

The Intensive/Cluster Site Synergy: An Example from South Florida

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The Everglades & Mercury


Extent of Sulfate Contamination in the Everglades

 **> 100 mg/L**

 **~50-100 mg/L**

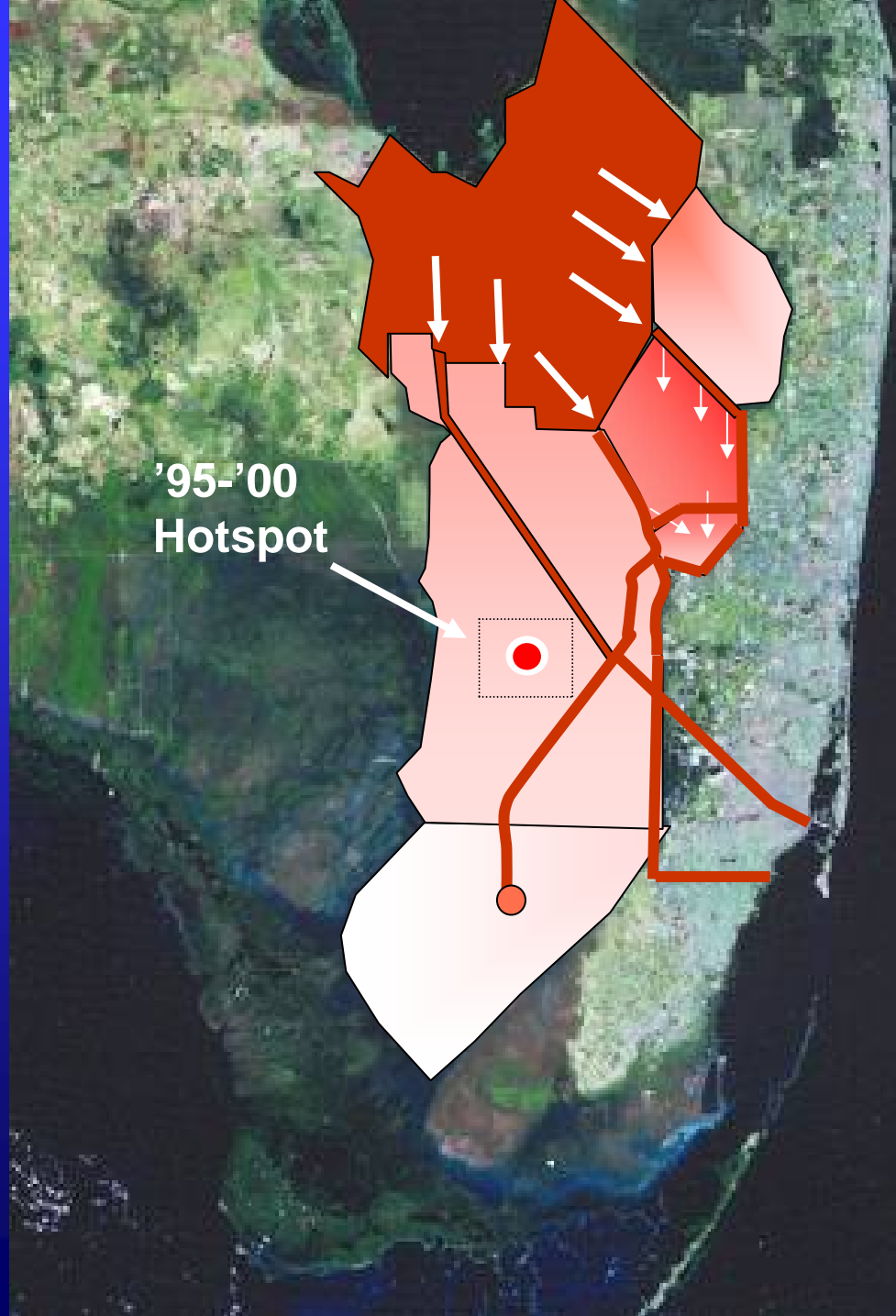
 **~2-10 mg/L**

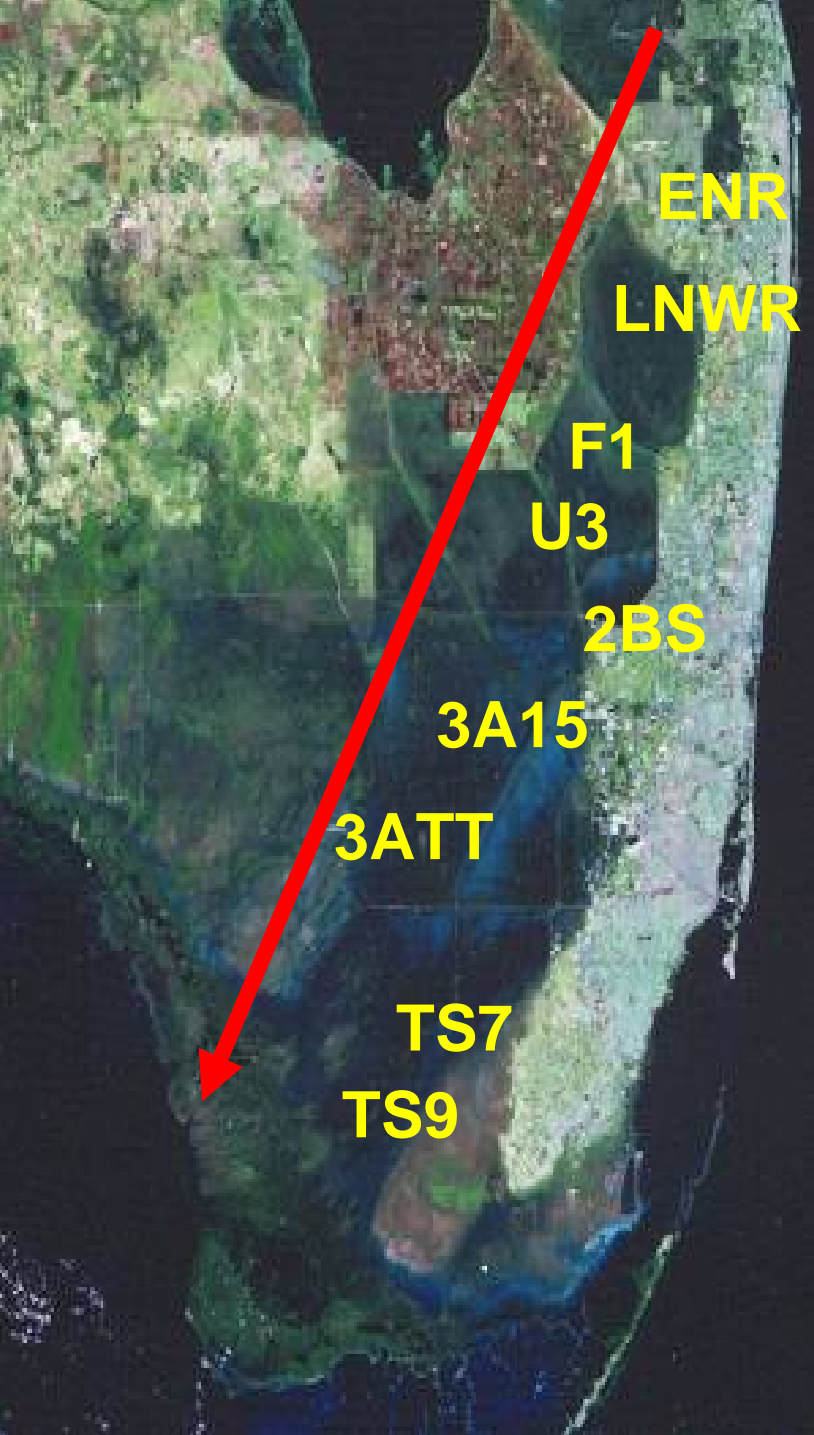
DOC gradient (mg.L)

