

Modeling Approach

Required Decisions for Selecting a Modeling Approach

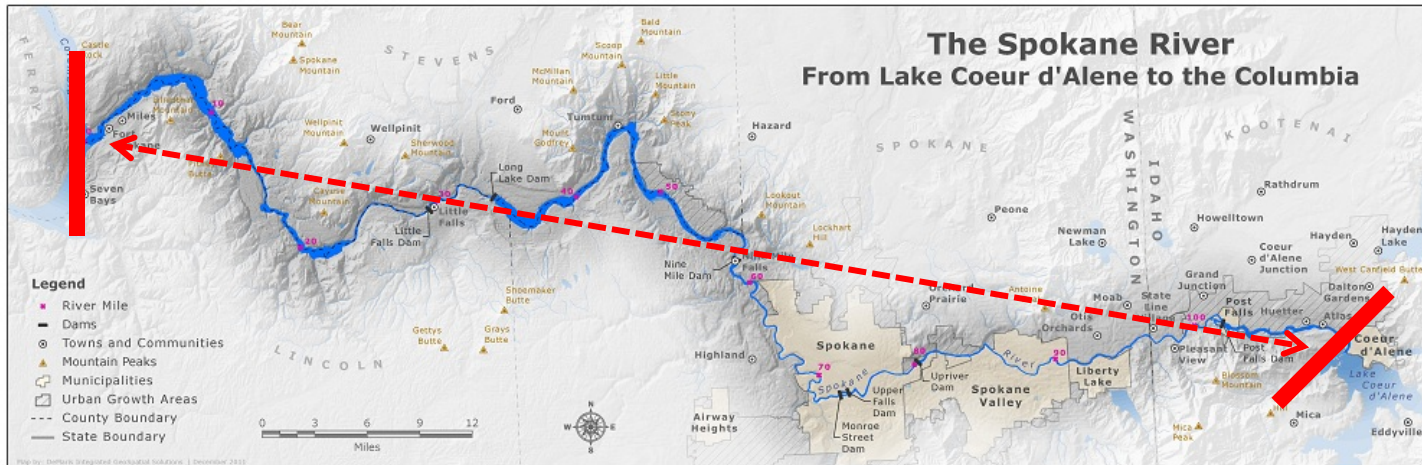
- Spatial Domain
 - What area does the model cover?
- Spatial variability
 - Does the model describe how concentrations change over length, width and/or depth?
- Time Variability
 - Does the model simulate how long it takes the system to change in response to changing loads?
- Kinetic Complexity
 - Does the model simulate sediment interaction, loss processes and/or bioaccumulation?

Required Decisions for Selecting a Modeling Approach

- **Spatial Domain**
 - Spokane River to Lake Spokane or Entire System?
- **Spatial variability**
 - 0, 1, 2, or 3 dimensions?
- **Time Variability**
 - Steady state or time variable?
- **Kinetic Complexity**
 - Sediment interaction, loss processes, and/or bioaccumulation?

Spatial Domain

Entire System: Lake Coeur d'Alene Outlet to Lake Roosevelt



-or-

“Upper” Spokane River : Lake Coeur d'Alene Outlet to Lake Spokane?



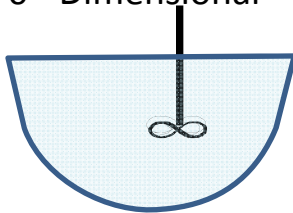
Required Decisions for Selecting a Modeling Approach

- Spatial Domain
 - Spokane River to Lake Spokane vs. Entire System
- Spatial variability
 - 0, 1, 2, or 3 dimensions?
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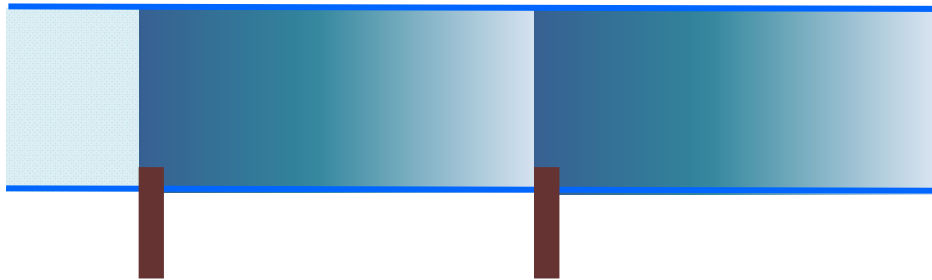
Spatial Dimensions

Different model frameworks exist covering the entire spectrum of possible dimensions

