Forestry BMP Intro
Verification Panel
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Forest Water Functions

- Deep rooting develops macropores for rapid infiltration

- Forest floor/ litter layer acts as sponge and supports insects/microbial community

- Canopy intercepts water and atmospheric pollutants

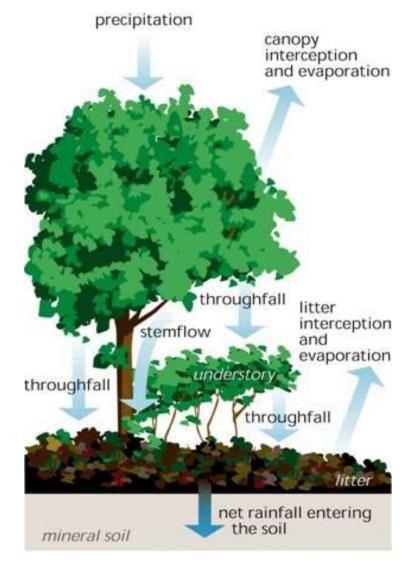- Evapotranspiration uses water and creates more soil storage capacity

precipitation

canopy interception and evaporation

throughfall

stemflow

litter interception and evaporation

understory

throughfall

throughfall

throughfall

litter

net rainfall entering the soil

mineral soil

Fig. 2.3 -- Typical pathways for forest rainfall. A portion of precipitation never reaches the ground because it is intercepted by vegetation and other surfaces.
In Stream Corridor Restoration: Principles, Processes, and Practices (10/98).
Interagency Stream Restoration Working Group (15 federal agencies)(FISRWG).

Why Urban Tree Planting?

- *Urban tree planting* is planting trees in an urban or residential environment. The intent of the planting is to have a living tree in that site or nearby in perpetuity and to expand the tree canopy.
  - Planting 100 trees is equivalent to one acre of "pervious urban" to forest.
- Nutrient credit is for the difference between urban and forest land use
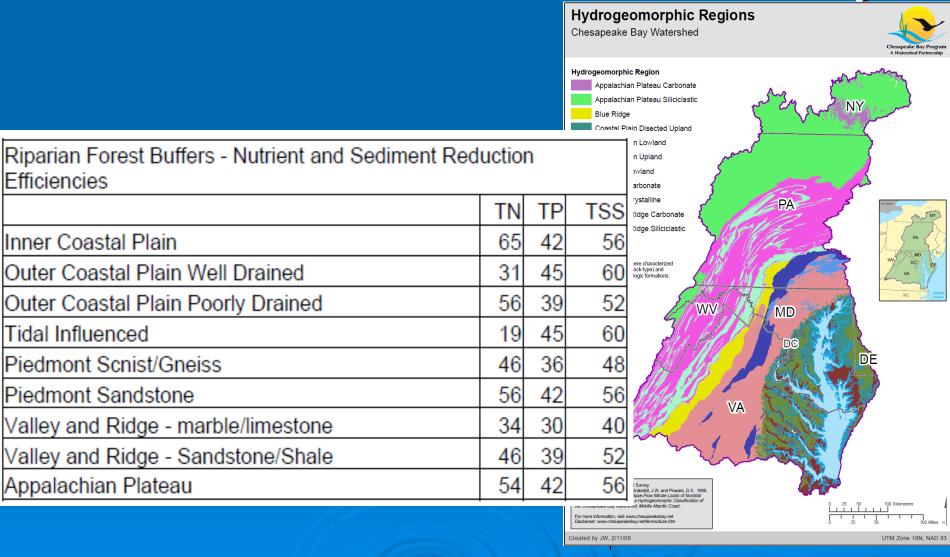
Table 7. Tree Planting and Reforestation Pollutant Load Reduction Efficiencies

Conversion from	TN (lbs/acre/yr)	TP (lbs/acre/yr)	TSS (tons/acre/yr)
Urban Pervious	9.43	0.57	0.07
Forest	3.16	0.13	0.03
Efficiency	66%	77%	57%
Conversion from	TN (lbs/acre/yr)	TP (lbs/acre/yr)	TSS (tons/acre/yr)
Urban Impervious	10.85	2.04	0.44
Forest	3.16	0.13	0.03
Efficiency	71%	94%	93%

(Adapted from CBP Model, Version 5.3.0, 2011)

From MDE draft Guidance on Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated 6/2011

Forest Buffer Treatment Efficiency

Riparian Forest Buffers - Nutrient and Sediment Reduction Efficiencies

	TN	TP	TSS
Inner Coastal Plain	65	42	56
Outer Coastal Plain Well Drained	31	45	60
Outer Coastal Plain Poorly Drained	56	39	52
Tidal Influenced	19	45	60
Piedmont Scnist/Gneiss	46	36	48
Piedmont Sandstone	56	42	56
Valley and Ridge - marble/limestone	34	30	40
Valley and Ridge - Sandstone/Shale	46	39	52
Appalachian Plateau	54	42	56

Hydrogeomorphic Regions
Chesapeake Bay Watershed

Chesapeake Bay Program
A Watershed Partnership

Hydrogeomorphic Region
- Appalachian Plateau Carbonate
- Appalachian Plateau Siliciclastic
- Blue Ridge
- Coastal Plain Disected Upland
- ...n Lowland
- ...n Upland
- ...owland
- ...arbonate
- ...rystalline
- ...Ridge Carbonate
- ...Ridge Siliciclastic

...ere characterized
...ock type) and
...logic formations.

...l Survey.
...rakebill, J.W. and Powars, D.S. 1998.
...Base-Flow Nitrate Loads of Nontidal
...a Hydrogeomorphic Classification of
...the Chesapeake Bay Watershed, Middle Atlantic Coast.

For more information, visit www.chesapeakebay.net
Disclaimer: www.chesapeakebay.net/termsofuse.htm

Created by JW, 2/11/08

UTM Zone 18N, NAD 83

Riparian Forest Buffers in the CB Model

- ➢ 35-foot minimum width, 2+ tree species
- ➢ Two kinds of credits applied
    1. Land use change on the acre planted
    2. Treatment efficiency credits for adjacent upland areas
        - 4 adjacent acres for N
        - 2 acres for P and sediment
- ➢ Land use assigned based on % of uses in the watershed segment

Forest Harvest BMP's

➢ Each year, 1% of forests are harvested

➢ Significant pollution input from "disturbed forest"

➢ Forest Harvest BMP's = undisturbed forest

➢ but, harvested acres and BMP's not well tracked

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i-Tree Canopy

i-Tree

Tools for Assessing and Managing
Community Forests

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Applications

i-Tree Eco

i-Tree Streets

i-Tree Hydro (beta)

i-Tree Vue

i-Tree Design

i-Tree Canopy

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i-Tree Ca

Get started in three easy steps!

One   📁 Load ESRI Shapefile   ?

Two   Configure the Cover Classes

Three   Begin i-Tree Canopy Survey

Id	Cover Class