

# Local Concerns

Chesapeake Bay Model and local area targets

Aquaculture not counted as a Best Management Practice (BMP)

Voluntary Agricultural BMPs not counted in Version 5.3.2

Land Use Limitations

Funding for Agricultural BMPs

Rural Development Target Cuts

Wildlife

Cypress Creek Power Station

# Chesapeake Bay Model

The Chesapeake Bay Model is not calibrated to provide highly confident local information. In a letter from EPA Regional Administrator Shawn Garvin to Secretary of Natural Resources Doug Domenech, dated October 5, 2011, the EPA makes it clear that the “EPA also recognizes that it is the nature of environmental modeling for confidence in outputs to increase as scales become larger...As the jurisdictions have pointed out, there are areas in the watershed where there are limitations to the application of the Chesapeake Bay Program Watershed Model at a finer scale.”

Each version of the Model results in different numerical reduction targets by locality. For instance, Version 5.3.2 indicates that there is a reduction target of 6,355,673 lbs of sediment per year for the Eastern Shore of Virginia. The previous version had that same target as 3,798,180 lbs per year.

There are several issues of concern with the local area targets. The Eastern Shore of Virginia is in main stem segments of the Chesapeake Bay. No other region has a majority of their land within these segments. The waters in these segments are impacted by all upstream areas. In between December 2010 and at least two versions of the model later in October 2011, Eastern Shore non-point sediment contributions almost doubled from 10,711,136 lbs per year to 19,380,690 lbs per year.

Known limitations include incorrect land use and also the lack of inclusion of voluntary agricultural BMPs. Aquaculture is also not included within the model.

# A Moment of Levity

## Local Examples Demonstrating Model Limitations.

For instance, Version 5.3.2 says Tangier has **5** acres of cropland, another **4** acres under construction and **1,131** acres of forest (It has been suggested that forest includes marshland). This may be news to folks living on Tangier. The Model results also give Tangier a bigger slice of the agricultural pie and at their current sediment from those acres they could plant another **3,815** acres, if they can find them. Obviously, while numbers are produced by the model they are not correct on a fine scale.



Odd things occur that cause strange issues. In POCOH\_VA (Northern Accomack County), the model has forestland contributing **9** lbs of sediment a year per acre. If every acre in this area were turned into forestland the sediment lost from the forestland alone would cause the water not to meet the sediment TMDL limits. That land would produce over **1,000,000** lbs of sediment a year. The published TMDL allows **665,670** lbs per year. Those darn trees are really ruining our water!

# Now A Moment of Gravity

In the local meetings it was quite common to hear one of two viewpoints. One trusts the model implicitly, the other outright discounts the model entirely.

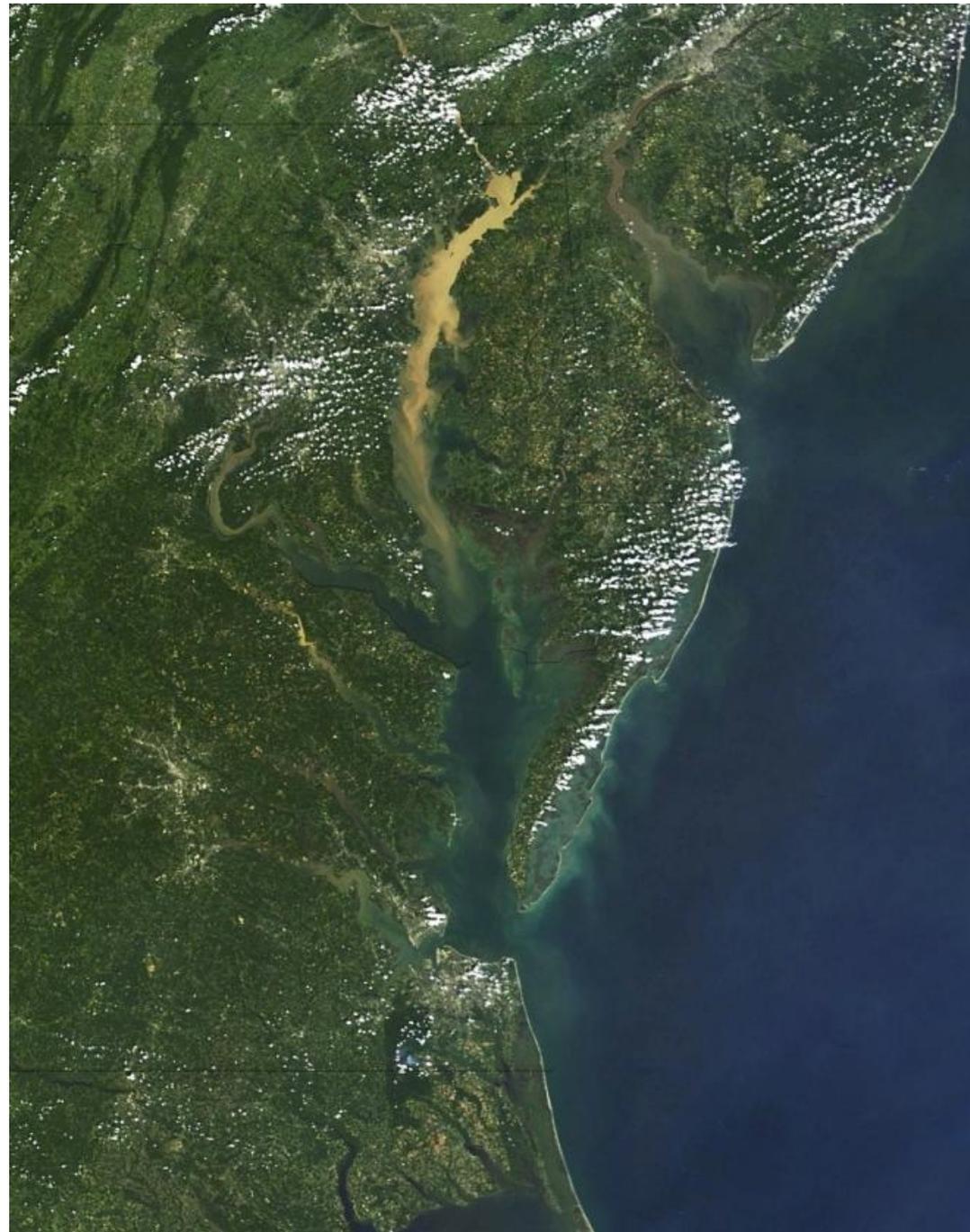
Models, even complex ones, are just simple representations of reality. A model car can look a lot like a classic car but that doesn't mean you can drive it.

