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# CARE

## Catskills Active Restoration Effort

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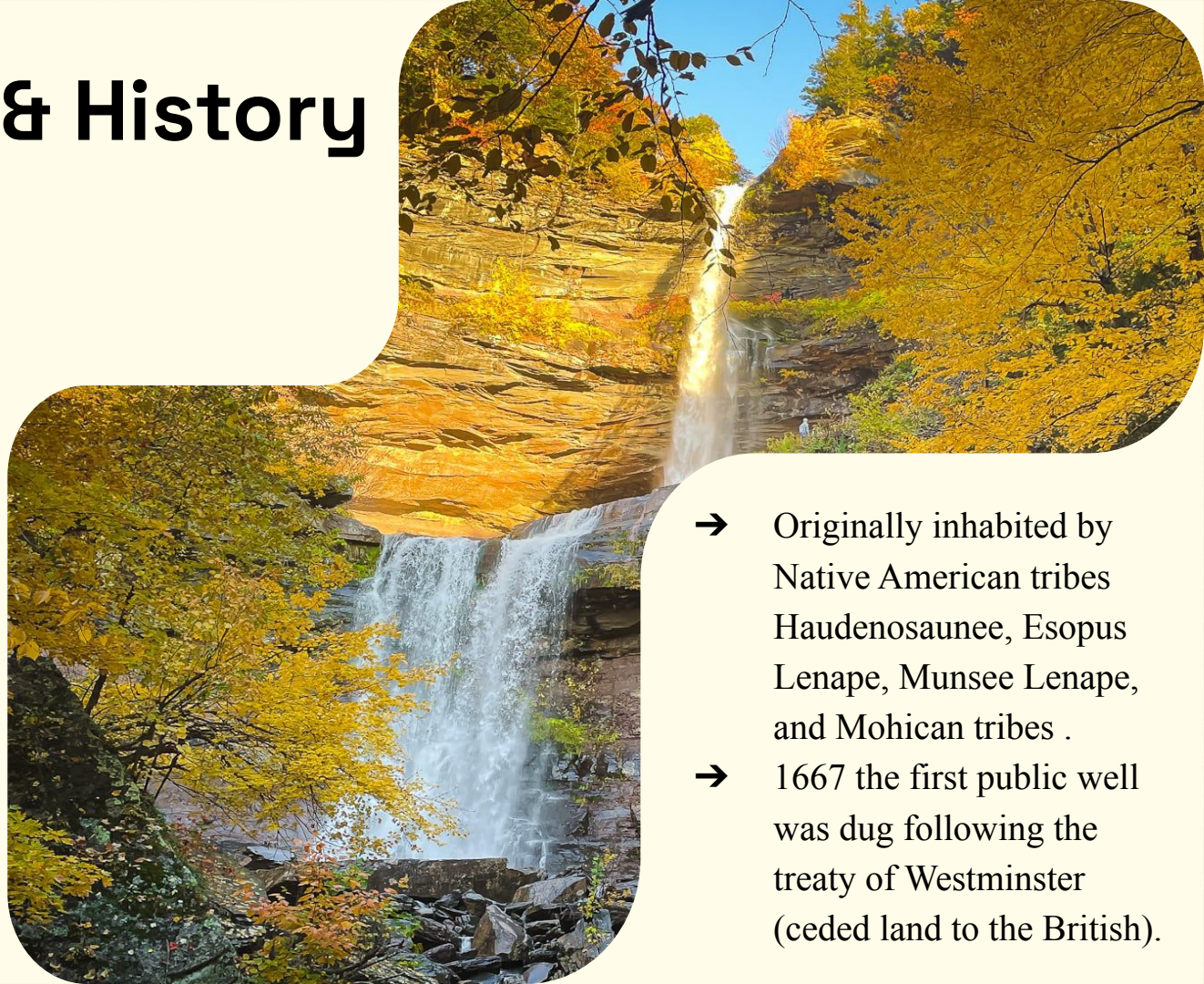
# Overview



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# Background & History

- Located in Southeastern New York.
- Approximately 1,597 square miles across five counties in NY.
- Houses the Catskill Mountains, characterized by rugged terrain and peaks exceeding 3,000 feet.
- Includes six major reservoirs that supply about 90% of New York City's daily water need.
- Serves over 15 million Americans.

