

# **Egg PCB Contamination of Various Avian Feeding Guilds from the Upper Hudson River**

**Joseph C. Steinbacher<sup>1</sup>, Christopher J. Balk<sup>2</sup>,  
Kathryn A. Jahn<sup>3</sup> and Thomas M. Brosnan<sup>1</sup>**

<sup>1</sup> National Oceanic & Atmospheric Administration  
Silver Spring, Maryland

<sup>2</sup> New York State Department of Environmental Conservation  
Gloversville, NY

<sup>3</sup> U.S. Fish & Wildlife Service  
Cortland, New York

# Study Objectives:

- Screening level survey of PCB contamination
- Preliminary measure for basing future investigations

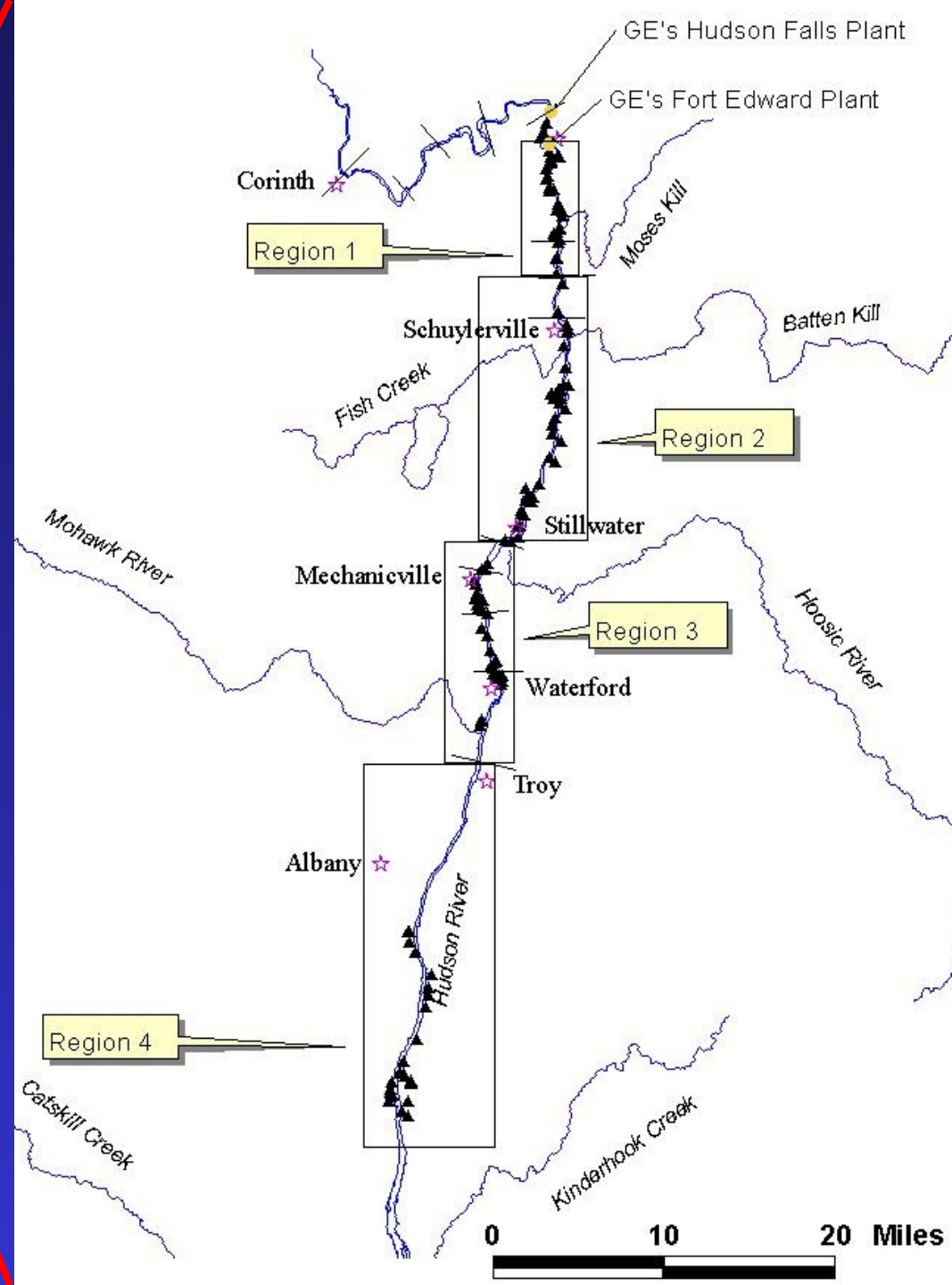
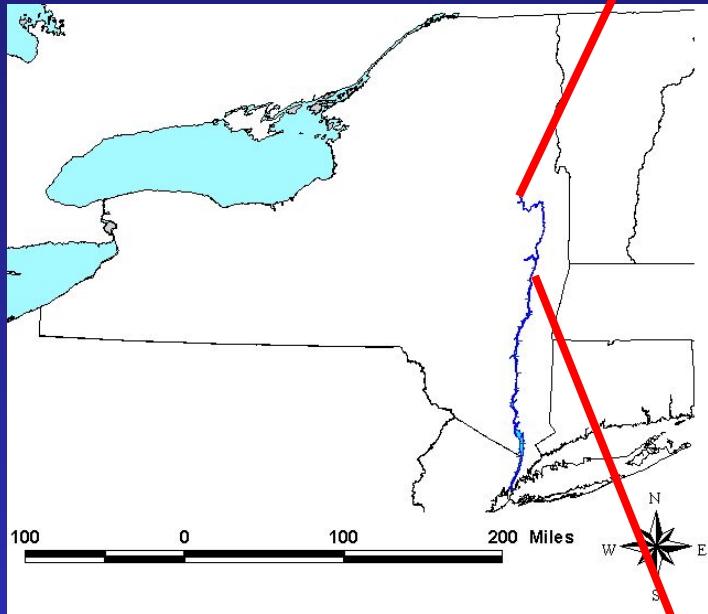
# Species of Interest:



# Sample Collection:

- April 16, 2002 to June 20, 2002
- 220 eggs collected; 168 egg samples
- 48 PCB congeners

