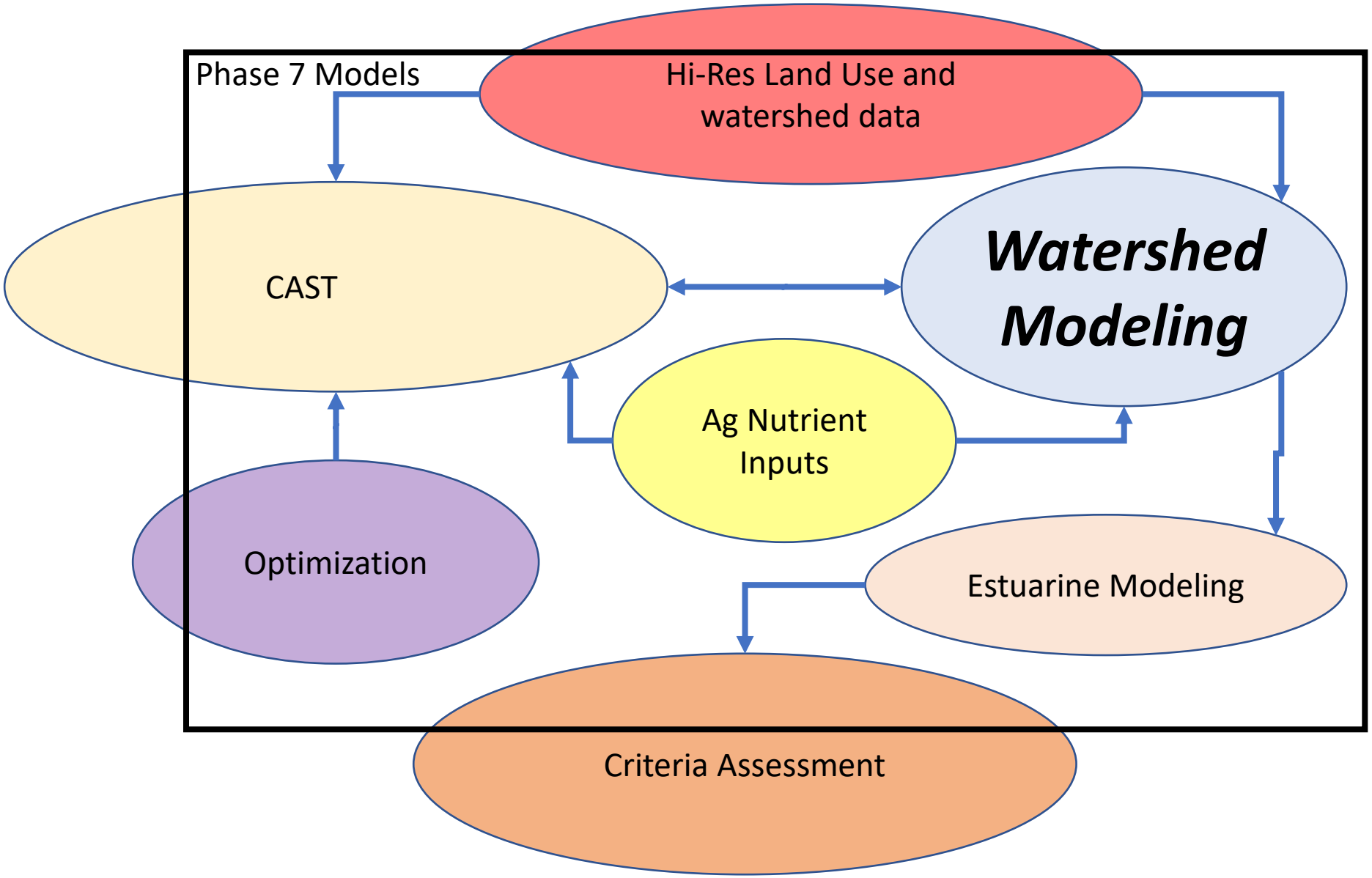
