# Exploring the Environmental Effects of Shale Gas Development in the Chesapeake Bay Watershed

A Workshop by
Chesapeake Bay
Scientific and Technical Advisory Committee

# STAC Steering Committee Members

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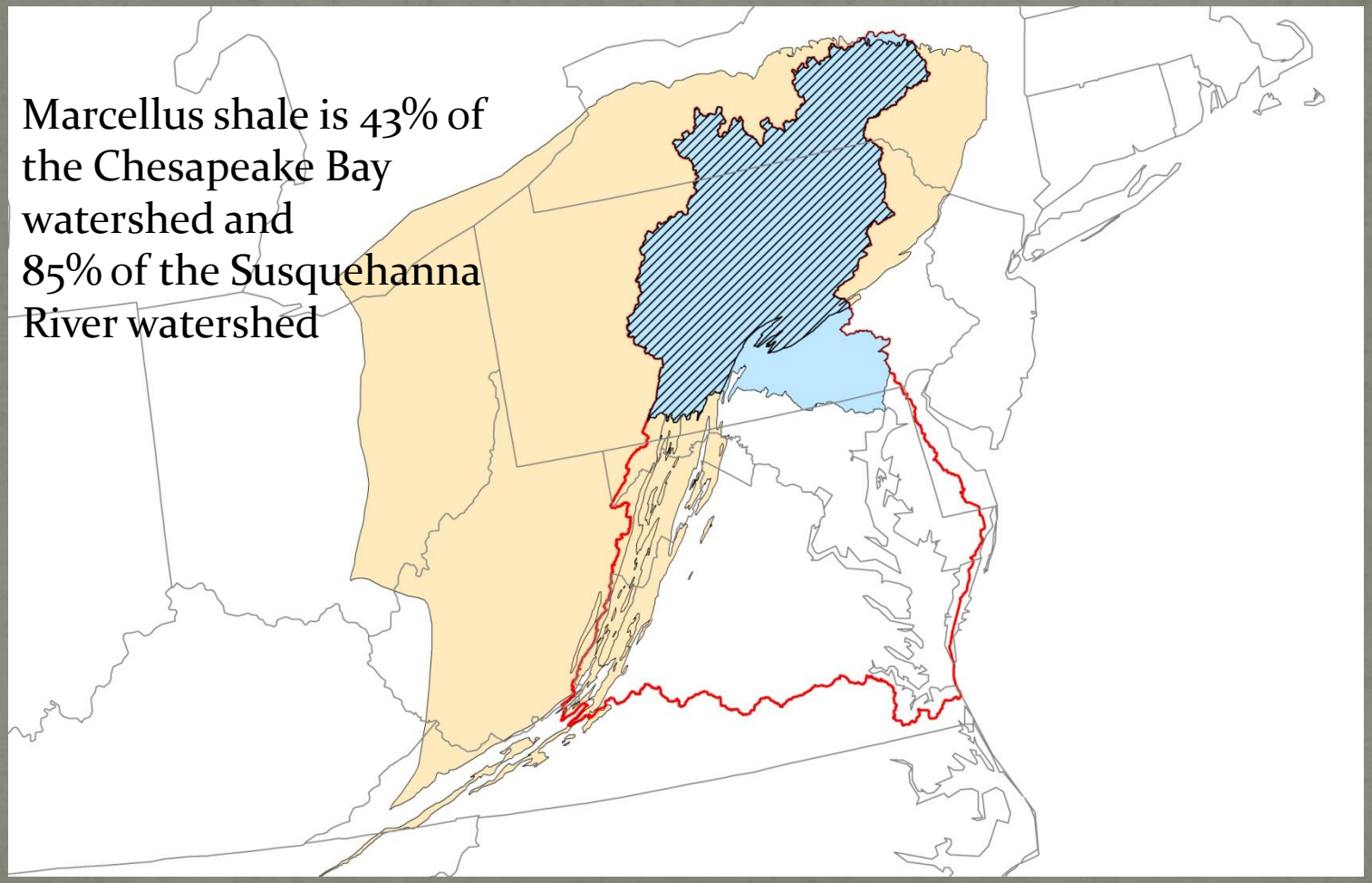
- Matthew Johnston (CRC)
- Kelly Maloney (USGS)
- Denice Wardrop (PSU)

# Workshop Objectives

- To review and synthesize the research available regarding shale gas development's environmental effects
- To identify the environmental effects that shale gas development will pose to the Chesapeake Bay Watershed relative to Chesapeake Bay water quality
- To identify and prioritize future research needs relative to shale gas development and Chesapeake Bay water quality

# Why Chesapeake Bay and STAC?




Map and data prepared by Randy Chambers

# Agenda

- Several summary presentations to help the group have some common knowledge
- Two breakout groups to discuss questions and prepare reports to group
  - Land based effects group
  - Water quantity and quality effects group
- Breakout groups report to whole group with discussion
- Discussion and assignments for report writing

# Water Quantity and Quality Questions

- What are the potential effects on Chesapeake Bay TMDL pollution reduction efforts?
- How effective are BMPs at reducing water quality and quantity effects?
- What are the high priority research needs for quantifying shale gas development effects on Chesapeake Bay water quality?

# Land Based Effects Questions

- How does the shale gas development infrastructure affect land cover/use and indirectly water quality and quantity via cummulative effects?
- What are the potential effects on Chesapeake Bay TMDL pollution reduction efforts?
- How effective are BMPS at reducing those effects?
- What are the high priority research needs for quantifying shale gas development effects on Chesapeake Bay waqter quality?

# Effects versus Impacts

- Effects = change due to action, objective measureable change in status (i.e. structure, function) of some environmental or socioeconomic factor in response to an activity or other cause

- Impacts = strong influence of effects, applying some of type of value system to the effects status change to provide an interpretation of those changes (i.e. positive, negative, neutral), or using socioeconomic analysis (i.e. cost-benefit, willingness to pay) to provide information for value judgments

# Workshop Products

- The report will summarize the state-of-the-science regarding environmental effects of shale gas development
- The report will identify and prioritize specific research gaps

# Questions?