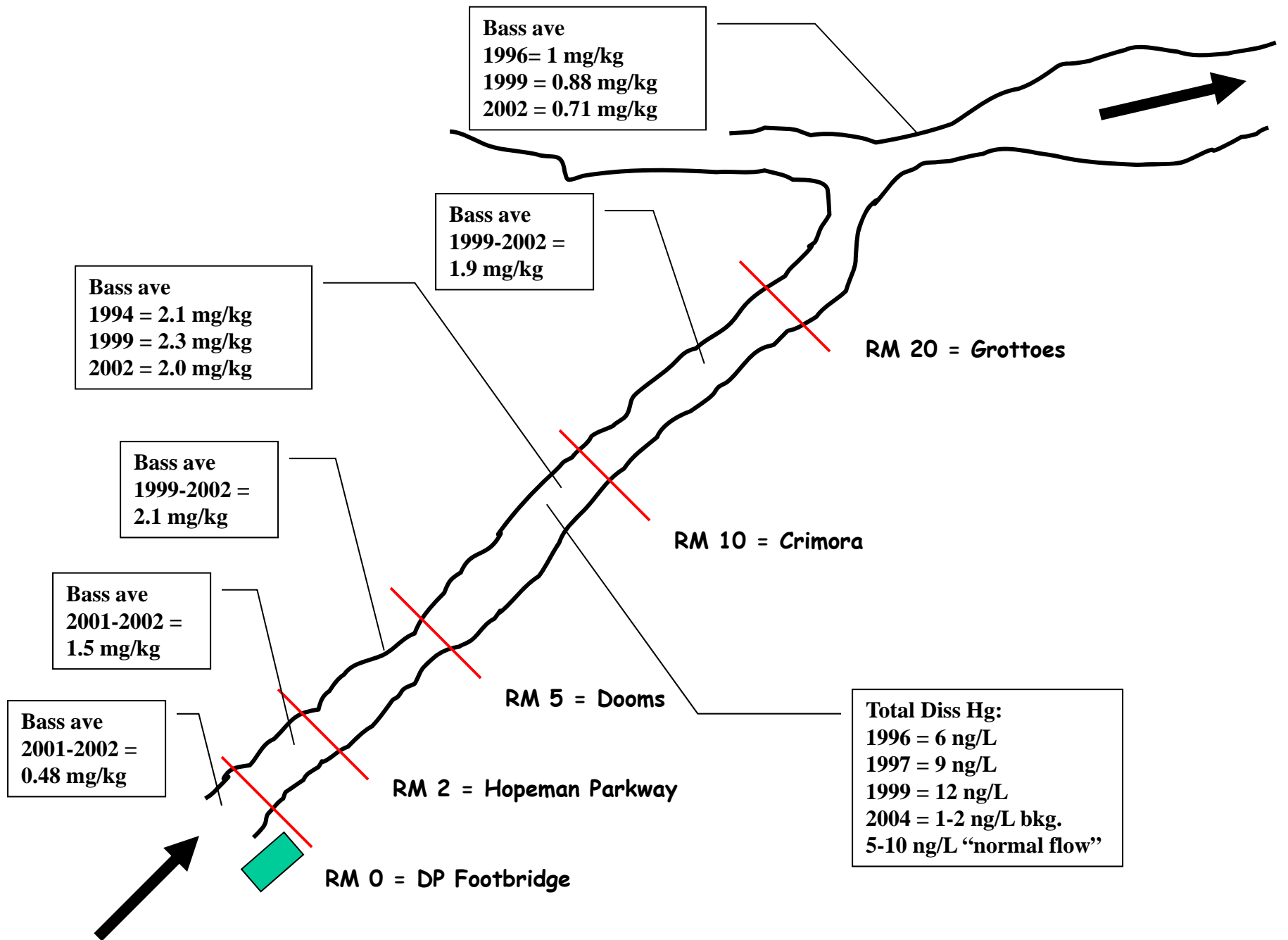


What We Know or What We Think We Know



South River Science
Team

Expert Panel Meeting
October 18-19, 2005



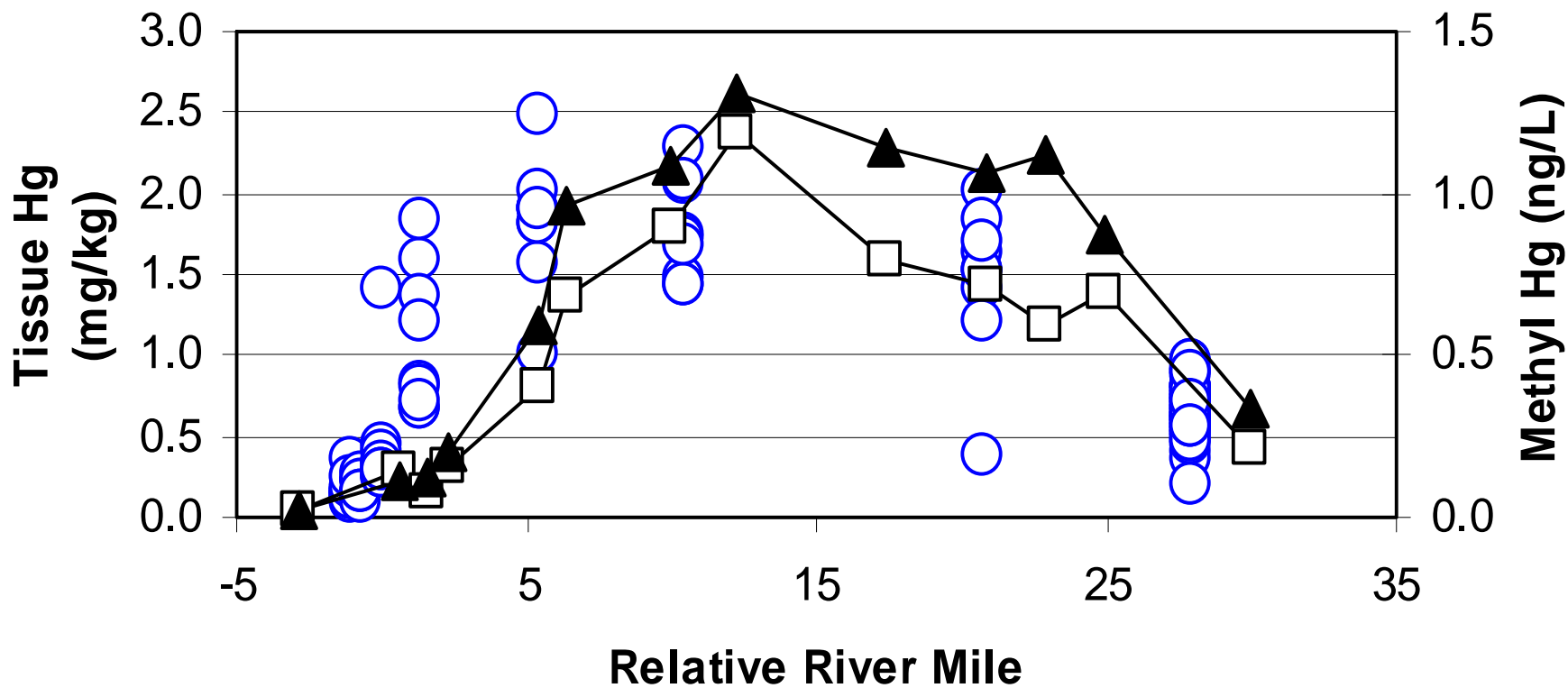
New Genus, New Species.



