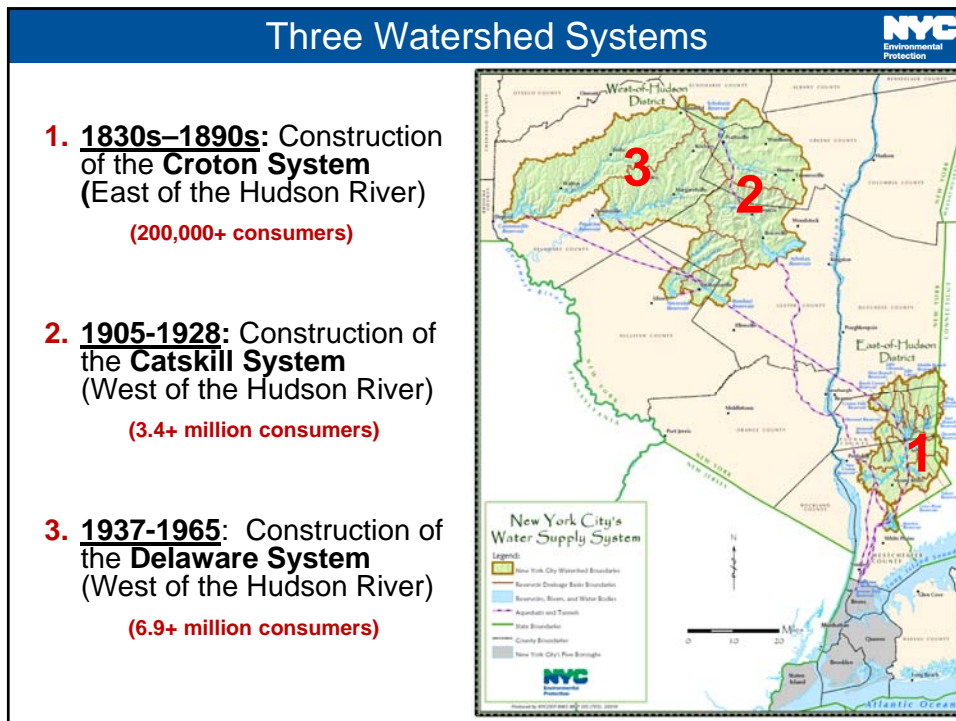
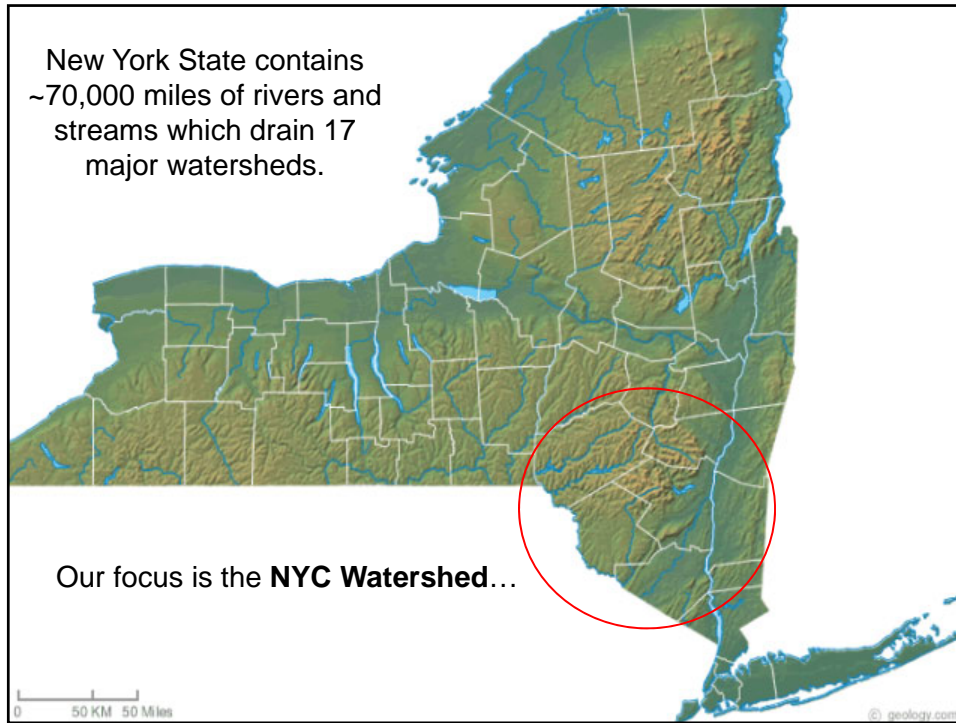





