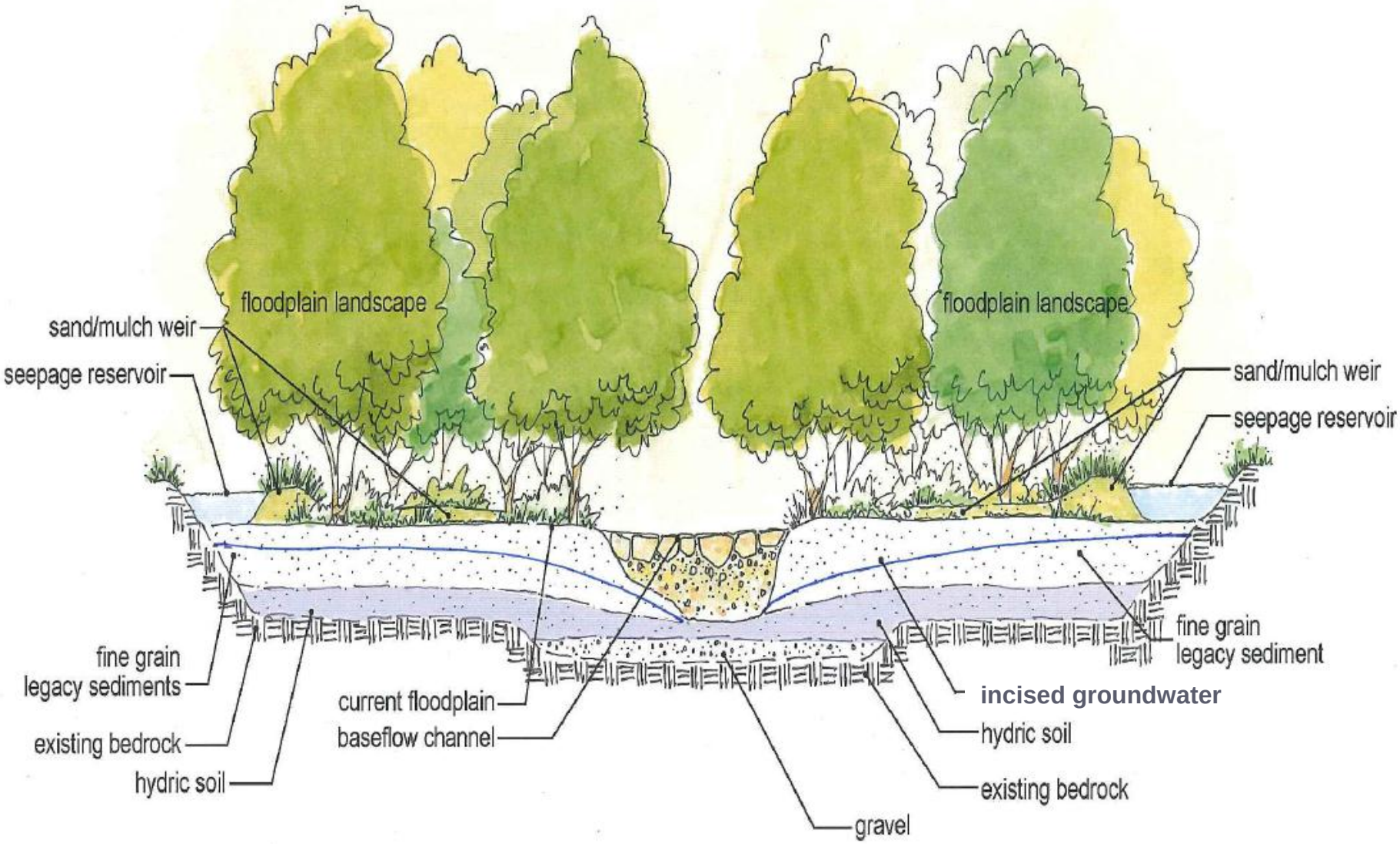
February 2011

~10 ft Incised

What is the Stream Design Solution?


