The 100-foot Buffer & Other Habitat Protection Areas

Becoming Bay Smart
February 25, 2012

Overview

- The Critical Area 100-foot Buffer
  - What is the Buffer and Why is it so Important
  - Where is the Buffer?
  - Expansion
  - Planting Requirements
  - Buffer Management Plans
- Other Habitat Protection Areas
  - Protection of Species Diversity & Continuity of Habitat

Buffers 101

- The Critical Area Buffer is the strip of land immediately adjacent to tidal waters, tidal wetlands or tributary streams
- This area links land and water on any given site and links landscapes together within a watershed

Buffers 101

- Last line of defense
- Protecting water from pollution generated by land use
- Conserving wildlife and fish habitat

Buffers 101

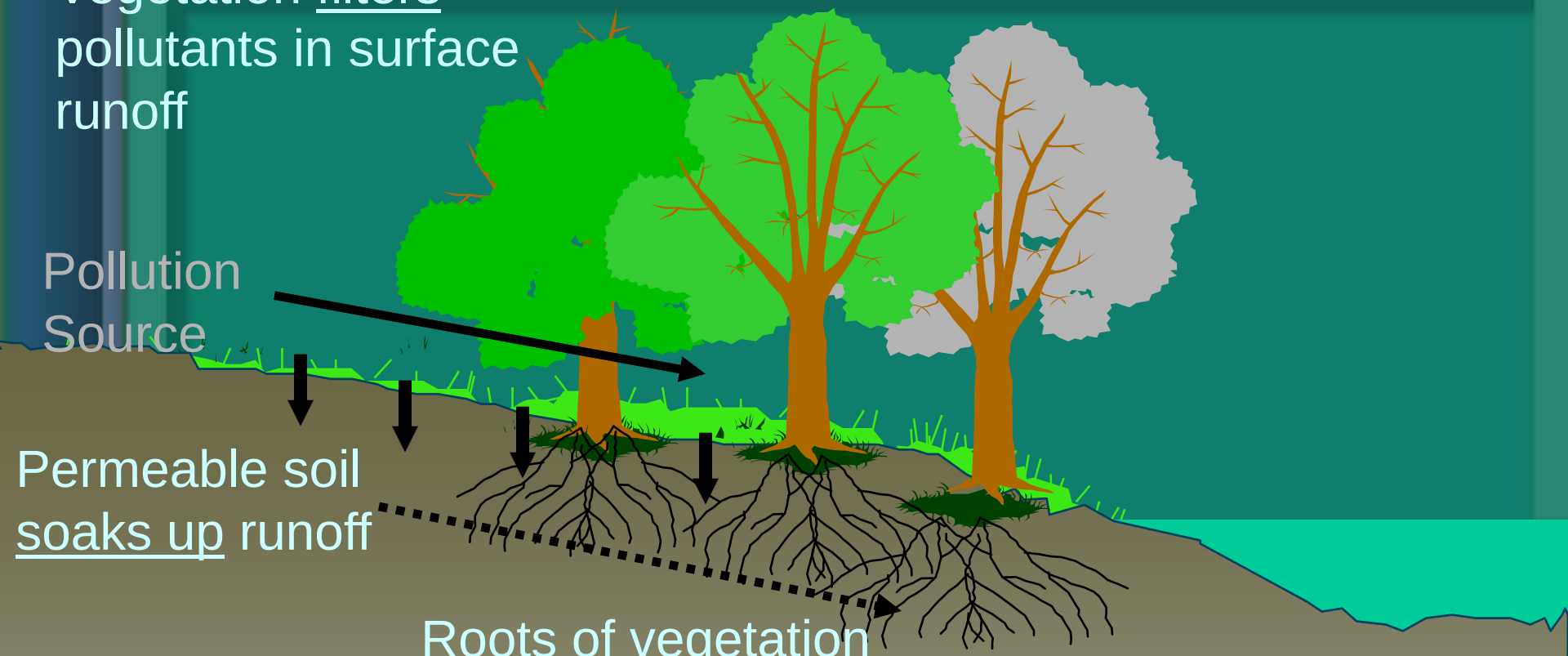
- Changes on land bring on changes in the water
- Affecting:
  - Water supply
  - Fish Habitat
  - Wildlife Habitat
  - Water Quality

Buffers 101

- The Buffer is the last opportunity to:
  - Trap sediment from surface runoff
  - Trap and remove nutrients such as Phosphorus and Nitrogen from surface and groundwater runoff
  - Contribute leaves and woody material to streams and rivers
  - Store flood waters
  - Reduce shoreline erosion

Photo Credit: Ben Longstaff, ian.umces.edu/imagelibrary/

How Do Buffers Protect Water Quality?