S ←  **N**

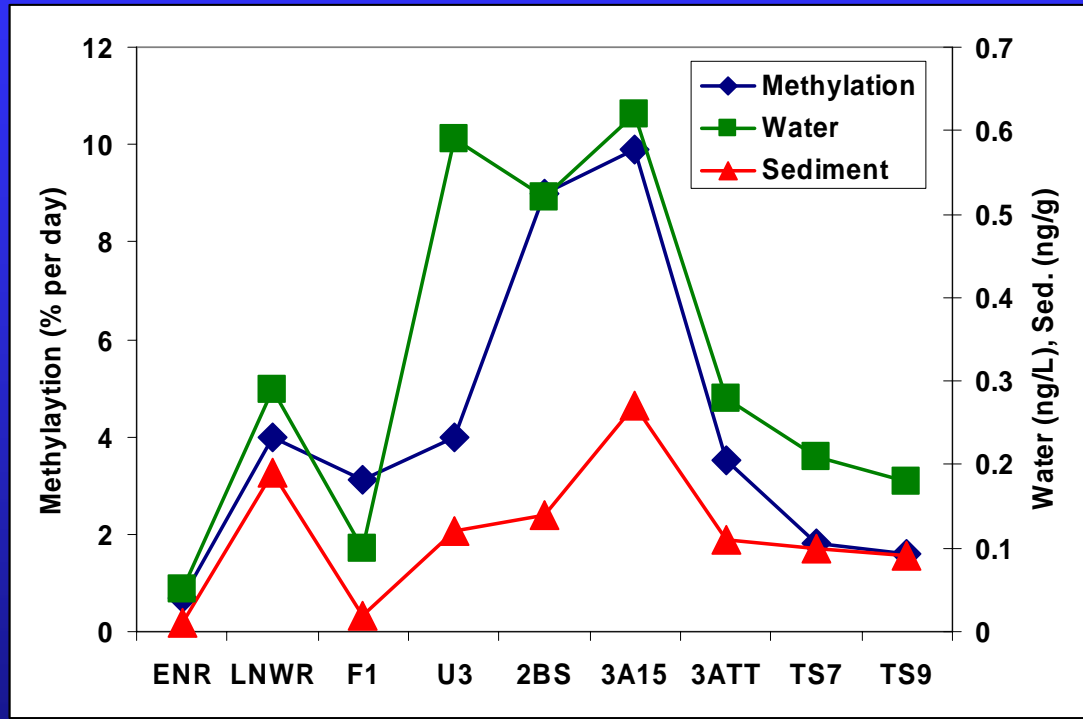
~15

~50



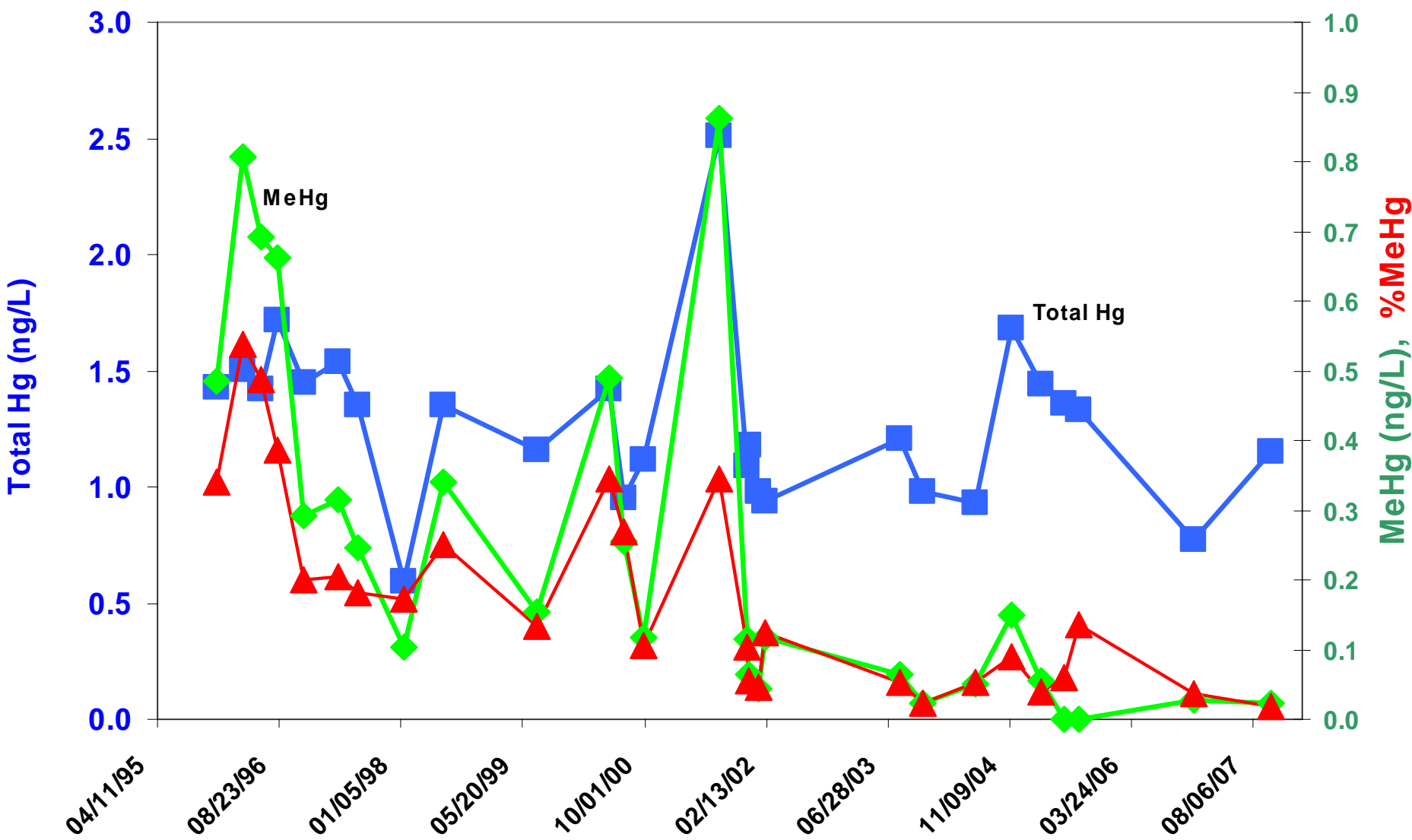


Summary of ACME data for 1995-2000