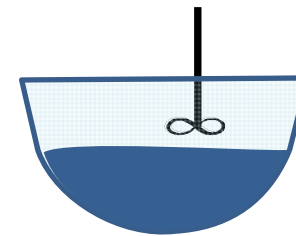
0 - Dimensional



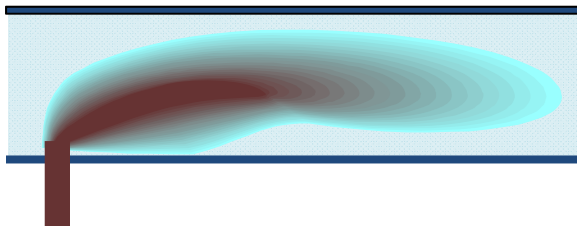
1 - Horizontal Dimension



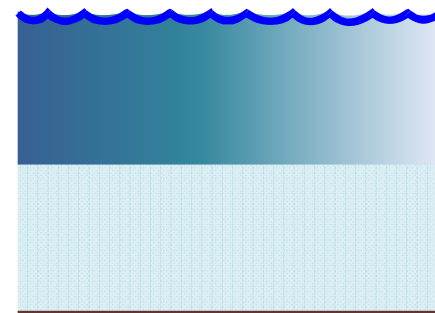
1 - Vertical Dimension



2 - Dimensional Horizontal



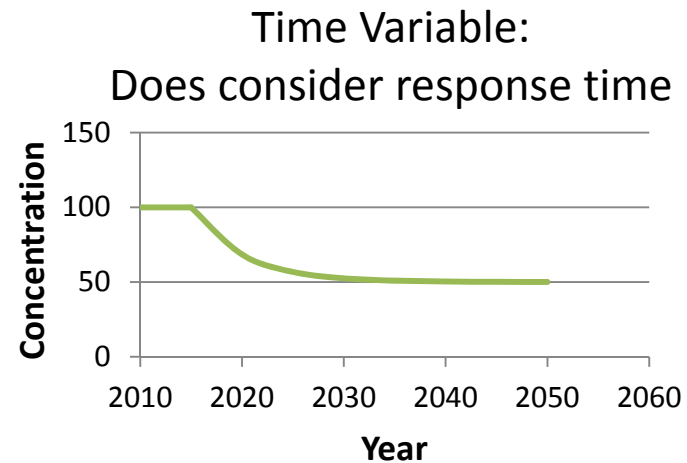
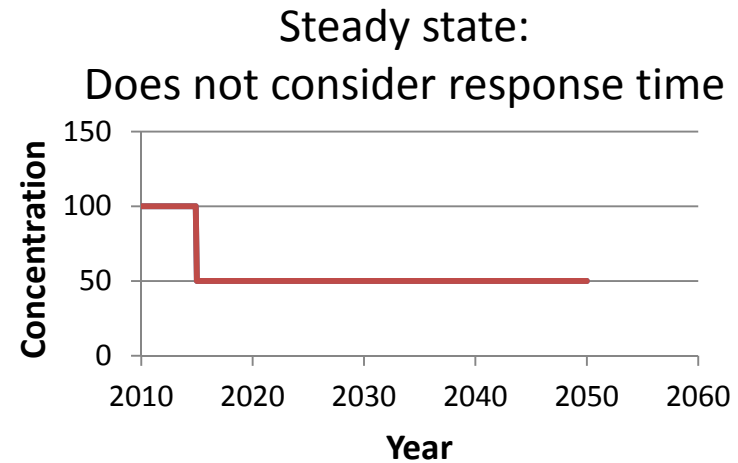
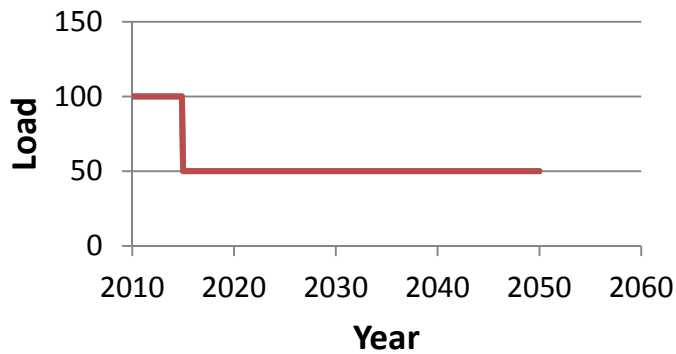
2 - Dimensional Vertical



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Steady-State vs. Time Variable



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Kinetic Complexity