Riparian Buffer = Filter + Sponge

Critical Area Buffer

- The first 100-feet landward of tidal waters, tidal wetlands or tributary streams

Critical Area Buffer

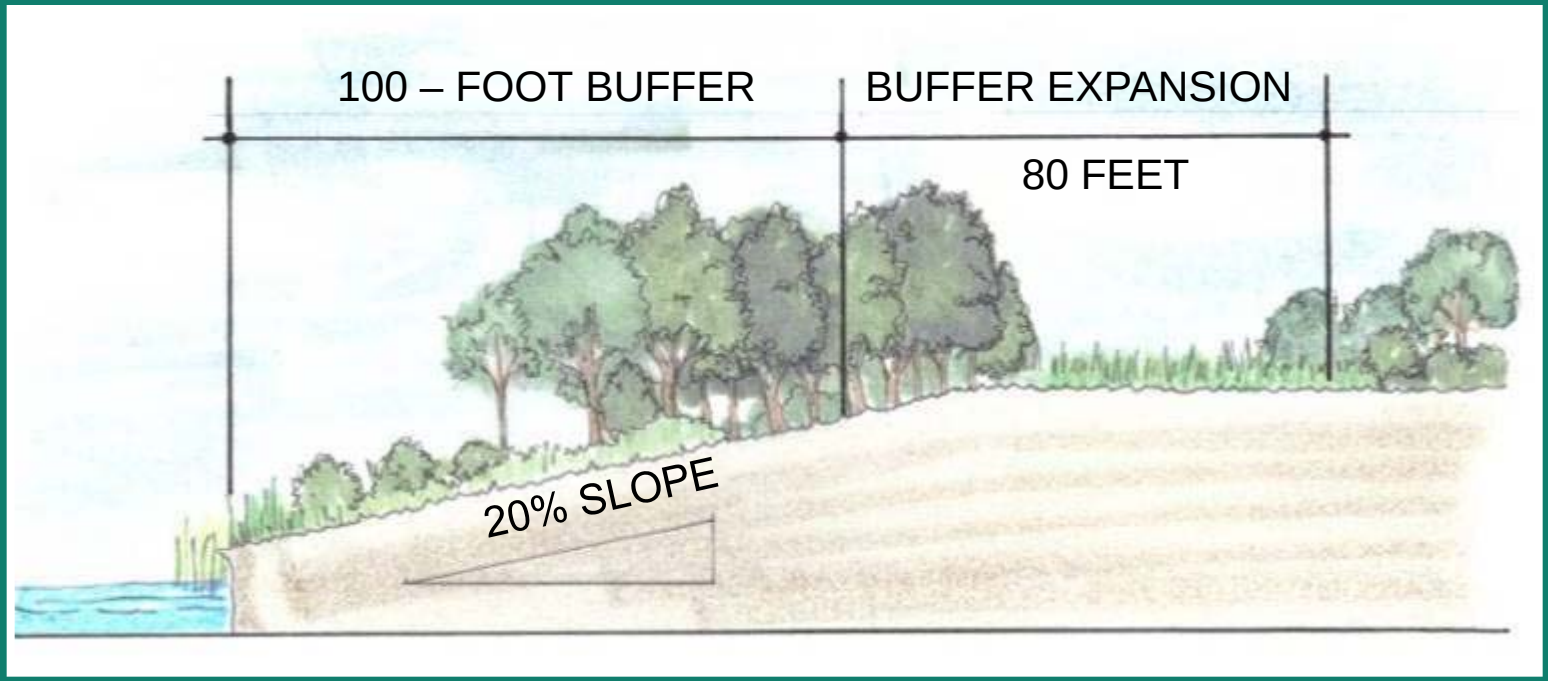
- Even if there are existing structures within the first 100-feet – it is still the Buffer and is protected

Buffer Measurement

- Buffers are measured on site, at the time of application for a development activity