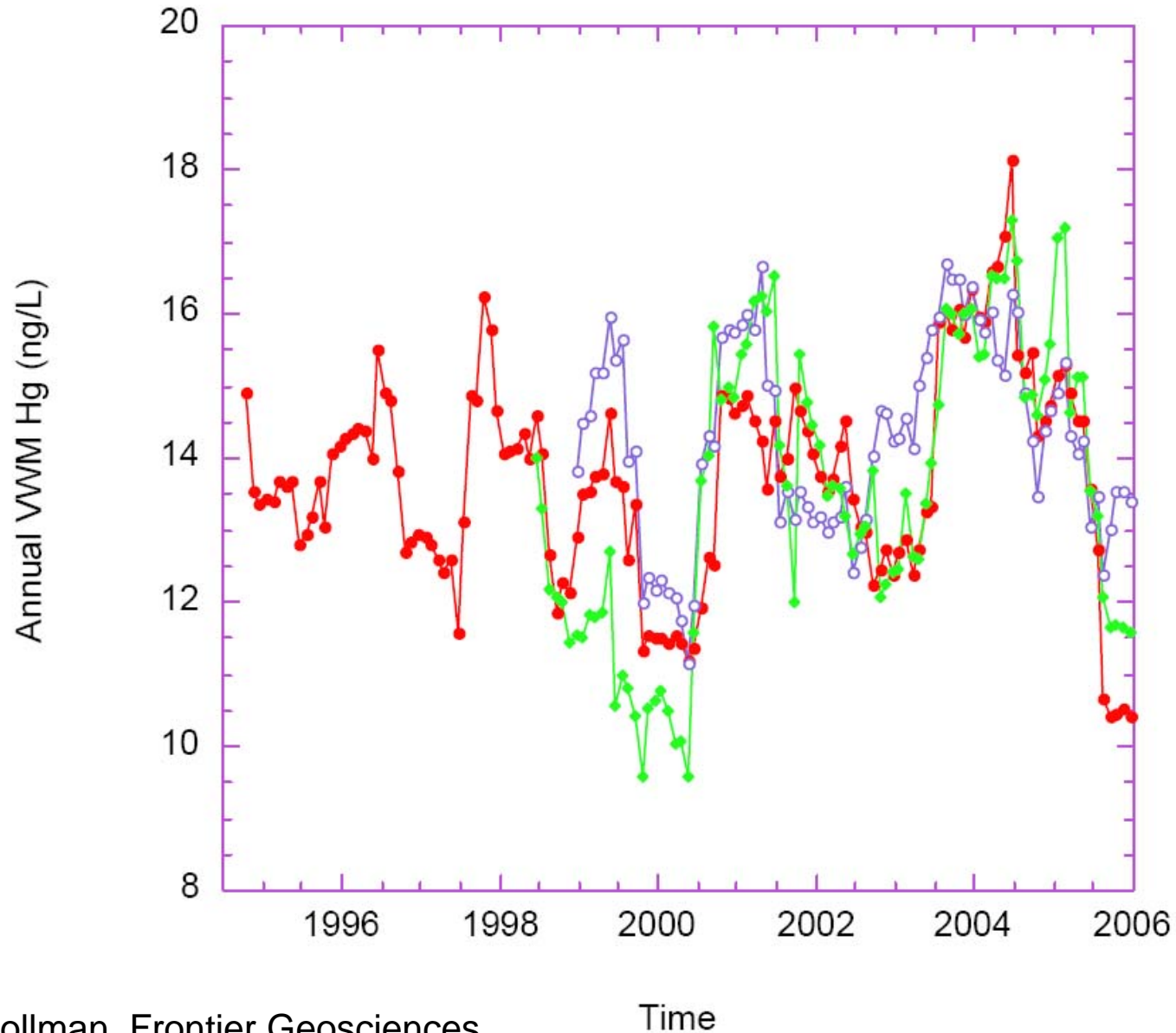


Methylmercury Gradient in the Everglades

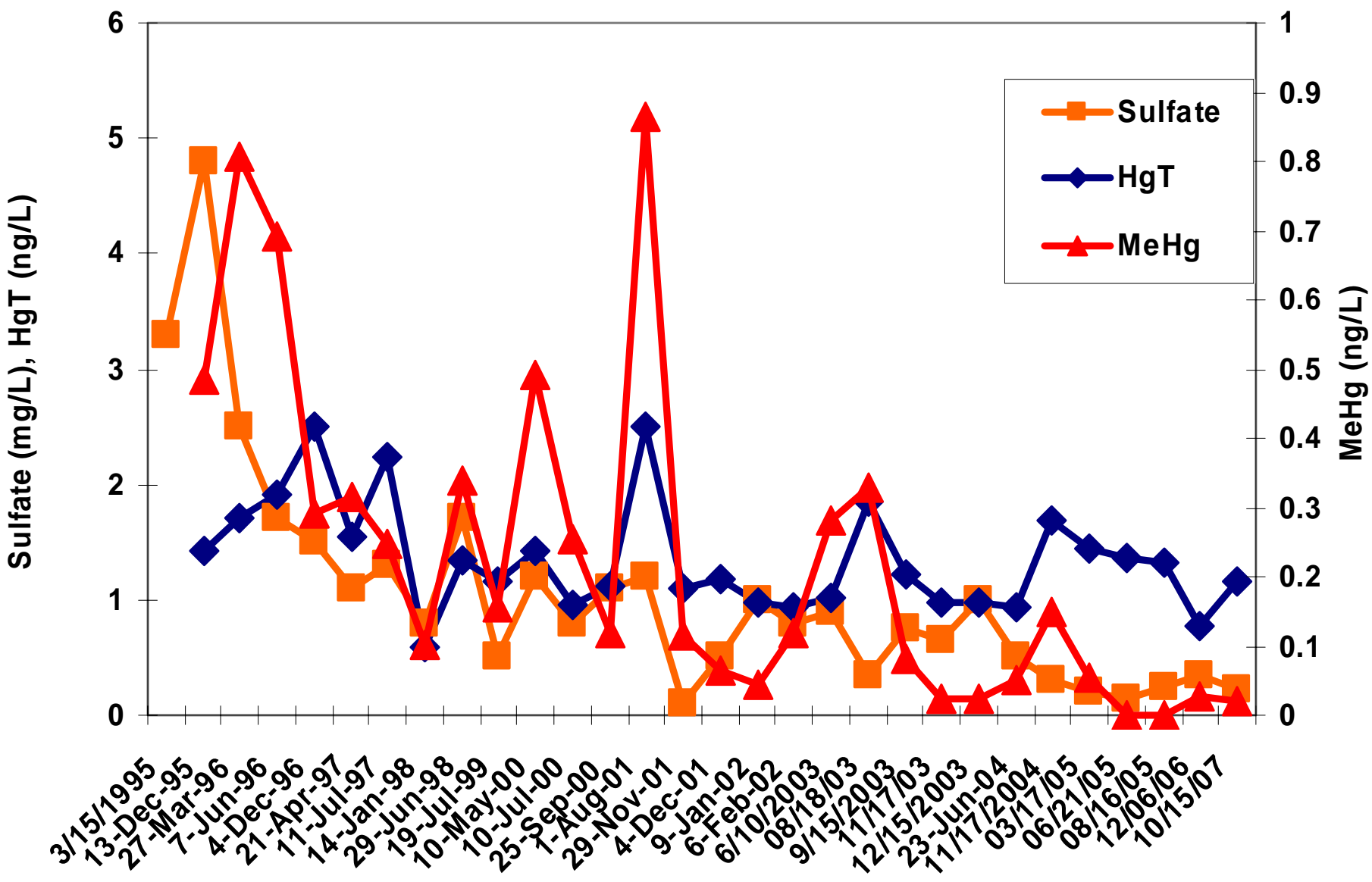
