Hudson River Environmental Project (HREP)

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Outline

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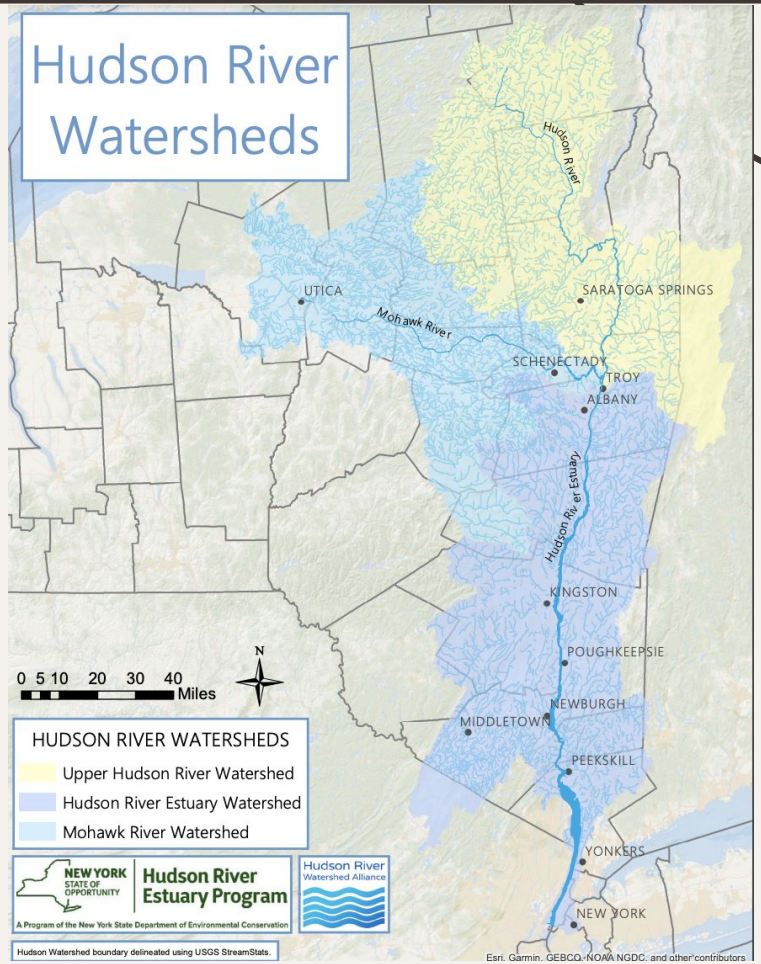


History

- Accidently discovered in the 1500s by english explorer Henry Hudson
- New York City founded in 1653
  - Colonization and industrialization revolution would soon follow
  - Pollution began to significantly increase in the river
- Northern region of the river began to populate in 1775
  - Became popular and crucial transportation and travel for colonies
  - Quickly became a dumping ground for neighboring cities
  - Pollution was considered an issue during these times
- By the 1900s the Hudson River was in the worst state it has ever been in

Background

- Watershed covers 13,330 square miles mostly in New York State
- River flows 315 miles long from upstate New York down to the New York City area
- Average depth of 30 feet
- Home to 200+ species of fish
- By the mid to late 20th century the environmentalists began to realize that the condition of the river was a serious issue
- Wildlife quality began to decrease and people became afraid to swim and fish in the water
- Roughly 100,000 people in the Hudson Valley rely on the river for their drinking water

Mission Statement

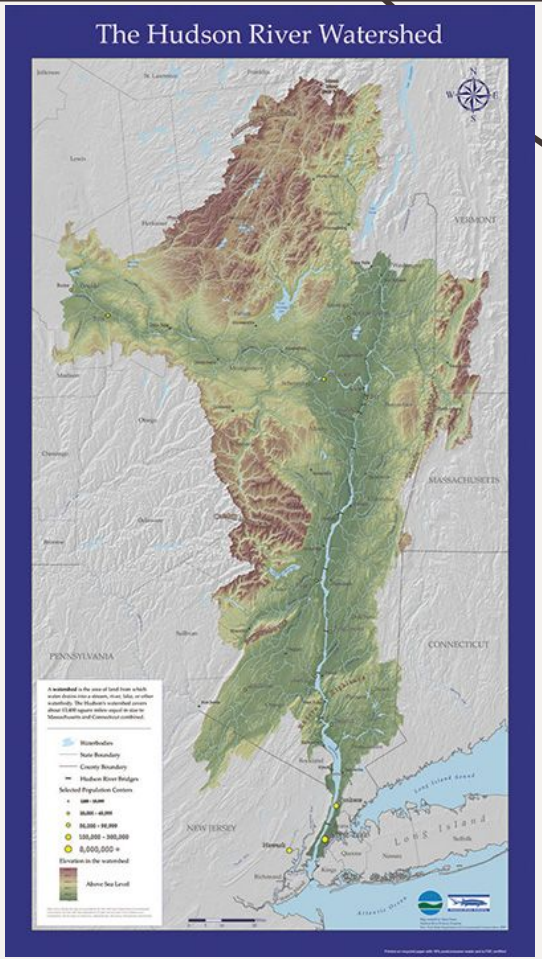
The goal of HREP is to achieve cleaner waters in the Hudson River watershed by reducing water pollution and waste runoff originating in urban areas allowing people to have the confidence and safety to swim and fish in southern New York by 2050.