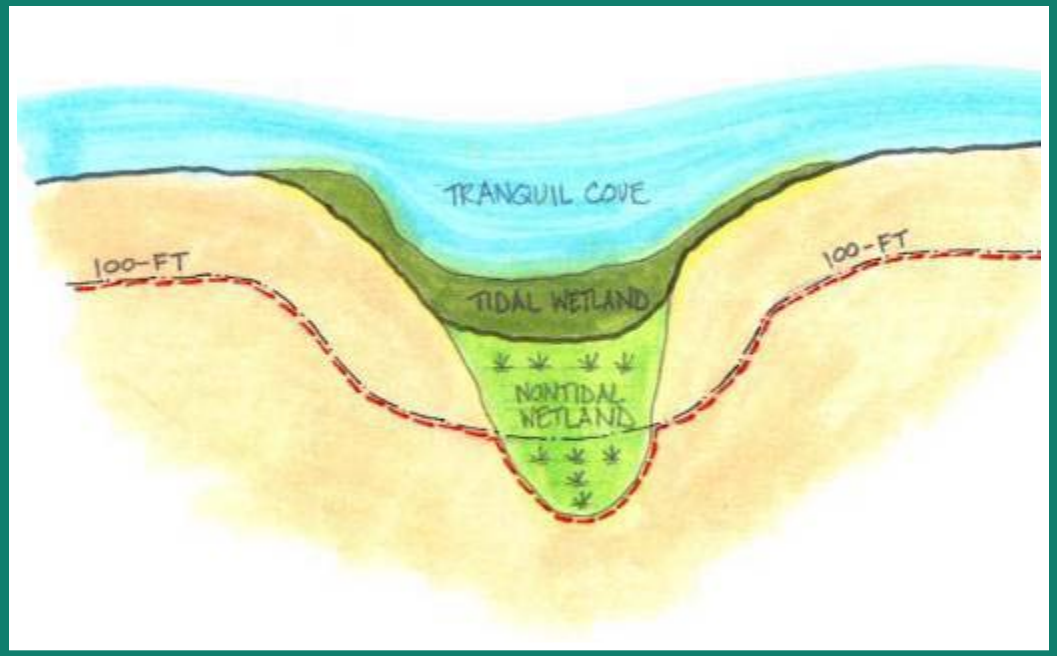
Buffer Expansion

- In the case of contiguous sensitive areas, the Buffer is expanded to provide further protection.
- For steep slopes, the Buffer is expanded four feet for every 1% of slope or to top of slope – whichever is greater



Buffer Expansion

- Buffers are also expanded to include adjacent nontidal wetlands, hydric and highly erodible soils
- In some circumstances, Buffer expansion is capped at 300 feet



Living with a Critical Area Buffer

- State regulations set out specific standards for development on lots that include a Buffer
- Generally, no new development activities (except those that are water dependent) are permitted within the Buffer
- In most cases, development within the Buffer would require a Critical Area variance
- Buffer mitigation is required for disturbance within the Buffer
- Buffer establishment is required when development occurs outside of the Buffer

Establishment Versus Mitigation

- Establishment is required when development activities take place outside the Buffer
- Mitigation is required when clearing, grading, or construction takes place in the Buffer

Buffer Establishment

- Regulations require planting in the Buffer even when all development is outside the Buffer
- Why?
  - Development activity outside the Buffer affects water quality and habitat
  - Effects are intensified when there is little or no natural vegetation at the shoreline
  - Shoreline development activity is outpacing natural resilience of aquatic resources
  - Human activity on existing lots still contributes nutrients, pollutants
  - Human activity, especially as it intensifies, is detrimental to wildlife habitat

Buffer Establishment

- Amount of planting dependent upon:
  - Development activity
  - When lot was created (prior to local Program adoption, i.e. late 1980s, or since then)
  - Amount and type of vegetation already existing within the Buffer

DEVELOPMENT CATEGORY	BEFORE PROGRAM DATE*	AFTER PROGRAM DATE
New development on vacant lot	Total lot coverage	Full establishment
New subdivision or new lot	Full establishment	
New lot with existing dwelling unit	Total lot coverage	
Conversion of land use to another land use	Full establishment	
Addition or accessory structure	Increase in lot coverage	
Substantial alteration	Total lot coverage	

Buffer Establishment

- Must take place on the project site
- If Buffer is fully forested, no additional planting is required