Presentation Outline

- 1. Setting the stage - Background of NYC water
- 2. Watershed forest management planning
- 3. Challenges & adaptive management solutions
 - a. Forest management & compliance
 - b. Emerald ash borer & Indiana bat
 - c. Public perception & education

2




Historical Perspective



Construction of 6 Catskill/Delaware reservoirs (West of Hudson) displaced about 5,500 people and claimed 26 communities.

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The Current Watershed System



- Primarily surface water
- 19 reservoirs + 3 lakes
- 550 billion gallon total reservoir storage capacity
- 9 million consumers (~1/2 New York State population)
- Delivers 1+ billion gallons/day
- 1,971 square mile watershed (~1.2 million acres)
- Spans 8 counties, 60 towns and 12 villages in NY plus a small portion of CT

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Watershed Protection Timeline



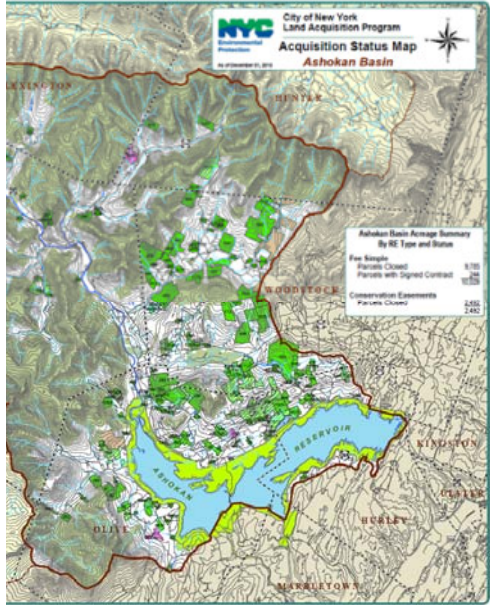
- 1986** – Federal Safe Drinking Water Act
- 1989** – Federal Surface Water Treatment Rule
- 1990** – Proposed Draft NYC Watershed Regulations
- 1992** – Whole Farm Planning Pilot Program (Phase I)
 - ...negotiations with local constituents at the “grass-roots” level...
- 1997** – **NYC Watershed Memorandum of Agreement (MOA)**
 - Filtration Avoidance (5 years)
- 2002** – Filtration Avoidance (5 years)
- 2006** – Long-Term Enhanced Surface Water Treatment Rule
- 2007** – Filtration Avoidance (10 years)
- 2013** – Filtration Avoidance Renewal (pending)