Evergaldes Hg & MeHg Time Series



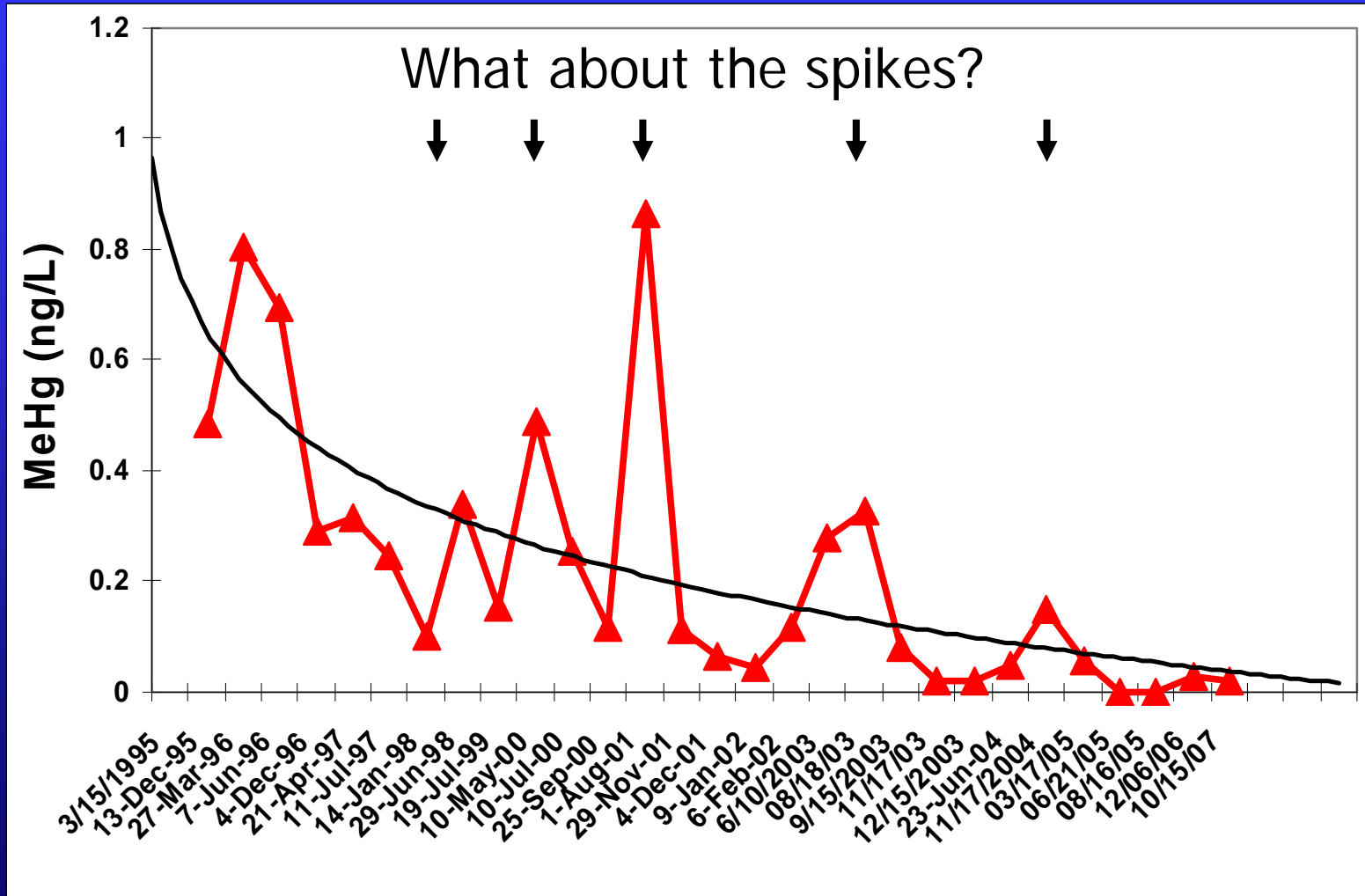
Time Series for Mercury Deposition in South Florida 1993-06



