

Riparian Protection and Restoration: Policy Tools



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New York State
Water
Resources
Institute



NYS Department of Environmental Conservation

State of the Hudson Watershed Conf.
September 30th, 2009



Overview

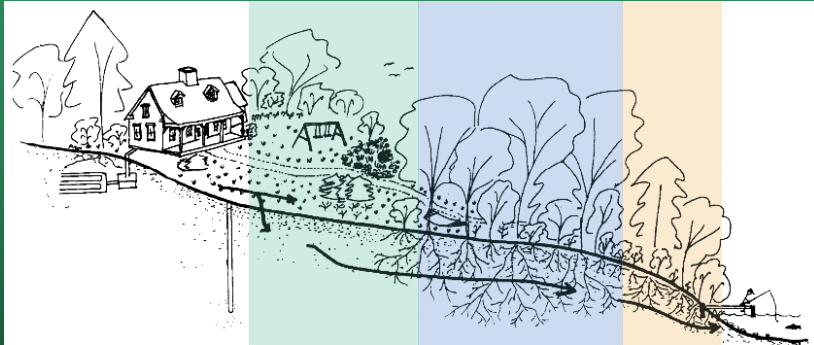
- Role of riparian buffers
- Why buffers need to be protected and restored
- What's actually protected
- Available protection options
- Who's doing what
- Available restoration options
- Resources/handout



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What is a Streamside, or riparian, Buffer?

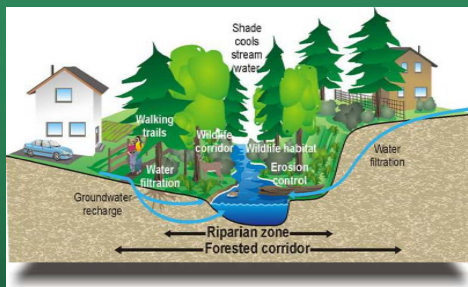


- An area of trees, usually accompanied by shrubs and other vegetation, that is adjacent to a body of water and which is managed to maintain the integrity of stream channels and shorelines, to reduce the impact of upland sources of pollution by trapping, filtering and converting sediments, nutrients, and other chemicals, and to supply food, cover, and thermal protection to fish and other wildlife.
- A vegetated protective area between a waterbody and human activity.

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Ecological Benefits of Riparian Buffers



- Reduces pollution entering waterways & improves water quality
 - Slows down & filters runoff
 - Extends retention times
- Provides wildlife habitat
 - Shoreline transition zone
 - Wildlife travel corridors
 - Increases biodiversity
 - Reduces water temperatures
 - Food source

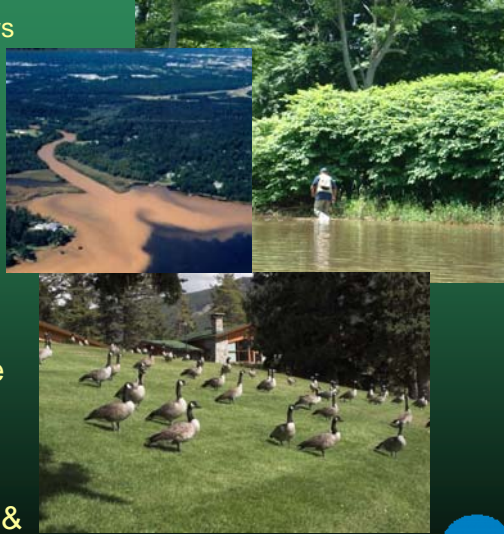


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Economic Benefits of Riparian Buffers

- Reduces flooding
 - Absorbs high velocity flows
- Reduces erosion
 - Roots stabilize shoreline
 - Trees & shrubs dissipate waves
- Privacy screen
- Scenic beauty
- Outdoor recreation & tourism opportunities
- Increased property value
 - Mature trees increase property value by up 20%
- Goose deterrent
- Improved fishing habitat & access

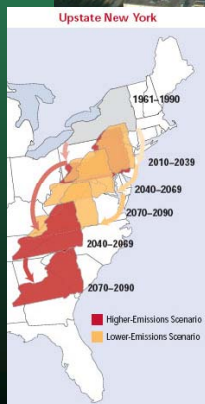
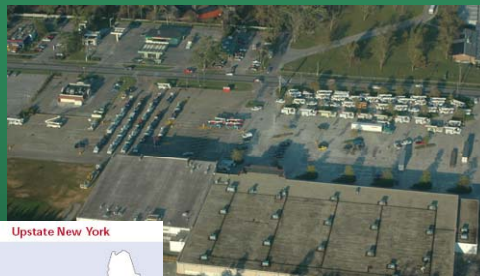


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Threats to Riparian Buffers

- Development
- Suburban attitudes
- Infrastructure maint.
- Invasive Species
- Climate Change