# Sampling Sites:



# Feeding Guilds:



Belted Kingfisher  
Spotted Sandpiper

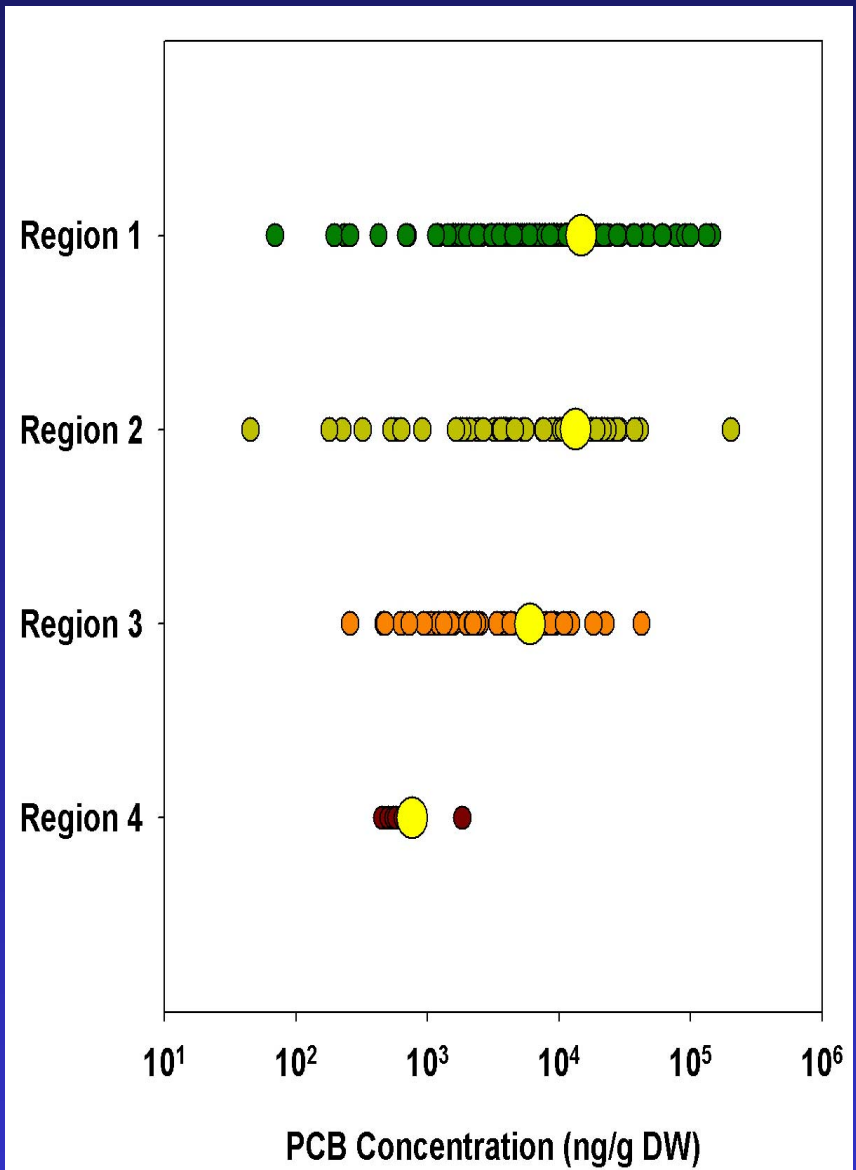
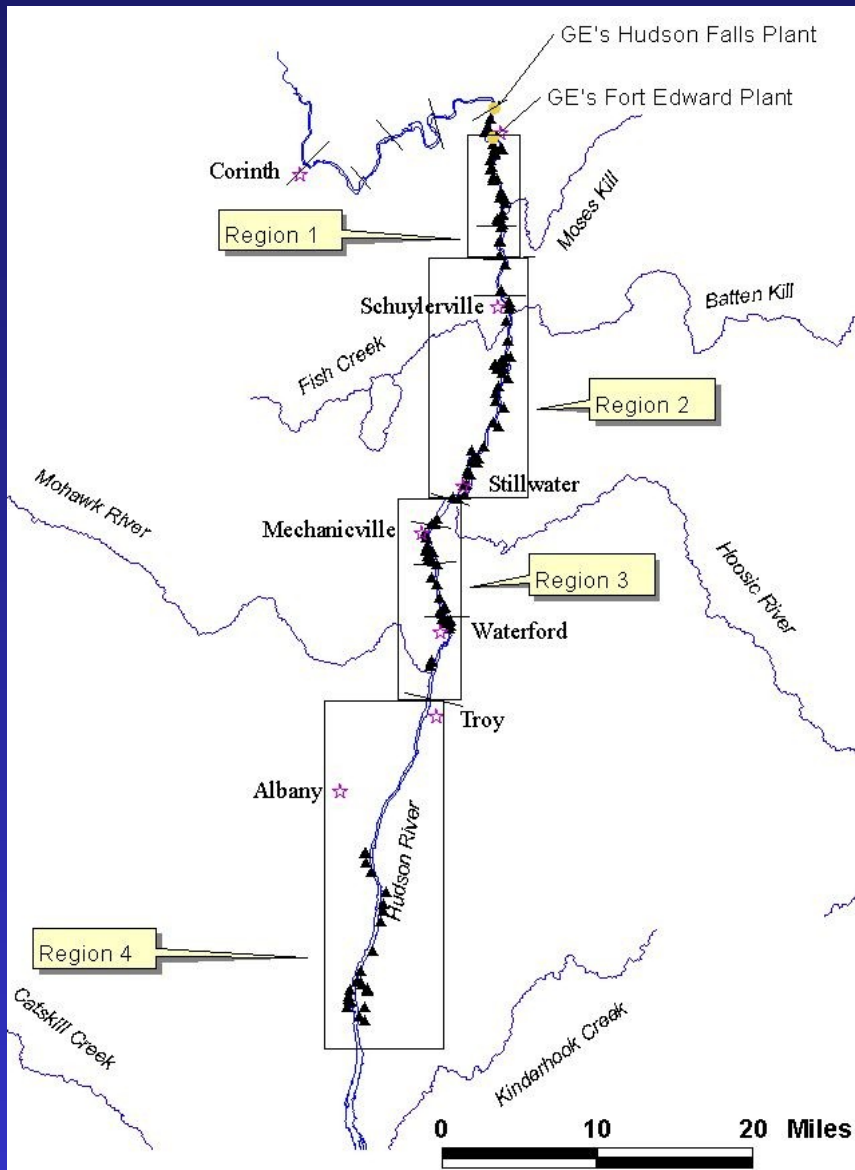
Barn Swallow  
Eastern Phoebe  
Rough Winged Swallow