SO₄, MeHg & HgT Time Series

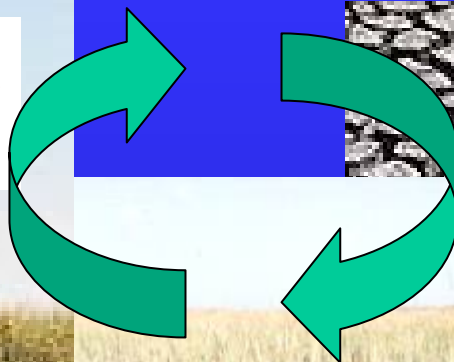


A bumpy road to recovery



But, then the Everglades dried up in 1999

Bioaccumulation & wet cycle period



Dry down & oxidation



Rewetting & methylation





United States
Environmental Protection
Agency

Region 4 Science & Ecosystem
Support Division and Water
Management Division

EPA 904-R-07-001
August 2007

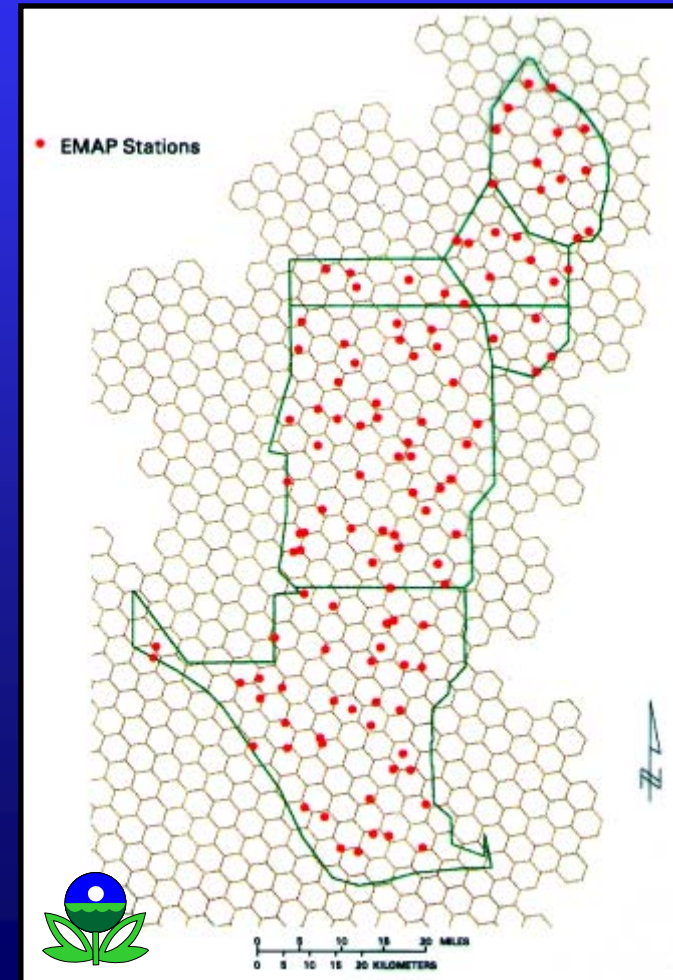
Everglades Ecosystem Assessment:
Water Management and Quality,
Eutrophication, Mercury Contamination,
Soils and Habitat

Monitoring for Adaptive Management:
A R-EMAP Status Report

Everglades Ecosystem Assessment: Regional Environmental Monitoring and Assessment Project (R-EMAP)