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So What's Actually Regulated

- NYSDEC Protection of Waters Program: Article 15

- Classification of Waters
 - AA or A (source of drinking water)
 - B (swimming/contact recreation)
 - C (fish propagation/non-contact activities)
 - D (fishing)
 - (T) trout population & (TS) trout spawning
- "Protected Streams" are C(T) or higher
 - Protection of Waters Permit
 - Disturbance of bed or banks of a stream



Source: Amy Flavin, NYC DEP Natural Resources

- Wild, Scenic and Recreational Rivers

- Wild (no structures within river segment)
- Scenic (250' buffer)
- Recreational (100' buffer)



- NY SEQR Act

- Not intended for economics

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Floodplain Programs - FEMA

- National Flood Insurance Program
 - Communities adopt & enforce floodplain ordinances to participate
- State Emergency Management Office
 - Pre Disaster Mitigation Program
 - Post Disaster Hazard Mitigation Grant Program
 - Flood Mitigation Assistance Program
 - 2 additional buyout programs for repetitively damaged structures
 - Generally 25% match
 - FEMA approved Hazard Mitigation Plan



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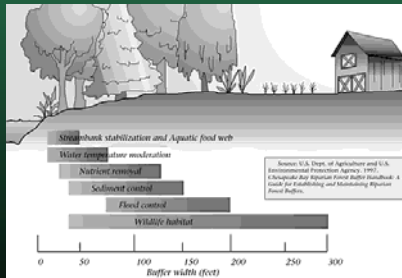
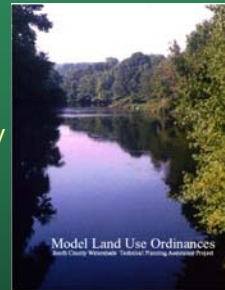


Protection at the Local Level cont.

- Implementation & Evaluation



- Zoning Overlay
- Ordinances
 - Permitted uses
 - Lot size & density
 - Setbacks
 - Clustering
 - Buffer widths
 - Subdivision reg's



- Sample buffer ordinances
 - Long Island Sound Study
 - Lewisboro, NY (150 ft. buffer)
 - EPA – Aquatic Buffers
 - Pace Land Use Law Center
 - Gaining Ground Database

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Going through the Ordinance Process

- Proposing a “Watercourse” Ordinance
- Develop a public information campaign
 - Benefits
 - Water quality
 - Reduced flooding
 - Ground water protection (wells)
 - Wildlife habitat
 - Provide specific local examples
 - Restrictions of the ordinance
 - Procedure for seeking variances
 - What can realistically be enforced
 - Town & Town Board support
- Wetlands vs. Riparian Buffers
 - The Wetland loophole (<12.4 acres)
- Ordinance committee
 - Attorney
 - Town Board liaison



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Going through the Ordinance Process

Economic Value of Charles River Basin wetlands, Massachusetts, US

Economic Benefit	Economic Value per year (converted to 2003 US\$)
Flood damage prevention	39,986,788
Amenity value of living close to the wetland	216,463
Pollution reduction	24,634,150
Recreational value: Small game hunting, waterfowl hunting	23,771,954
Recreational value: Trout fishing, Warm water fishing	6,877,696
TOTAL	95,487,051

Source: Living Waters; www.panda.org



- What's the key message to get across
 - What's the impact of not passing the ordinance
 - How much have we lost already
 - What are the costs of losing our buffers
 - Economic & ecological
 - Who deals with the problem when the developers leave

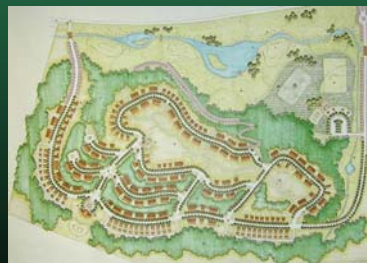
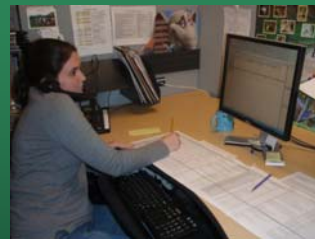


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Who's Doing What: Biodiversity Outreach Matrix

- Biodiversity Program - Hudson River Estuary Program
 - Plans, policies, and procedures used by towns to conserve natural areas and biodiversity
 - Wetland and/or stream ordinances
 - Estuary Program involvement



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Biodiversity Outreach Matrix cont.

- 251 Hudson River Estuary Watershed municipalities
 - 113 surveyed to date
 - Percentage of surveyed with:
 - 5% Wetland Ordinance
 - 7% Stream Ordinance (75% in Albany Co.)
 - 12% Wetland/stream Ordinance (77% in Dutchess Co.)

