

# 2015 Patuxent River Conference

## Small Group Discussion: Green

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### Watershed / Upland Species and Habitat

What is the most fundamental scientific question concerning watershed / upland habitat and species that would enhance our understanding of the Patuxent River ecosystem?

**Fundamental Question:** How do we monitor and evaluate restoration practices through the lens of water quality, habitat connectivity, and species conservation?

#### **Elaboration:**

- Monitor long-term success of stream and stormwater restoration practices.
- Be more adaptive with restoration practices.
- Wastewater treatment plants need to upgrade to ENR (Enhanced Nutrient Removal) standards. How can nutrient input to the river be reduced?
- Map watershed inputs and develop a nutrient budget.
- Is the system recalcitrant to restoration because of legacy issues?
- Is there a way to rank species that are currently under threshold?
- How do we engage the agricultural community?
- How can restoration strategies that are resilient to climate change be designed?
- How can strategies to address hot spots on streams be developed?
- How can strategies be funded?
- How can urban planners account for long-term environmental planning?
- How can agriculture be made environment-friendly?
- What is the effect of continued dam construction associated with urban development?

### Tidal Species and Habitat

What is the most fundamental scientific question concerning tidal habitat and species that would enhance our understanding of the Patuxent River ecosystem?

**Fundamental Question:** How do we prepare for impending climate change through improved understanding of salinity changes, sea level rise, ground water, storm events, and the role of keystone areas (marshes, forest buffers, and tidal streams)?

#### **Elaboration:**

- Model salinity changes along the Patuxent River in the face of climate change.
- What are the impacts of flash events on the system?

- Incorporate flooding projections into planning.
- Where do marshes / forest buffers play a keystone role in the tidal system? View these areas with a lens for protection.
- How can socio-economic valuation of marsh ecosystem services be used to change behavior?
- Where are the worst problems in tidal habitats? There is a need for prioritization – consider a scale.
- Understand and quantify the impact of the Chesapeake Bay influence on the tidal area.

### **Conservation, Restoration, Management, and Monitoring**

What is the most significant conservation, restoration, management, or monitoring strategy that would enhance water quality in the Patuxent River over the next 5 years?

**Fundamental Question:** Where and why are counties falling short on WIPs (Watershed Implementation Plans) and TMDLs (Total Maximum Daily Loads)? Emphasize the evaluation of BMPs (Best Management Practices) for agricultural practices and the engagement of the agriculture community to promote change.

#### **Elaboration:**

- How can a clearinghouse for information be developed?
- How can nutrient input to the river be reduced? One example is the upgrade of waste treatment plants to ENR standards.
- How can the agricultural community be engaged?
- How can developers be engaged?
- Institute monitoring programs that involve stakeholders in ecosystem goals.
- Evaluate BMPs for agriculture practices. Engage the community to encourage change in traditional practices. Incorporate adaptive management.
- How does the system operate as an overall concept?
- Where and why are counties falling short on WIPs / TMDLs? What are the barriers and the gaps?