American Robin  
Common Grackle  
Red Winged Blackbird

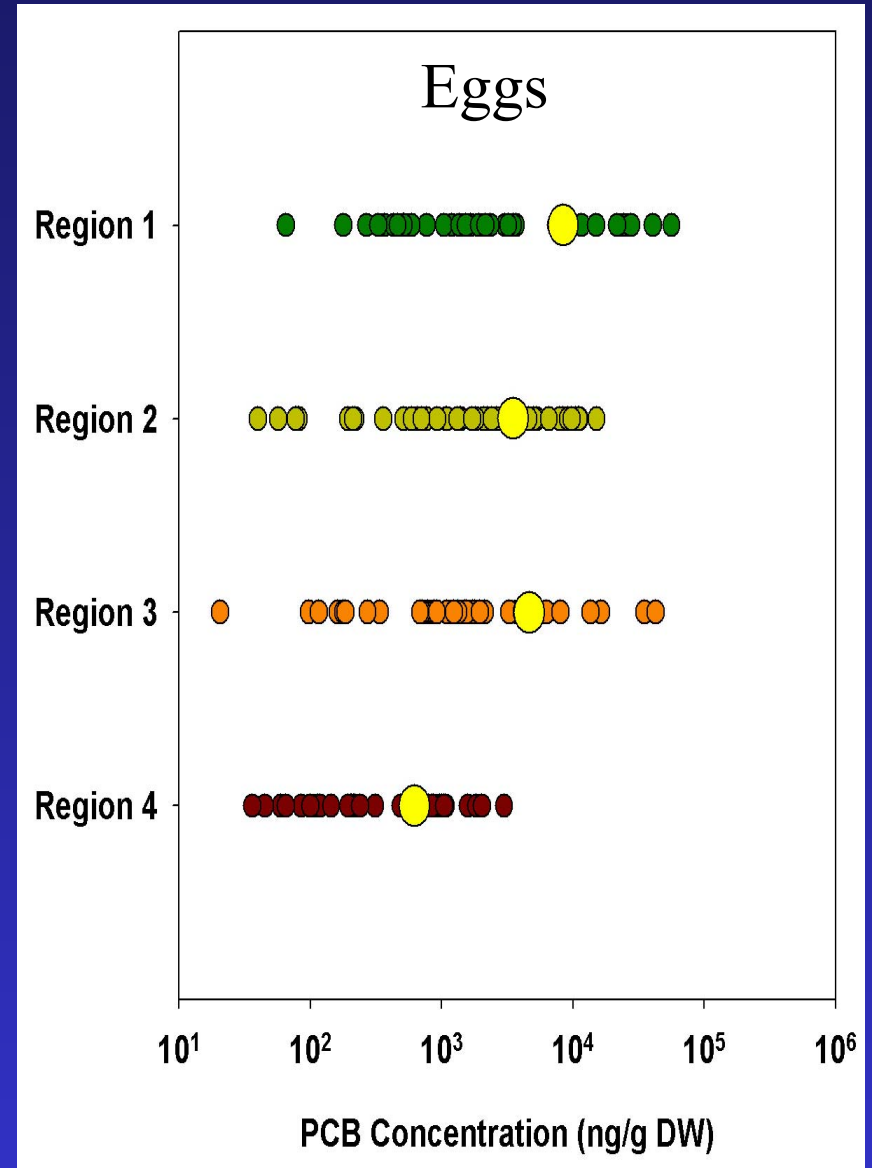
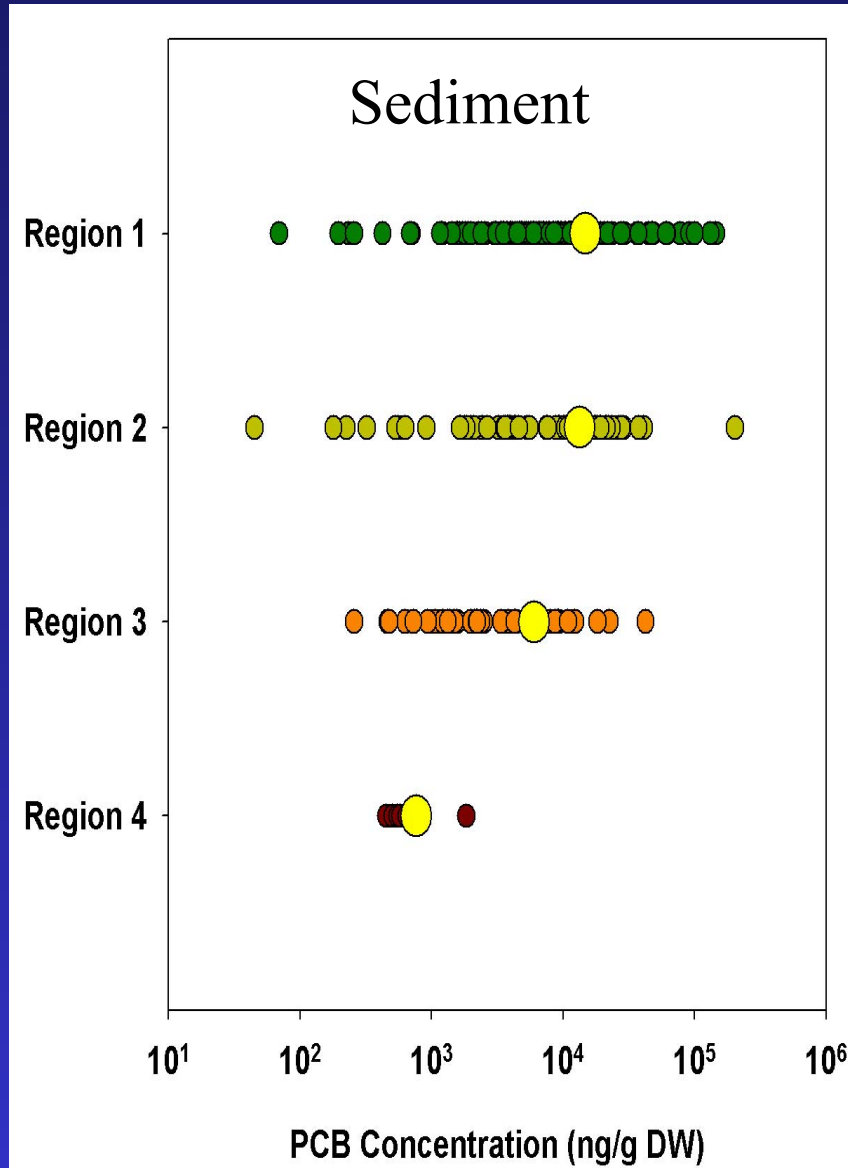
# Total PCBs