Peter Kalla, Program Leader
Dan Scheidt, Associate Program Leader

USEPA Region 4



Marsh Sampling 1995-2005

EMAP probability based
design

Phase I Canal = 1993-95

Phase I Marsh = 1995-96

Phase II Marsh = 1999

Phase III Marsh = 2005

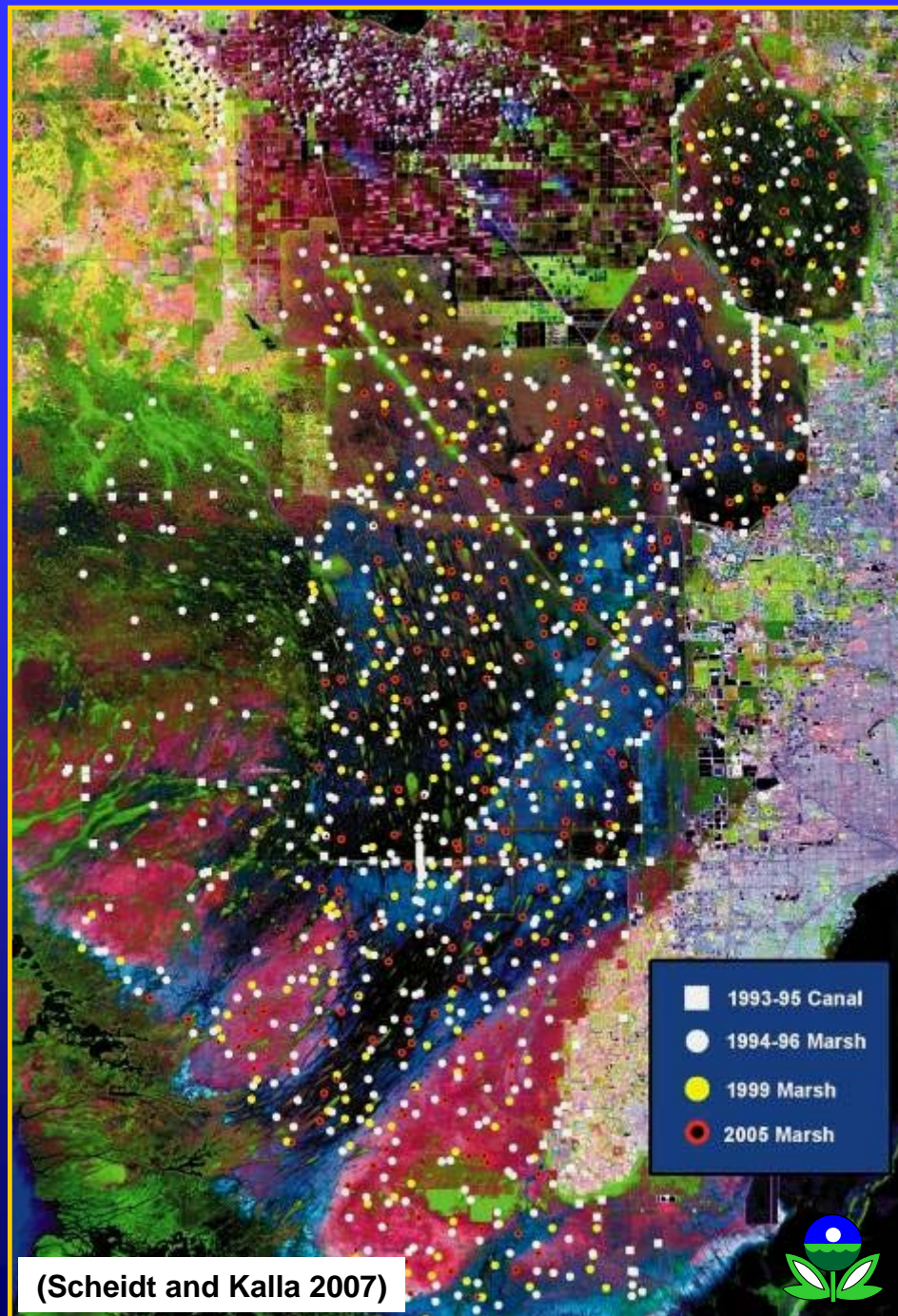
1145 Sample Sites

~100,000 biogeochemical