Community	Open Space Plan	Natural Resource Inventory	Dedicated Open Space Funds	Wetland Ordinance	Stream Ordinance	Wetland/Stream Ordinance
Town of Berne	No?	Yes (Hudson)	No?	No (76)	No	No
Town of Bethlehem	Yes 2008	No	No	No (76)	Yes (2007)	No
Town of Coeymans	Open space	Yes "Open space"	No	No (76)	No	No
Town of Colonie	No	Working on it	No	No	Yes (All water)	No
Town of Green Island	No	No	No	No	No	No
Town of Guilderland	Yes (2005)	No (mentioned)	No	Yes (old)	Yes (include)	No
Town of Knox	No	No	No	No	No	No
Town of New Scotland	No	No (mentioned)	No	No	No	No
Town of Rensselaer	No	No	No	Yes (2007)	Yes (2007)	No
Town of Westerlo	Drafting	No	No	No	Yes (for two)	No
Village of Altamont	No	No	No	No	No	No
Village of Colonie	No	No	No	No (76)	Yes (1995)	No
Village of Green Island	No	No	No	No	No	No

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State Ordinances

- Ordinances
 - PA Buffers 100: *Beside Every Good Stream is a Good Forest*
 - Campaign for ordinances to mandate 100 ft buffer on all streams
 - 150 ft. on headwater streams
 - 300 ft. on best quality streams
 - 150 ft. on impaired waters or implement best mgt. practices
 - New Jersey
 - 300 ft. buffers on C1 streams & tribs to C1 streams (6,000+ total stream miles protected)
 - Massachusetts
 - Rivers Protection Act
 - 200 ft. rural buffer & 25 ft. urban buffer



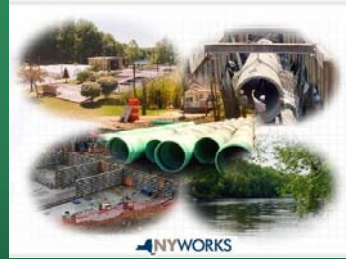
Pennsylvania Campaign for Clean Water

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Easements & Land Acquisition

- Land Trusts & Conservation Easements
 - Land Trust Alliance
 - NY Land Trust Service Center
 - NYS Conservation Partnership Program
 - Grant program
 - NYS Conservation Easement Tax Credit
 - The Vermont River Conservancy
 - Pennsylvania Land Trust Assoc.
 - Riparian Forest Buffer Protection Agreement & Commentary
- NYS Env. Facilities Corp
 - Clean Water State Revolving Fund (CWSRF)

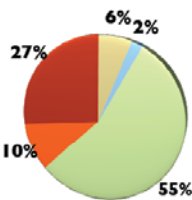


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State Easement & Acquisition Programs

Percentage of CWMTF Dollars Awarded by Project Type

- Acquisitions
- Wastewater
- Planning
- Restoration
- Stormwater



- North Carolina Clean Water Management Trust Fund
 - Direct appropriation from General Assembly & Scenic River plates
 - Grants to local gov't, state agencies and conserv, non-profits
 - Enhance or restore degraded waters
 - Protect unpolluted waters
 - Contribute toward a network of riparian buffers and greenways

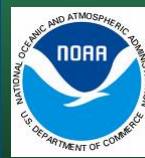


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How Can You Restore Riparian Buffers?

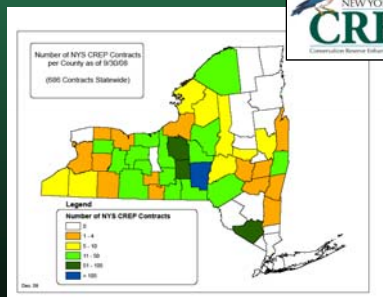
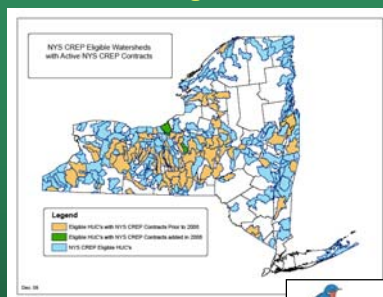
- Funding Opportunities
 - Env. Protection Agency
 - USDA FS Northeastern Area
 - NFWF
 - NOAA
 - NRCS WHIP
 - NYS DOS – Div. of Coastal Resources
 - Fish America Foundation
 - Trout Unlimited
 - Estuary Program
- Local Restoration Programs
 - USDA (CREP & CCRP)
 - NYC DEP Catskill Streams Buffer Initiative
 - Estuary Program's "Trees for Tribs" Initiative