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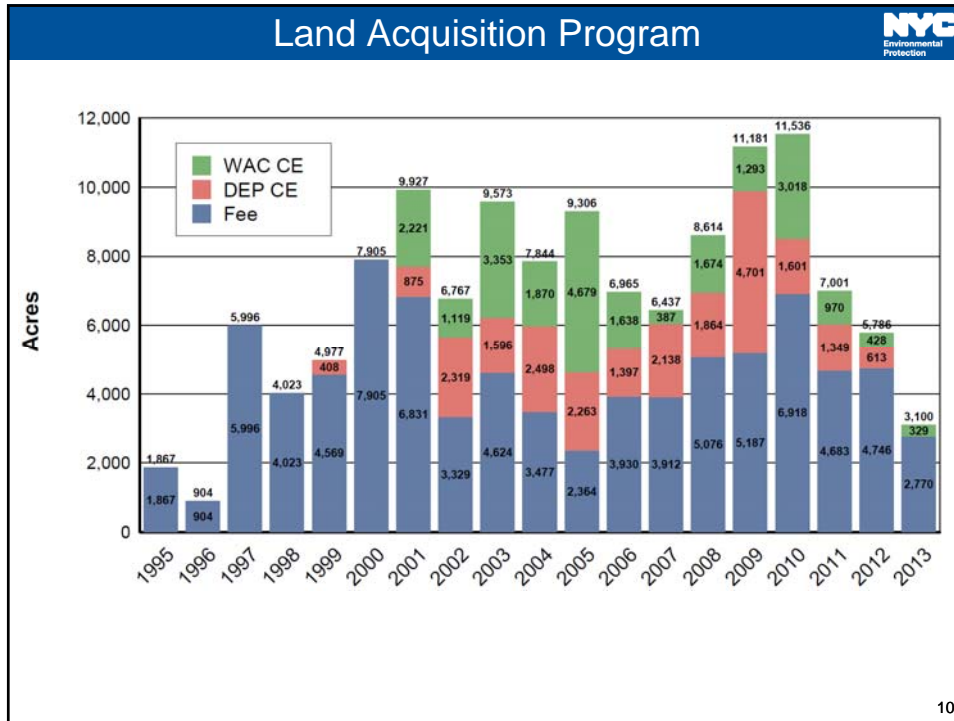
Land Acquisition Program



- Solicitation goals only
- No “eminent domain”
- Voluntary: willing buyer & seller
- 106,327 acres newly-acquired through 2013 (includes DEP conservation easements)
- Above acreage added to existing land holdings of 41,998 buffer acres around 35,963 acres of water supply reservoirs
- Total NYC protected lands = 184,288 acres (14%)