To Clarify

- Even if a Buffer has canopy coverage, there may be establishment required if an understory or shrub layer is absent

Buffer Establishment

- Not required for:
  - In-kind replacement (same footprint and use) of a principal structure
  - Land that remains in agricultural use after subdivision

Buffer Mitigation

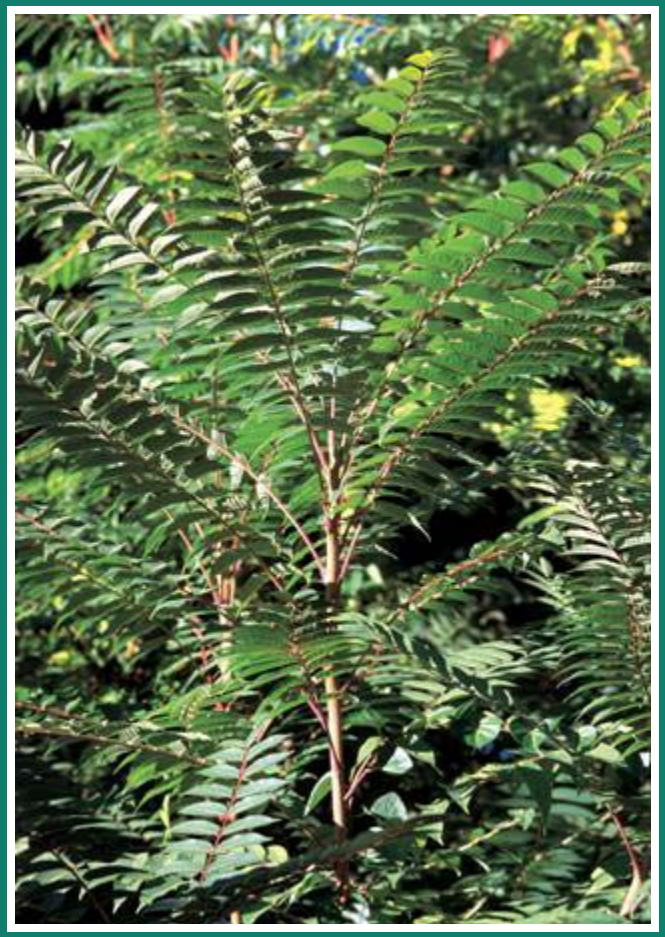
Activity and Tree Cutting Determine

- Area of Buffer disturbed multiplied by mitigation ratio
- Area of canopy coverage of trees/forest removed

Activity	Mitigation Ratio	
	Permanent Disturbance	Temporary Disturbance
Septic system with no clearing	N/A	0
Septic system with clearing	1:1	N/A
Shore erosion control	1:1	1:1
Riparian water access	2:1	1:1
Water-dependent facilities	2:1	1:1
Variance	3:1	1:1
Violation	4:1	Not applicable

Buffer Mitigation

- Not required for removal of a dead tree
- For removal of a dying, diseased, invasive or hazardous tree, replacement is one tree for each tree removed



Buffer Mitigation

- Location depends upon available space
- Priority is onsite planting in and adjacent to the Buffer
- Other options available, including payment of a fee-in-lieu

Planting Options

- Planting options range from using larger landscaping materials (e.g., containerized or balled & burlapped trees) to allowing natural regeneration to revegetate the Buffer
- Options depend upon the amount of planting required and whether it is for Buffer “establishment” versus mitigation

Planting Options

Mitigation amount	Plant materials
Less than 1 acre	Landscape stock
1 acre or greater	50% landscape stock, remainder flexible

Establishment amount	Plant materials
Less than ¼ acre	Landscape stock
¼ acre to 1 acre	25% landscape stock, remainder flexible
Greater than 1 acre	10% landscape stock, remainder flexible

Plant Stock Definitions

- Canopy Tree – a tree that reaches a height of at least 35 feet
- Understory Tree – a tree that reaches a height of 12 to 35 feet
- Large shrub – a shrub that reaches a height of at least 6 feet
- Small shrub – a shrub that reaches a height of up to 6 feet
- Native - species that are indigenous to the area in Maryland where the planting is proposed