Tributary to Rock Creek
Washington, DC
October 2011
Connected to Riparian Zone

Groundwater Restoration



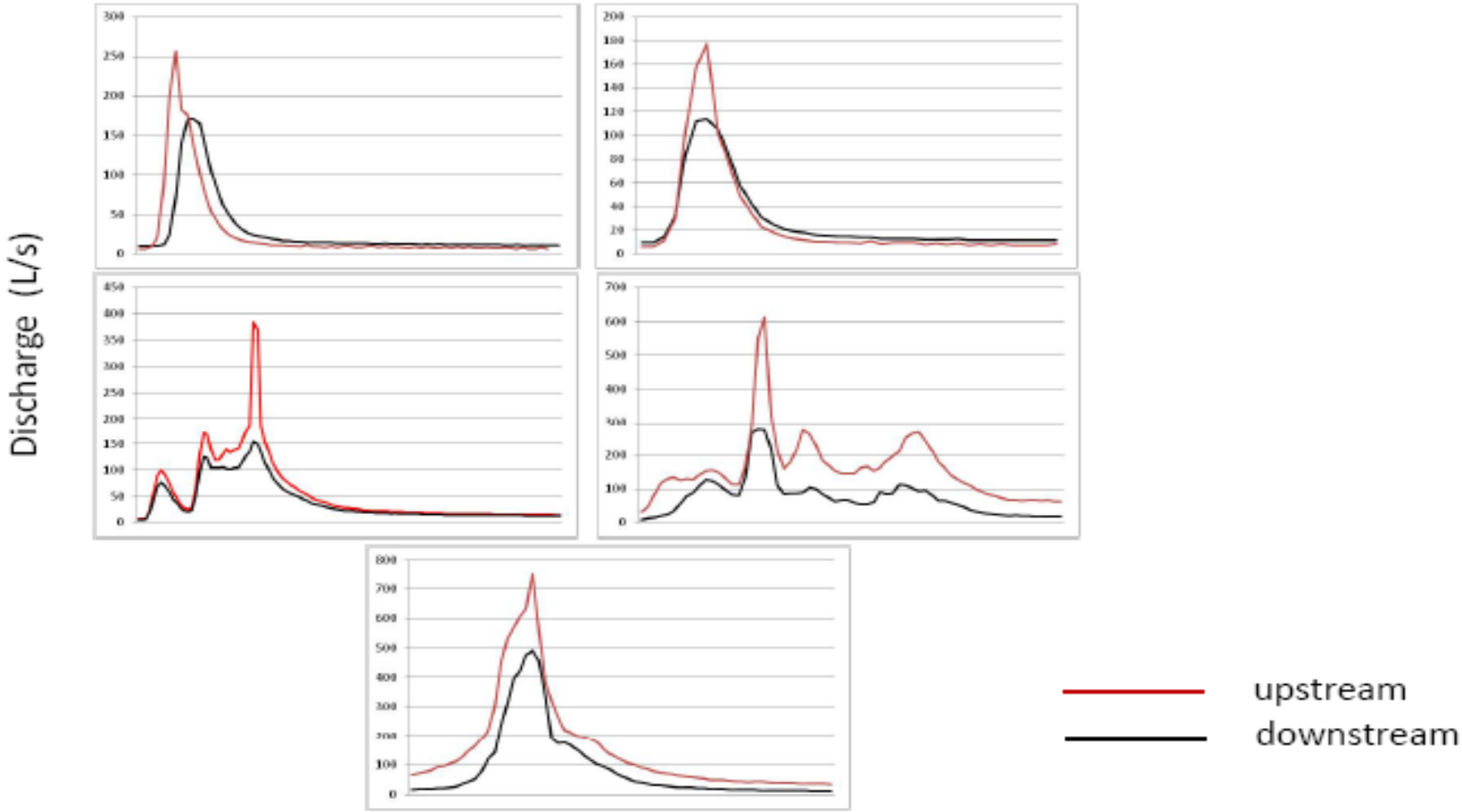
Reconnect Stream – PB-1

Raising groundwater elevation to near top of bank would store
8.5 ac-ft of water

Estimated to extend baseflow by 19 days

Significant benefits to
Stream hydrograph, shear s, instream-habitat, adjacent wetland hydrology, etc.