Nemesis teddi

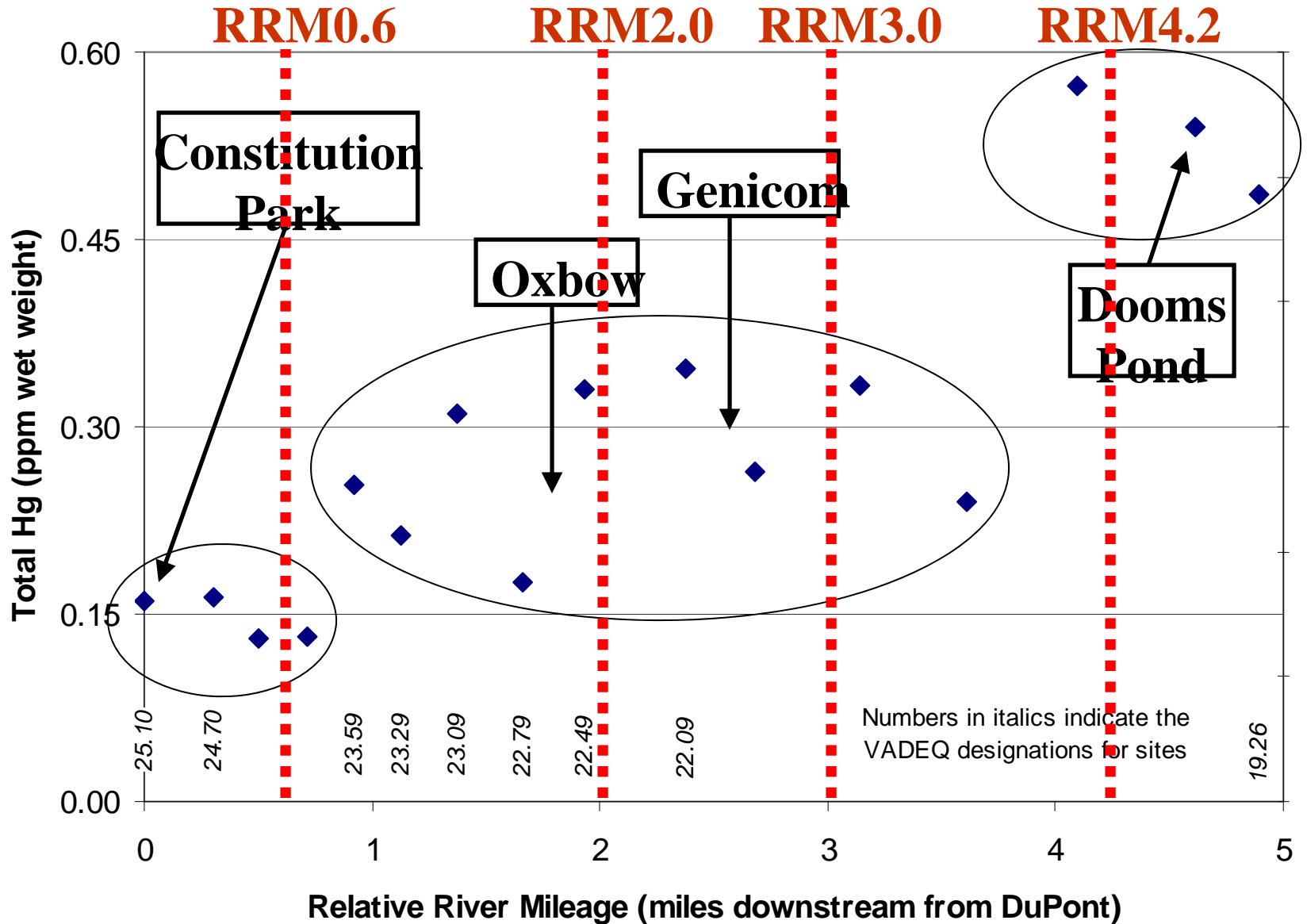
Smallmouth Bass - 2002

Methyl Hg - Sept 2005



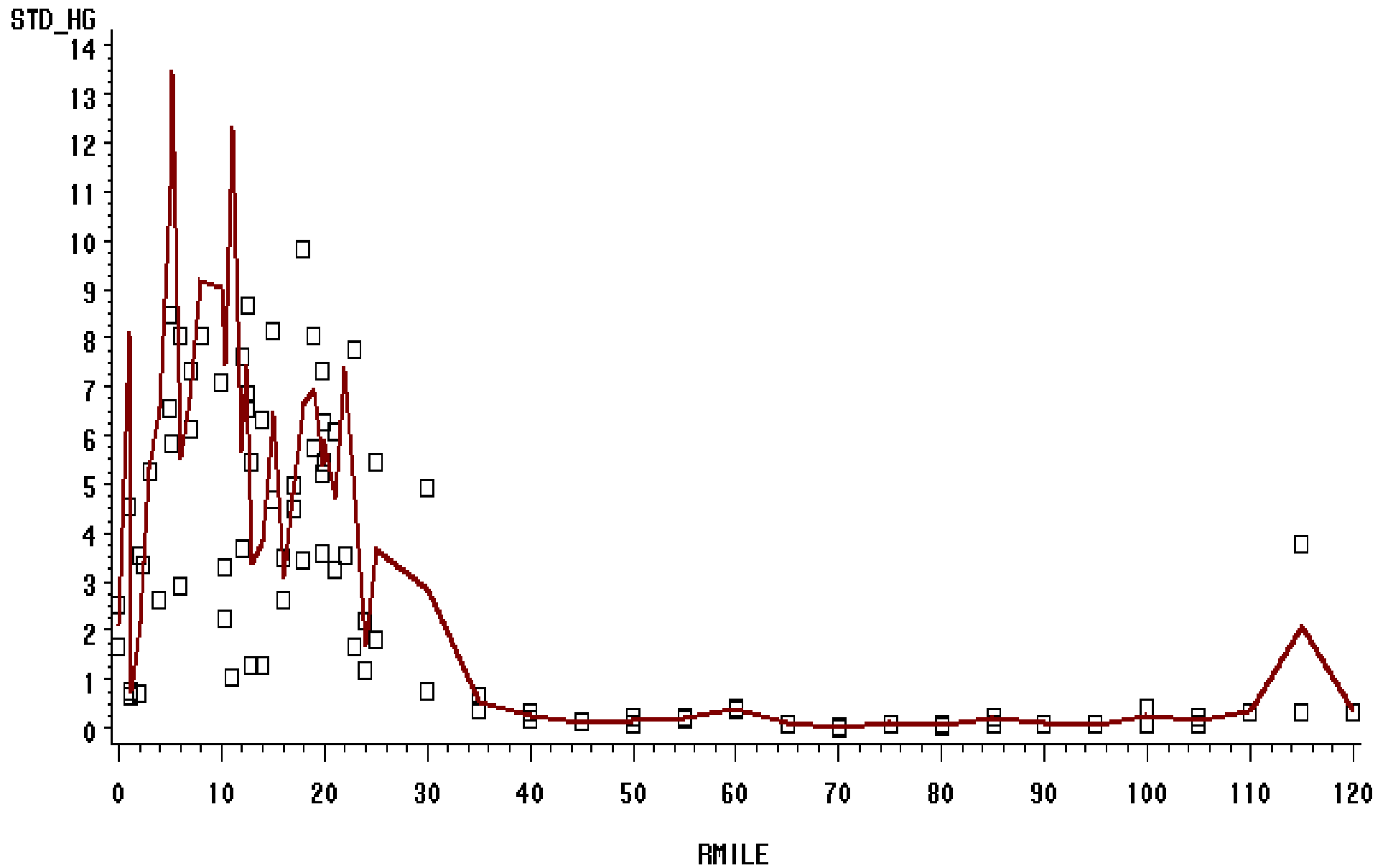
○ Smallmouth Bass —□— Dissolved MeHg —▲— Total MeHg