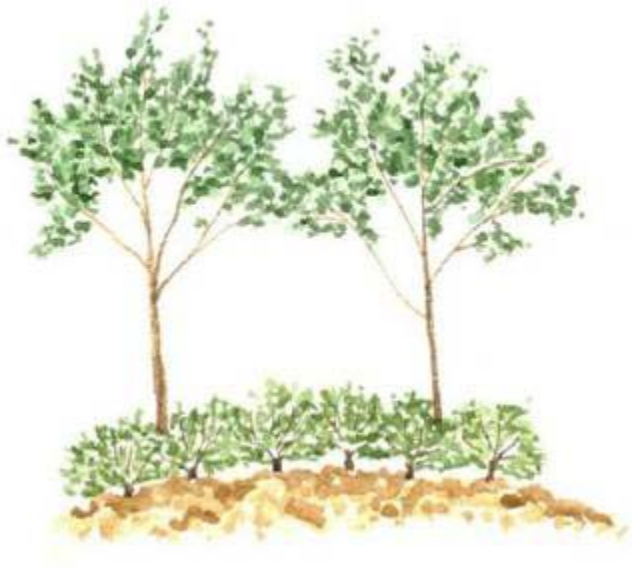
Landscape Stock Credits

LARGE CANOPY TREE	REGULAR CANOPY TREE	UNDERSTORY TREE
		
2 - INCH CALIPER	**3/4 - INCH CALIPER**	**3/4 – INCH CALIPER**
200 Square Ft	100 Square Ft	75 Square Ft

Landscape Stock Credits

LARGE SHRUB	SMALL SHRUB	HERBACEOUS PERENNIAL
		
3 – FEET HIGH	18 – INCHES	QUART
50 Square Ft	25 Square Ft	2 Square Ft

Landscape Stock Credits

PLANTING CLUSTER 1	PLANTING CLUSTER 2
	
1 CANOPY TREE AND 3 LARGE SHRUBS OR 6 SMALL SHRUBS	2 UNDERSTORY TREES AND 3 LARGE SHRUBS OR 6 SMALL SHRUBS
300 SF	350 SF

Flexible Stocking for Large Areas

- Provide flexibility for larger planting requirements
- Survival enhanced by different stock sizes
- Promotes structural diversity sooner after planting
- Can reduce costs and maintenance

Natural Regeneration

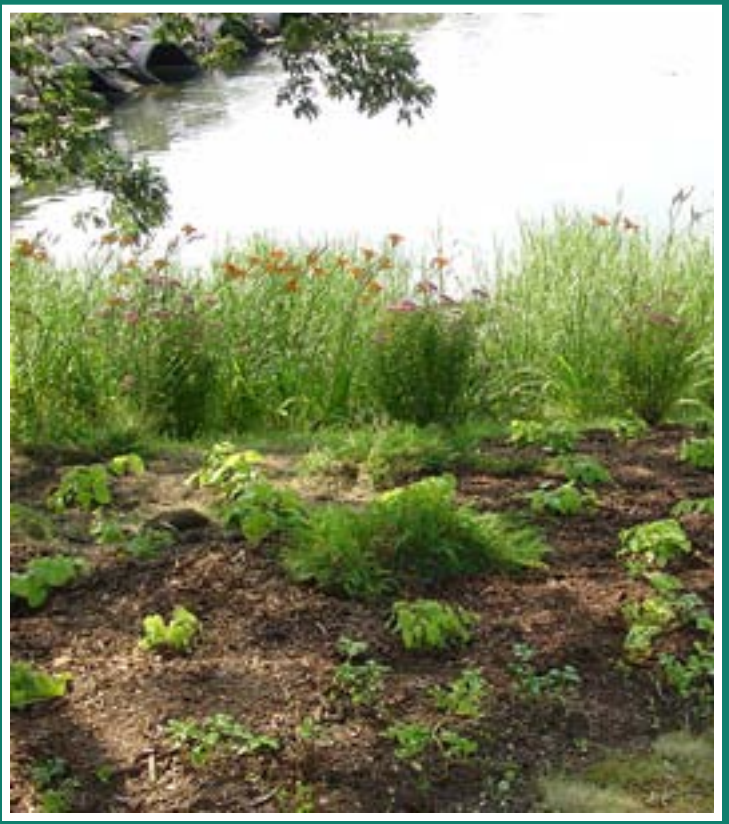
- No new lawn or managed turf
- Cannot be used for Buffer mitigation
- Can be used for up to 90% of Buffer establishment if requirement exceeds 1 acre
- Must be within 300 feet of mature forest with a seed bank of native species

Buffer Management Plans

- Tool used to implement the requirements for Buffer establishment and Buffer mitigation
- Requirement does not apply to mowing an existing lawn or planting/gardening
- Reviewed and approved at the local government level, typically in conjunction with a building permit, grading permit, etc.