Hydrographs during individual storms HOWARD'S BRANCH



Source: Solange Filoso, University of Maryland

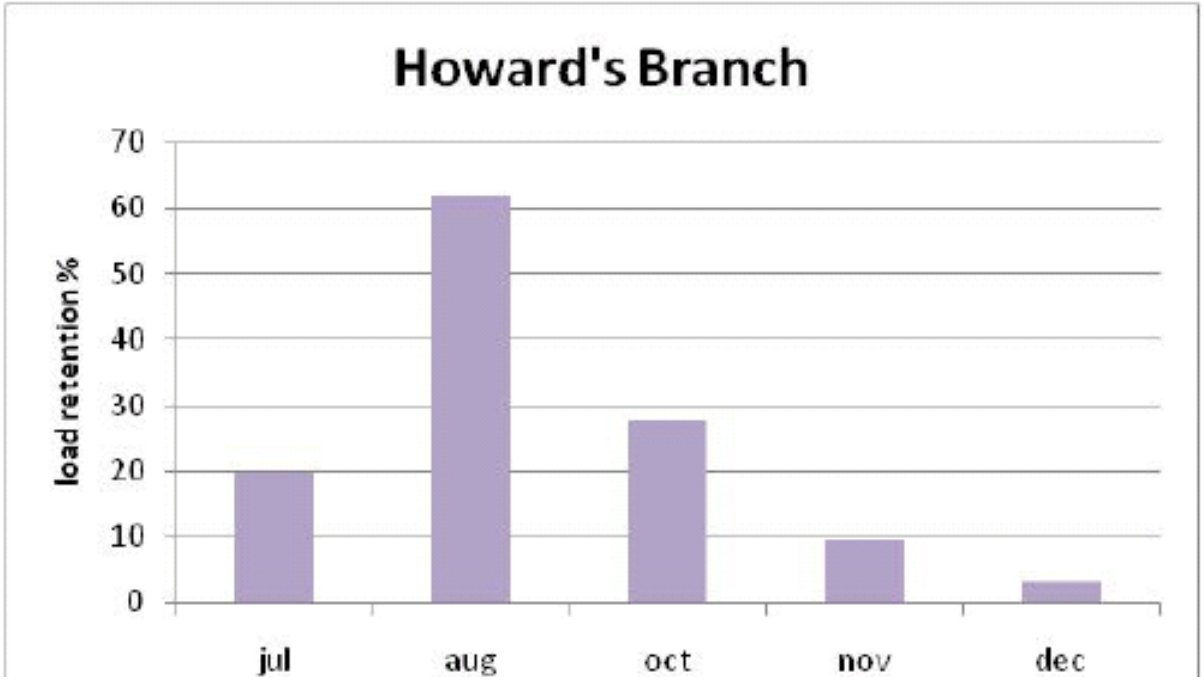


Figure 32. Percent load reduction of TN in the restored reach of Howard's Branch during five different storm events.