Mercury in Indigenous *Corbicula*

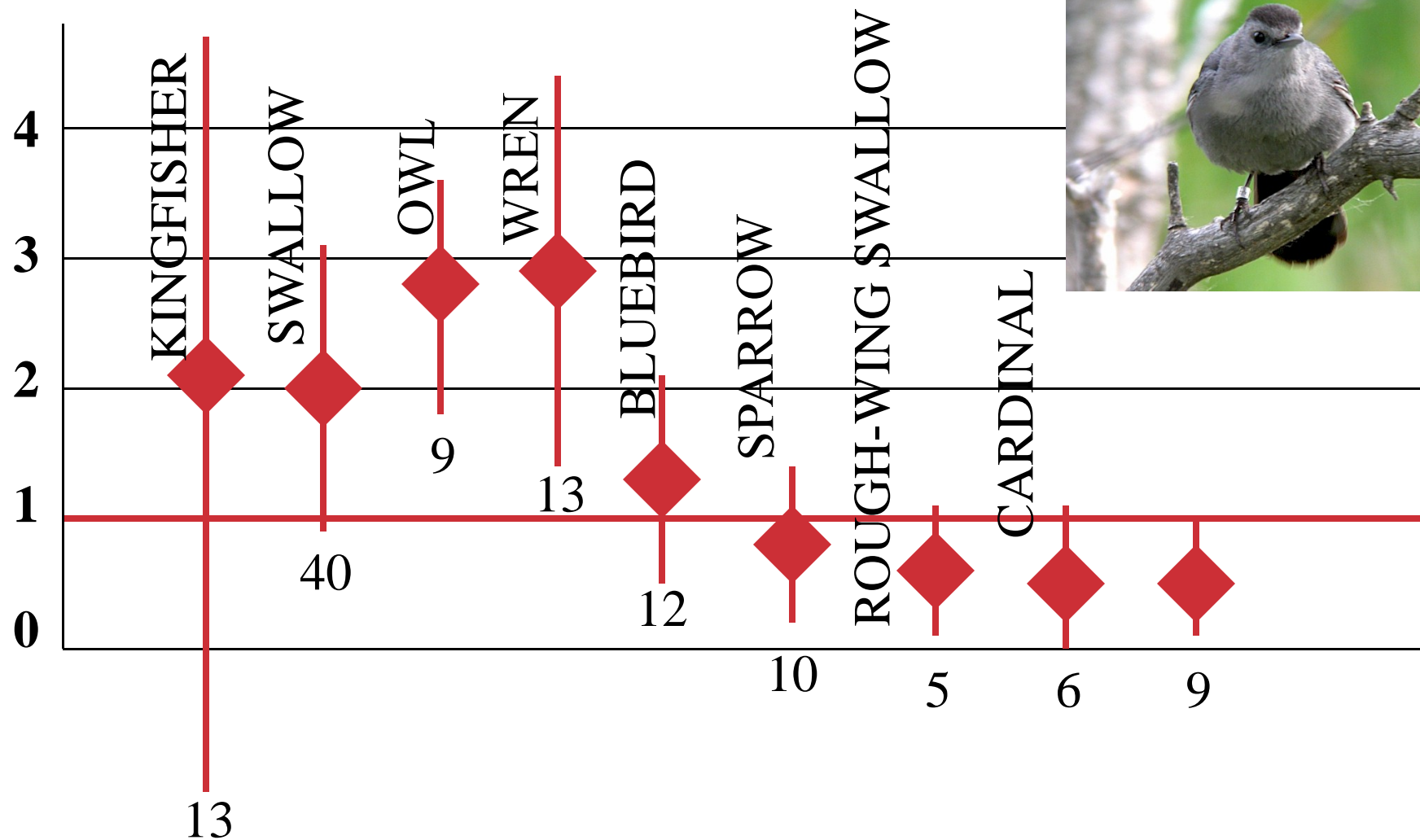


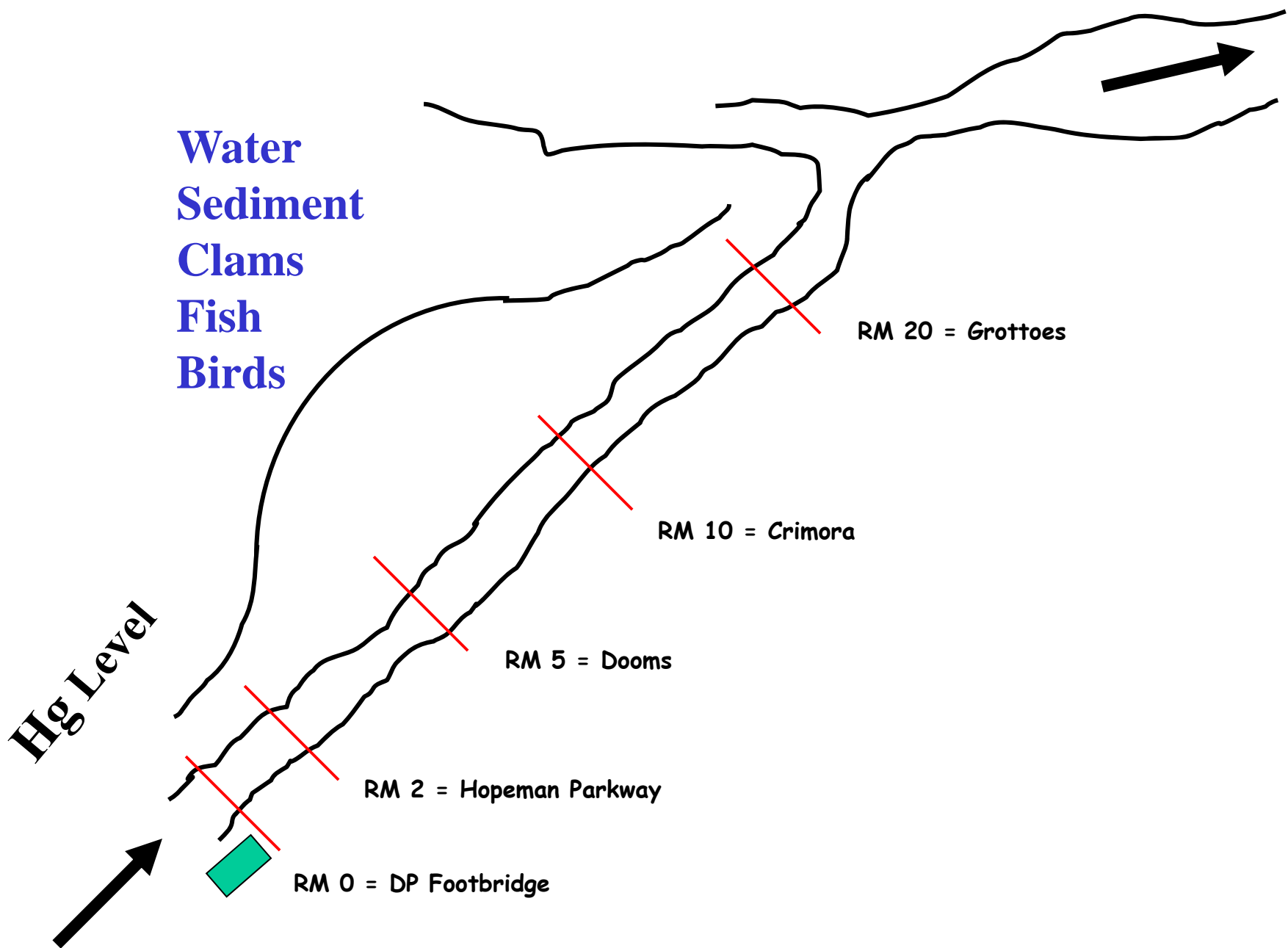
STANDARDIZED Hg vs RIVERMILE

VALUES >10 REPPRESSED



CATBIRD: Total Hg ppm wet weight blood





