

Watershed Model Documentation

Gary Shenk

Presentation to MWG

1/11/2018



Chesapeake Assessment Scenario Tool

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CAST PLANNING TOOLS

Logging in to CAST allows users to rapidly develop scenarios for reducing nitrogen, phosphorus and sediment with varying best management practices to streamline environmental planning. Costs are provided so users may select the most cost-effective practices to reduce pollutant loads.

Log In To Get Started

Email Password [Forgot Password](#)[Log In](#)[Register](#)[BayFast Log In](#)

ADDITIONAL RESOURCES

Frequently requested data and information associated with water quality monitoring and modeling.

MODEL DOCUMENTATION

Find additional information about the Phase 3 model, its documentation and links to model review webinars and files.

[Learn More](#)

DEVELOPING PLANS

Get answers to your questions about how to use CAST to develop a plan.

[Develop A Plan](#)

SOURCE DATA

Download data tables including information on load sources and agencies, BMPs, animals, geographic references and delivery factors.

[View Source Data](#)

CALIBRATION INPUTS

BMPs, MODELS & GEOGRAPHY

TMDL TRACKING

View additional information on BMPs, CBP

Information on how to submit progress



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MODEL DOCUMENTATION

Model Documentation

The documentation for the Chesapeake Bay Program Partnership Phase 6 model is available for viewing below. CAST is the same as the model. Creating and running scenarios in CAST is simply using an on-line interface to the model. The documentation for the model is the documentation for CAST. Due to the length of the model documentation, it is divided into sections. Click on the links below to read through the different portions of the model documentation.

- | | | |
|------------------------|--|---------------------------|
| 1. Overview | 6. Best Management Practices | 11. Physical Setting |
| 2. Average Loads | BMP Appendix A | Physical Setting Appendix |
| Average Loads Appendix | BMP Appendix B | 12. Applications |
| 3. Terrestrial Inputs | 7. Land to Water | 13. Reviews |
| Inputs Appendix A | 8. Direct Loads | 14. References |
| Inputs Appendix B | 9. Stream to River | |
| Inputs Appendix C | Stream to River Appendix | |
| Inputs Appendix D | 10. River to Bay and Temporal Simulation | |
| 4. Sensitivity | Temporal Simulation Appendix A | |
| Sensitivity Appendix A | Temporal Simulation Appendix B | |
| Sensitivity Appendix B | Temporal Simulation Appendix C | |
| 5. Land Use | | |
| Land Use Appendix | | |

[Final Phase 6 Model Performance](#)

More information on the Watershed Model can be found at the [Modeling Workgroup](#) page.

Non-Tidal Water Quality Dashboard

Comparisons between the Watershed Model and monitoring data can be found on the non-tidal dashboard. These visual representations show both the loads estimated from Weighted Regressions on Time, Discharge and Season (WRTDS) and loads estimated from the time-variable Phase 6 Model.

[Non-Tidal Water Quality Dashboard](#)

Phase 6 Model Review Sessions

Webinar-based model review sessions provide the Chesapeake Bay Program Partnership with the opportunity to directly ask questions and provide feedback on the model. Click on the links below to view and hear the recorded webinars.

[Sediment Simulation: April 19, 2017](#)[Integrated Models and Decision Framework: May 9, 2017](#)[Inputs: May 25, 2017](#)[Loads: June 1, 2017](#)[Physical Transport: June 20, 2017](#)

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CAST - Model Documentation X

https://cast.chesapeakebay.net/Documentation/ModelDo 90% Search

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Inputs Appendix D	10. River to Bay and Temporal Simulation	
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Sensitivity Appendix A	Temporal Simulation Appendix B	
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Final Phase 6 Model Performance

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- Beta 4 Draft Documentation
- Final Documentation to be Complete by April 1



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Final Phase 6 Model Performance

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Non-Tidal Water Quality Dashboard

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Weighted Regression, Time, Discharge, and Stream Discharge Loads estimated for the Watershed Phase 6 Model.