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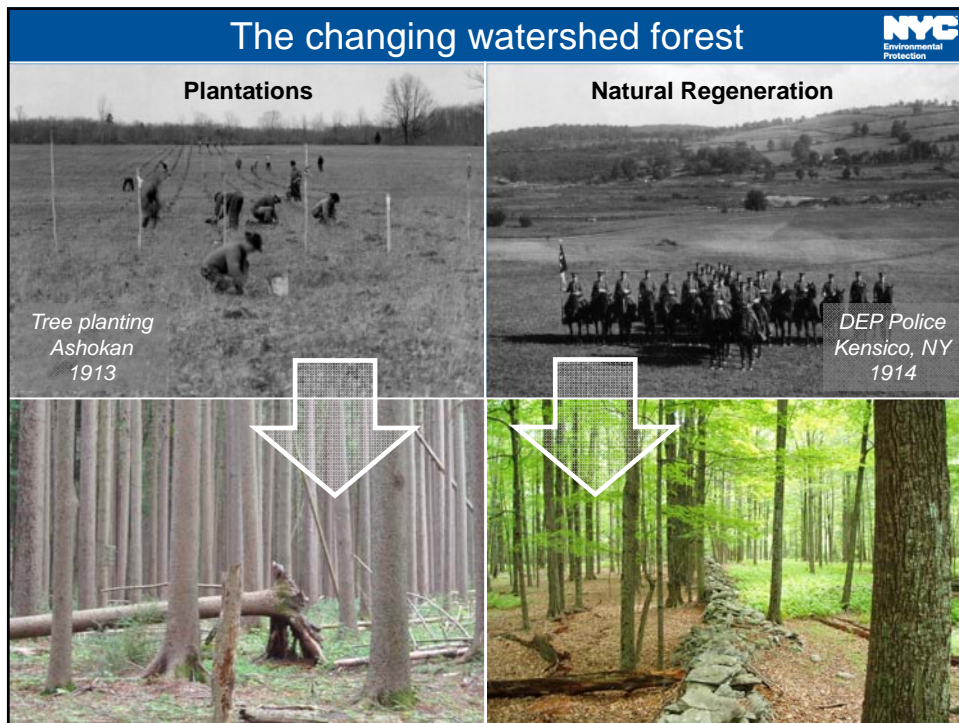
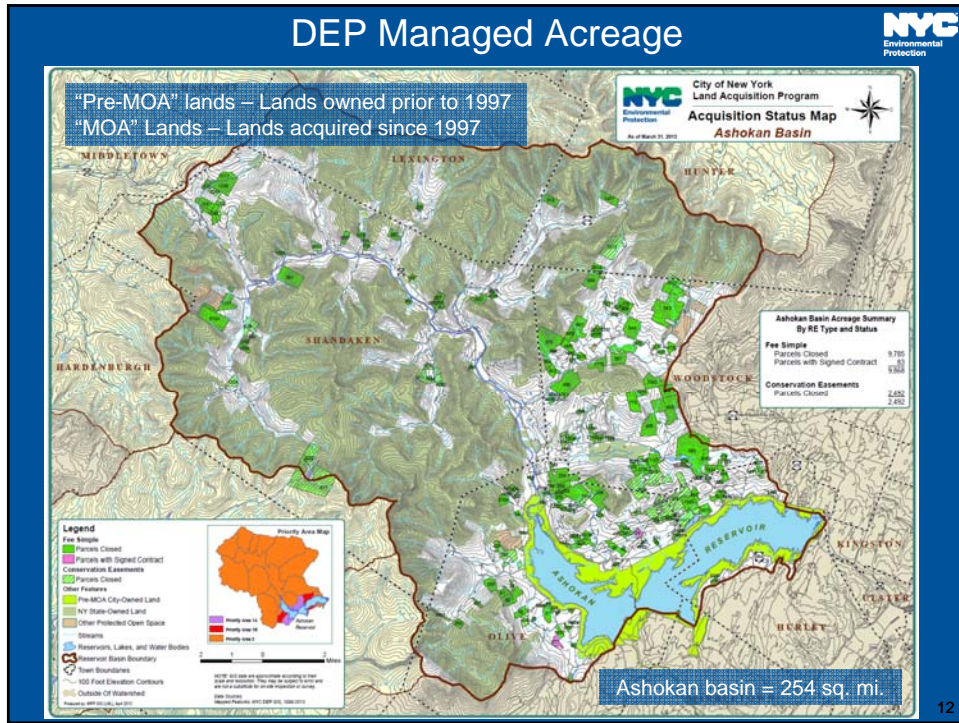
10

DEP Managed Acreage

As of January 1, 2014

ACRES		January 1997		January 2014			↑
Basin	Reservoir	Land	Total	Land	CE	Total	
Ashokan/ Schoharie	9,472	5,872	15,344	34,822	7,397	51,691	5.9X
Neversink/ Rondout	3,657	5,016	8,673	13,244	2,801	19,703	2.6X
Cannonsville /Pepacton	10,497	20,751	31,218	56,616	12,040	79,153	2.7X
East of Hudson	12,336	10,389	22,725	19,738	1,667	33,741	1.9X
TOTALS	35,963	41,998	77,961	124,420	23,905	184,288	3.0X

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Today's Pre-MOA Forest



- Often even aged
- Limited structural diversity
- Declining forest vigor
- Little to no forest regeneration
- Limited understory (basin dependent)
- Invasive plants (basin dependent)

Today's MOA Forest



- Retention of genetically inferior trees
- Lower forest vigor
- Limited structural diversity
- Limited species diversity
- Varying degrees of forest regeneration
- Varying degrees of understory

NYC
Environmental
Protection

Challenge: Forest Management & Compliance

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NYC
Environmental
Protection