Water
Sediment
Clams
Fish
Birds

Hg Level

RM 20 = Grottoes

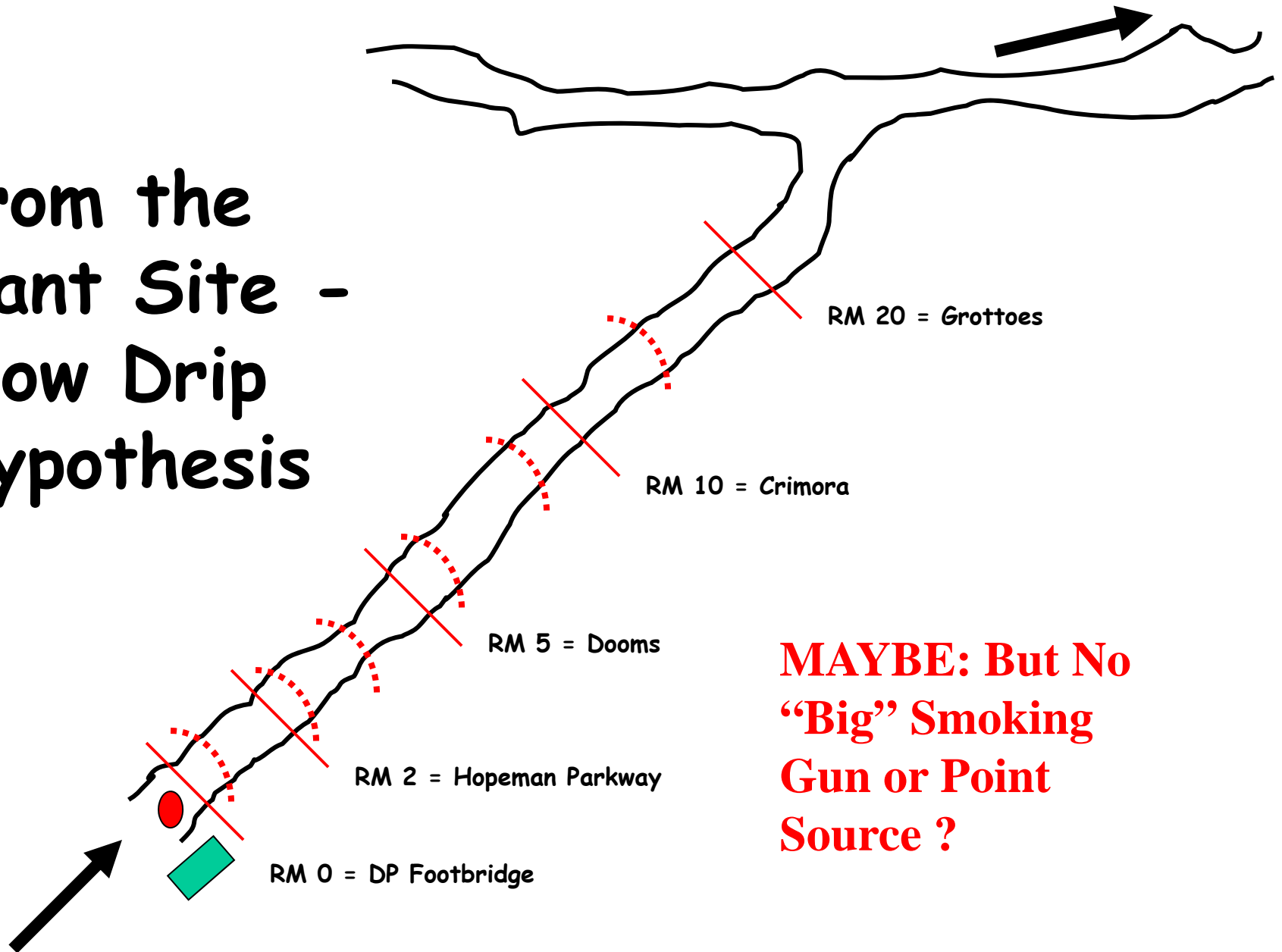
RM 10 = Crimora

RM 5 = Dooms

RM 2 = Hopeman Parkway

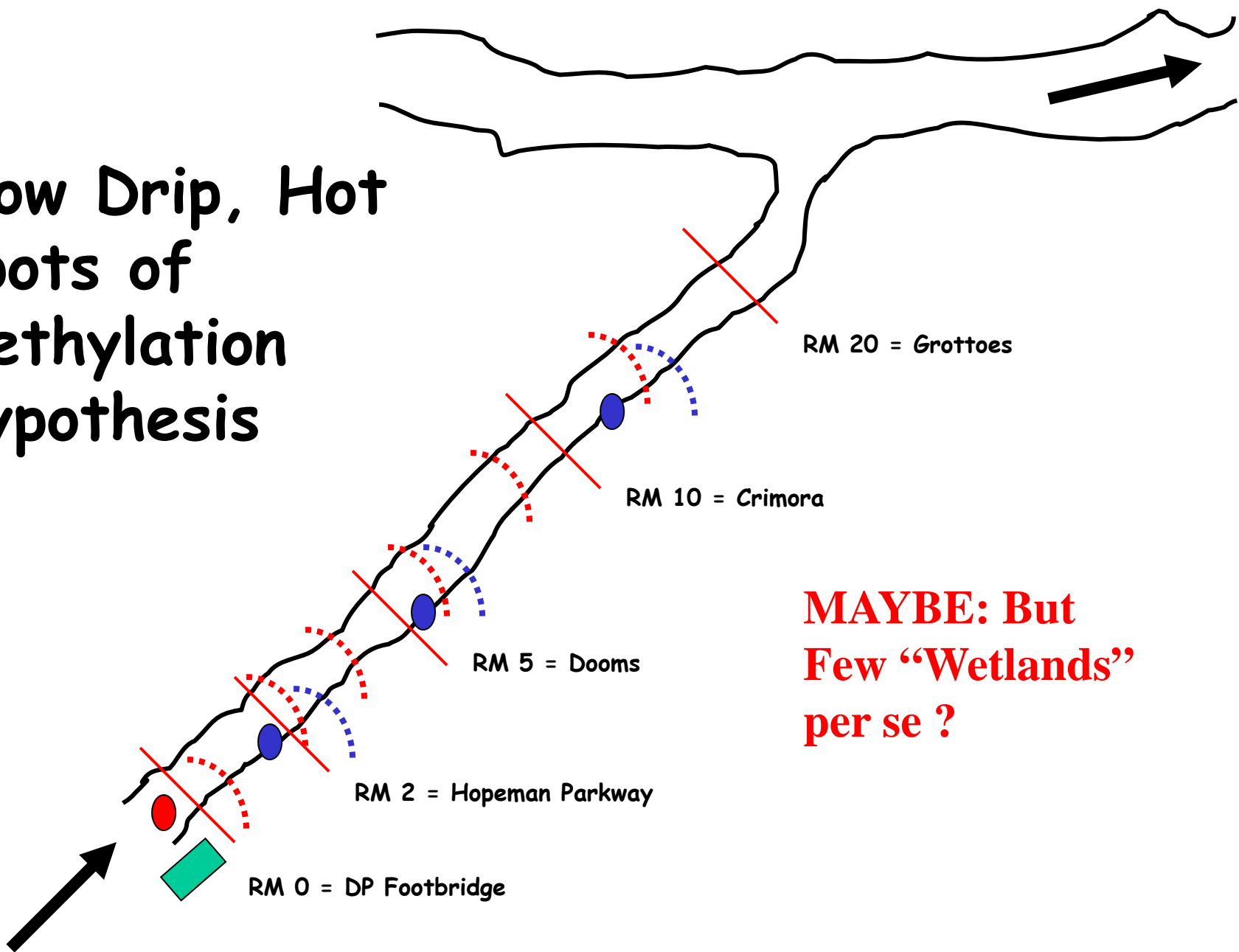
