

Quantifying the Conceptual Aquatic Exposure and Pathway Diagrams

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South River Science Team Meeting

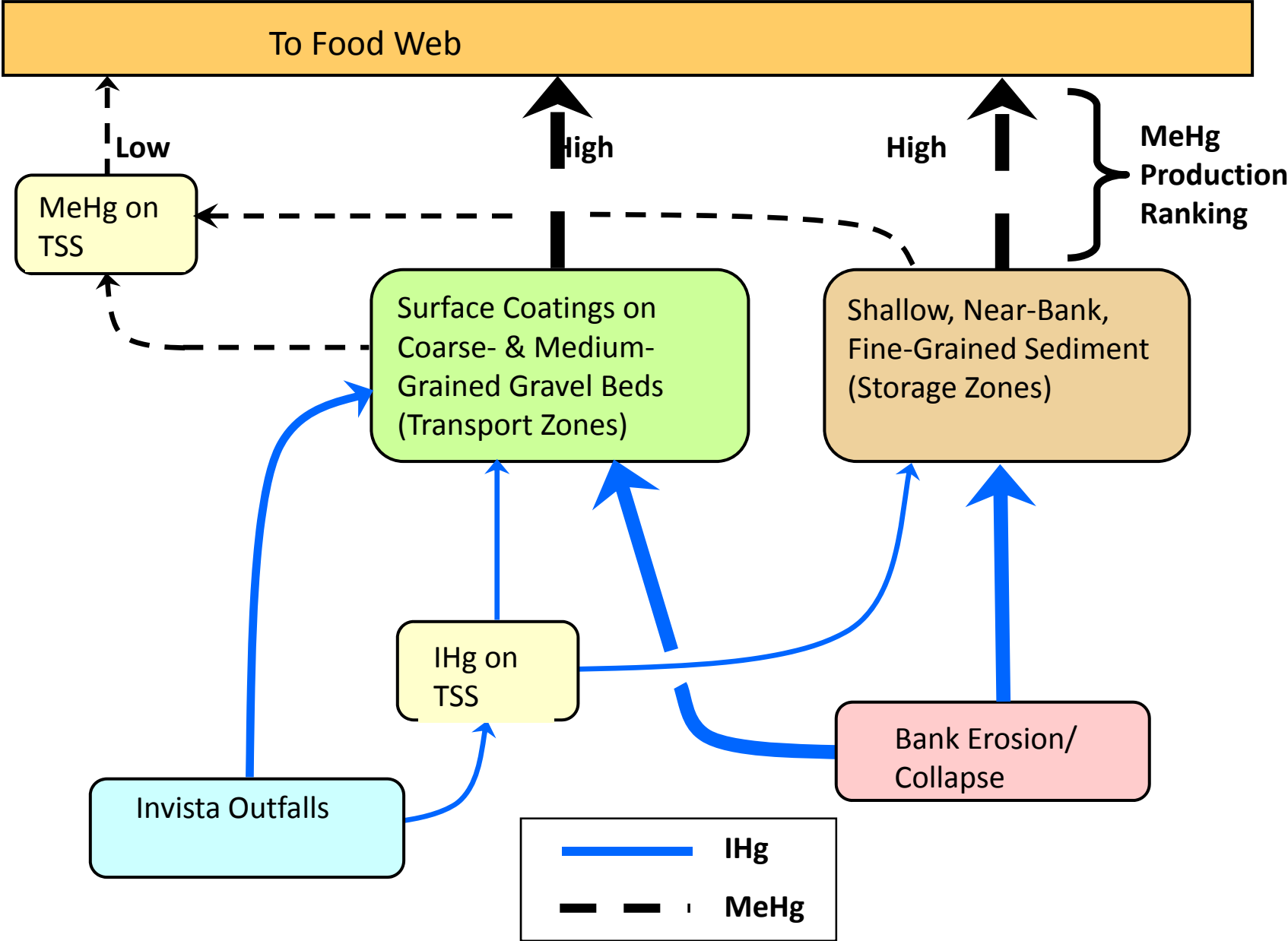
July 14, 2010

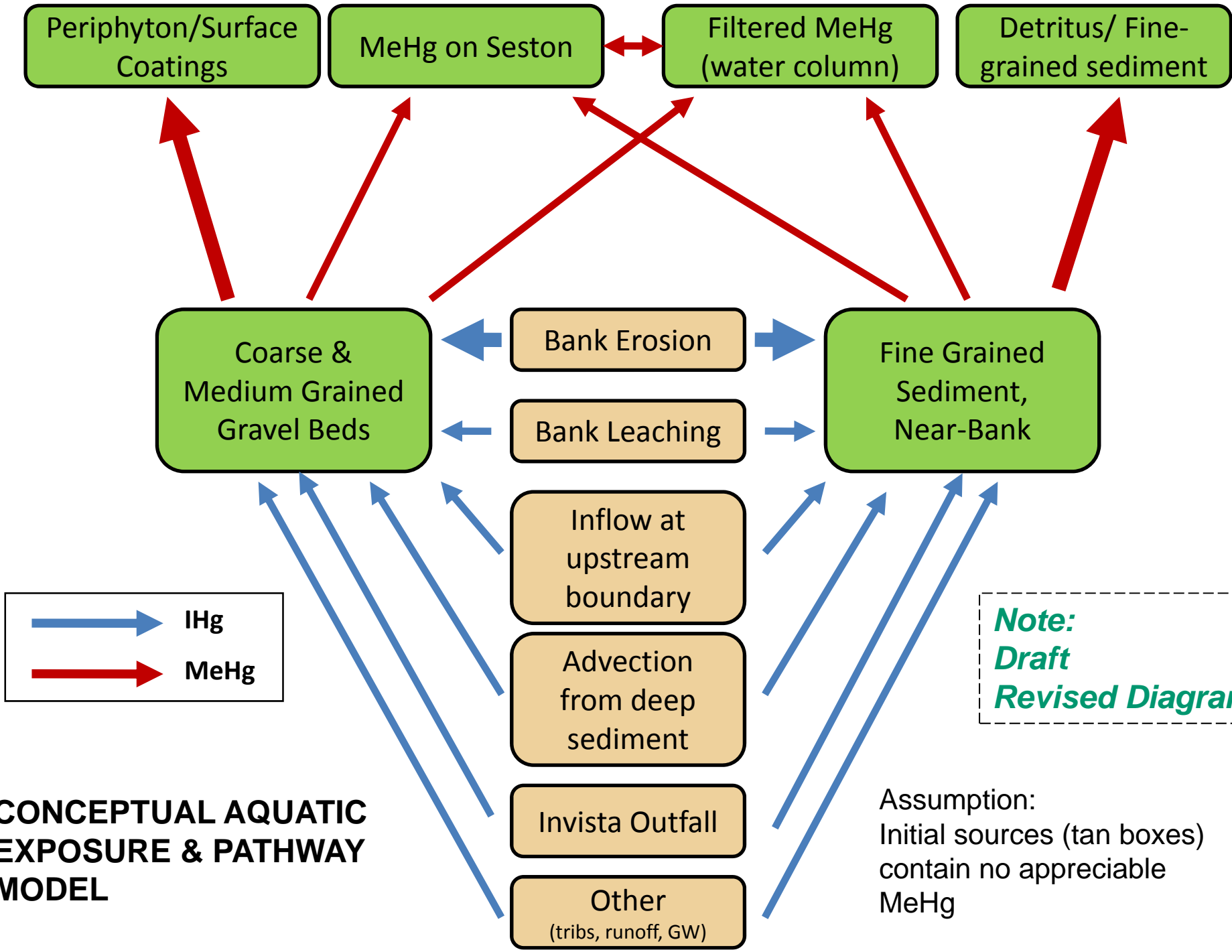
Background

- Conceptual Exposure and Pathway Model (CEM) Diagrams prepared in 2009 (Dyer et. al.)
- Expert Panel requested that fluxes be quantified (Oct. 2009)
- Purpose of diagram: Identify pathways that can be feasibly interrupted, thus reducing exposure by fish
- Quantifying fluxes allows us to target significant pathways in our management approach for the river
- Two Task team meetings held
- Task Team: Reed Harris, Todd Morrison, Jim Pizzuto, Jim Dyer, Rich Landis, Nancy Grosso

