Created for:

A DAY IN THE LIFE OF THE HUDSON RIVER

An Educational Program of the Hudson River Estuary Program of the NYS DEC

in collaboration with Lamont-Doherty Earth Observatory

Stuyvesant

Frank Nitsche, Lamont-Doherty Earth Observatory of Columbia University
Hudson River
Benthic Mapping Project

- Mapping Benthic Habitats
- Identifying Sites of Sediment Deposition and Erosion
- Understanding changes and related processes

Collaboration:
- Lamont-Doherty Earth Observatory
- State Univ. of New York - Stony Brooks
- Institute of Ecosystem Studies
- New York State Department of Environmental Conservation
Acoustic Surveying

- Multibeam bathymetry
- Sub-bottom profiling
- Sidescan sonar

GPS
Sidescan Sonar

Tow Vehicle
Boulder
Sand
Mud
Gravel
Depression

Boulder
Ship’s Path
Gravel
Sub-Bottom Profiling

Satellite navigation antenna

Source

Receiver

Seabed

Bottom Mud

Sediment Layers
Multibeam Bathymetry: Details

- Detailed morphology
- Anthropogenic objects
- Change analysis

Tappan Zee Bridge
Sediment Dunes in Catskills

Upper River:
- Fresh water, smaller cross-section
- Dominated by dunes and bars
- Sandy sediments
Human Impact: Tappan Zee Bridge
Human Impact: Pipelines

Scour around pipelines

200 m

10 m
Dredging: Examples New York Harbor
How deep is the Hudson River?