**Take a look at the satellite picture of the Bay just after Hurricane Irene and Tropical Storm Lee.**

Seems there is a lot of sediment (and the phosphorus attached) going into the Bay, you can't see the nitrogen but we do see its effects. Can the model tell the Eastern Shore how many millions of pounds of sediment are flowing into the Bay? Probably not, especially since from version to version it can change by over 100%.

But if we want the Bay to be clean, the people in the watershed need to make some changes.

Believe your own eyes, you can see the Eastern Shore does contribute sediment to the Bay albeit not as much as other regions appear too.



# How the Chesapeake Bay Model Helps the Eastern Shore of Virginia.

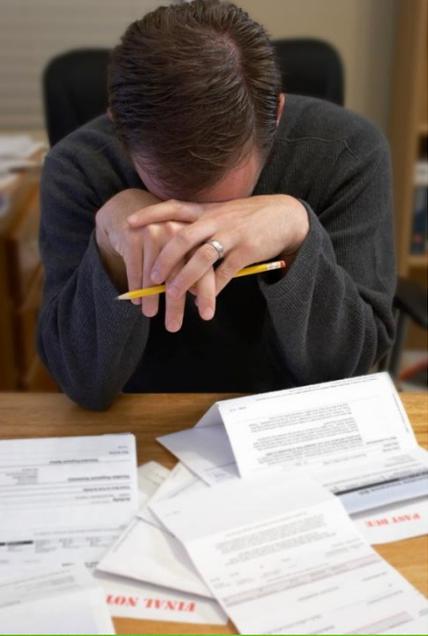
- Unlike other rural regions, the Eastern Shore of Virginia will get **economic** and **quality of life** returns on improved water quality in the Chesapeake Bay.
- Restoration of Submerged Aquatic Vegetation (SAV), oysters and other marketable aquatic life will result in financial returns.
- Clearly going forward, getting these benefits should be a priority for our local area but these benefits need to come at sensible costs.
- The following slides illustrate how our area needs to make sure we **get the best deal possible**.

# Agricultural BMP Funding

- Virginia offers a cost share program to assist farmers with improvements that benefit water quality.
- Cost share programs provide funds but each farmer must pay at least 25% of the cost and in general are limited to \$50,000. ([www.dcr.virginia.gov](http://www.dcr.virginia.gov) Retrieved 12/17/12)
- In past years, Eastern Shore farmers have sought to participate in this program to a greater extent than funds are available.
- **The Chesapeake Bay TMDL Version 5.3.2 lists **nitrogen**, **phosphorus** and **sediment** cuts for farming in greater proportion than other uses, such as residential development.**

Overall, Version 5.3.2 indicates Virginia farming-related activities are discharging just under 53% of the non-point **nitrogen** but farming-related activities are being asked to make just under 91% of all the non-point **nitrogen** cuts. The same pattern holds for **phosphorus** and **sediment**. As a rural community dependent on agriculture, it is important for us to know the truth of who is being asked to make cuts. Rural forms of development, with a heavy, heavy emphasis on agriculture, are being asked to make more significant cuts.

