

## **Potential Partnership between the Chesapeake Bay Program and Knowledge Systems for Sustainability**

**May 2, 2013; 9 AM to 5 PM**

**May 3, 2013: 9 AM to 2 PM**

**Chesapeake Bay Program Organization  
Joe Macknis Memorial Conference Room (Fish Shack)  
410 Severn Ave, Annapolis MD 21403**

### **Background:**

Restoring our national watersheds while maintaining a highly productive, sustained, and environmentally responsible agricultural industry remains a significant challenge for future resource allocations. These dual goals of environmental restoration and maintaining a productive, sustainable agricultural industry are further complicated by a growing population and urgency in addressing critical questions of land management, water, and energy production. These questions of land management, water, and energy production and how to better utilize and integrate national scientific resources has evolved into the “Knowledge Systems for Sustainability” dialogue or KSS.

The mission of KSS is to leverage technical, financial, and other resources to better address these critical issues and to help ensure that information is seamlessly transferable between institutions. By building connections, sharing knowledge, and leveraging resources, the hope is to be able to use 21<sup>st</sup> century technology to allow for rapid dissemination of information to decision makers, both at a policy level and on the ground. As our land, water, and energy resources are stretched to increased capacities for ensuring sufficient food and a continuous supply of renewable, low emissions energy, we need to ensure that these systems are sustainable and environmentally protective.

In exploring how to do this, the KSS partners have been exploring specific challenges where stakeholders and institutions are facing these kinds of issues. The Chesapeake Bay and its watershed are a critical and important example of geographically-focused group of institutions and stakeholders that are facing these difficult and complex questions. Through several exploratory conversations with people affiliated with the Chesapeake Bay restoration effort, including Gary Shenk and Kevin Sellner, the KSS partners are interested in exploring ways to assist regional restoration through their extensive network of capacities and knowledge.

### **Meeting Purposes:**

The meeting will provide an introduction between KSS leaders and key members of the Chesapeake Bay Program (CBP) partnership. The meeting will further provide an opportunity to explore how the KSS partnership might be able to work with the Chesapeake Bay Program in meeting its goals. Some of the specific areas of possible interaction include the creation of a modeling laboratory for additional research and development for management issues in the region, and the engagement of the social sciences to more fully communicate restoration needs and tools to implement changes to improve the system. The meeting will conclude with a better understanding of challenges, opportunities, and concrete next steps on *what* and *how* a KSS-CBP collaboration might foster progress for restoration of the Chesapeake Bay.

## Critical Challenges/Questions

The CBP Watershed Model “was developed to simulate the Chesapeake watershed, the river flows, and associated transport and fate of nutrients and sediment.”<sup>1</sup> However, there are several challenges related to this model; addressing these would provide for a more robust tool that could better inform decision makers today.

### Challenges/ Questions:

- The National Academy of Science proposed the development of a “modeling laboratory” to perform research and development critical to updating the model.<sup>2</sup>
  - However, no funding was identified to implement the Modeling Laboratory.
  - A potential collaboration with Oak Ridge National Lab may be of interest as a way to move the needed Research & Development forward; however, it also raises a number of questions, including how ORNL might participate or engage.
- There are a number of individuals and academic institutions working on researching various issues that affect the Chesapeake Bay.
  - Funding for this work is grant-by-grant through sources such as the National Science Foundation, the EPA STAR program, etc.
    - How can we develop a long-term source of sustainable funding to work on critical research/development needs in a comprehensive way?
    - Is there a way to tie potential funding to the management priorities for the Bay?
  - How do we incorporate the work accomplished by others into the existing CBP model?
  - How could individuals and institutions become part of a working research collaborative in advancing the existing model or developing new models?
  - Is there a way to more successfully engage academic modelers’ full suites of capabilities to help meet the national mandate of Chesapeake Bay clean up?
- Some consider the CBP Partnership’s watershed model to be an EPA product and therefore view it with suspicion.
  - How do we ensure the model(s) are viewed as credible, robust and transparent by all?
- There needs to be better linking between scientific knowledge and ground-based management.
  - How do we create/incentivize change in a way that is scaled to the right decision-making timeframes (for individuals, industry, others)?
  - How do we capitalize on the knowledge from the social sciences to inform decision making and change behavior?
- Additional resources (~\$1.5-\$2.5 million/year) are needed for research and development in key areas (see examples below), yet the funding environment is very restricted and getting smaller.
  - How do we leverage additional funds to meet critical deadlines in the Bay Program?
  - How do we address spatial differences in modeling (watershed, basin, local)?
  - How do we connect water quality indicators to fisheries outcomes?
  - How do we address large-scale nutrient imbalances?
  - Is there a way to use the KSS partnership to assist with these issues?

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<sup>1</sup> See description of the Chesapeake Bay Phase 5 Community Watershed, pg. 1-7 (available online at [https://archive.chesapeakebay.net/modeling/P5Documentation/SECTION\\_1.pdf](https://archive.chesapeakebay.net/modeling/P5Documentation/SECTION_1.pdf))

<sup>2</sup> A press release is available at <http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=13131>, or the actual study is available at [https://download.nap.edu/catalog.php?record\\_id=13131](https://download.nap.edu/catalog.php?record_id=13131).