# Hudson River Sediment PCBs:

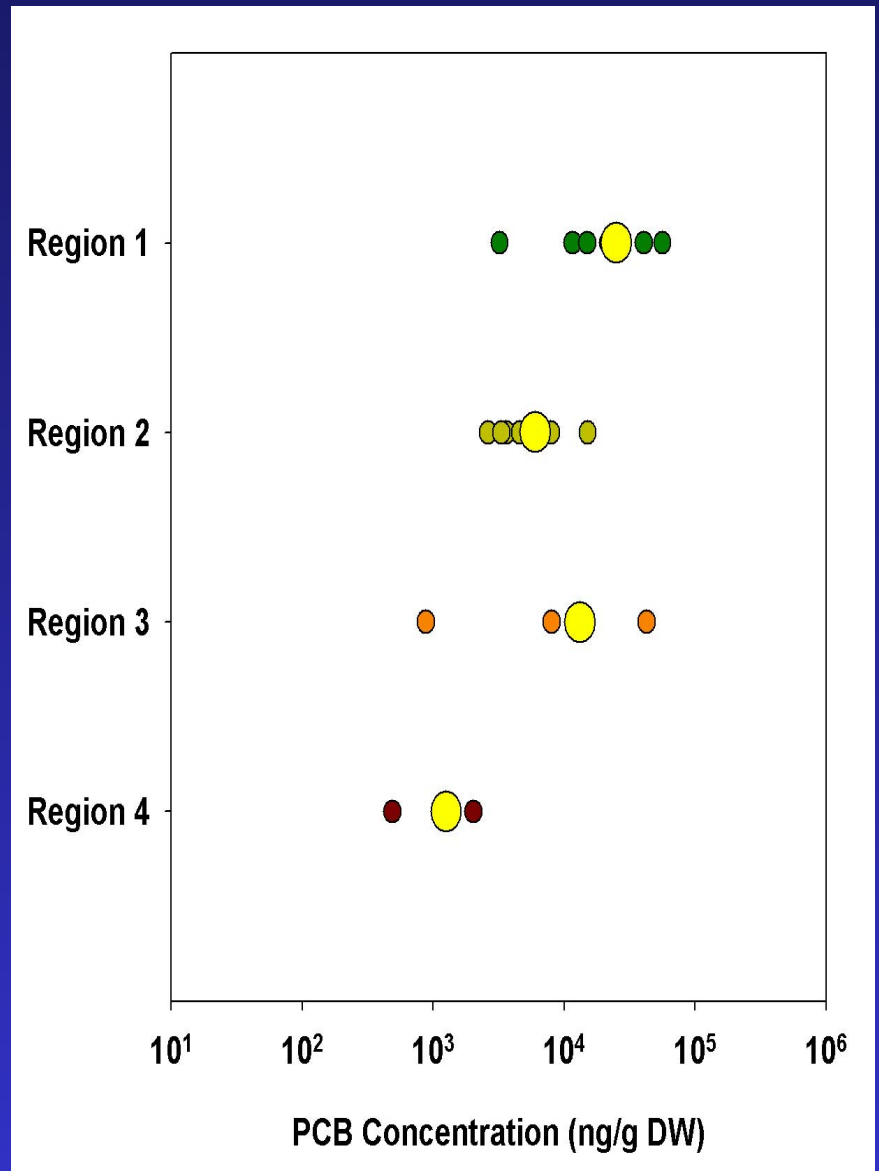
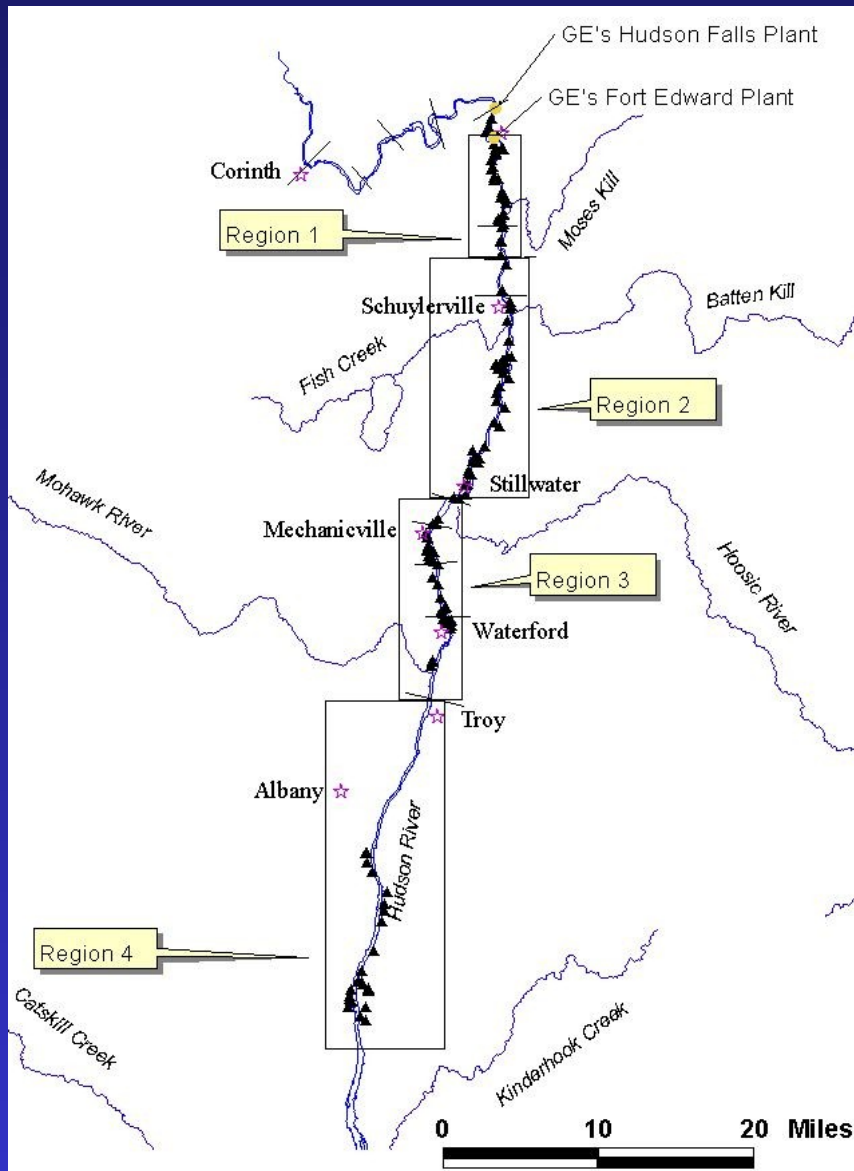




