

Water Quality Trading in the Chesapeake Bay

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What is Water Quality Trading?

- Regulated source purchases credits in lieu of upgrades
- New or expanding source purchases an allocation
- Credits generated by other regulated sources or from unregulated sources like agriculture.

Benefits of WQT

- Reduces cost of compliance
- Accelerates pace of compliance
- Allows for growth under a pollution cap
- Provide incentive for nonregulated sources to meet TMDL allocation

Drivers for WQT in the Chesapeake Bay

- Chesapeake Bay 2000 Agreement
- Chesapeake Bay TMDL
- State-level policies
 - NPDES permits
 - Construction Stormwater
 - MS4 permits

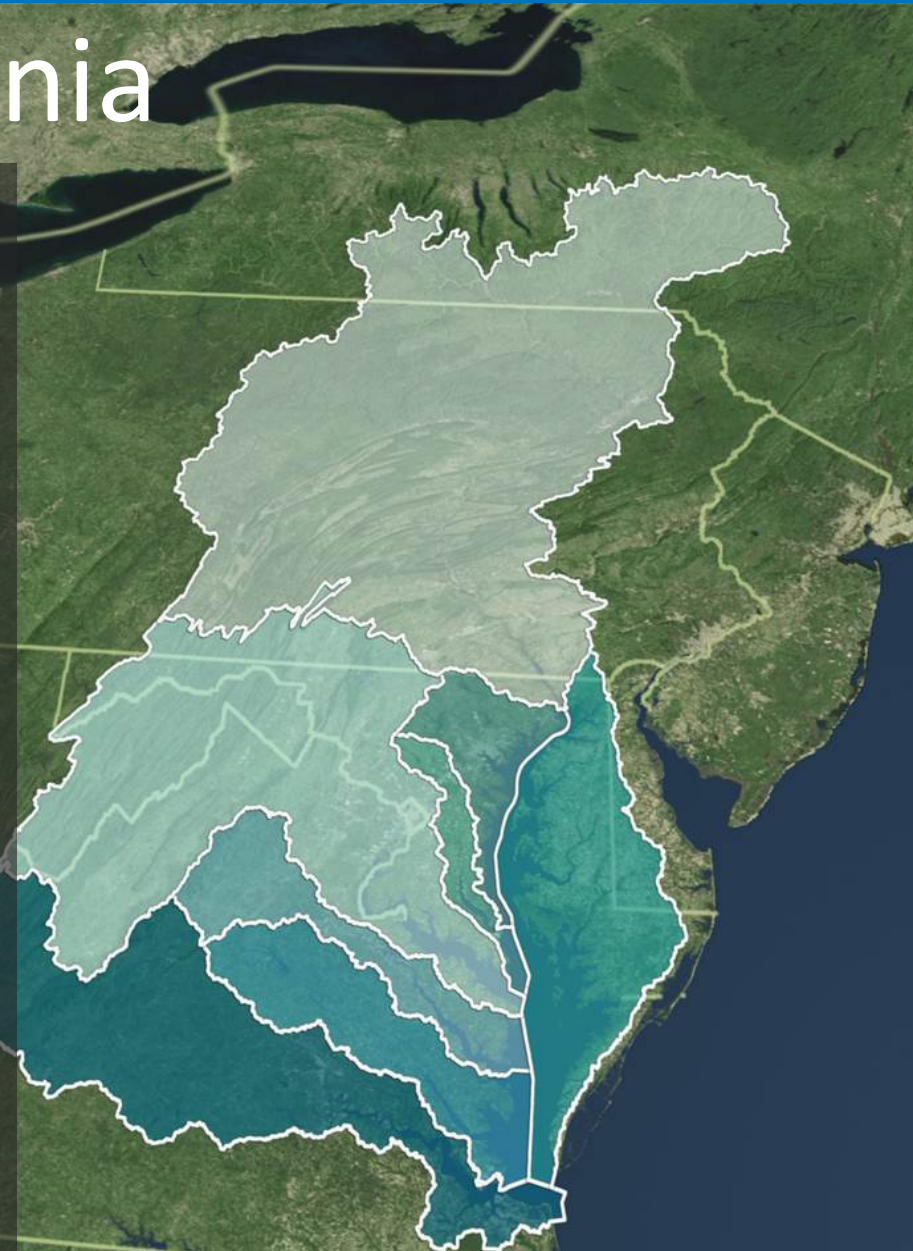


State Trading Programs in the Chesapeake Bay

- Virginia
- Pennsylvania
- Maryland

Virginia

- Nutrient trading law signed in 2005
 - To provide flexibility for point sources to meet compliance schedules and cost-effectively meet upcoming loading caps
- Trading for P allowed to offset post-construction requirements in 2009
- Program expanded in 2012 to authorize MS4s, other sectors to trade





Virginia