data values

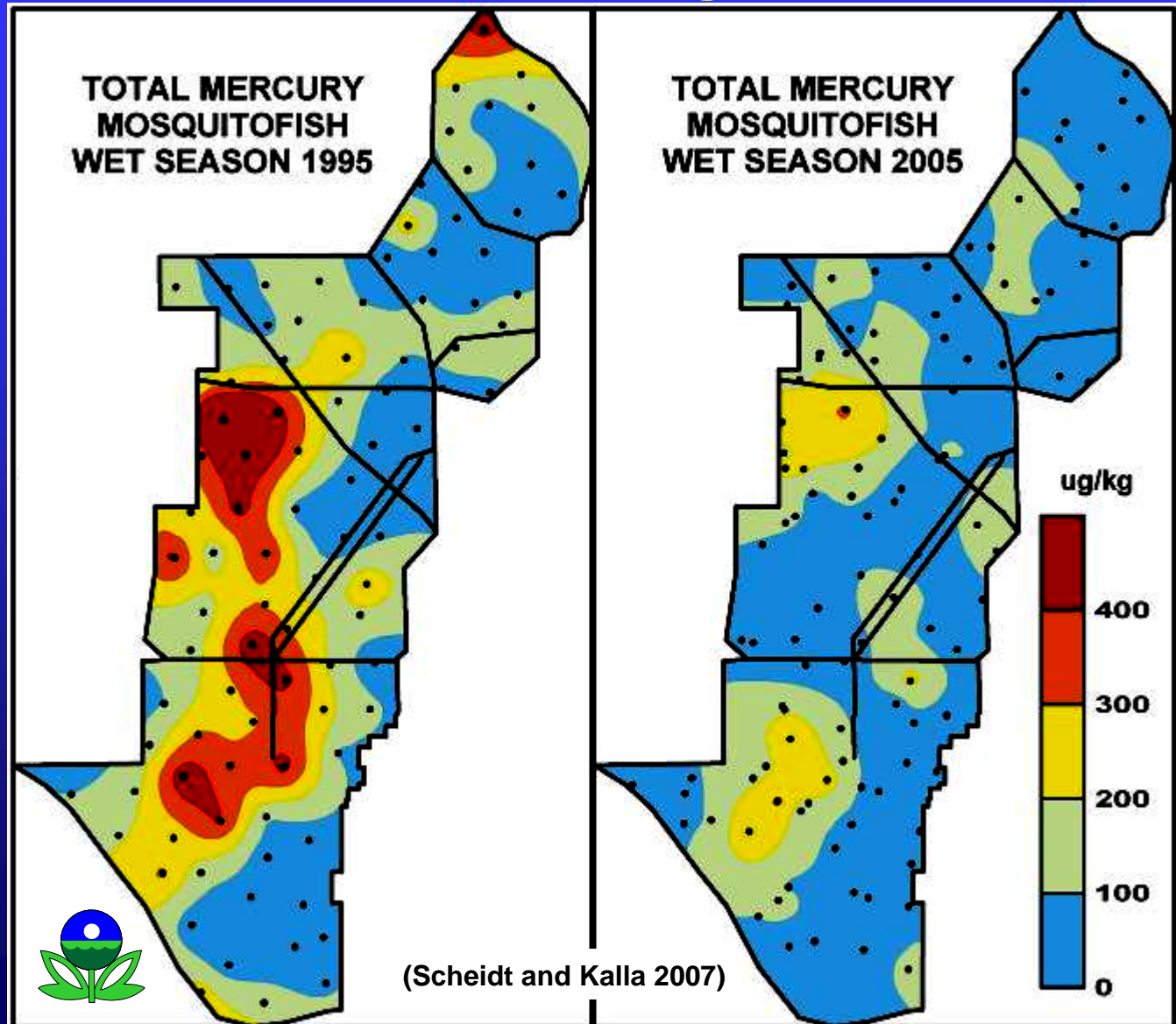
~\$6M investment to date

Collaborative multi-agency
federal-state effort

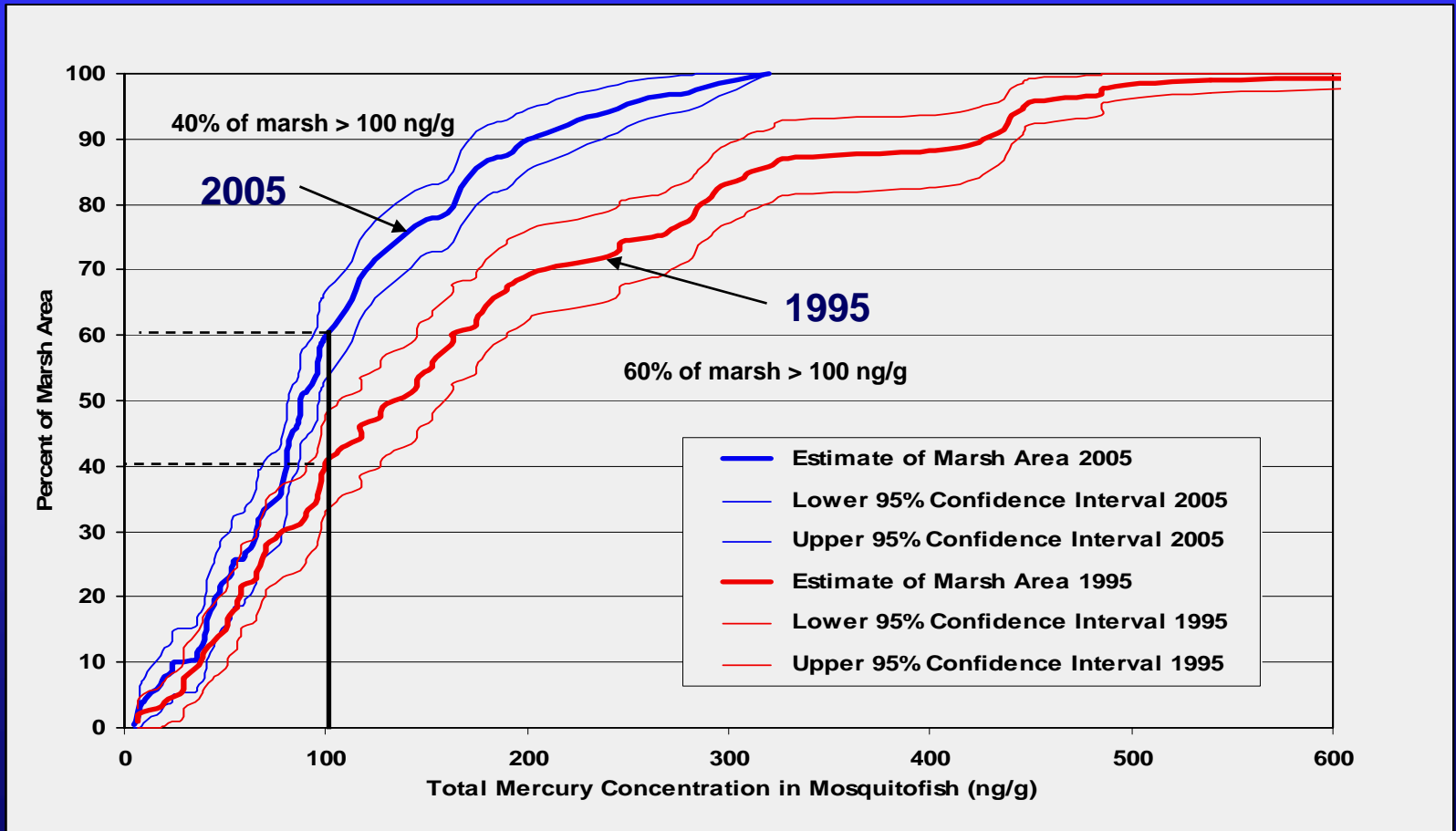
CERP cost ~ \$11 billion



Mosquitofish Mercury, 1995 & 2005



Mercury in Mosquitofish 1995 & 2005 Wet Season



(Scheidt and Kalla 2007)