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Agriculture Buffer Programs



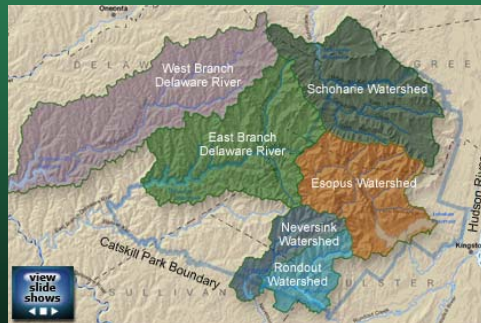
- USDA-Farm Service Agency
 - CREP-Conservation Reserve Enhancement Program (selected watersheds)
 - CCRP-Continuous Conservation Reserve Program (all watersheds)
 - 35 ft. buffers for pastures
 - Includes BMPs
 - 55 ft. buffers for crop land
 - 10-15 year contracts
 - Signing Incentive Payment (\$100-\$150 per acre)
 - Practice Incentive Payment (40%)
 - Annual Incentive Payments
 - Annual Rental Payment
 - Cost-Share Assistance (50%)
 - Annual Maint. Payment

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NYC DEP Catskill Streams Buffer Initiative

- Provide technical assistance to streamside landowners in WoH watershed
 - NYC DEP CSBI Manager
 - 4 county/basin CSBI Coordinators
- Process
 - Town adoption of stream management plan where applicable
 - Identify priority sites/ landowner interest
 - Site visit/management goals
 - Property Management Plan
 - BMPs
 - Funding mechanisms
 - Implement BMPs
 - Monitor and maintain BMPs



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“Trees for Tribs”

Replanting the Streams of the Hudson Valley



- Riparian buffer restoration, re-planting & outreach effort
- Hudson River Estuary Watershed
- Spring and Fall plantings
- Site analysis and evaluation
- Technical assistance
 - Planting plan & plant selection
 - Pre-digging planting holes
- Free native trees and shrubs
 - Tree tubes and weed mats
 - Bio-engineering & erosion control
- Upon selection begin volunteer recruitment
- Yearly plant monitoring & periodic maint.

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Trees for Tribs Accomplishments

- 2007
 - 27 partners, 24 project sites
 - 4,750 native plants
 - 9,000 ft. of stream length
 - 200+ volunteers
- 2008
 - 41 partners, 59 project sites
 - 7,250 native plants
 - 23,000 ft.
 - 700 volunteers
- Spring 2009
 - 36 partners, 28 project sites
 - 4,400 native plants
 - 12,000 ft.
 - 350+ volunteers
- Grants received
 - \$32,000 USFS NE Area S&PF Grant

The screenshot shows a photo gallery on recordonline.com with the title 'Pine Bush'. Below it is a news article from Times Herald-Record titled 'Dirks: DEC tree-planting program is superb', dated April 28, 2009. The article text includes: 'There is conservation work being done every day on our behalf and for the benefit of future generations. Much of that conservation work goes on without much recognition, even among those who enjoy outdoor sports. Each year, handfults of pe benefit of the many.'

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What's in Store for the Future?

TREES FOR TRIBS
"Replanting the Streams of the Hudson Valley"
 In partnership with local volunteers, NYSDEC's Hudson River Estuary Program is planting trees to conserve the shoreline of tributary streams. These trees will protect water quality, fish and wildlife, and will also reduce erosion and flooding.

For more information about "Trees for Tribs" please contact the Hudson River Estuary Program at 914-255-3090 or visit the website: www.dec.ny.gov/hudson/43888.htm

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- Riparian Buffer Protection Outreach
- More "fine-scale" buffer mapping
- Cornell Projects – Roadside Ditch Mgmt.
- "Trees for Tribs" buffer signs
- Buffer brochure
- Buffer native plant list
- Native seed collection & propagation
- Increased "Trees for Tribs" monitoring

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Acknowledgements

- CCE of Dutchess Co.
- Wappinger Creek Intermunicipal Council
- Town of Clinton CAC
- Hudson River Watershed Alliance
- Albany Co. Dept. of Economic Development, Conservation & Planning
- Walkkill River Task Force
- Orange County Land Trust
- Orange County SWCD
- Scenic Hudson
- Hillsdale Town Board
- Town of Cortlandt
- Boy Scouts of America
- Town of Rochester ECC
- Mahopac HS
- Moodna Creek Watershed Coalition
- Sharpe Reservation
- Trout Unlimited
 - Columbia-Green Chapter
 - Mid-Hudson Chapter
- Saw Mill River Coalition
- Sawkill Watershed Alliance
- Town of Poughkeepsie
- Saw Mill River Coalition
- Open Space Institute
- NYS OPRHP – PIPC
- NYS DEC Saratoga Tree Nursery
- US Forest Service NE Area
- NRCS Big Flats Plant Material Center

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Questions?



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