Proposed Wetlands Land Uses for the Phase 6 Watershed Model

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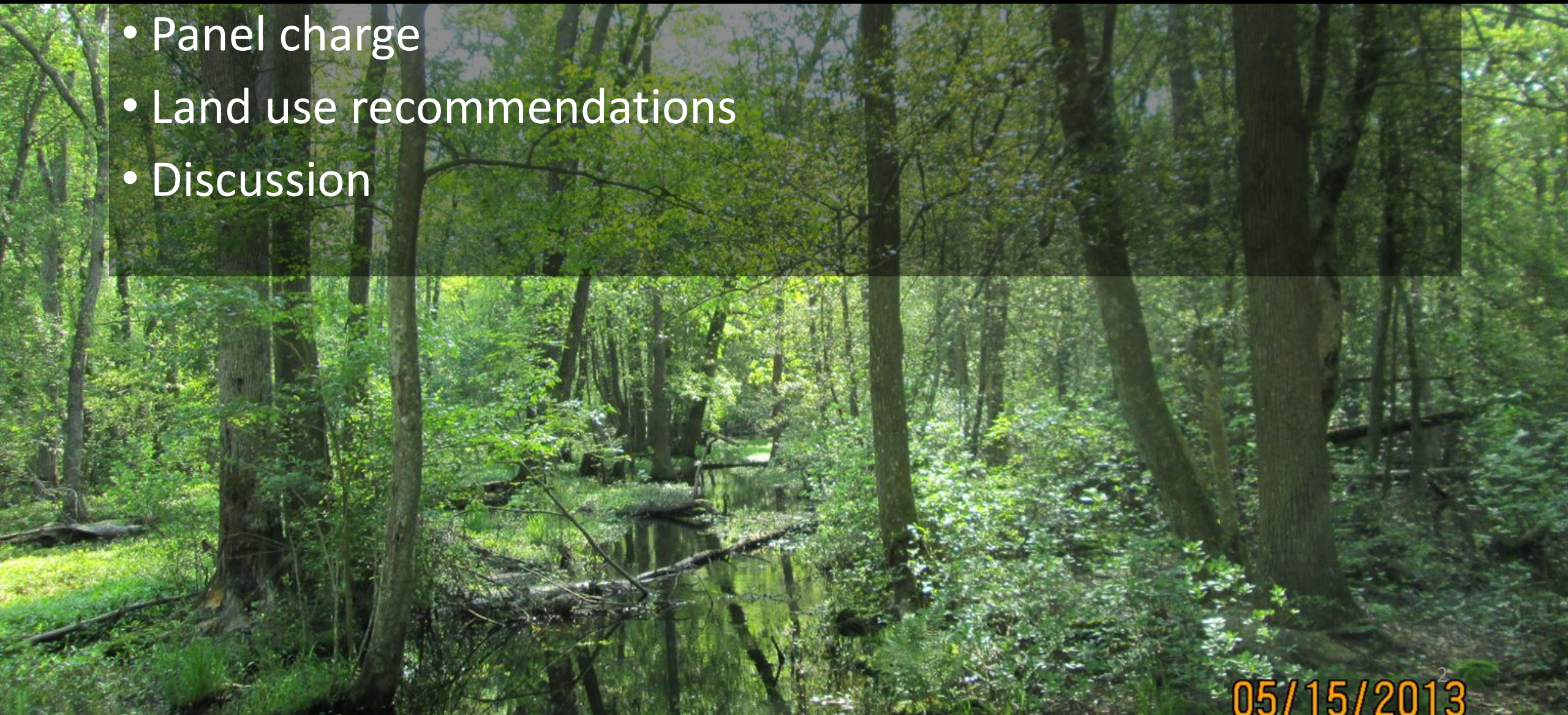
Overview

- Panel charge
- Land use recommendations
- Discussion



Panel Charge

- Assessment and recommendation of wetlands land use(s) for the Phase 6 Watershed Model
- Wetland land use efficiencies
- Wetland restoration and enhancement sediment and nutrient load reduction efficiencies (BMPs)

Proposed Wetland Land Uses

- **Two land use classes are proposed for Nontidal wetlands:**
  - **Floodplain** wetlands (surface water dominuated systems)
  - **Other** wetlands (ground water dominated)

- The **loading rate** from the wetland acres are equal to the TN, TP and TSS rates for Forest
  - Wetland land use efficiencies and wetland BMPs are still under consideration by the panel and will be presented for partnership review/approval for a later calibration

- Tidal wetlands will NOT be a land use in the P6 Watershed Model. They will be simulated in the estuarine water quality and sediment transport model
  - These wetlands interact with the tidal water column so the Modeling Workgroup is working to simulate their effects in the estuarine model

Criteria for land uses in Phase 6 (from Land Use Workgroup)

1. The proposed land use(s) can be mapped

2. Unique efficiencies associated with the land use

   Can think of this in terms of a unique “contribution” or “role.” The panel’s future recommendations will quantify this.

3. Unique BMPs applied to the land use (i.e. floodplain reconnection and wetland enhancement)

Clarification: loading rates

In the Watershed Model, “loading rates” can be understood as the nutrients and sediment that are annually generated in, and transported from, a given land use **irrespective of surrounding land uses**

- What is the contribution of the wetland itself?
  - Plenty of studies on wetlands and nutrient load reductions, but not a “loading rate” for the wetlands separately from other land uses
  - Wetlands are relatively few acres within the watershed acreage, setting the loading rate equal to Forest is reasonable. Accounting for the affects of wetlands on reducing loads from upslope sources is a much larger effect
- Wetland pollutant reduction effects with respect to the surrounding landscape can be captured through an efficiency estimate applied to, but distinct from, the wetland itself
  - Need (for the October calibration) agreement on how to map and classify wetlands throughout the entire watershed
    - NWI is not perfect, but it’s the only option universally available across the 64,000 sq. mile watershed

Summary of recommendations

Table 1. Recommended land use classes and relative loading rates for nontidal wetlands in the Phase 6 Watershed Model			
Proposed wetland land uses for Phase 6 Watershed Model	Relative Loading Rate (TN)	Relative Loading Rate (TP)	Relative Loading Rate (Sediment)
Floodplain	100% Forest	100% Forest	100% Forest
Other	100% Forest	100% Forest	100% Forest

Support for Adding Wetlands as a Land Use

- Why incorporate Non-tidal wetlands into the Phase 6 Watershed Model?
  - Wetlands are a land cover type and should be included in Bay Program models
    - Separating wetlands from forest allows for application of models to assess the unique role of wetlands as land use AND the effect of wetlands as efficiencies and BMPs
  - Existing and created wetlands have effects on nutrient and sediment loads delivered to the waterway
  - Existing wetlands can only be attributed additional load reductions as BMPs if they are land uses in the model