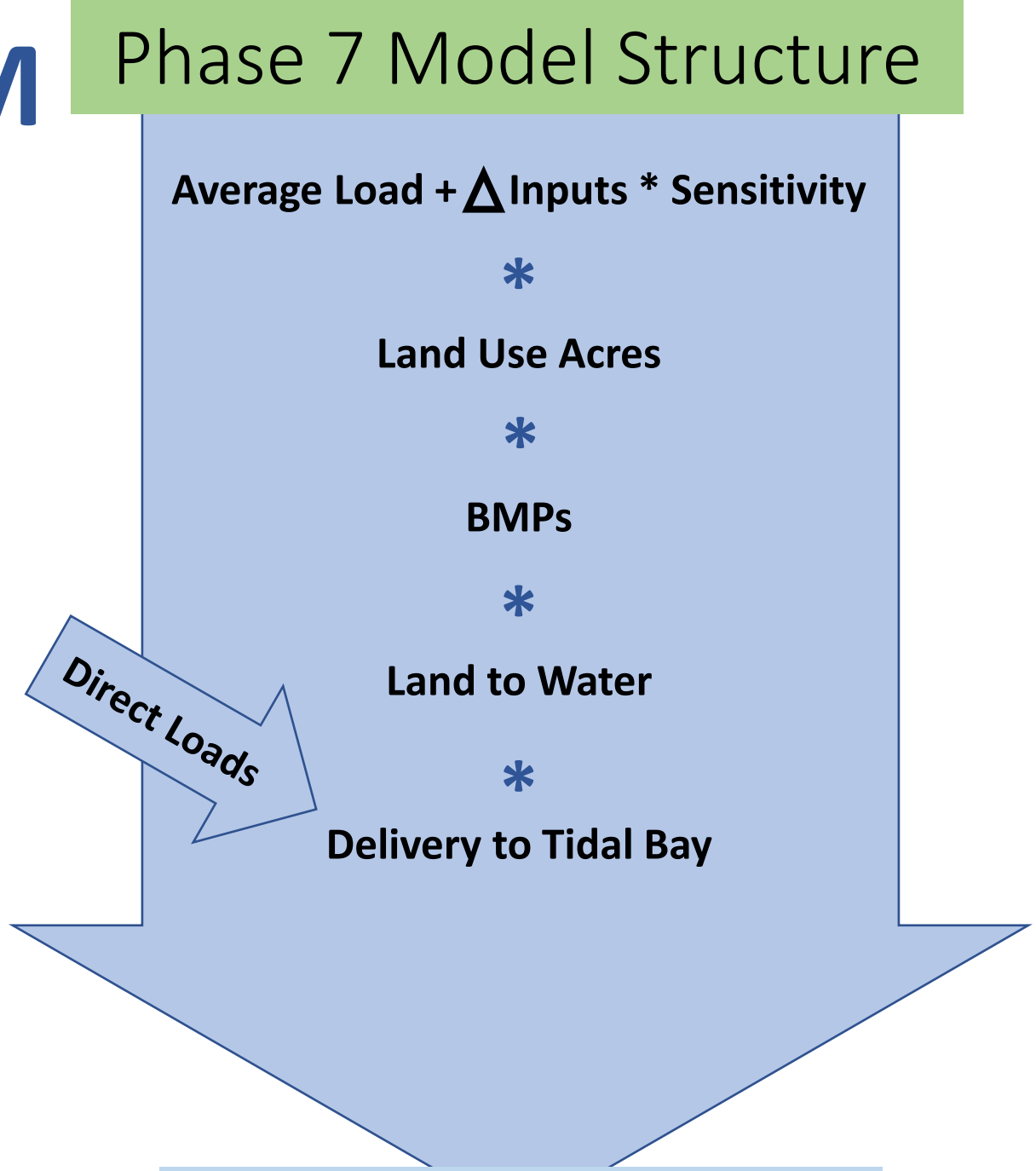
Phase 7 Development Tracks