Buffer Management Plans

- Depending upon the level of complexity, a Buffer Management Plan can be prepared by property owner, landscape architect, land surveyor, or other design professional

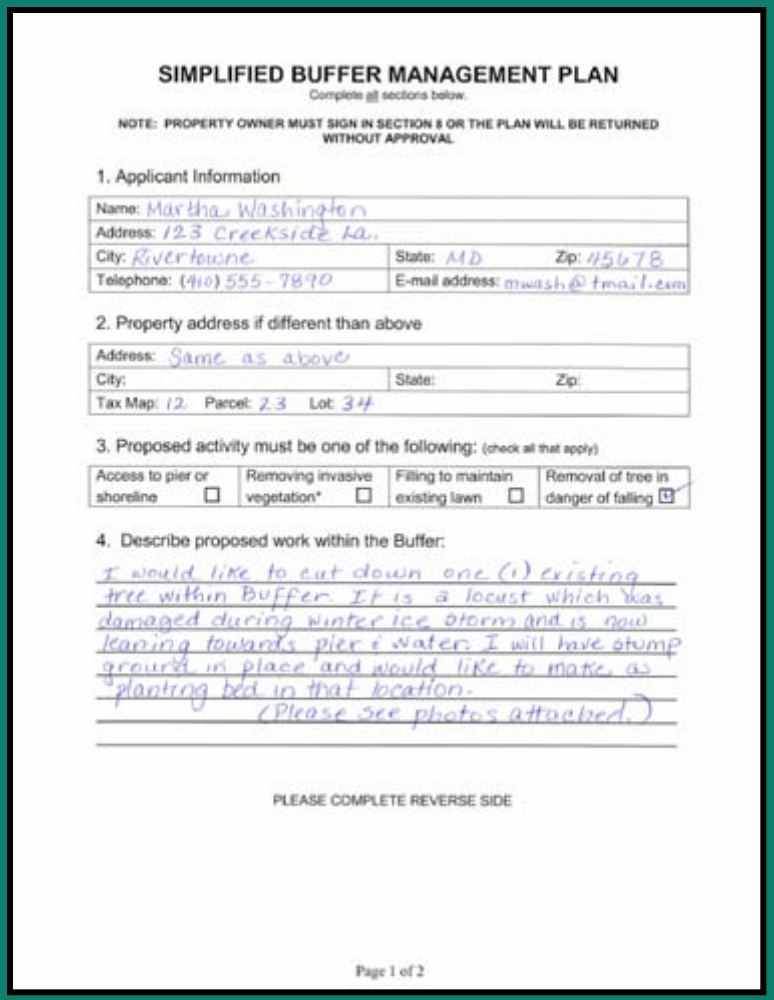


Simplified Buffer Management Plan

- Required for these activities:
  - Access to a private pier up to 3 feet wide
  - Manually removing invasive or noxious vegetation
  - Filling to maintain an existing grass lawn
  - Cutting to remove a hazardous tree

Simplified Buffer Management Plan

- Simple, one-page
- Narrative describing activity including the start date and method to be used
- Proposed mitigation
- Planting date
- Responsible party
- Local approval and date



SIMPLIFIED BUFFER MANAGEMENT PLAN

Complete all sections below.

NOTE: PROPERTY OWNER MUST SIGN IN SECTION 8 OR THE PLAN WILL BE RETURNED WITHOUT APPROVAL

1. Applicant Information

Name: Martha Washington		
Address: 123 Creekside La.		
City: Rivertowne	State: MD	Zip: 45678
Telephone: (410) 555-7890	E-mail address: mwash@tmail.com	

2. Property address if different than above

Address: Same as above		
City:	State:	Zip:
Tax Map: 12 Parcel: 23 Lot: 34		

3. Proposed activity must be one of the following: (check all that apply)

Access to pier or shoreline ☐	Removing invasive vegetation* ☐	Filling to maintain existing lawn ☐	Removal of tree in danger of falling ☑

4. Describe proposed work within the Buffer:

I would like to cut down one (1) existing tree within Buffer. It is a locust which was damaged during winter ice storms and is now leaning towards pier & water. I will have stump ground in place and would like to make a planting bed in that location. (Please see photos attached.)