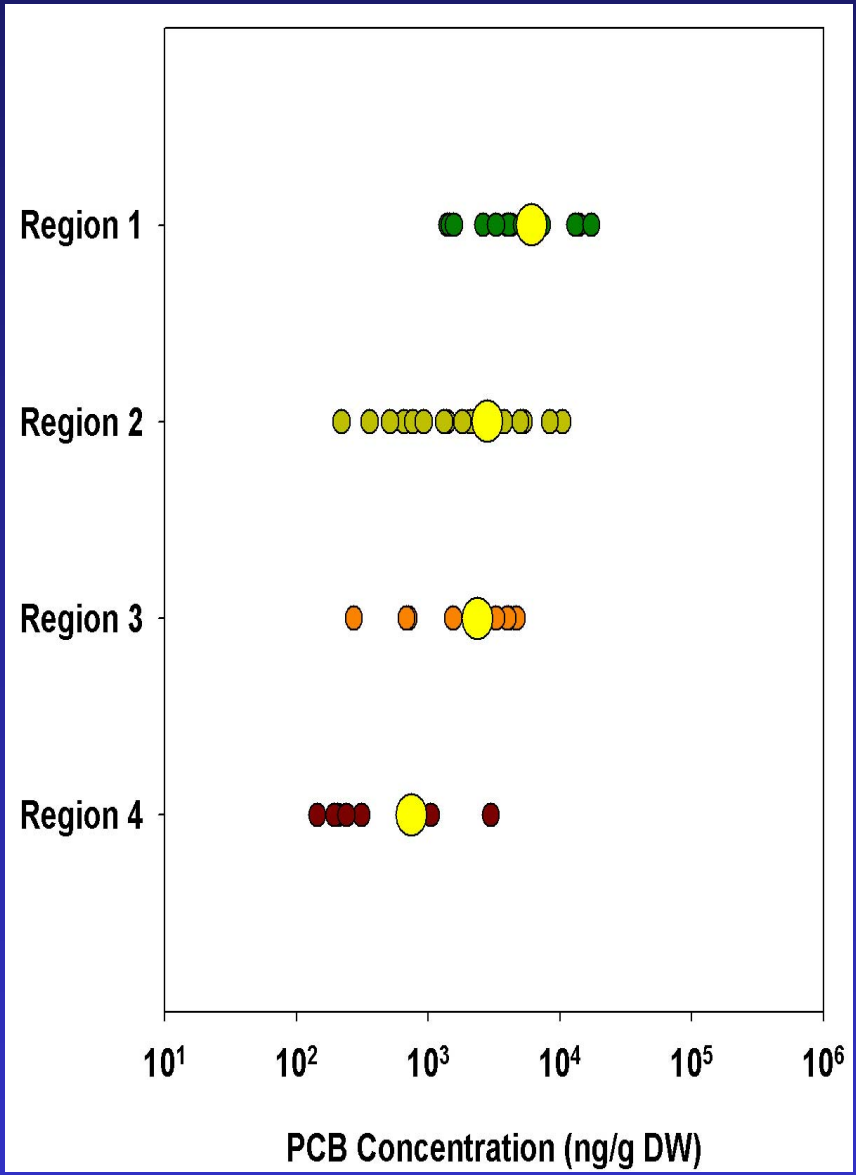
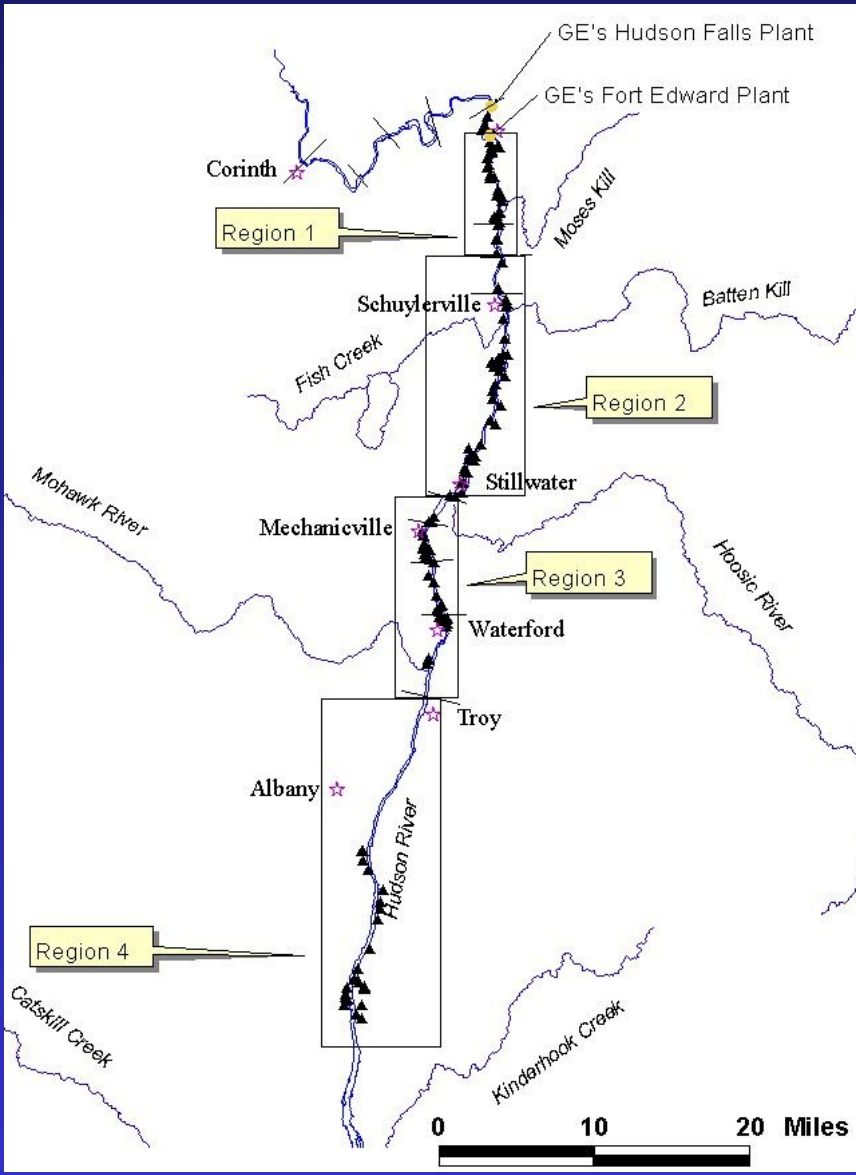
# Egg PCB Concentrations by Region:



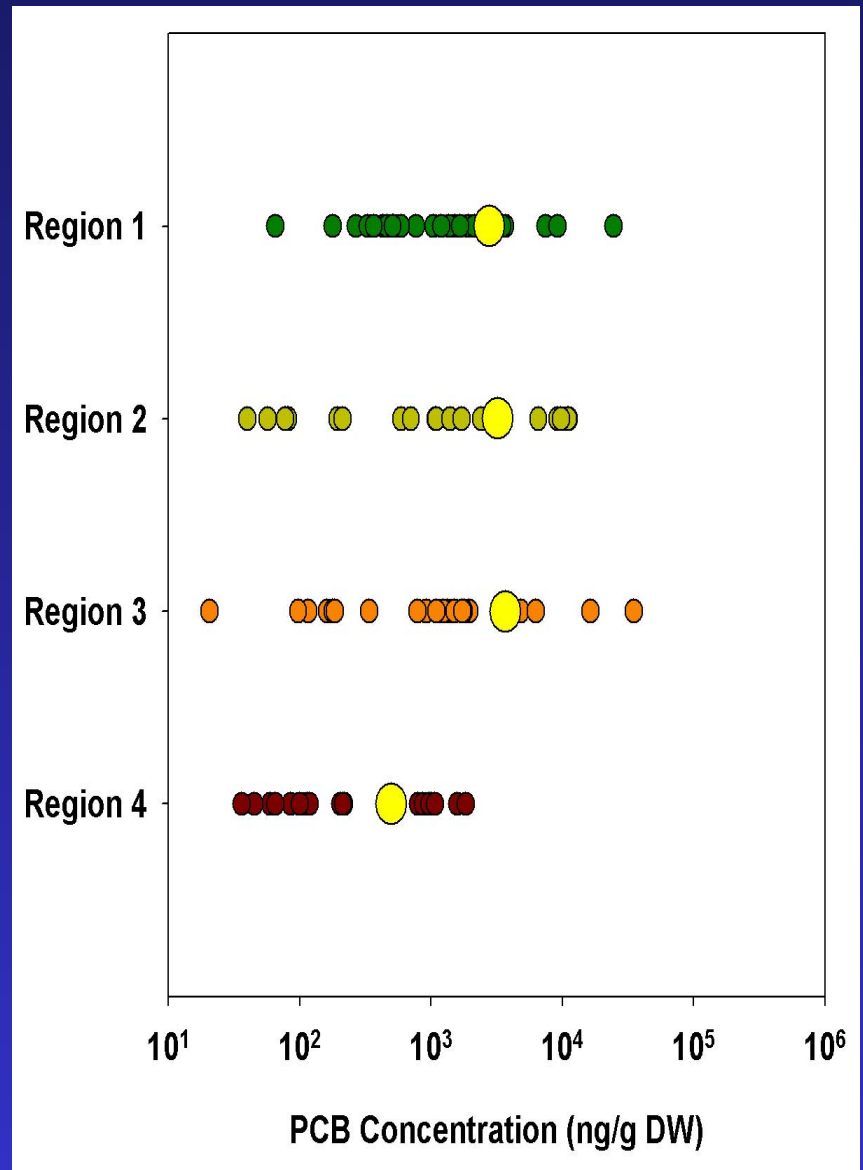
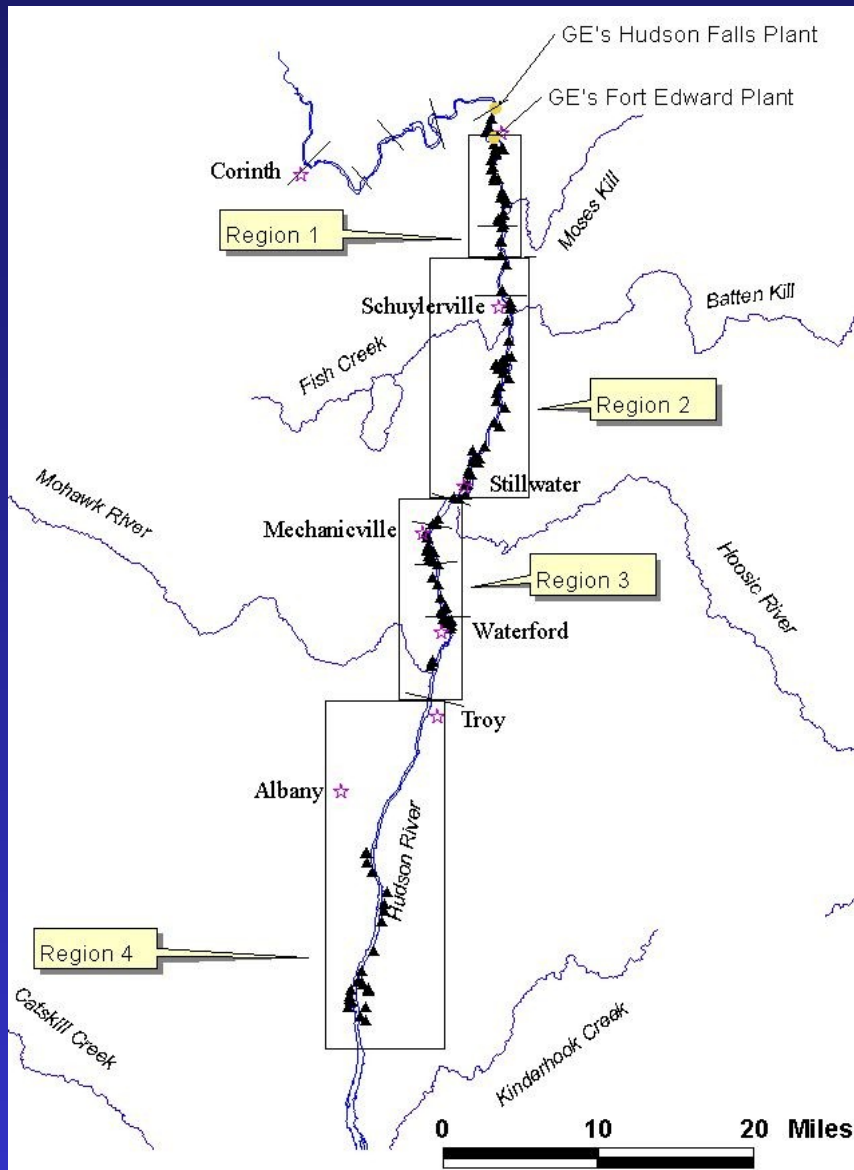
# Kingfisher and Sandpiper