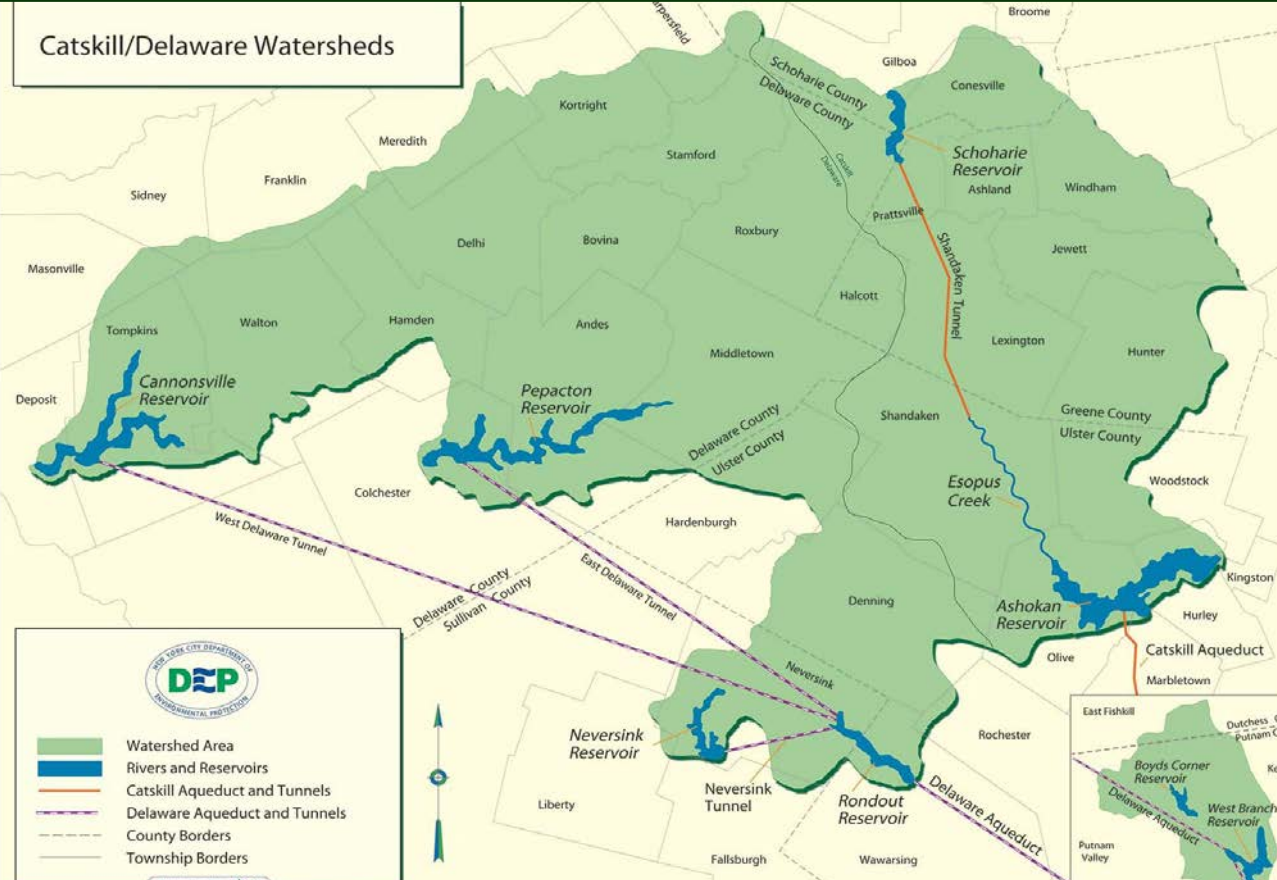


- Originally inhabited by Native American tribes Haudenosaunee, Esopus Lenape, Munsee Lenape, and Mohican tribes .
- 1667 the first public well was dug following the treaty of Westminster (ceded land to the British).