Hudson River

	Lower Hudson River Drainage Basin						
H- 4	Saw Mill River (1301-0007)	Westchester	River	C	Floatables	Urban Runoff	1998
H- 4	Saw Mill River (1301-0007)	Westchester	River	C	Phosphorus/Low D.O. [2]	Urban/Storm, San.Dschgs	2010
H- 4	Saw Mill River (1301-0007)	Westchester	River	C	Pathogens	Urban/Storm, San.Dschgs	2010
H- 4	Saw Mill River, Middle, and tribs (1301-0100)	Westchester	River	A	Phosphorus/Low D.O. [2]	Urban/Storm, San.Dschgs	2010
H- 4	Saw Mill River, Middle, and tribs (1301-0100)	Westchester	River	A	Pathogens	Urban/Storm, San.Dschgs	2010
H- 13	Sparkill Creek, Lower (1301-0088)	Rockland	River	C	Pathogens	Urban/Storm Runoff	2010
H- 13	Sparkill Creek, Lower (1301-0088)	Rockland	River	C	Oxygen Demand [1]	Urban/Storm Runoff	2010

	Lower Hudson River Drainage Basin (con't)						
H- 31-P44-14-P50- 2-P50a	Lake Shenorock (1302-0083)	Westchester	Lake	B	Phosphorus	Urban/Storm Runoff	2010
H- 31-P44-17-5-P57a	Lake Lincolndale (1302-0089)	Westchester	Lake	B	Phosphorus	Onsite WTS, Urban	2002
H- 31-P44-23-P59- 6-P62a *	Lake Carmel (1302-0006)	Putnam	Lake	B	Phosphorus	Onsite WTS	2002
H- 31-P44-31- 3-P107a	Lake Katonah (1302-0136)	Westchester	Lake	B	Phosphorus	Urban/Storm Runoff	2012
H- 31-P44-35-P109- 6-13-P115a	Truesdale Lake (1302-0054)	Westchester	Lake	B	Phosphorus	Urban/Storm Runoff	2010
H- 31-P44-54-P128a	Teatown Lake (1302-0150)	Westchester	Lake	B	Phosphorus	Urban/Storm Runoff	2010
H- 49a-P160	Lake Meahagh (1301-0053)	Westchester	Lake	C	Phosphorus	Onsite WTS, Urban	2002
H- 55- 1-P165	Wallace Pond (1301-0140)	Westchester	Lake	B	Phosphorus	Urban/Storm Runoff	2010
H- 55-11-P179	Lake Mohegan (1301-0149)	Westchester	Lake	B	Phosphorus	Urban/Storm Runoff	2010
H- 95-10-P345g	Hillside Lake (1304-0001)	Dutchess	Lake	B	Phosphorus	Onsite WTS	2002
H-101-P365	Wappingers Lake (1305-0001)	Dutchess	Lake	B	Phosphorus	Urban/Storm Runoff	1998
H-101-P365	Wappingers Lake (1305-0001)	Dutchess	Lake	B	Silt/Sediment	Urban/Storm Runoff	2002
H-114	Fallkill Creek (1301-0087)	Dutchess	River	C	Phosphorus	Urban/Storm Runoff	2002
H-139-13-52	Monhagen Brook and tribs (1306-0074)	Orange	River	C	Phosphorus	Urban/Storm Runoff	2010
H-171-P848	Ashokan Reservoir (1307-0004)	Ulster	Lake(R)	AA(T)	Silt/Sediment	Streambank Erosion	2002
H-171-P848-	Esopus Creek, Upper, and minor tribs (1307-0007) [8]	Ulster	River	A(T)	Silt/Sediment	Streambank Erosion	1998
H-188-P902	Robinson Pond (1308-0003)	Columbia	Lake	B(T)	Phosphorus	Agriculture	1998
H-202-P8f	Sleepy Hollow Lake (1301-0059)	Greene	Lake	A	Silt/Sediment	Streambank Erosion	2002
H-204- 2- 7-P34	Nassau Lake (1310-0001)	Rensselaer	Lake	B	Phosphorus	Onsite WTS, Urban	2010
H-221- 4- 3	Krumkill Creek, Upper, and tribs (1311-0004)	Albany	River	A	Unknown (biol impacts)	Urban Runoff/CSOs	2002
H-221- 4-P270- 1- 9-P276a	Duane Lake (1311-0006)	Schenectady	Lake	B	Phosphorus	Onsite WTS, Urban	2010
H-226	Patroon Creek and tribs (1301-0030)	Albany	River	C	Oxygen Demand [1]	Urban/Storm/CSOs	2002
H-2228a thru 237	Minor Tribs to West of Hudson (1301-0027) [9]	Albany	River	D>C	Unknown (biol impacts)	Industrial	2002
H-235-11-P377	Snyders Lake (1301-0043)	Rensselaer	Lake	B	Phosphorus	Oxygen Demand Sed.	2002