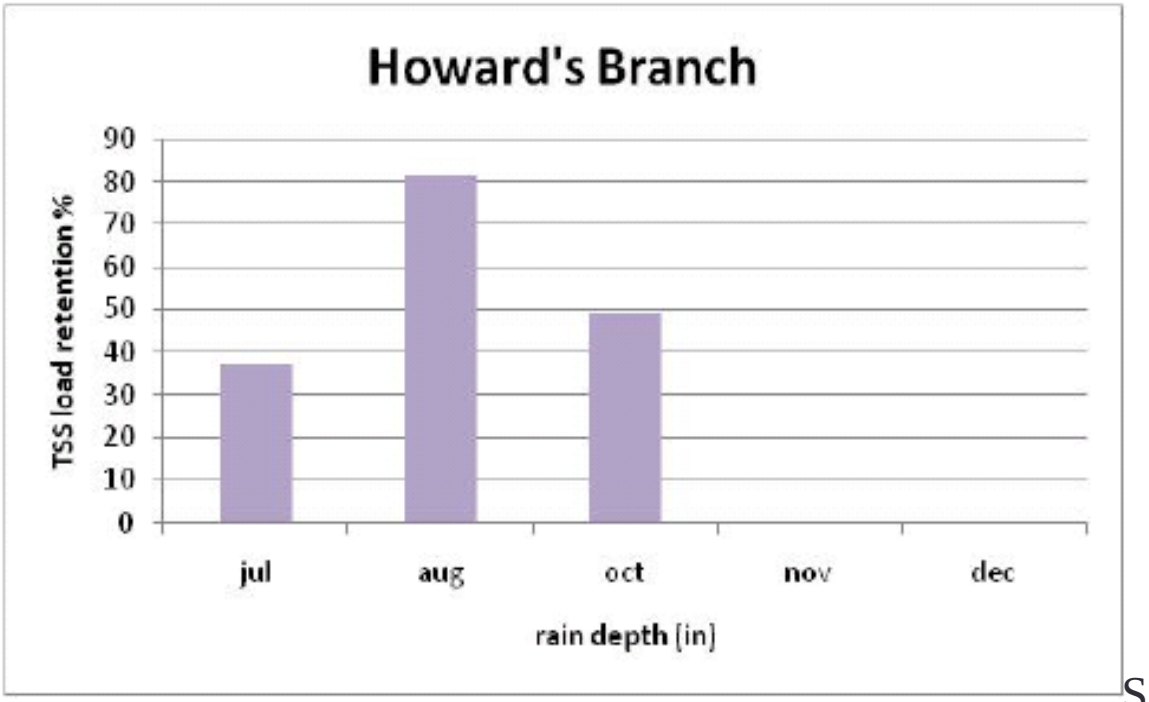
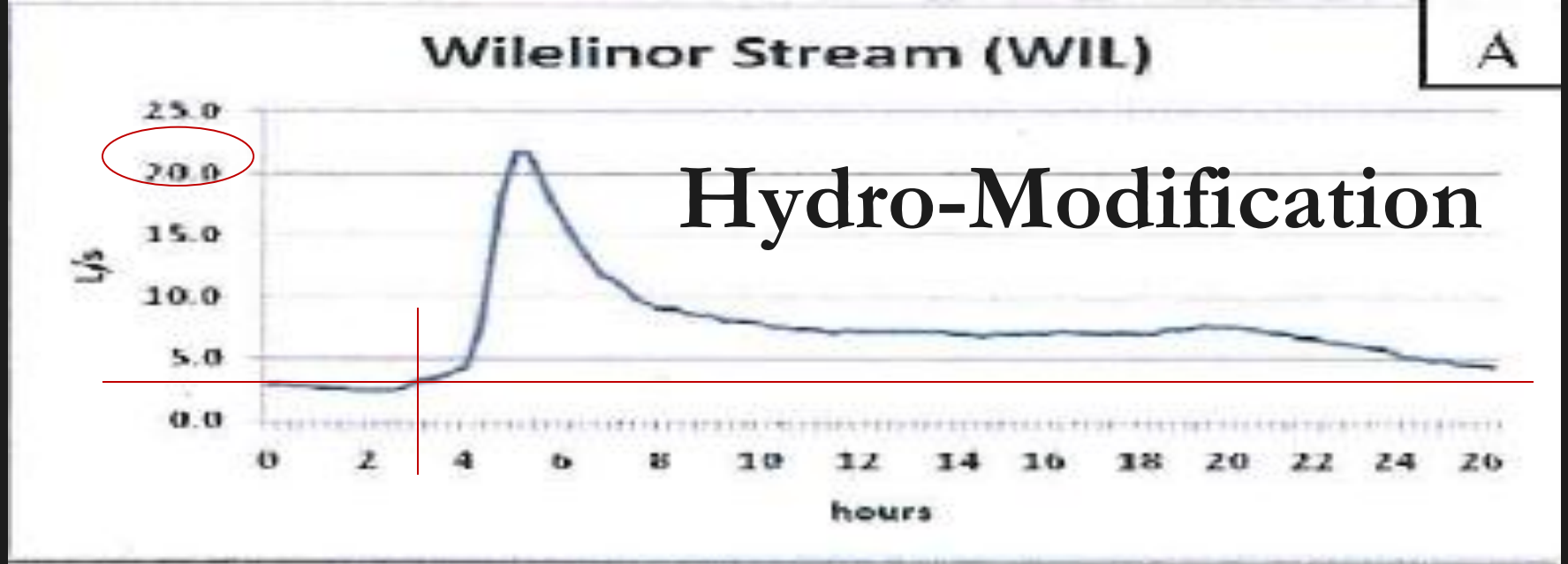


