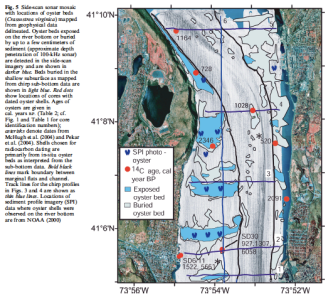
What Can You Learn from Cores from the Bottom of the River?

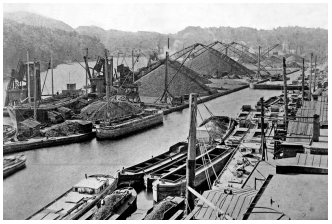
SEDIMENT TYPE/GRAIN SIZE MAP

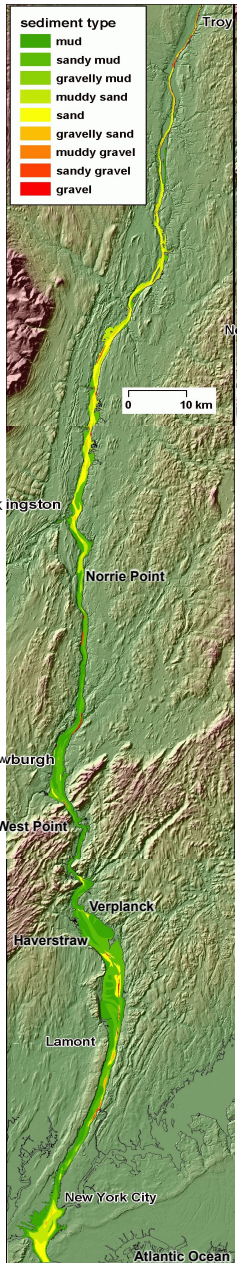
COURSE LARGE GRAIN SANDS: Sands and gravel are large grain sizes and take a lot of energy to be moved by water. Sand shows up in two distinct sections of the Hudson estuary, in NY harbor and the upper section from Kingston to the Troy Dam. Sand in the harbor enters from the 'long shore' current that moves water and sand along the New Jersey and Long Island coasts. Traveling in on the tide it settles in the harbor. Sand in the Upper Hudson tells the story of a high energy environment, where smaller easily moved particles like muds and clays, are swept by the water and moved on to be deposited downriver. Fun Fact: an average of 2200 tons of sediment a day enters the estuary from upriver!

OYSTERS: The history of oysters in the Hudson River stretches back some 6000 years to when the native settlers feasted regularly on the mounds of oysters that stretched from the harbor up to where the salt influence in the water is lost. Oyster Middens (large stacks of empty shells) lined the shallows like garbage mounds up to Verplanck. More recently, but still in our past, in the early days of European settlement the harbor was covered in oyster beds like a carpet beneath the water – plentiful AND large, some reference them to be as big as dinner plates! In 1911 twenty-five million pounds of oysters were harvested from the Hudson and NY waters, but then water pollution caused oysters to die off. With the cleaning of the river water and oyster reseeding projects by many groups, oysters have been returning to the saltwater section of the river.

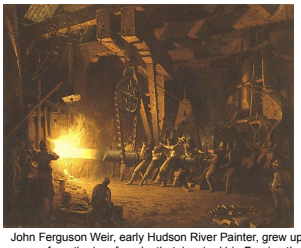


COAL: Pennsylvania coal made its way to the Hudson River through the D&H Canal by way of the Rondout Creek in Kingston. At its peak in the 1860's and 1870's one million tons of coal entered the Rondout to move into the Hudson Valley. Coal traveled from the canal into the Rondout Creek and into the Hudson, moving both upriver to Albany and downriver to New York City on barges to heat home, businesses, factories and steamboats. Another important use for coal was in brickmaking. In 1829 James Wood designed a way to make more brick from Hudson River clay by adding crushed coal, reducing both brick firing time and fuel needs. Hudson River brickmakers used 22 ½ tons of coal a year.





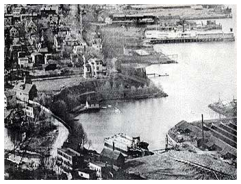
SLAG: When metal ore (iron, copper, lead, aluminum etc.) is found in nature it is impure, mixed with other metals and silicates. Slag refers to the left over material created during the 'reduction' or heat separation of a metal from its ore. During production (smelting) the metal is heated very hot and the impurities separated and removed (SLAG). The famous paintings below show the hot smelting fires of early industrialization (shows West Point Foundry located in Foundry Cove across from West Point). The West Point Foundry operations created slag and the stream that runs through the property carried it into the Hudson River.

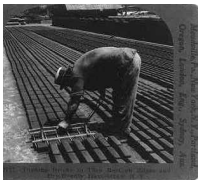


John Ferguson Weir, early Hudson River Painter, grew up at West Point directly across from the iron foundry that inspired his *Forging the Shaft 1874-1877 and Gun Foundry* (1866; Cold Spring, NY, Putnam County Hist. Soc.).Both are set in the West Point Iron and Cannon Foundry, that established Weir as one of the most important 19th-century American painters of industrial themes.

EURASIAN WATER CHESTNUT PODS: Water Chestnut is not native to the Hudson River but moved into the estuary around 1900. This aquatic plant likes shallow, freshwater, still sections of the river like Norrie Point. The plant has become invasive in the upper Hudson wherever there are shallow protected coves. The plant forms dense mats that shades and lowers the oxygen levels in the water underneath it. The seed heads are called 'devil heads' and float on the water moving and spreading through the freshwater sections. The seed pods are able to reproduce for up to 12 years!!

BRICKS: Fire was a huge threat to early builders in the new world, especially in the cities, so brick was in high demand as a building material. The Hudson River was filled with brickyards with almost 100 of them lining the shores producing 500 million bricks a season. In New York City brick or stone walls were required between attached buildings, brick was used in water tunnels and sewer lines and for the sidewalks, in fact, many called New York the brick city. The most famous location for brick making was Haverstraw, with over 40 brickyards! Brick was loaded onto barges and moved on the river from Haverstraw down to New York City until the last Haverstraw yard closed in 1941.





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