RM 0 = DP Footbridge

From the Plant Site - Slow Drip Hypothesis



**MAYBE: But No
“Big” Smoking
Gun or Point
Source ?**

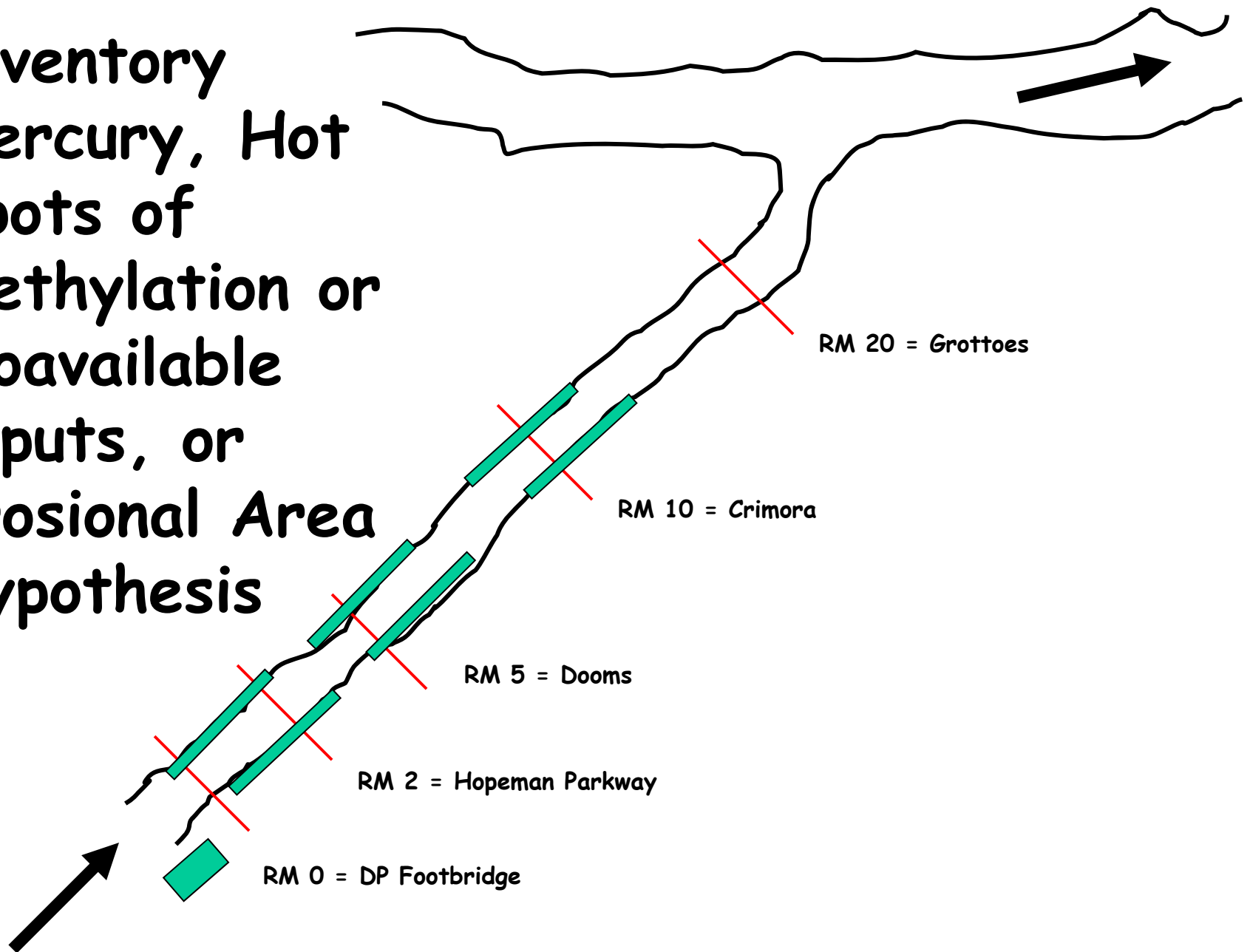
Slow Drip, Hot Spots of Methylation Hypothesis