IHg Sources Feeding MeHg Production in South River

*Note:
Original Diagram*



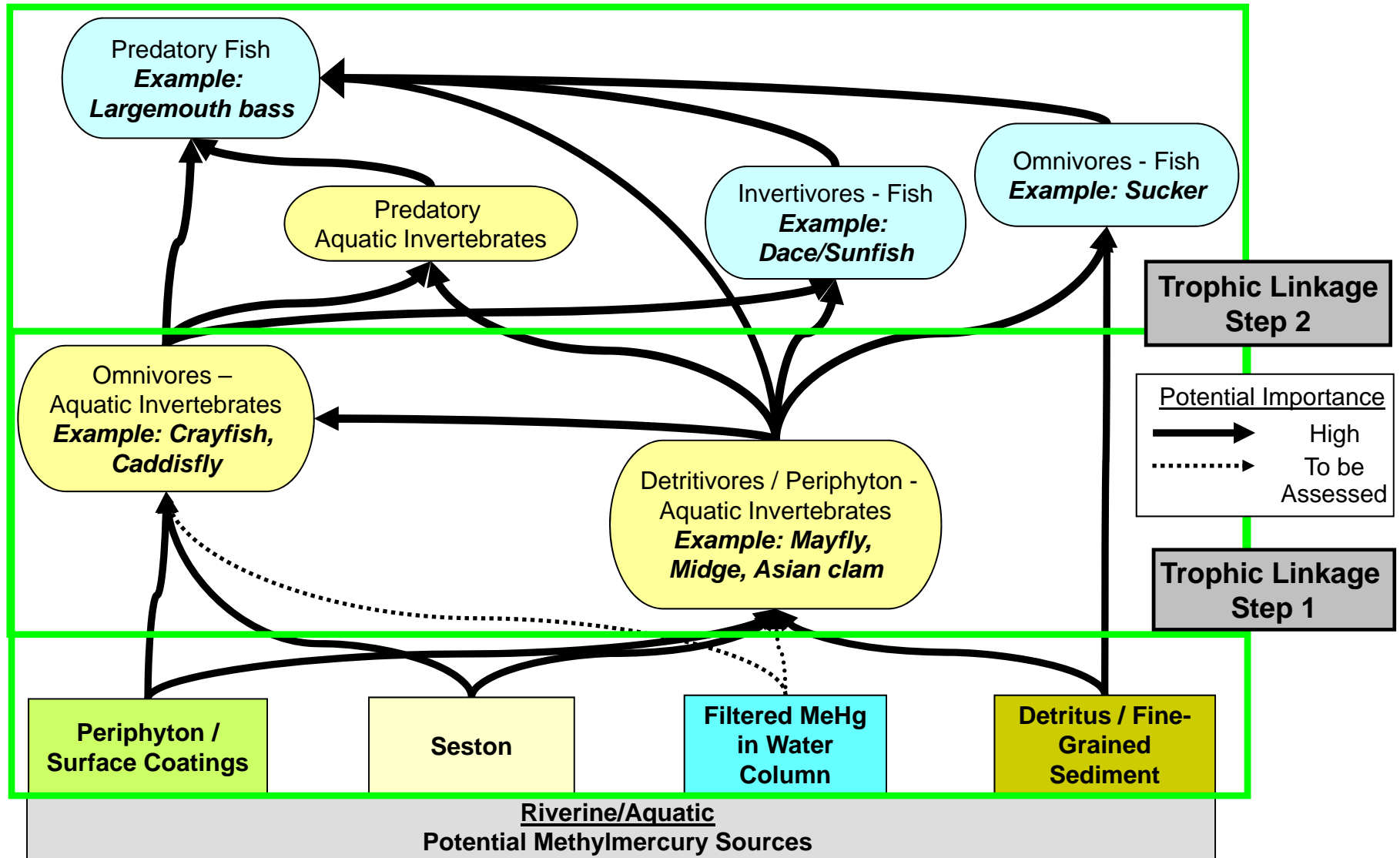


*Note:
Draft
Revised Diagram*

CONCEPTUAL AQUATIC EXPOSURE & PATHWAY MODEL

Assumption:
Initial sources (tan boxes) contain no appreciable MeHg

Simplified Conceptual Pathway for MeHg Bioaccumulation



Next Steps

- Revise Biological Diagram:
 - subdivide Trophic Level 1 into smaller categories
 - Possible: Crayfish, Caddisfly, Midge, Terrestrial insects, Other
- Adopt convention for fluxes (space and time scale)
- Assign responsibility for draft flux estimates / ranges, including uncertainty
- Assemble and refine fluxes
 - Estimate fluxes from two directions on aquatic pathway diagram
 - Bottom up (from Hg sources to fish species)
 - Top down (from fish species to Hg sources)
- Estimate fluxes for two or three fish endpoints (e.g. bass, sucker, sunfish)
- Identify critical uncertainties – can these be addressed?
- Explore application to Floodplain food web