- PS-PS trades for compliance; PS-NPS trades for new/expanded growth
- Virginia Nutrient Credit Exchange established for PS-PS trades
- Credits selling for \$3.75/lb N and \$5.65/lb P in 2017
- No trades to offset new or expanded growth

Virginia

- Post-construction stormwater offsets for P only
- Offsets must be permanent
- Credits generated through land conversion/stream restoration and/or urban BMPs
- Permanent P credits trading for up to \$30,000/lb



Virginia

- Virginia only state to add numeric N and P goals to Phase I MS4 permits
- MS4 can trade with PS or NPS
- Arlington county currently exploring a trade with its WWTP
- VDOT has purchased NPS credits to help meet its MS4

Pennsylvania

- Nutrient trading policies and guidance issued in 2006
 - To meet regulatory obligations and offset new loads
- Trading regulations passed in 2010
- PS and NPS baselines updated 2015
- Offset options for MS4s recently added to permits



Pennsylvania

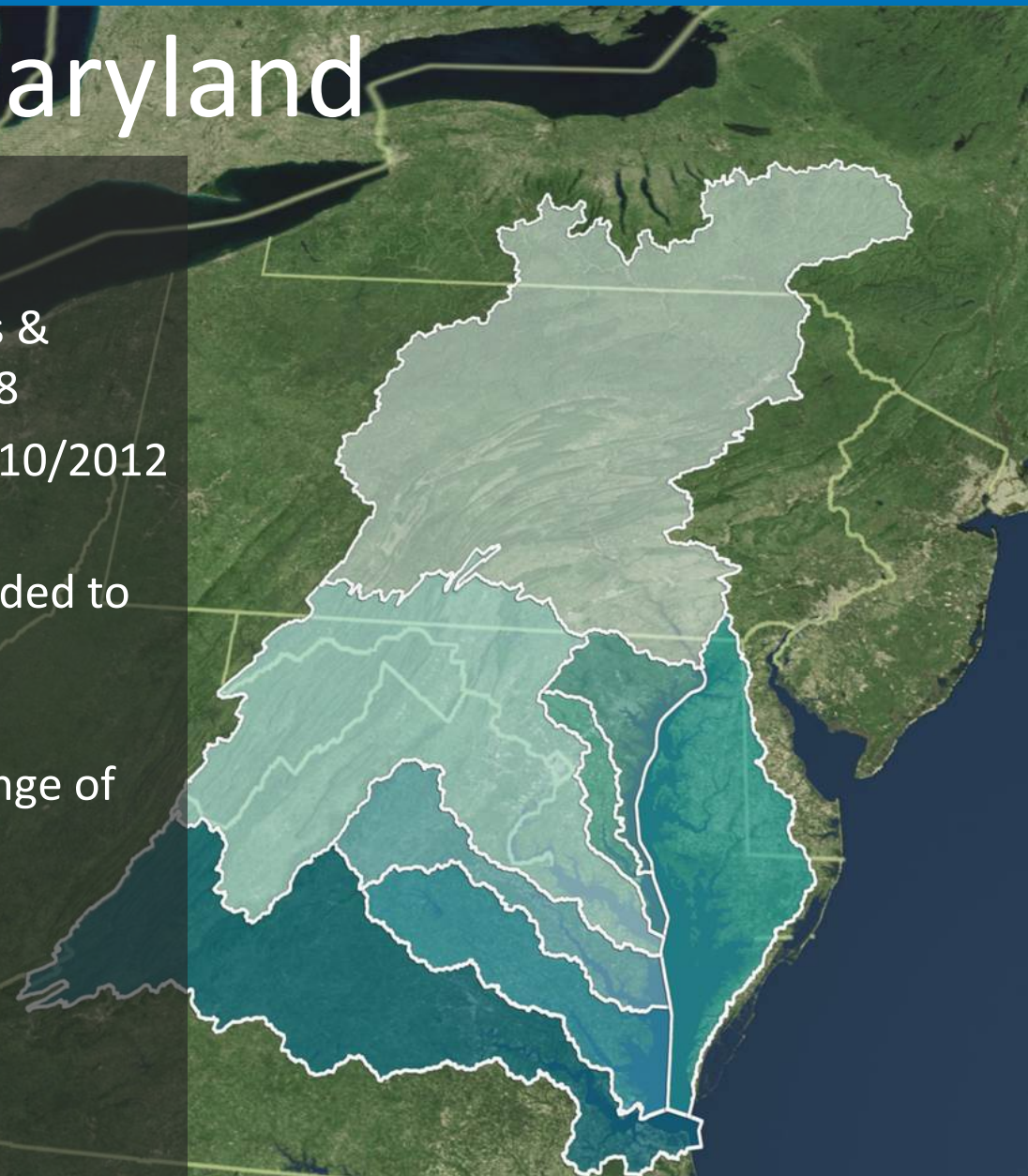
- Trades for permit compliance
- 82 trades in 2017
- Credits sold bilaterally (majority) and some through PennVest Auction
- Average price is \$2.37/N and \$3.75/P
- Credits generated from PS and NPS