EPA 2016 TMDL Report of impaired waters



Policies and Mandates

- Hudson River Watershed Alliance
- Two Central Regulatory Programs
  - ECL Article 15, Title 15
  - Public Health Law Article Article 11, §1100
- DOH WR&R Program
  - 10 N.Y.C.R.R. Parts 100 to 158
  - 10 NYCRR § 133.2 City of Newburgh
    - Outdated overall
- Surface Water Treatment Rule
  - 40 C.F.R. Part 141, Subpart H
- Intermunicipal Agreements
  - General Municipal Law § 119-u

Problem 1: PCBs

- PCBs entering the watershed from large manufacturing plants and companies that are dumping pollutants into the rivers
- 1973, dam at Fort Edwards was removed and flooded 200 miles downriver with pollutants that General Electric was dumping into the water

Goal

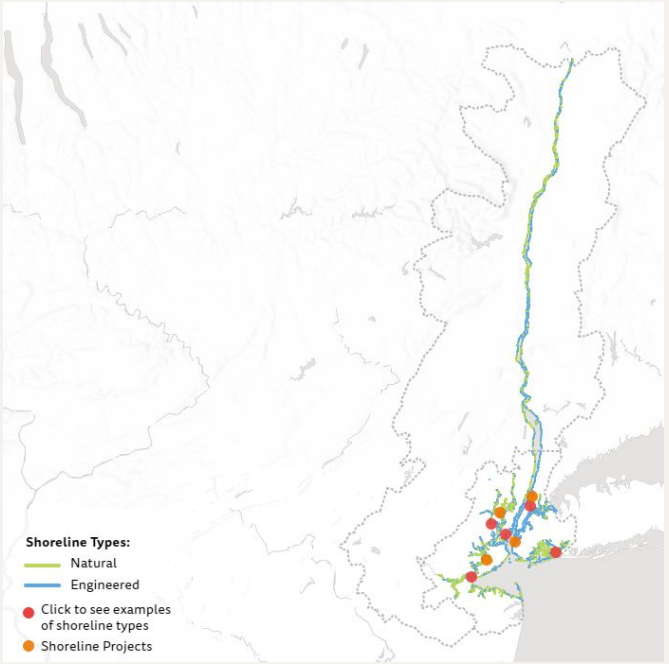
- Continue the dredging project that the EPA started and expand it outside of the 40 mile stretch that was already dredged
- Increase the funding from the original money that GE spent to support better remediation processes

Problem 2: Urban Runoff

- Stormwater, pesticide, and chemicals from the surrounding cities that runoff into the river causes a pH and DO imbalance
- Nutrient rich runoff is causing eutrophication

Goal

- Control the flow of wastewater and stormwater in the city limits entering the river and transport it to treatment facilities.
- Implement more stormwater planters to capture stormwater



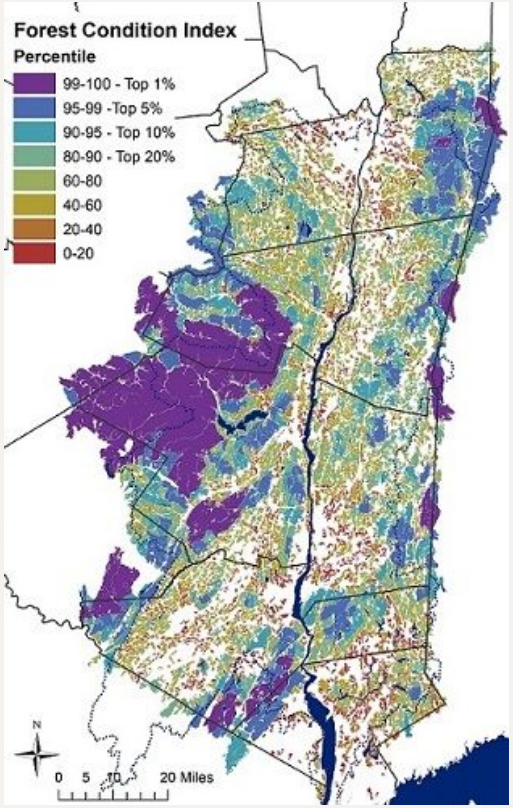
Problem 3: Waste Disposal

- Highly populated areas and companies contribute large amounts of waste and sewage that pollutes the river and its wildlife
- Increases bacteria presence and decreases health of marine life

Goal

- Implement more regulation that controls the outputs of waste coming from factories along the river banks
- Begin to clean up the current buildups of sewage and waste in the water
- There are over 1,000 dams in the Hudson estuary and many are abandoned and harm fish migration and local marine life

Problem 3: Waste Disposal Cont.



Conclusion and Recommendations

- To clean up the damage done to the Hudson river it would take around $15 billion over a span of roughly 25 years.
- It is unlikely that companies like GE will come forward with more funding and the EPA's budget alone may not be enough
- Improve stormwater management practices by using green infrastructure to control runoff and flooding
- Raise more awareness to the issues facing the water quality and initiate more cleanups