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Sediment Simulation: April 19, 2017

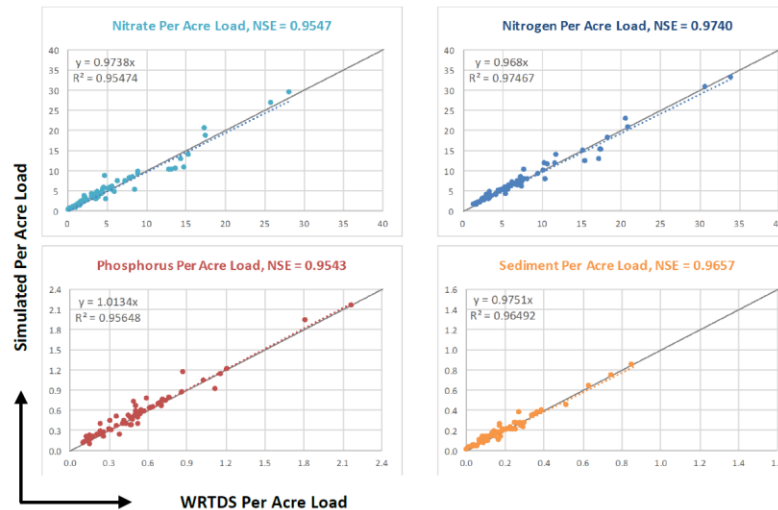
Integrated Models and Decision Framework: May 9, 2017

Inputs: May 25, 2017

Loads: June 1, 2017

Physical Transport: June 20, 2017

Phase 6 – geographic efficiencies



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• Final Calibration Available as Presentation to MWG on 11/28/17



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Final Phase 6 Model Performance

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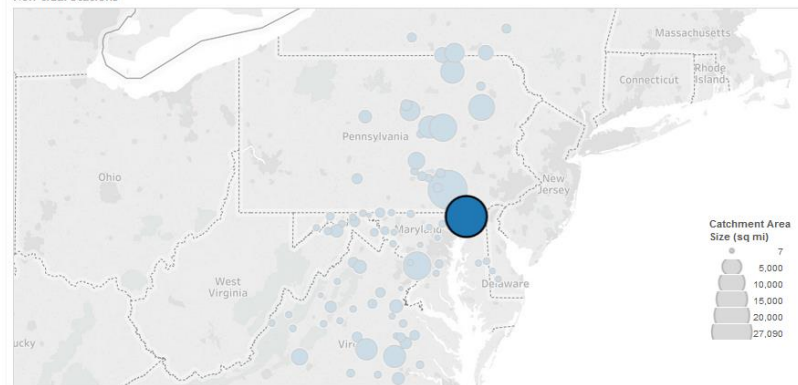


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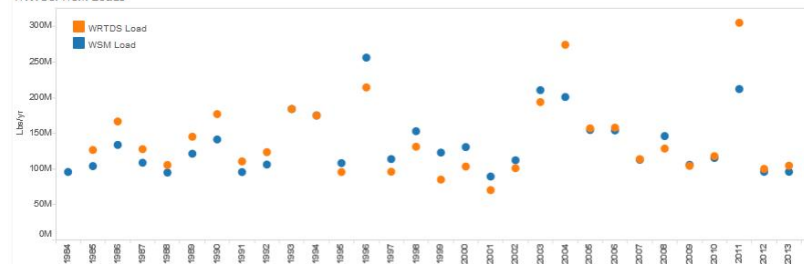
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Non-tidal Stations



WRTDS/WSM Loads





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Still to come

- By April 1
 - Finalizing Documentation
 - STAC Review and CBP Responses
 - CBP responses will be drafted by CBPO staff and reviewed by the Modeling Workgroup
- By December 2018
 - Peer-reviewed Publications submitted