Cast/CalCast/DM

Phase 7
CAST

Deterministic Scenario Tool:
1 set of loads for 1 set of inputs

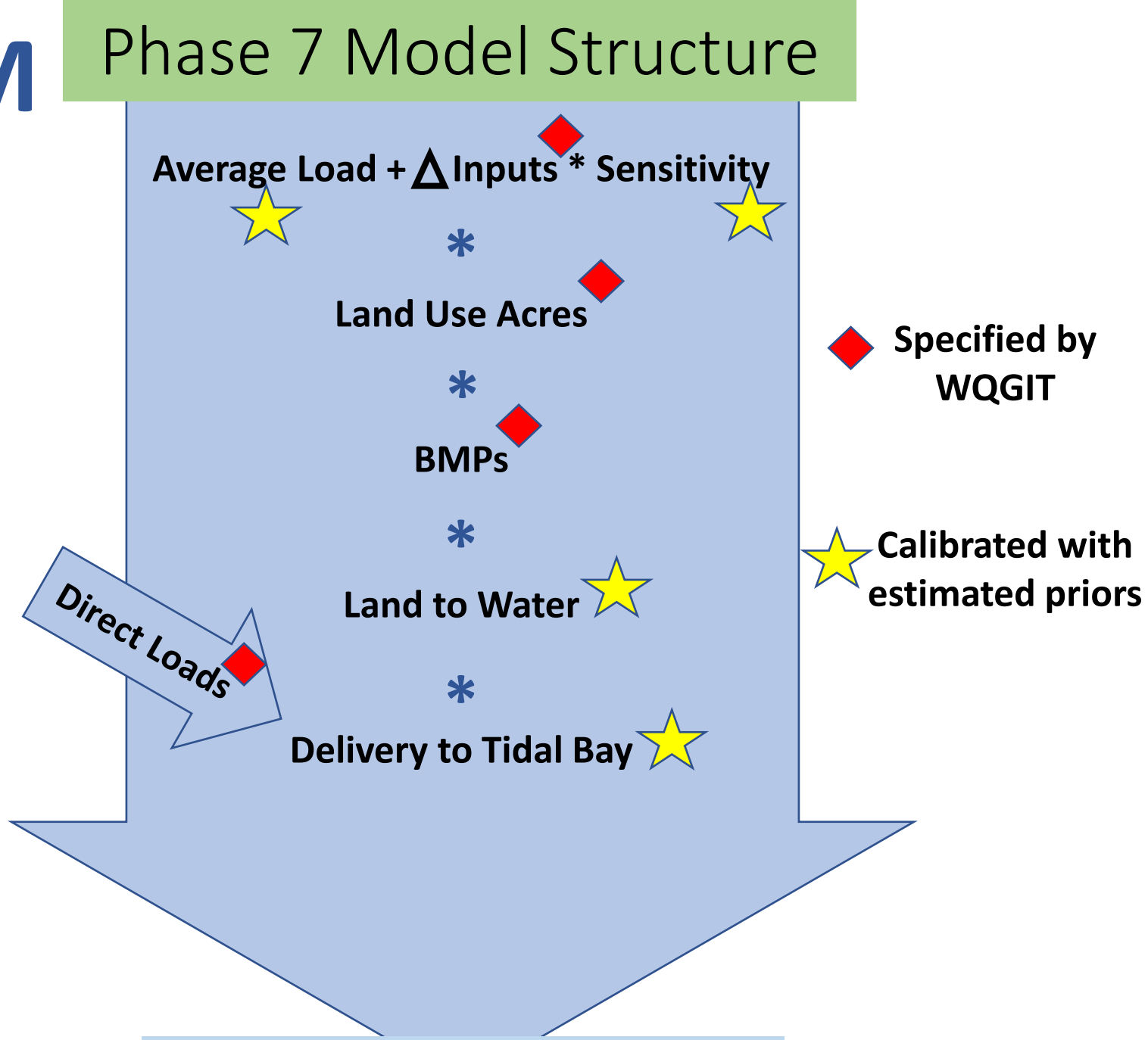


Cast/CalCast/DM

Phase 7
CalCAST

Tool for finding parameters that best match observations

Isabella Bertani



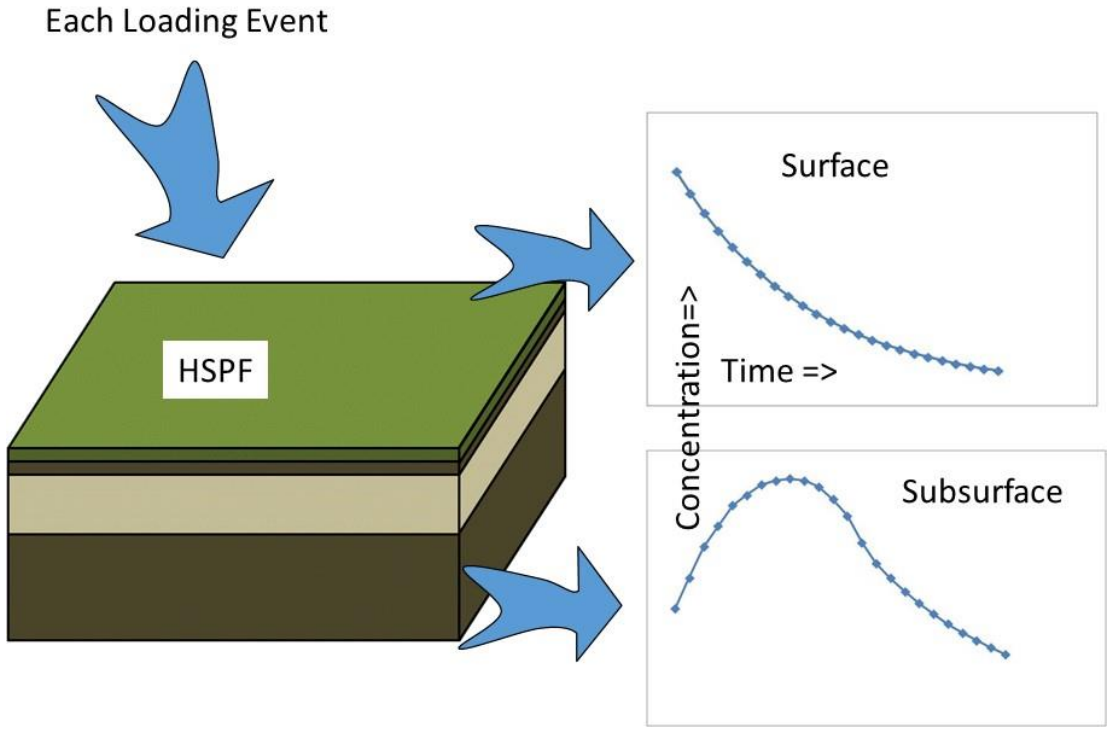
Cast/CalCast/DM

Phase 7

Dynamic Model

Tool for

- loading estuarine models
- Comparing against observations
- Other potential collaborative projects



Gopal Bhatt

Phase 7 CAST Structure

Average Load
+
Δ Inputs * Sensitivity
*
BMPs
*
Acres
*
Land to Water
*
River Delivery

Load by land-river segment and land use

Inform

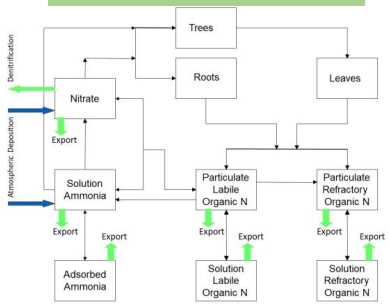
Constrain

CalCAST

Average Load
+
Δ Inputs * Sensitivity
*
BMPs
*
Acres
*
Land to Water
*
River Delivery