PLEASE COMPLETE REVERSE SIDE

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Minor Buffer Management Plan

- Used when planting requirement is less than 5,000 square feet
- Used for establishment or mitigation

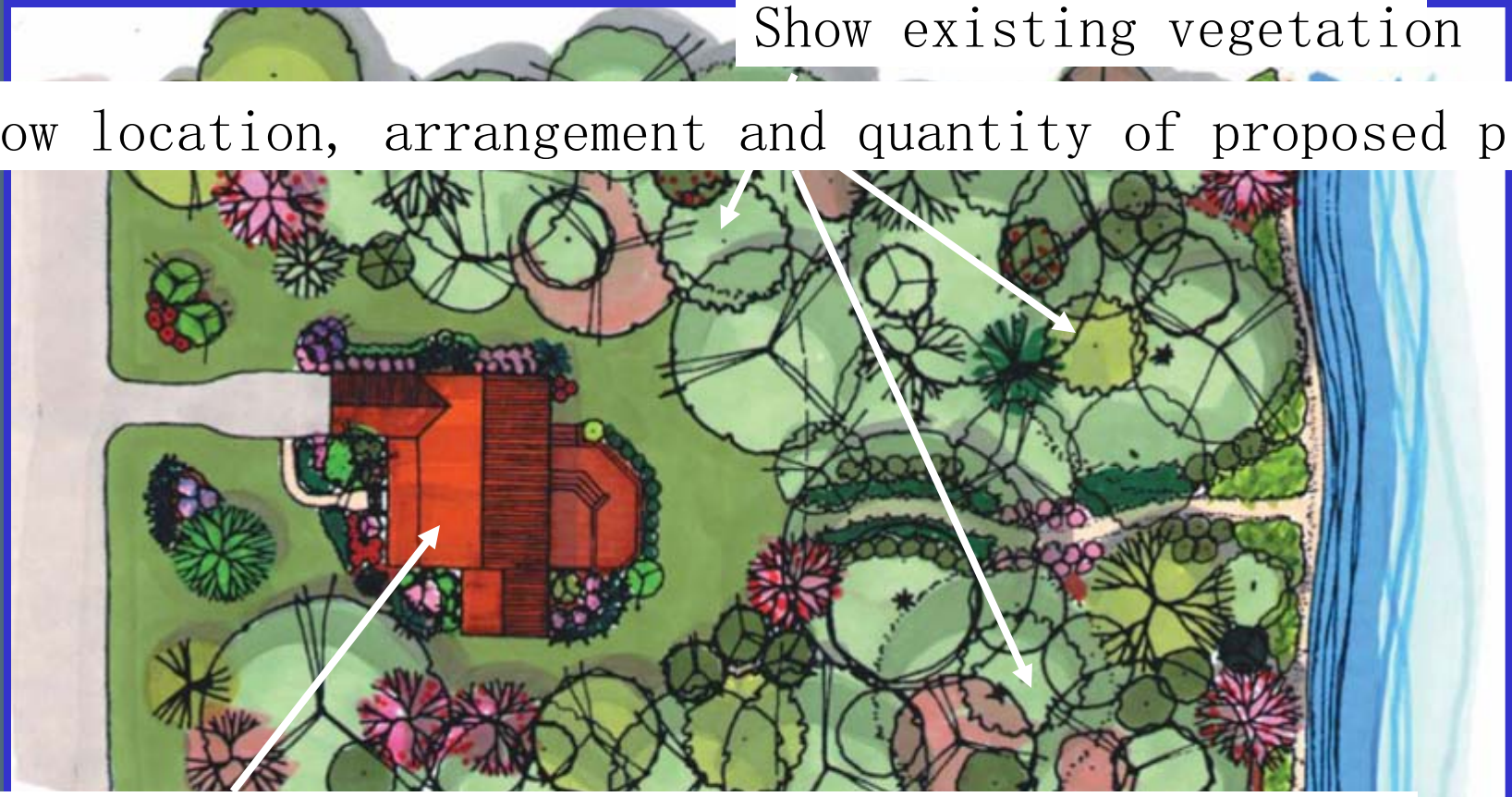
Major Buffer Management Plan

- Used when planting requirement - establishment or mitigation - is 5,000 square feet or more