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Maryland

- PS-PS and PS-NPS programs established in 2008
- Ag credit generation policies & guidelines developed in 2008
- Legislation established in 2010/2012 for ag credit certification
- In 2015 trading policy expanded to include MS4s
- July 2018 regulations were approved guiding the exchange of credits for all sectors



Maryland

- WWTPs cannot trade to comply only to offset new and expanding growth
- No trades conducted under the new regulations
- MS4 trades would require a translation between impervious acres and nutrient loads



Allowable Trading Scenarios

		Who can buy?				
		Wastewater	Municipal Stormwater	Post-construction Stormwater	CAFO	Septic
When can trading occur?	Who can sell?					
To Comply	Point sources	VA, PA	VA, MD		VA	
	Nonpoint sources	PA	VA, MD		VA	MD
To Offset	Point sources	VA, MD, PA	VA	VA	VA	
	Nonpoint sources	VA, MD, PA	VA	VA	VA	



Trading Ratios

	Maryland	Pennsylvania	Virginia
Delivery Ratio	Chesapeake Bay Watershed Model		
Reserve Ratio	5%	10%	
Retirement Ratio			5% for NPS*
Uncertainty Ratio	2:1 for NPS to PS	3:1 (for NPS-temporary)	2:1 for NPS to PS

* proposed

Agricultural Baseline

- A level of environmental performance that must be achieved before being eligible to trade.
- Because agriculture is not regulated, baseline is used to determine trading eligibility



Agricultural baseline

Maryland	Pennsylvania	Virginia
Meet a per-acre annual loading rate (e.g., lbs TN/acre) calculated from the Bay or local TMDL, whichever is more restrictive	(1) Implement a 100-foot manure setback, (2) implement a 35-foot vegetative buffer, or (3) reduce the farm's total nutrient balance by additional 20%	Implement, as applicable: 1) Soil conservation plan 2) Nutrient management plan 3) Cereal cover crops 4) Fencing 5) Riparian buffers

Performance-based

EPA: TMDL

Practice-based

EPA: TMDL

Practice-based

EPA: TMDL



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Questions?

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