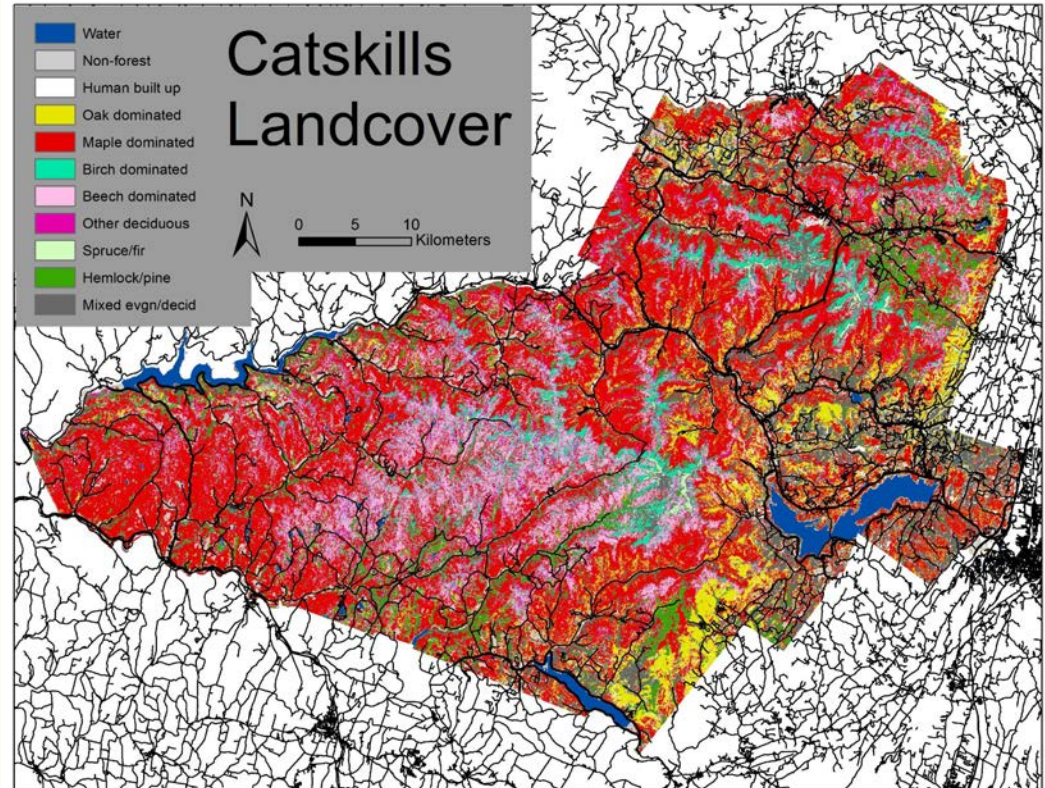
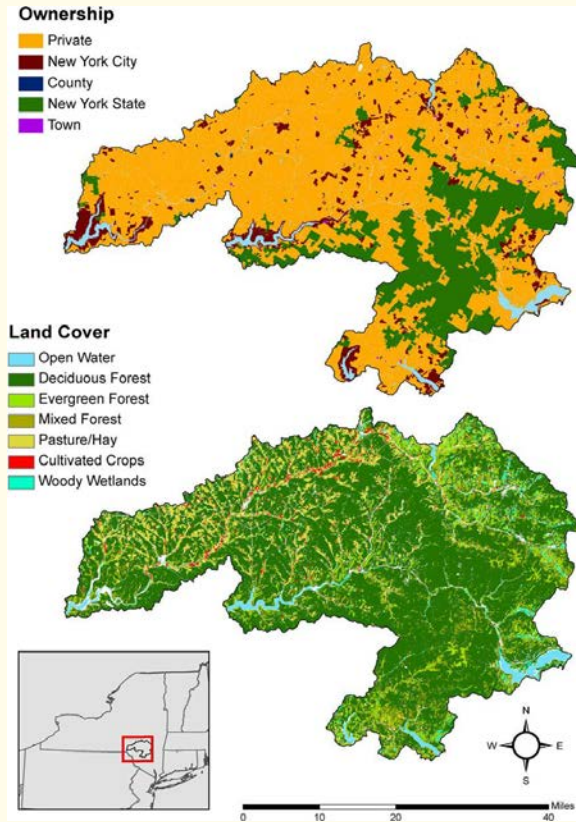