Figure 34. Percent load reduction of TSS in the restored reach of Howard's Branch during five different storm events.

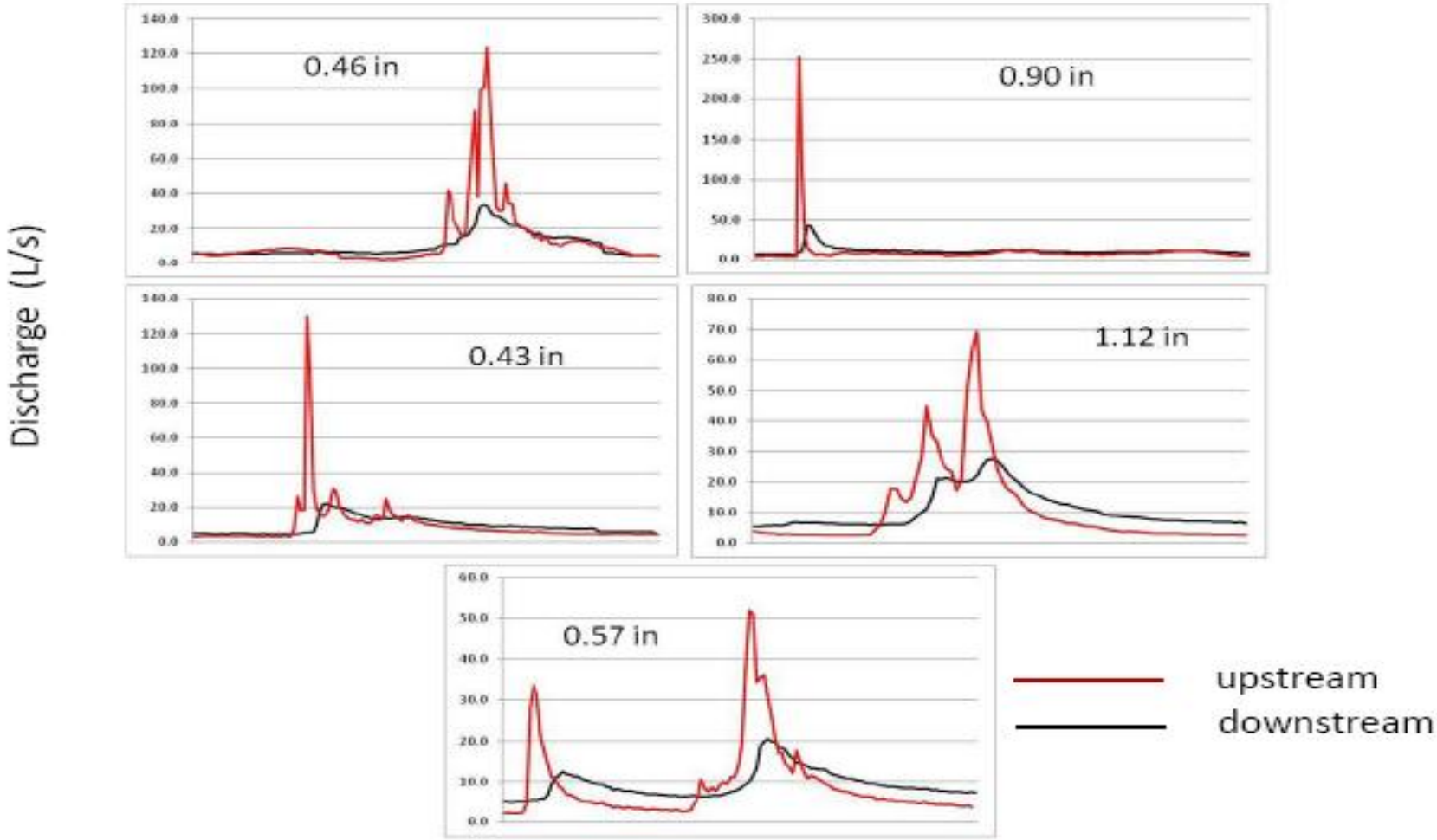
Source: Palmer and Filoso, 2009