Forest Management Plan

TEAMS
New York City Watershed
Forest Management Plan
NYC
Environmental
Protection

**New York City Watershed
Forest Management Plan**
CAT-374



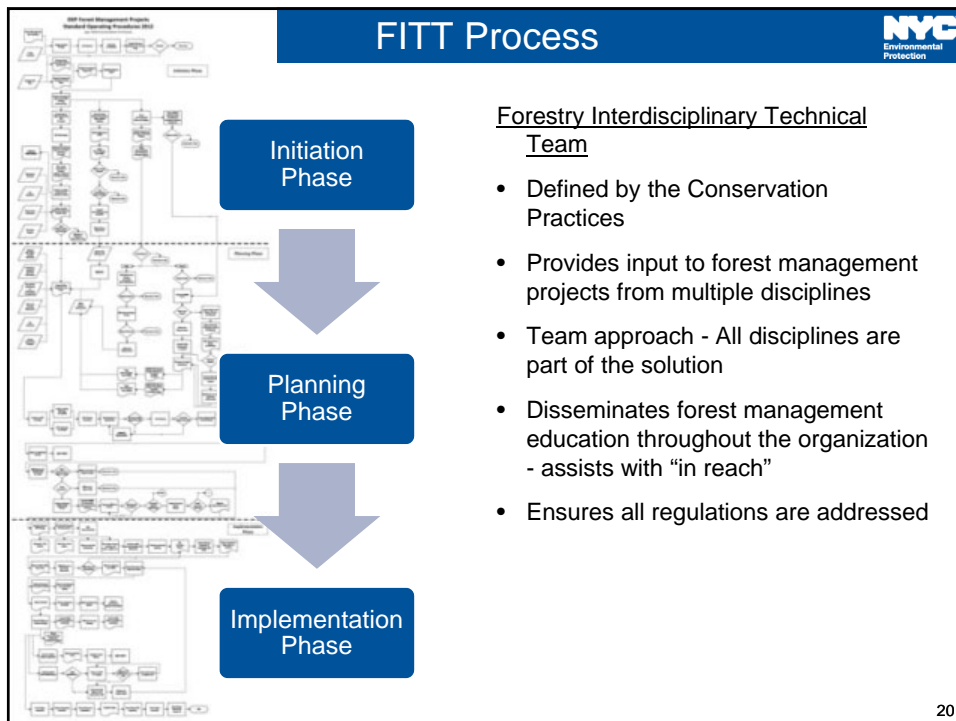
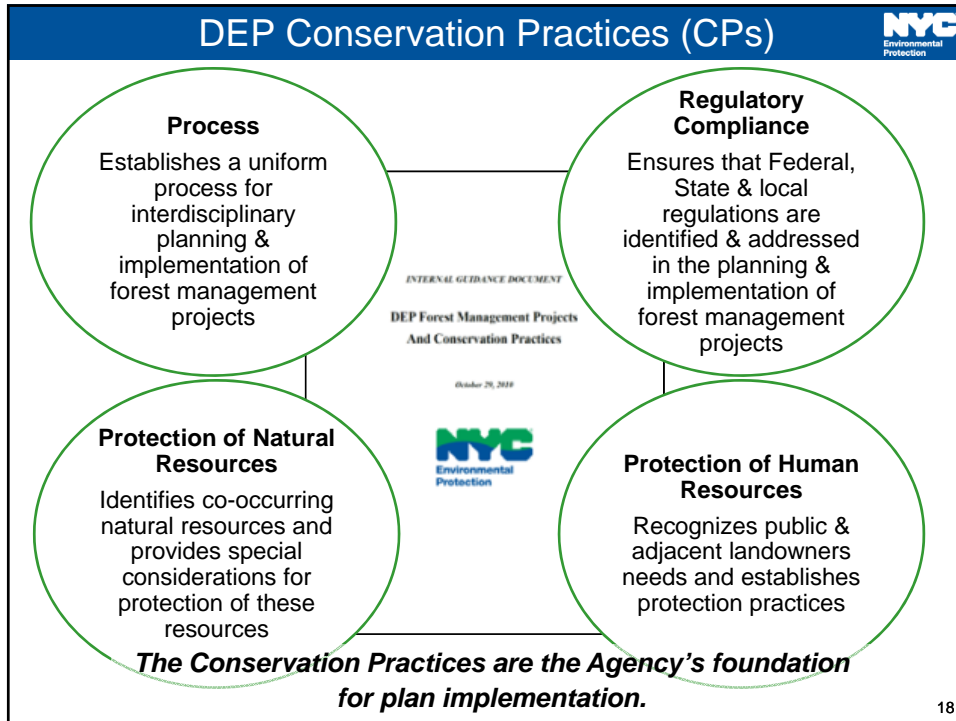
Ashokan Reservoir