# The Catskill Watershed

Catskill/Delaware Watersheds

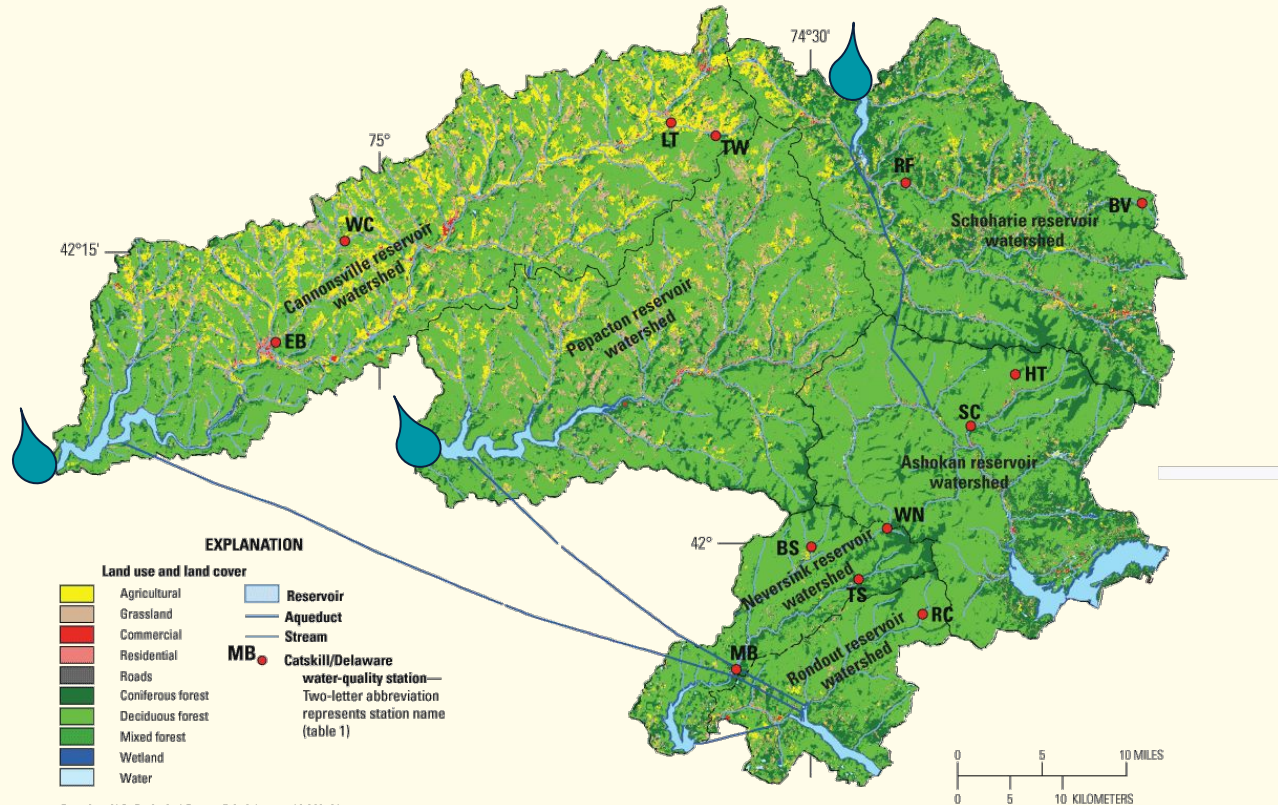


# The Catskill Watershed





# The Catskill Watershed



# The CARE Mission



The goal of the CARE campaign is to analyze human impact on the Catskill watershed to enhance and maintain the cleanliness and health of the watershed and surrounding ecological areas. CARES hopes to mediate flood damages, decrease pollutant levels (i.e., phosphorous) by 40%, and reduce sediment by 30% by the year 2035.

# Policies

## Public Health Act 1905

- Granted land and water rights to city
- water supply act

## New York City Watershed Memorandum of Agreement 1997

- Protect upstate New York watershed environment and economy
- Filtration avoidance determination

## Delaware River Basin Conservation Act 2016

- Addresses conservation needs through voluntary, incentive driven, and collaborative approach.