Wilelinor



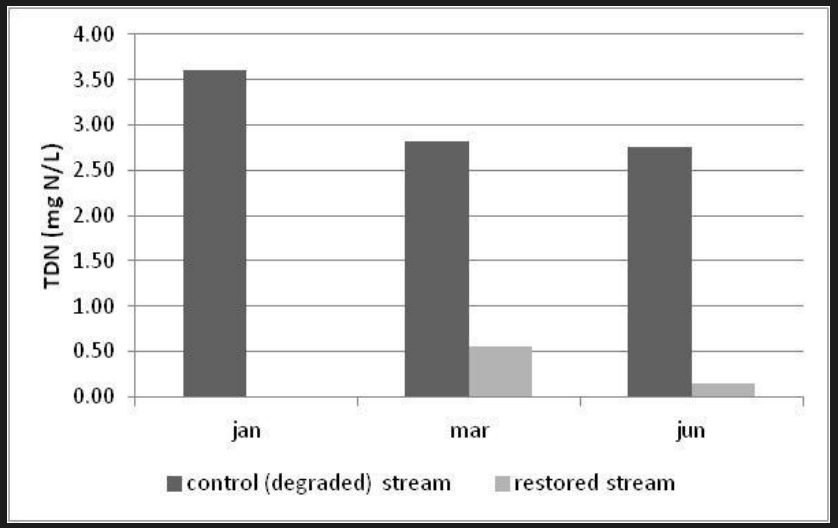
Source: Palmer and Filoso, 2009

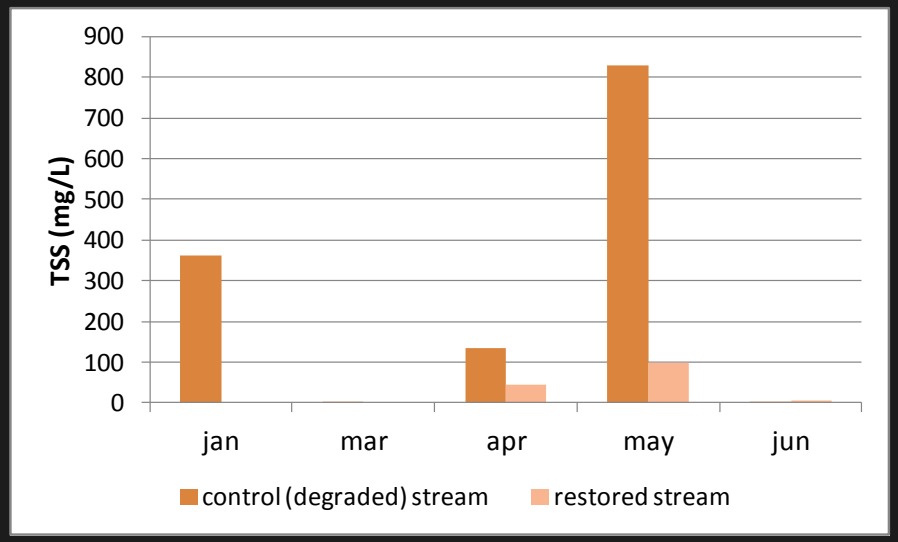
Hydrographs during individual storms WILELINOR