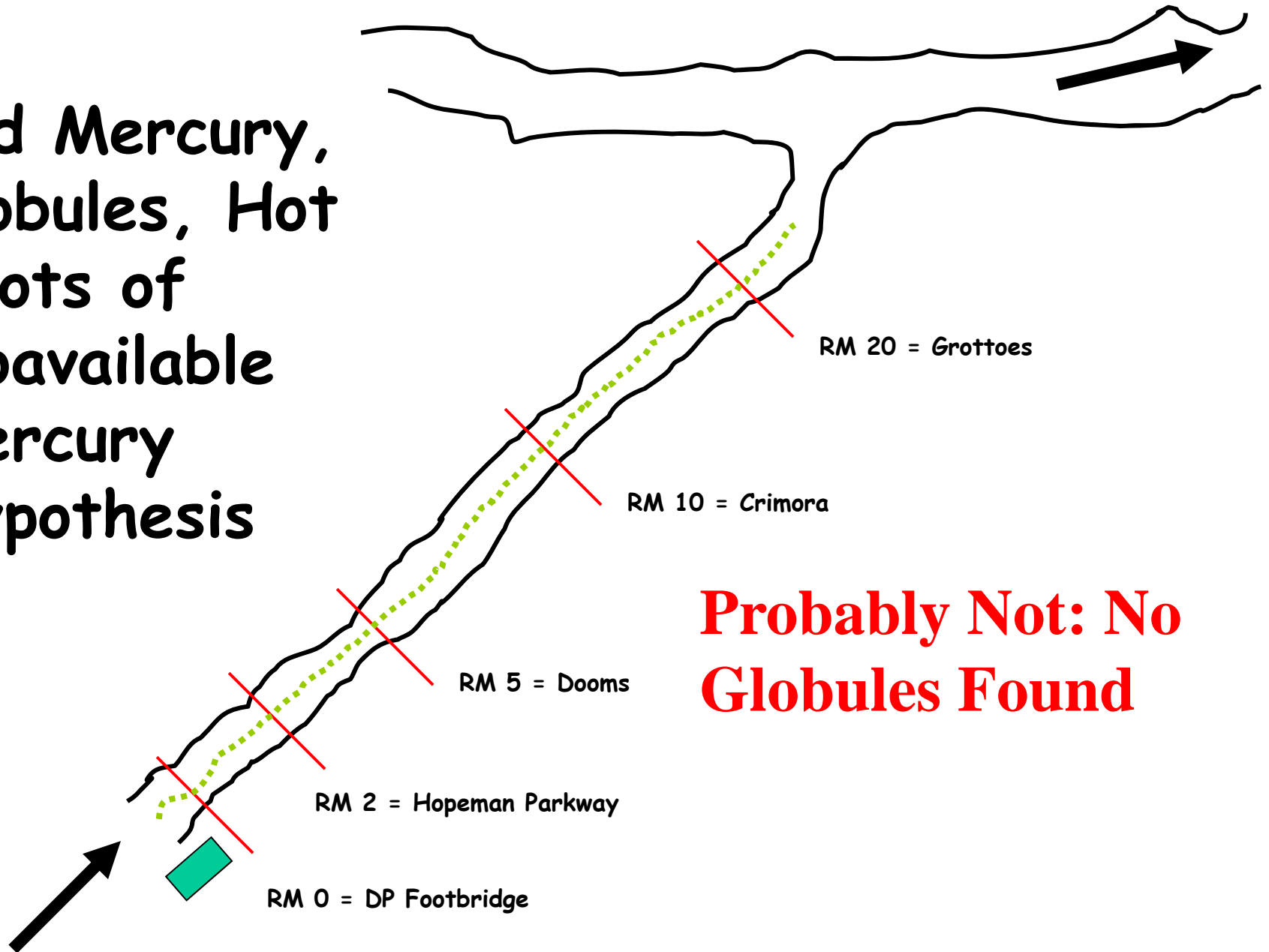
**MAYBE: But
Few “Wetlands”
per se ?**



Inventory Mercury, Hot Spots of Methylation or Bioavailable Inputs, or Erosional Area Hypothesis

