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 ~15 N ~50

‘95-’00 Hotspot
Summary of ACME data for 1995-2000

Methylmercury Gradient in the Everglades

Methylation (% per day)

Water (ng/L), Sed. (ng/g)
Evergaldes Hg & MeHg Time Series

![Graph showing time series data for Total Hg and MeHg concentrations from 04/11/95 to 08/06/07. The graph includes data points for MeHg and Total Hg with labeled axes and dates.](image-url)
Time Series for Mercury Deposition in South Florida 1993-06

Slide: C Pollman, Frontier Geosciences
A bumpy road to recovery

What about the spikes?
But, then the Everglades dried up in 1999

- Bioaccumulation & wet cycle period
- Dry down & oxidation
- Rewetting & methylation
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

(Scheidt and Kalla 2007)
Mercury in Mosquitofish
1995 & 2005 Wet Season

60% of marsh > 100 ng/g

40% of marsh > 100 ng/g

(Scheidt and Kalla 2007)