Prepared by:
USDA Forest Service TEAMS Enterprise Unit
For:
New York City Department of Environmental Protection
November 10, 2011

***The first comprehensive watershed forest inventory and
management plan for the Agency.***

- Developed in partnership with US Forest Service, TEAMS Enterprise, completed in 2011
- Wall-to-wall forest inventory
- Provides specific forest management direction for the Agency
- Increases transparency to the public (available on webpage)
- Provides compliance with the State Environmental Quality Review Act (SEQRA)

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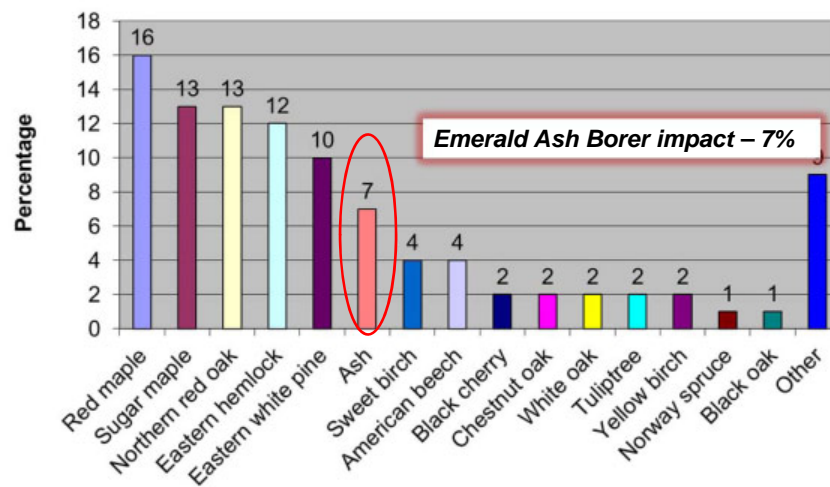
Challenge: Emerald Ash Borer & Indiana Bat