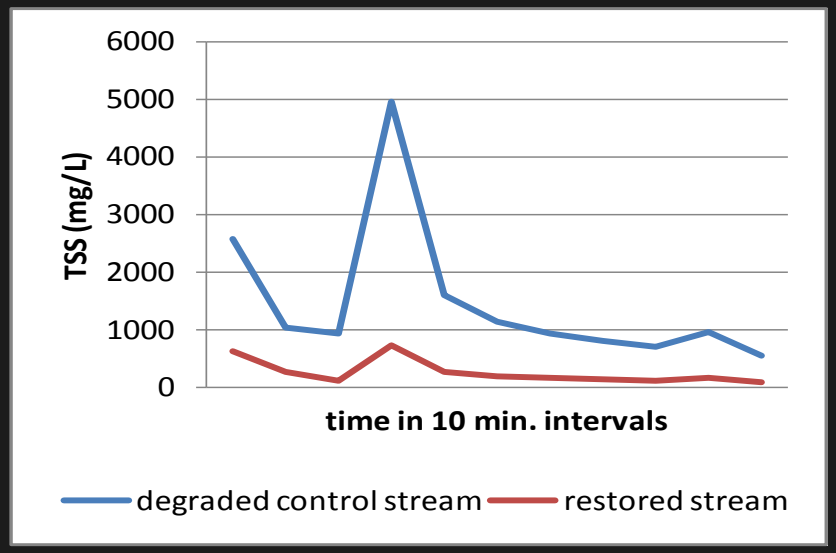


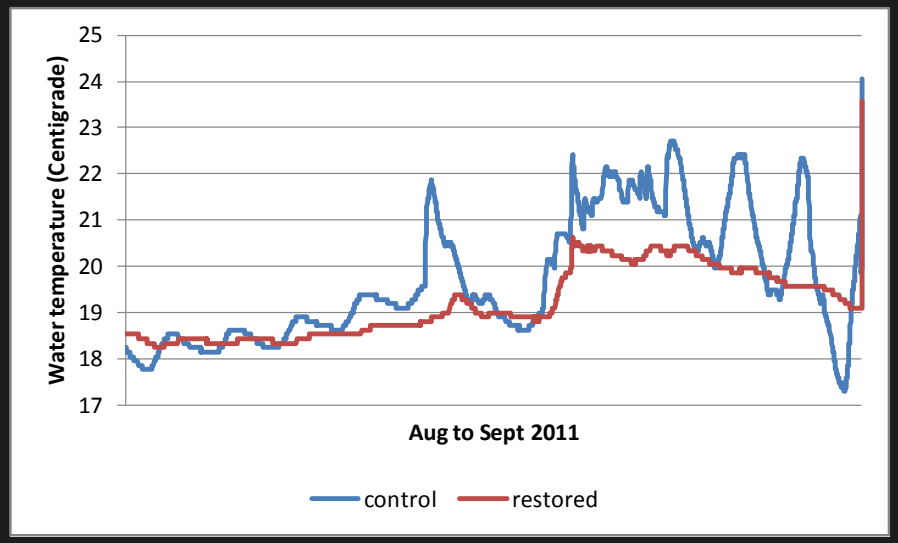
Source: Solange Filoso, University of Maryland

Carriage Hils









Carriage Hills,
Source: Solange Filoso, University of Maryland Center for Environmental Science, Chesapeake Biological Laboratory

Discussion?