Highlights of Minor/Major Buffer Management Plans

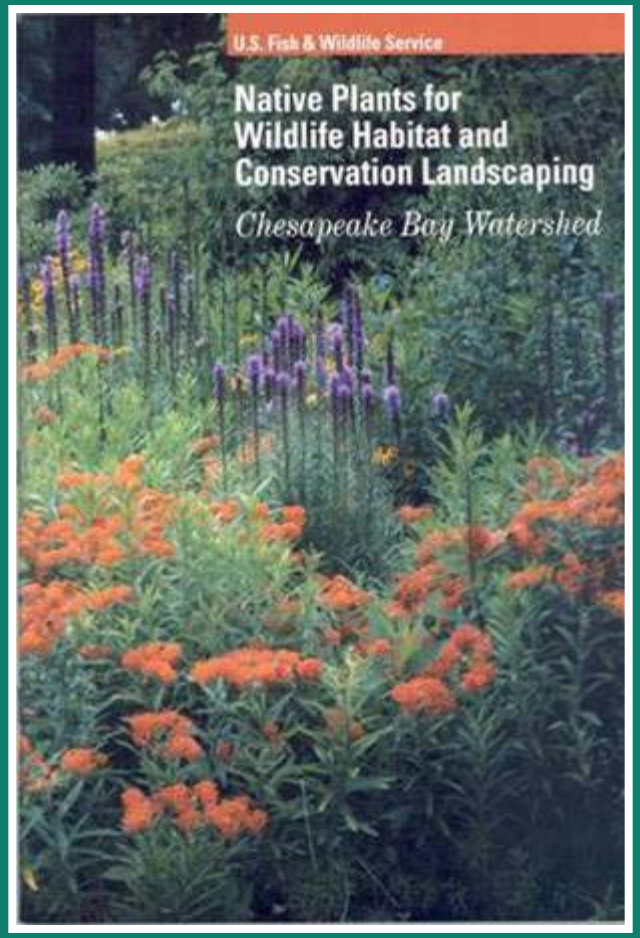
- For mitigation – calculations (disturbance x ratio + caliper of trees removed)
- For establishment – category and area calculation
- Landscape Plan
- Landscape Schedule
- Maintenance, Monitoring and Replacement Plan
- Inspection Agreement
- Signature of Responsible Party
- Long term protection and financial assurance – required for major only

Landscape Plan



Optimize Buffer Function

- Use USFWS publication to select plants
- Classification as canopy tree, understory tree, large shrub, small shrub, and herbaceous perennial based on publication
- Includes information about soil, sunlight, moisture, predation
- Pictures and descriptions are helpful
- Indexes at the end for common and scientific species names



Optimizing Buffer Function

- No matter how small, every bit of vegetated Buffer helps protect water quality and riparian habitat
- Use a variety of plant types and species
- Minimize lawn areas

Other Habitat Protection Areas: Nontidal Wetlands

- If contiguous with the Buffer, expansion of the Buffer required
- If not contiguous, MDE is primary regulatory authority
- Local government may require a variance for disturbance

Threatened and Endangered Species

- Identify any habitats of threatened and endangered species, or species in need of conservation potentially affected by the project
- Develop a plan for protection of the species and habitat

Other Plant and Wildlife Habitat

- Identify plant and wildlife habitats including:
- Forest areas for FIDs and wildlife
- Colonial bird nesting sites
- Historical waterfowl staging and concentration areas
- Existing riparian forests
- Natural heritage areas

Protection Measures

- May include:
- Establishment of no-disturbance zones around nesting sites or colonies
- Time of year restriction on clearing or other development activities

Anadromous Fish Propagation Waters

- Determine if project will occur in watershed of streams where spawning occurs
- Avoid channelization and installation of any obstructions
- Crossings must be designed to minimize impacts
- No construction related to crossings between March 1st and May 15th

Site Specific Analysis

- Each site and project requires analysis
- DNR recommendations may vary
- Buffer regulations may offer necessary protection of habitats
- Coordinate with DNR, local staff and CAC staff

Any Questions?