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Distribution of Species

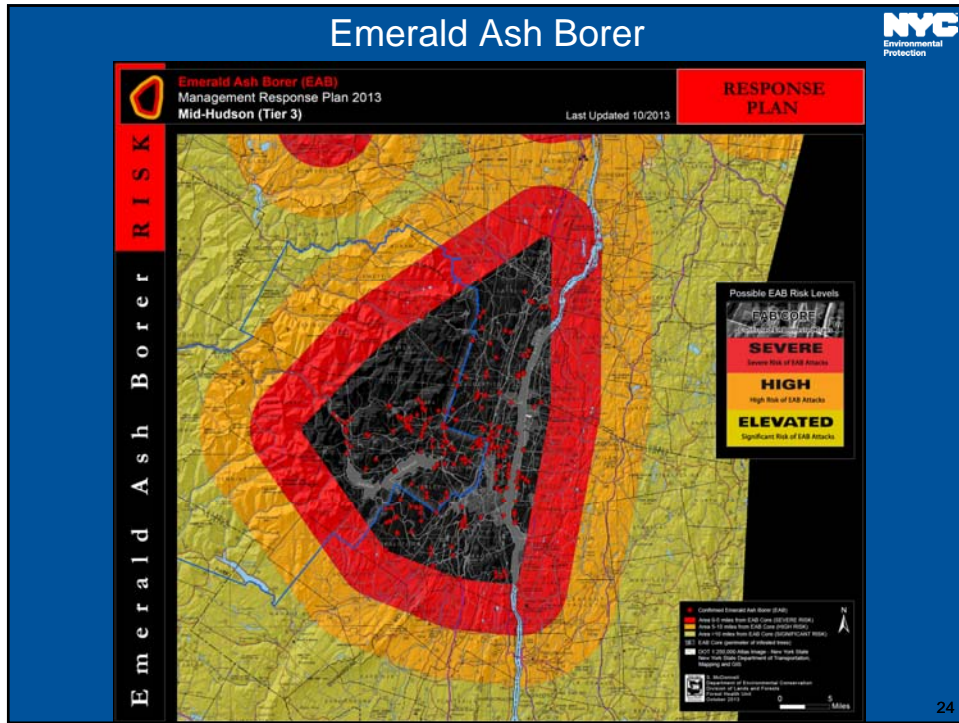


Species by % Basal Area



Forest Inventory 2009-10

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Emerald Ash Borer & Indiana Bat

The EAB issue:

- Loss of ash in ecosystem
- Ash growing in clumps, human disturbed sites, riparian areas
- Creation of hazardous conditions for highways, recreation areas and other forest management activities such as invasive plant control
- Loss of value

Initial management option:

- Slow Ash Mortality (SLAM) – Harvest ash >10" while retailing ash <10" to slow EAB spread
- Complicated by Ibat protection requirements & revised NYS EAB quarantine zone

Combined adaptive management option:


- Currently developing harvesting protocols with USFWS to minimize Ibat impacts
- Implementing acoustical monitoring to assess the presence of bats to, hopefully, expand the harvest window
- Combining ash harvesting & invasive plant control
- Joint roadside ash management program with NYSDOT


The Ibat issue:

- Endangered species under the Endangered Species Act (ESA)
- Most of the watershed is in the range of Ibat
- Decline of bats due to white-nose syndrome (WNS)

Current management option:


- Assume presence
- Harvesting restricted to October-April (no summer harvests)
- All harvests require USFWS review






Challenge: Public Perception & Education

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Public Outreach




NYC DEP Bureau of Water Supply
 Watershed Protection Programs
 Natural Resources Division


Forest Conservation Area Plank Road Forest Management Project



The NYC Department of Environmental Protection (DEP) oversees and coordinates the use and protection of New York City-owned water supply lands. The forest management project in progress here is consistent with the City's Forest Management Plan which is designed to provide a diverse, healthy and vigorous forest producing quality water into the future. The primary objective of this project is to mitigate damage to the invasive exotic pest, the emerald ash borer, reducing potential hazard trees and salvaging timber that is valuable to the local forest product industry in the watershed.



The emerald ash borer (EAB), a native pest of eastern Asia, became established in the Midwest U.S. in 1996 and was first found near Detroit in 2002. Since then it has killed tens of millions ash trees and caused billions of dollars of damage in the territory. EAB appears to have been first introduced in Oneida County near Plattsburgh, NY in 2002 and was confirmed present on this site, adjacent to James Cook, in September of 2012. Ash trees become severely infested and usually are lost to damage from the pest within three years from the initial infestation. As a result, DEP has planned this forest management project as part of a strategy to help mitigate the impact of this pest in the reserve area.



This forest management project is being completed by professional timber harvesters employed by J&J Log and Lumber Corporation. J&J specializes in high value American hardwoods and operates two local sawmills (including the largest in the Hudson Valley and employs over 200 people). They also own Home Country Furniture in Dover Plains which locally produces and retails high quality hardwood furniture.

