2009 Expert Panel Feedback Review and Discussion

South River Science Team Meeting

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Questions to Guide Expert Panel Feedback

1. **Have we sufficiently characterized the South River aquatic environment?**
   - Consensus on predominant pathways by which IHg & other constituents/conditions for methylation enter & move through aquatic system to sites of methylation
   - Consensus on how Hg subsequently bioaccumulates within food web to fish?
2. **Are we considering an appropriate blend of innovative watershed management & remedial technology options for managing risk & reducing MeHg levels in fish?**
   - Overlooking opportunities to modify critical methylmercury production compartments/ processes or bioaccumulation pathways that will reduce MeHg concs. in South River biota?
3. **Have we collected & analyzed sufficient data to reach a consensus understanding of fate & dynamics of Hg in the terrestrial environment adjacent to the South River?**

Summary of Expert Panel Recommendations

#1

- Confirm conceptual models (for baseline conditions in particular) via data synthesis/analysis & "minimum essential" numerical modeling.
- Reduce uncertainty via manipulation experiments in lab & field
  - Hyporheic zone & link between Hg in eroding banks & riverbed
- Implement exp. programs to manipulate MeHg conc. in major production compartments
  - Microbes, microhabitats, & chemical inhibitors
- Better understand MeHg points of entry into invertebrate community
  - How to manipulate and impact of nutrient reduction

#2

- Form 3 remedial option working groups to pursue
  1. Engineering options
  2. Microbial methylation
  3. Trophic modification
- Drive **above** experimental & modeling efforts from within work groups
- Include microbiologists
- Partner w/ TMDL implementation projects for DO, P, & habitat improvements

#3

- Use population level effect as benchmark for terrestrial environment & assess data to date to confirm
- Focus on reducing MeHg bioaccumulation in aquatic organisms first