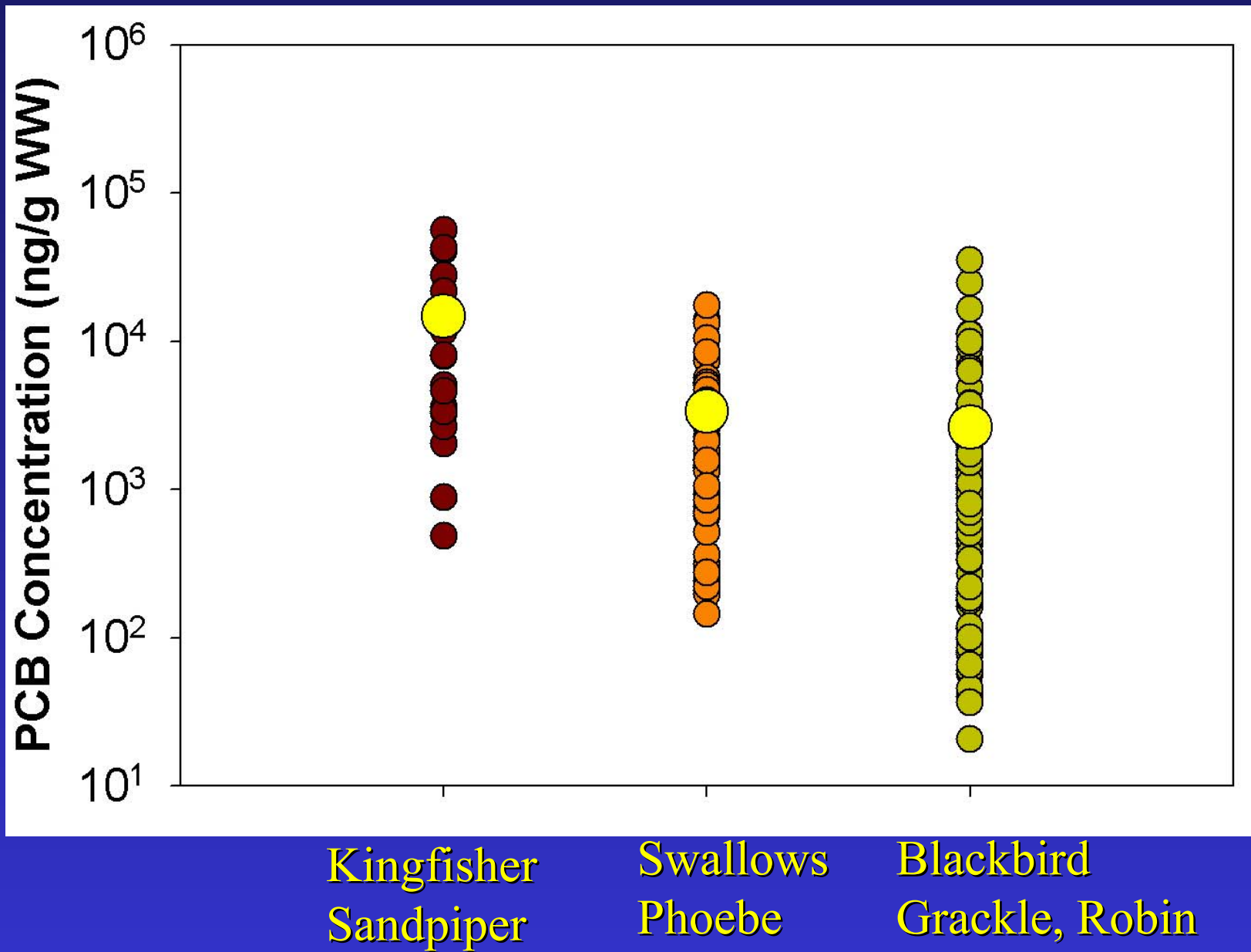
# Swallows and Phoebe



# Blackbird, Grackle and Robin

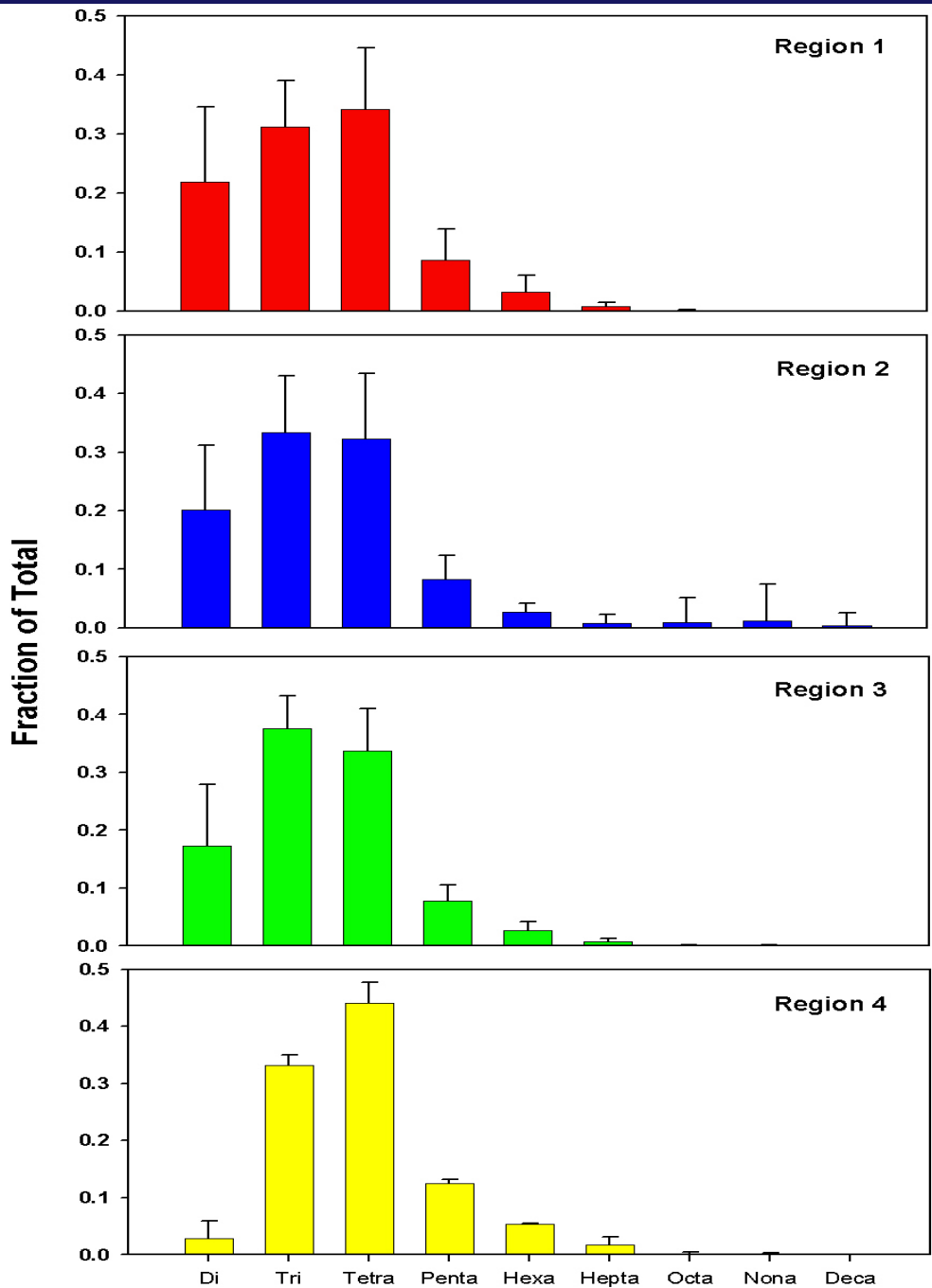


# Feeding Guild Comparison

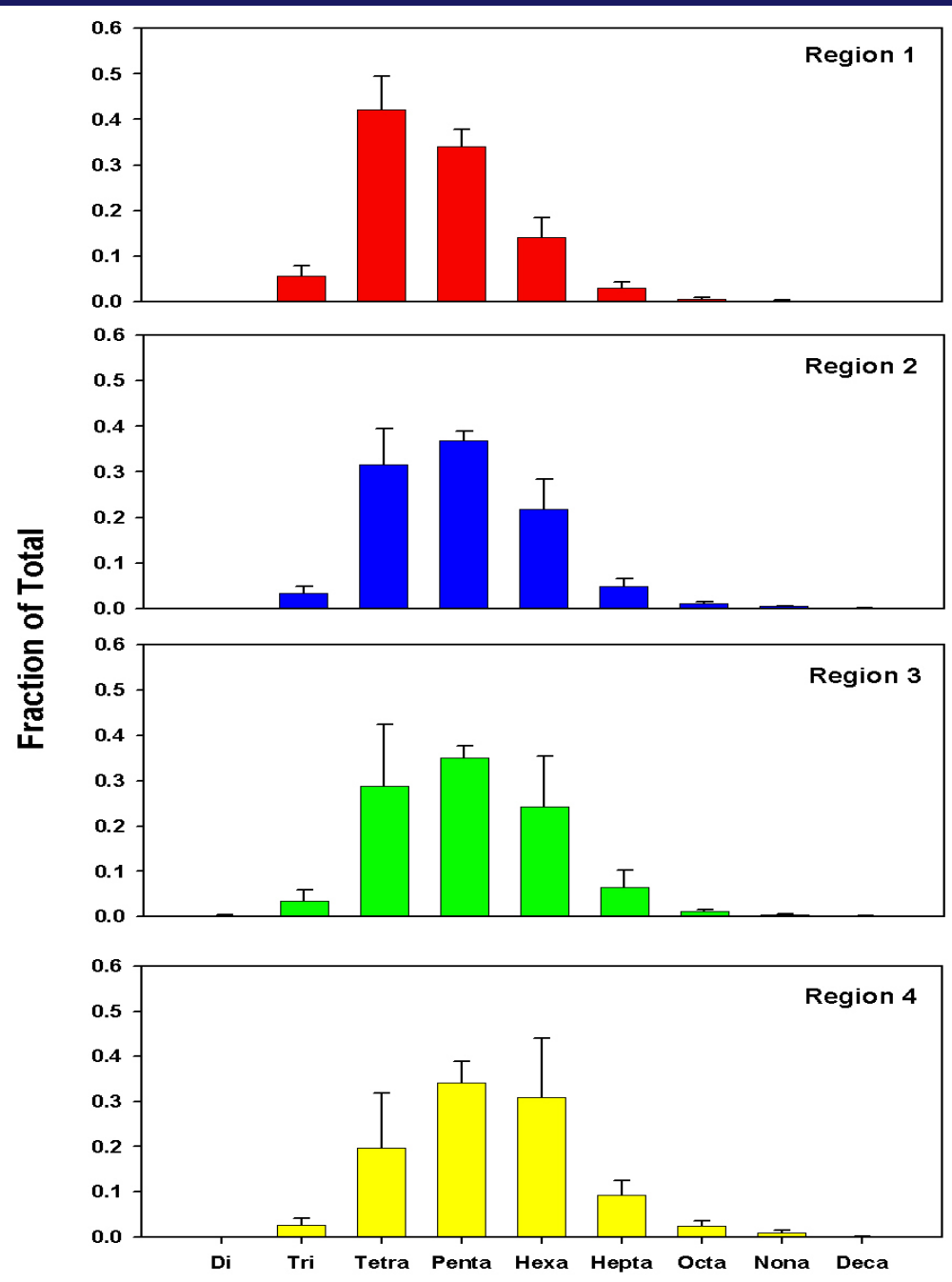


# PCB Homologs

# Hudson River Sediment PCB Homolog Composition

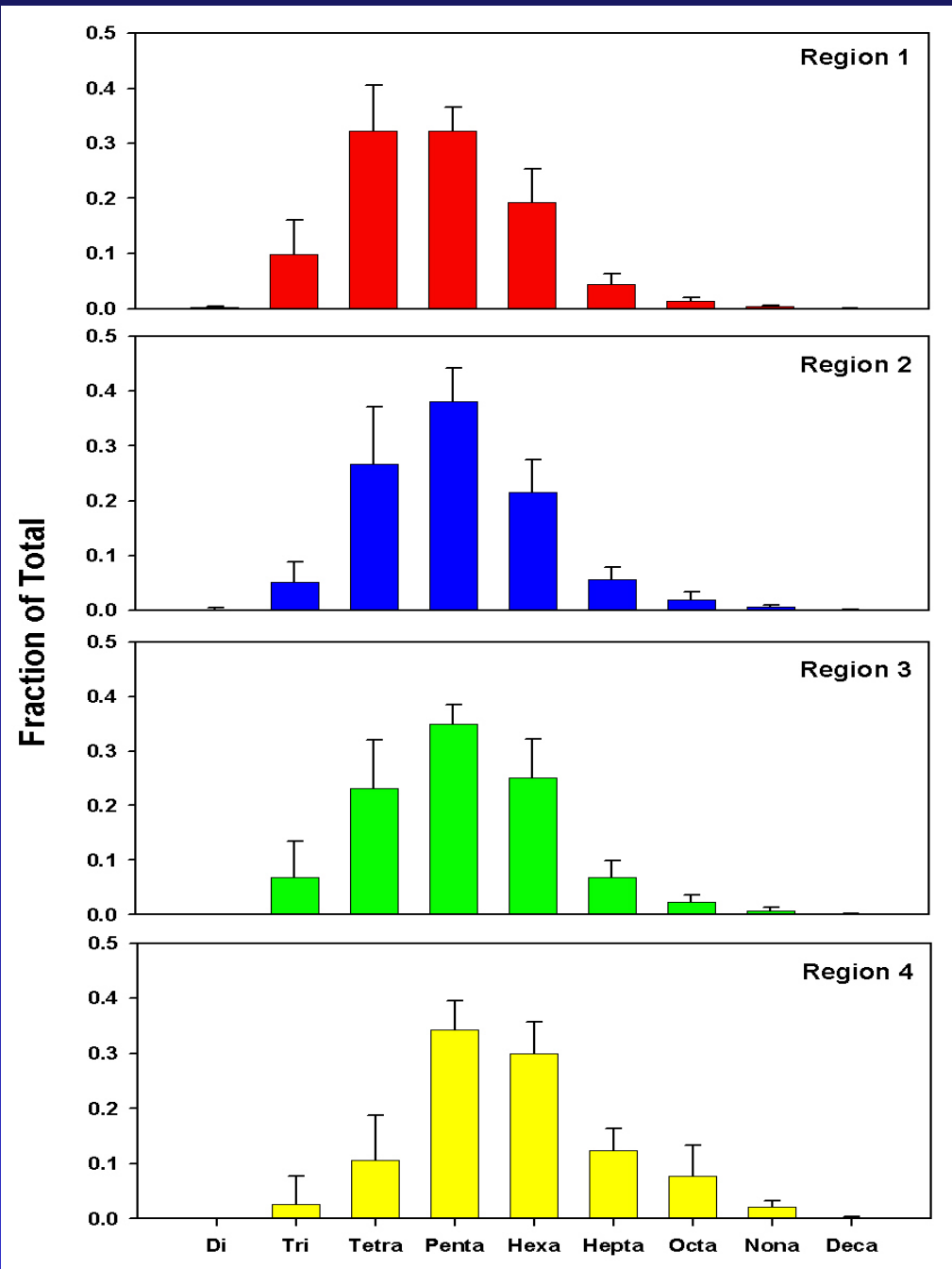


# Kingfisher and Sandpiper PCB Homolog Composition

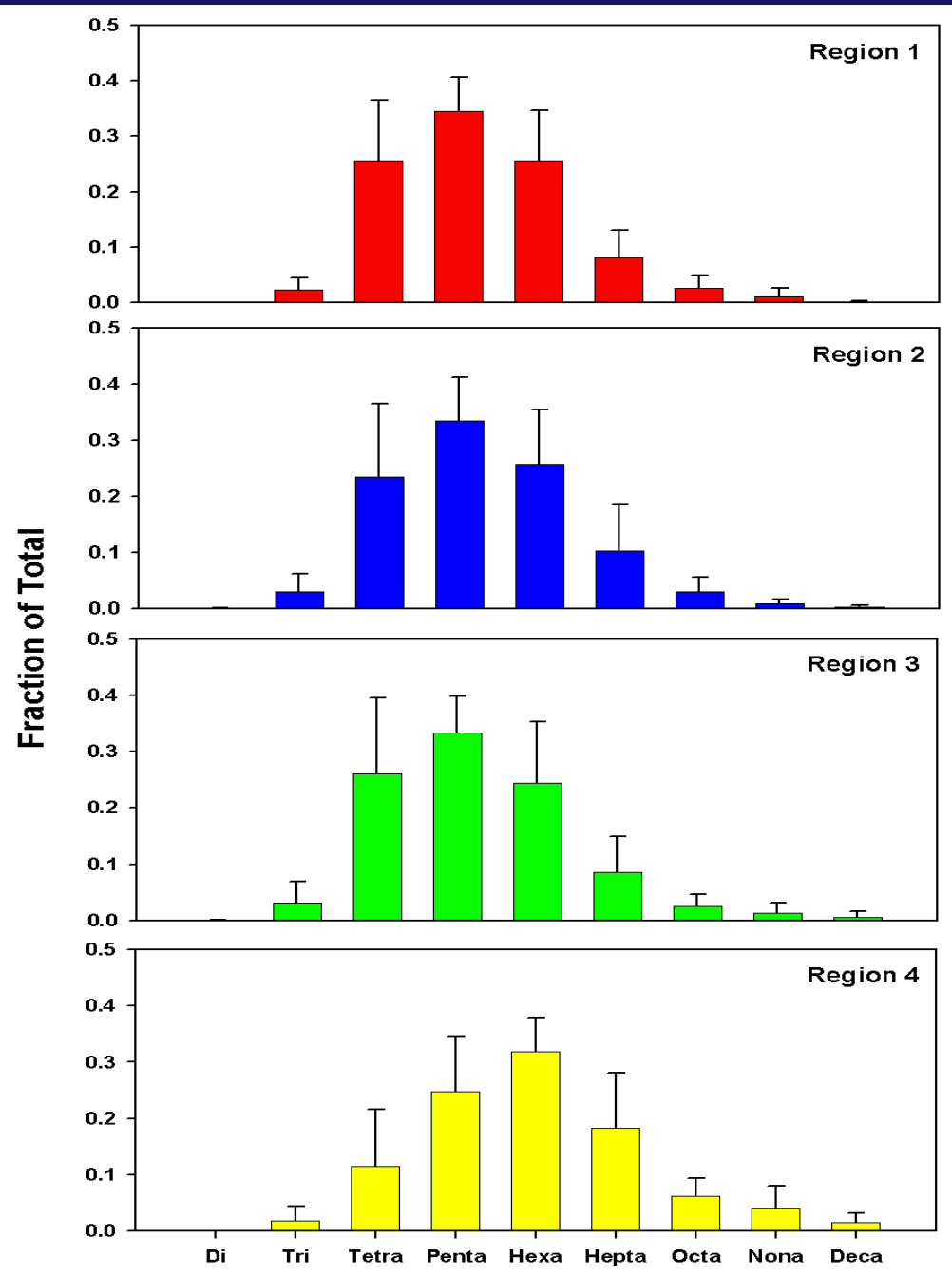




# Swallow and Phoebe PCB Homolog Composition



# Robin, Grackle And Blackbird PCB Homolog Composition



# Conclusions

- Avian eggs are contaminated with PCBs (20 to 56,000 ppb; 12% > 10,000 ppb)
- Regional egg t-PCB concentration trends are reflective of regional sediment trends
- Regional egg homolog compositions show similar pattern shift as sediments