Load by land-river segment and land use

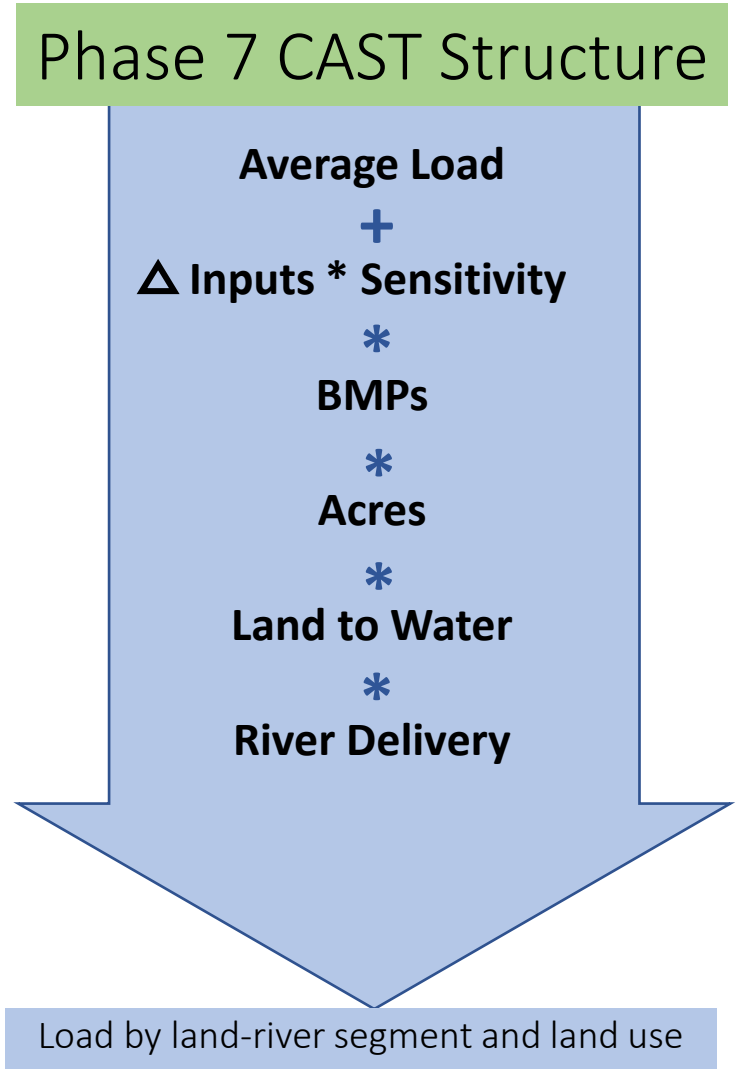
Temporal downscaling model



CAST model documentation; section 1
https://cast.chesapeakebay.net/Documentation/ModelDocumentation

Workgroup Discussions

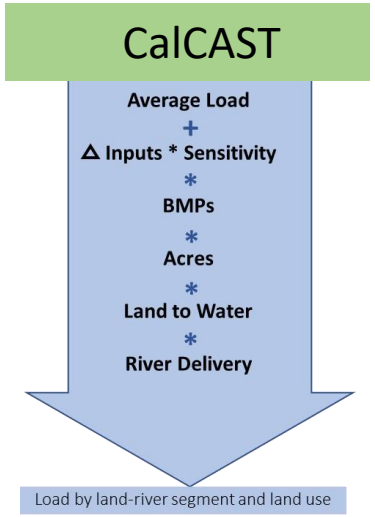
- Urban Stormwater
- Waste Water Treatment
- Forestry Workgroup
- Watershed Technical
- Do you want to change
  - Land uses
  - Other Load sources
  - Relative loading rates
  - Sensitivities
  - BMPs
- *Leads: Gary Shenk; Auston Smith*