- Current Eastern Shore Agricultural Cost Share Funding is not enough.



# Rural Development

- Farming is only a small group of people being asked to do more so others can do less and there may be some level of funding available to the industry to make these changes. It may be tempting to believe that you, if you are not a farmer, may be one of those others that get to do less but if you live on the Eastern Shore or another rural area that may not be the great deal it might appear to be.
- The model breaks apart rural development from urban development so the Towns and some suburban areas like Cape Charles and Onancock are in one pool called Unregulated Urban while the big cities like Virginia Beach and Fairfax are called Regulated Urban
- Version 5.3.2 calls for reductions for septic systems. This model suggests that all septic systems in the watershed contribute less (just over 4.4 million) although somewhat similar amounts of **nitrogen** to the Bay as all Regulated Urban Pervious (City Grass) Development (just under 5 million). Septic systems are being asked to reduce their nitrogen 18 times more than Urban Grass (~500,000 Septic vs 27,800 from the 603,000 acres of Urban Grass).
- **Nitrogen** removal from septic systems will add significant cost to the total system cost. Yet Regulated Urban areas are not being seriously asked to even reduce buying fertilizer for their grass.



# Rural Development -continued

- Regulated Urban (cities) areas have more point sources for their sewage disposal which is regulated outside Version 5.3.2 and they have been incurring costs for this for many years. So a comparison of septic systems to grass probably wasn't fair.
- So how does our grass stack up to city grass?
- Well, the Eastern Shore of Virginia within the watershed has 17,123 acres of Unregulated Pervious and we have a target cut on those acres of 25,837 pounds of **nitrogen**.
- All of Virginia's Regulated Urban Pervious (603,639 acres of City Grass) is being asked to cut 27,801 pounds of **nitrogen**.

# Wildlife

- Previous local studies have shown significant contributions of nutrients to local water from wildlife.
- Wildlife is not a component of the Chesapeake Bay TMDL.
- The Eastern Shore is concerned that wildlife may be more of a contributor of nutrients than the EPA expects and this may skew results in our area.
- Wildlife Management, with reductions of certain animal populations, may need to become a strategy to reduce nutrients as well.



# Cypress Creek Power Station

The EPA likes to describe the Chesapeake Bay TMDL as a “pollution diet”. If this is a diet it has a significant loophole, **air deposition**. Cutting back on foods will cause someone to lose weight but not if there is a loophole that any time you get hungry you can eat chocolate. Not only can you have as much chocolate as you ate yesterday but you can have as much more as you want.

Our region has the potential for more chocolate. Old Dominion Electric Cooperative (ODEC) has plans and purchased property in Surry County for a new coal fired power plant.

ODEC currently states “recent EPA regulatory developments, low natural gas prices and slower growth in the demand for electricity stemming from the economic downturn have changed the power supply landscape. Thus, development of the Cypress Creek Project is on hold indefinitely.”

The EPA regulatory developments appear to be new regulations for mercury emissions. Also there are new potential EPA regulations for carbon emissions.

However, ODEC also states “Going forward, our southeastern Virginia properties possess many natural, geographic and infrastructure characteristics that make them valuable for the future development of a power generation facility should market or regulatory conditions change, new infrastructure become available or new technologies evolve. As we continue to assess these changing opportunities, we will actively manage the Surry and Sussex sites and continue to participate in the life of these local communities.” (<http://www.cypresscreekpowerstation.com> Retrieved 12/17/12).

The Chesapeake Bay Foundation has commissioned a study of the potential emissions from this power station. The study indicates a potential new deposition of Oxides of **Nitrogen** of 118 tons to the Chesapeake Bay Watershed, another 10 tons would deposit directly to the Chesapeake Bay.

To put this in perspective everyone in the Bay watershed in Northampton County is being asked to reduce their **nitrogen** by 328,000 pounds and Accomack County is being asked to reduce by 333,000 pounds. This one power station has the potential to almost cancel out one of the county’s entire effort. The station has the potential to add over 250,000 pounds of new **nitrogen** to the Bay watershed and Bay.

**What about other new sources of **nitrogen** from all over the airshed?**

# Conclusions

- The counties, with assistance from the PDC, are currently working with DCR on the new stormwater regulations and that effort will continue.
- Going forward, our region needs more funding for agricultural cost-share to promote the voluntary practices that farmers want to adopt.
- **It is important for our region to stand together and ensure only reasonable ideas and programs move forward and that the burdens do not rest unevenly on our people. Our primary focus needs to be the best outcome for the Eastern Shore of Virginia, it's people, economy and water quality.**

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