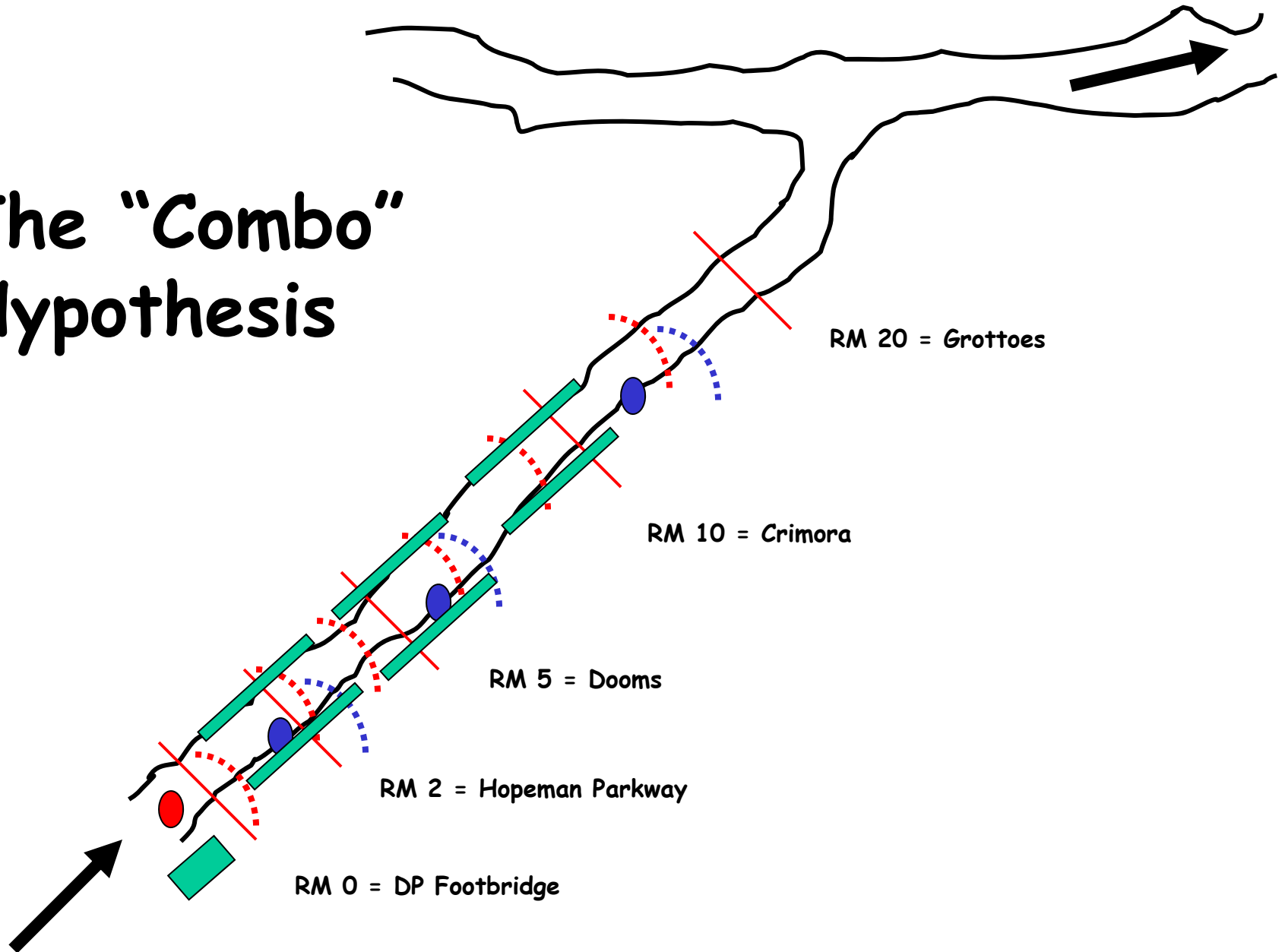


Old Mercury, Globules, Hot Spots of Bioavailable Mercury Hypothesis

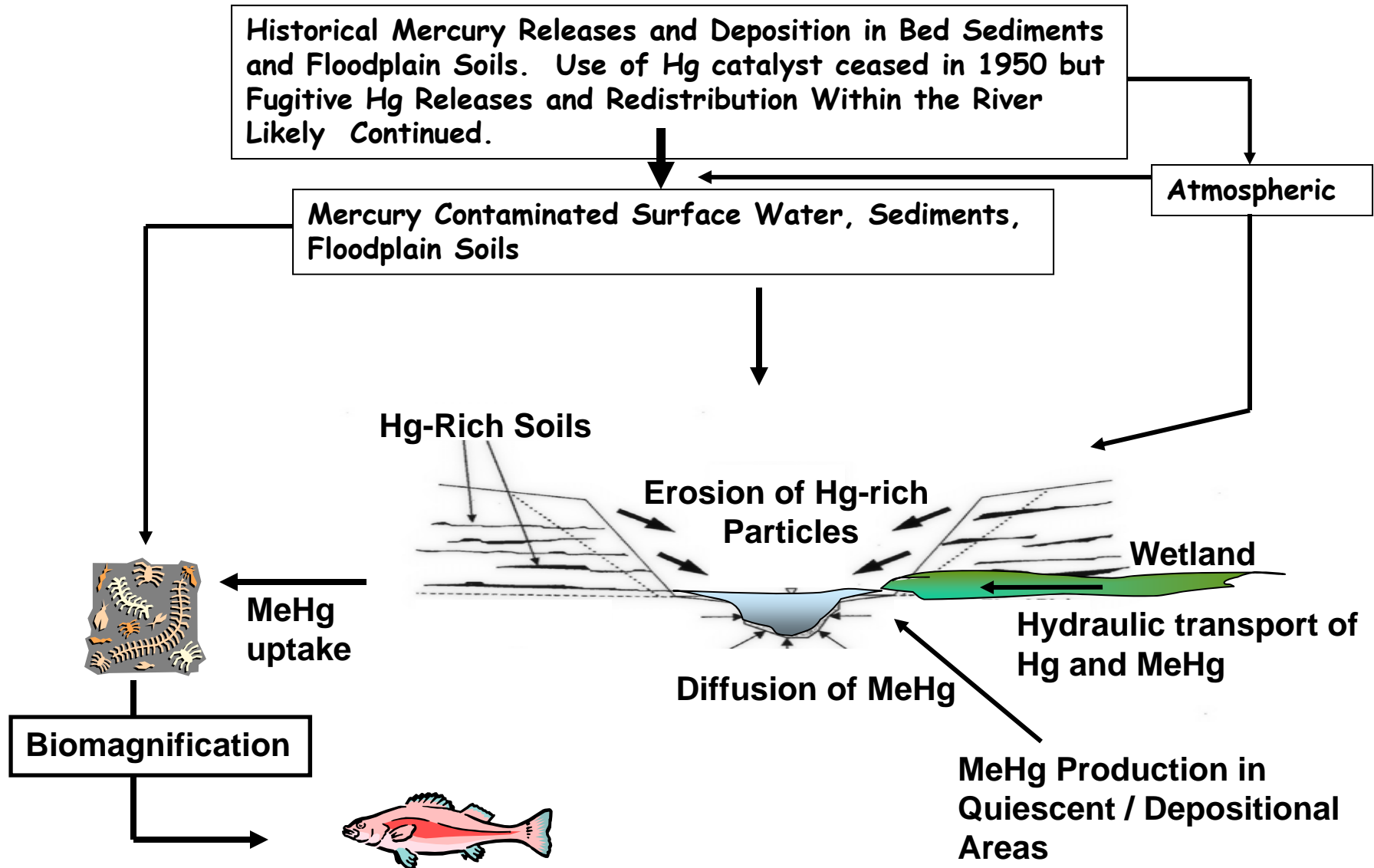


**Probably Not: No
Globules Found**

The "Combo" Hypothesis



Conceptual System Model of Historical Mercury Contamination and Current Exposure Pathway To Fish in the South River, Virginia.



Common Elements ?

- What would explain similar tissue burdens in aquatic, terrestrial and avian receptors ?
- Why is there a bell shaped curve of concentrations, tissue levels ?
 - Why is there a hump ?
 - Why are there tails ?