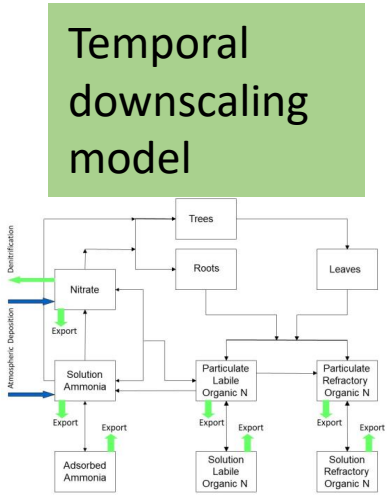


CAST model documentation; section 1
https://cast.chesapeakebay.net/Documentation/ModelDocumentation

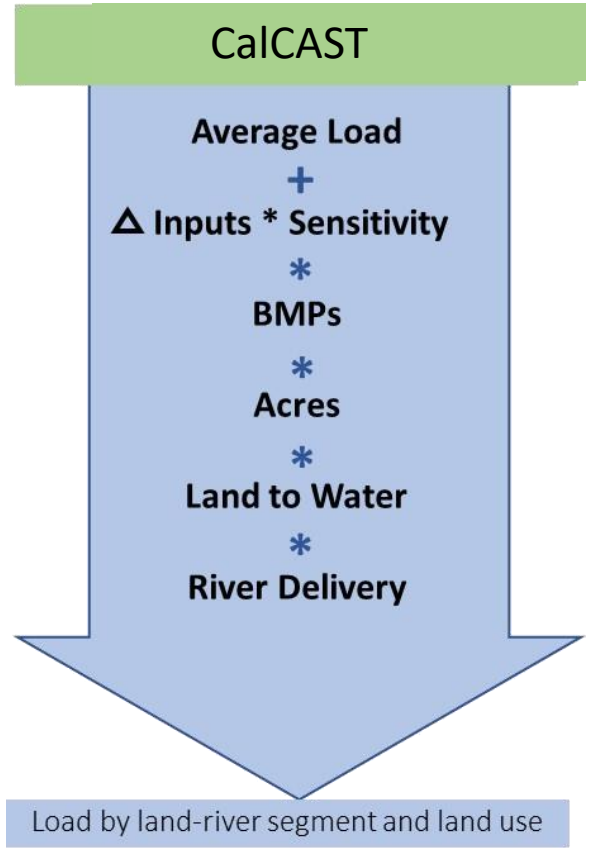
Stream Observations

- Flow, concentration, loads
- *Lead: Isabella Bertani*





CalCAST

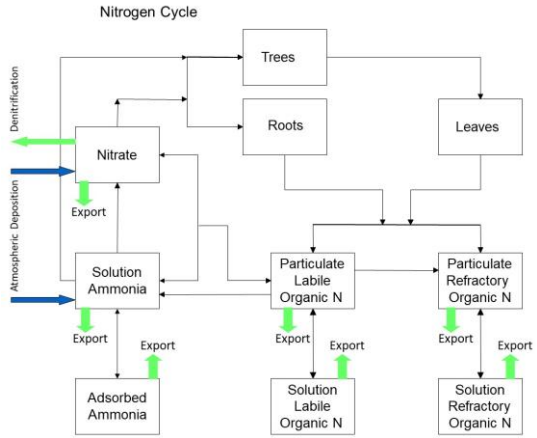


- Evaluate land to water factors
- Evaluate river delivery factors
- Evaluate sensitivities
- *Lead: Isabella Bertani*
- *Support: Joseph Delesantro*

Dynamic Model

- Develop NHD100k scale simulation and outputs
- Update weather
- Update climate
- *Lead: Gopal Bhatt*

Temporal downscaling model



Machine learning

- Fine-scale data use in transport
- Time-variable concentrations
- *Penn State: Kim Van Meter; Chaopeng Shen*