# Organizations

## New York Department of Environmental Conservation/ Protection



Provides technical expertise and coordination with federal, state, and local governments

## Catskills Watershed Corporation



Locally based non profit organization

## EJ sitting law



Prevents disproportionate pollution burdens on disadvantaged communities



# Problems in the Catskills

## Repeated Flood Damage

- The region experiences frequent flooding due to steep terrain, heavy rainfall, and inadequate flood control infrastructure.



## Sediment Problems

- Increased soil erosion and runoff from agricultural and construction activities can degrade water quality and harm aquatic habitats.



## Excess Phosphorus

- Nutrient pollution from agricultural runoff, septic systems, and stormwater. This can cause harmful algal blooms and disrupting ecosystems.



# Repeated Flood Damage

## Cause

- Flash floods from heavy rainfall and snowmelt
- Runoff worsened by land use changes like deforestation
- Damages infrastructure and disrupts communities
- Long-term erosion and soil loss



## Effect

- **Short term:** Property damage, road closures, stream sedimentation
- **Long term:** Habitat destruction, economic burden, flood vulnerability



## Solution

- Improve stormwater management and floodplain restoration
- Strengthen infrastructure (elevate buildings, reinforce bridges)
- Goal: Reduce flood damage by 50% in 10 years





# Suspended Sediment Concentration

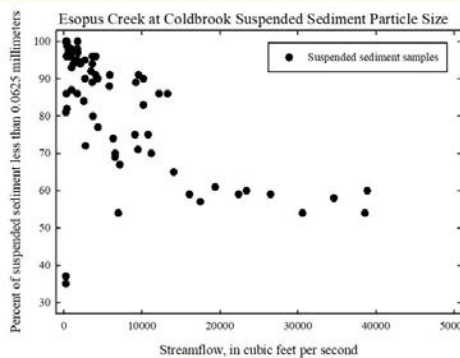
## Cause

- Erosion from agriculture, construction, and land disturbance
- High rainfall increases sediment runoff
- Exposed stream banks and glacial deposits add sediment



## Effect

- **Short term:** Water turbidity harms aquatic plants and animals
- **Long term:** Silt accumulation degrades water quality and disrupts ecosystems



## Solution

- Erosion control measures (sediment basins, riparian buffers)
- Streambank stabilization and vegetation restoration
- Goal: Reduce sediment by 30% in 5 years



# Excess Phosphorus

## Cause

- Agricultural runoff, septic systems, and urban stormwater
- Fertilizers and untreated wastewater release excess phosphorus



## Effect

- **Short term:** Algal blooms, oxygen depletion, fish kills
- **Long term:** Eutrophication, water quality degradation, biodiversity loss



## Solution

- Nutrient management, improved wastewater treatment
- Riparian buffers to filter nutrients
- Goal: Reduce phosphorus by 40% in 5 years





# Milestones

**5/2025**

Start Date

**5/2035**

End Date



Assess if goals have  
been met. Decide if  
more work is needed.

# Conclusion



- **1**  
Catskill Watershed is the primary source of drinking water for over 15 million Americans.
- **2**  
Reduce phosphorus levels by 40% in 5 years.
- **3**  
Decrease sediment concentration by 30% in 5 years.
- **4**  
Reduce flood damage by 50% in 10 years.



# Sources

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- 2) <https://dec.vermont.gov/watershed/wetlands/functions/wetland-functions-and-values-water-storage-flood-water-and-storm#:~:text=As%20flood%20waters%20recede%2C%20the,of%20downstream%20flooding%20and%20erosion.>
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- 7) <https://www.nycwatershed.org/about-us/overview/croton-catskilldelaware-watersheds/>
- 8) <https://www.nyc.gov/site/dep/water/history-of-new-york-citys-drinking-water.page>
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- 10) <https://www.nps.gov/articles/000/the-six-nations-confederacy-during-the-american-revolution.htm>





A scenic landscape photograph showing a large lake nestled between forested mountains. The foreground is filled with trees displaying vibrant autumn foliage in shades of orange, red, and yellow. Large, dark grey rocks are visible in the lower-left corner. The sky is blue with scattered white clouds. The word "Questions?" is written in a large, white, sans-serif font across the center of the image, flanked by two horizontal white lines.

# Questions?