The volume of timber salvaged in this project could be enough to build nearly 30 houses and provide a dozen jobs. The forest products produced from trees harvested on this project will include fine veneers and lumber for cabinetry, furniture, flooring, beautiful bats and tool handles. Lower grade logs will also be milled for structural building products, fencing, pallets, ties and firewood.

Providing sustainably produced wood products to local forest based businesses and workers is critical for maintenance of high quality water. Forest management on City lands demonstrates sustainable forest management principles while encouraging forest industry infrastructure and helping to preserve long term forest land use in the region.

DEP's forestry staff carefully supervises all work on this project. Should you have any questions about this project or any aspect of our ongoing forest management program, contact the Watershed Forester, Todd Swanson at 845-386-7594 or twatson@dep.state.ny.us

- Roadside educational signs installed near log landings
- Harvest specific information
- Educates the public on the forest condition and what is trying to be achieved through the harvest
- Provides contact information to address other questions & concerns
- Also scaled to letter size as a handout to town chief elected officials & the public – provides consistent message
- Information is the basis for press releases

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Public Outreach - Signage



Recreation area sign

- Educates the public of where and what form of recreation is permitted





Forest Management Project area sign

- Educates the public of where recreation is not permitted for public safety
- Also educates the public about active forest management
- Provides contact information to address questions & concerns
- Installed around perimeter of harvest area

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Public Outreach – Press Releases





- Education of the public & forest industry of forest management activities on City lands
- Information is the based on educational signage info. (reduces impact on forester)
- Harvest specific information, often including logger information
- Educates the public on the forest condition and what is trying to be achieved through the harvest
- Reaches the public who rely on news print
- Provides additional means of “in-reach” to Agency senior management & staff

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Public Outreach - Webpage





- Source for information on DEP’s forest management program
- Source for DEP’s *Watershed Forest Management Plan*

<http://www.nyc.gov/dep>
 or Google “NYC DEP forest management”

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Public Outreach - Webpage

Watershed Recreation

Even Lake One House, Photo by Jennifer Chaseman

Although the majority of land in the watershed is privately owned by local residents, New York City is also a watershed landowner with responsibilities for managing nearly 34,000 acres of reservoir and approximately 190,000 acres of water supply lands. Although DEP's primary management goal is watershed protection, a significant portion of City-owned lands is open to the public for a variety of recreational uses and other opportunities.

Attention Hunters and Hikers and Outdoor Enthusiasts

Portions of the following DEP recreational units will be temporarily closed to public access as necessary for completion of forest management projects. The remaining lands outside the project areas in these recreational units will remain open to the recreational uses posted on the property signage with a DEP Access Permit and New York State Sporting License where needed. Under no circumstances should you enter these areas or come within 300 feet of active work.

- Ashokan North Recreational Unit, Town of Olive, Ulster County.**
 Easternmost portions (approximately 200 acres) adjacent to Jones and Burns Creeks and east of Ashokan Reservoir are subject to closure upon the start of the forest project (expected - November 1). The current project will be salvaging ash trees subject to imminent loss from emerald ash borer; an invasive exotic pest which has been found on site. Work is expected to be completed by March 31.
 Ashokan North
- Acres 800 Recreational Unit, Town of Olive, Ulster County.** Approximately 80 acres of land including most of the eastern half of the property located

DEP Recreation Webpage

- Provides recreationalists information on forest management activities
- Allows them to plan where they recreate
- Provides rec unit maps with harvest locations
- Reduces surprises!







Photo by John Staby
Ashokan Reservoir

Fred Gliesing
Senior Forester/ Forestry Coordinator
NYC Department of Environmental Protection
Bureau of Water Supply – Natural Resources
71 Smith Avenue
Kingston, NY 12401

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845/340-7863

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