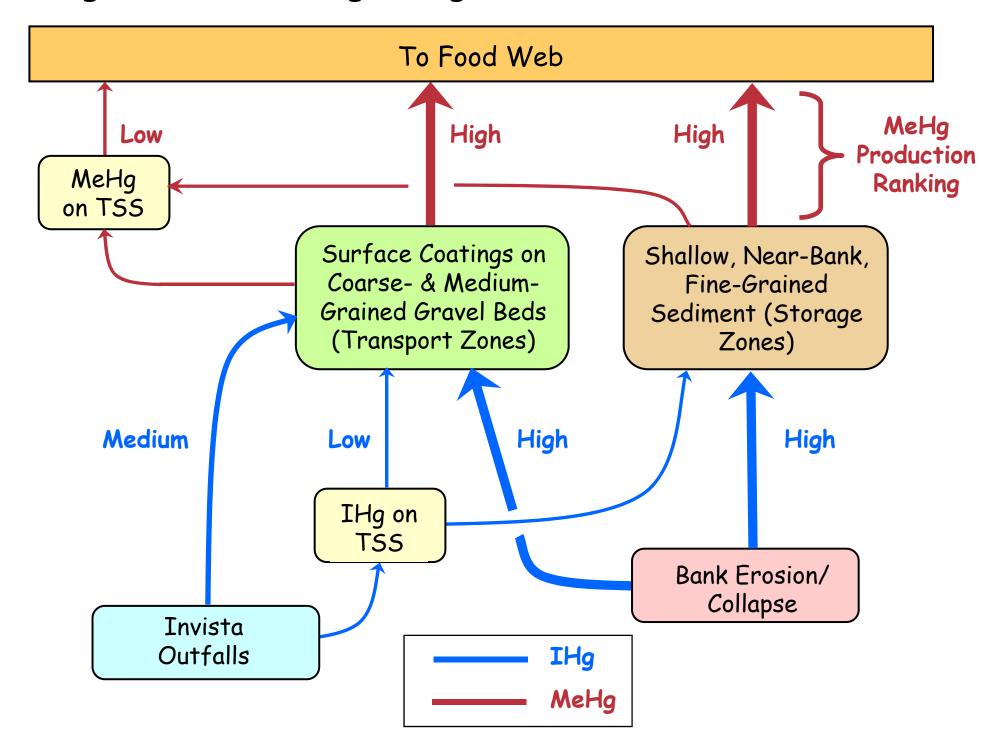
## Sources of FIHg and $Hg_R$ Feeding Methylation in the South River

Source	Primary Processes	Source Type	Importance to Methylation (initial assessment)
Bank erosion/collapse (includes exposed HRADs)	resuspension/deposition, adsorption/ desorption, oxidation/reduction	1°	Н
Shallow, near-bank, fine- grained sediment	adsorption/desorption, methylation, diffusion, advection, resuspension/deposition	2°	Н
Coarse- & medium-grained gravel beds	adsorption/desorption, methylation, diffusion, advection, hyporheic flow	2°	H
Invista outfalls	deposition, adsorption/desorption, volatilization, oxidation/reduction	1°	W
River input (upstream of Invista plant)	resuspension/deposition, adsorption/desorption, demethylation	1°	L
Floodplain soil (ex. banks)	surface runoff, methylation/ demethylation, oxidation/reduction	1°	L
Direct precipitation	infiltration + interflow	1°	L
Deeper, buried sediment	resuspension	2°	L
Interflow/GW advection through river banks	diffusion, advection	2°	L
TSS	adsorption/desorption, resuspension/ deposition, oxidation/reduction	2°	L
Tributaries and millraces	resuspension/deposition, adsorption/desorption, methylation/demethylation	2°	L
Contaminated GW at source	diffusion, advection	2°	L?

## IHg Sources Feeding MeHg Production in South River



## Production Compartments for MeHg in the South River

Production Compartment	Biological Ranking as Food Source *	MeHg Production Ranking *
Surface coatings on coarse- & medium-grained gravel beds	Н	Н
Shallow, near-bank, fine- grained sediment	M	н
TSS	Н	L
Water column colloids	L	N/A
Upstream river input	L	L
Gravel/cobble areas	L	W
Banks	L	L
Floodplain	L	L
Invista outfalls	N/A	L
Tributaries and millraces	L	L

<sup>\*</sup> Note: H, M, L rankings are based on collective experience of task team

## Simplified Food Web for the South River **Terrestrial** Aquatic High-Level **Predatory Wildlife Piscivores** Ex: Screech Owl Ex: Kingfisher & Heron **Predatory Fish** Ex: Smallmouth & Invertivores-Wildlife Largemouth Bass River-Linked Ex: Carolina Wren Insectivores - Wildlife Example: Bats **Omnivores** Predatory Invertivores - Fish Wildlife, Fish, Invertebrates Ex: Dace/Sunfish **Omnivores** & Invertebrates Ex: Spiders Wildlife Ex: Mallard Duck Invertebrates Predators -Invertebrates Invertebrates: Grazers/Scrapers Herbivores -**Deposit Feeders** Wildlife Detritivores -Herbivores -Suspension Fdrs Herbivores -Invertebrates Invertebrates Ex: Caddisfly Wildlife **Aquatic Plants Terrestrial Plants Algae** Suspended **Surface Coatings** Shallow, Near-Bank, Soil **Detritus** Solids (TSS) on Gravel Beds Fine-Grained Sediment Riparian/Floodplain **Potential Methylmercury Sources** Riverine/Aquatic