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**The Third Workshop on Mercury and Sulfur in South Florida Wetlands**  
**South Florida Water Management District, West Palm Beach, FL**  
**June 21 and 22, 2011**

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The *Third Workshop on Mercury and Sulfur in South Florida Wetlands* will be held in the South Florida Water Management District Headquarters, 3301 Gun Club Road, West Palm Beach, FL 33406, on June 21 and 22, 2011.

This Workshop is organized by the South Florida Water Management District (SFWMD), the U.S. Geological Survey (USGS) and the Florida Department of Environmental Protection (FDEP). It is intended to support activities under the SFWMD's Sulfur Action Plan; the USGS' South Florida Ecosystem Program, and the FDEP's South Florida Mercury Science Program. Through these programs, the three agencies investigate the effects of elevated mercury and sulfur levels on the Greater Everglades, with research emphasis placed on mercury and sulfur biogeochemistry, internal eutrophication, sulfide toxicity, agricultural applications of sulfur, mercury bioaccumulation and levels in biota, and mercury effects on wildlife. The purpose of this workshop is to present data and conclusions from research conducted since the Second Workshop (June 2009), on that basis recommend actions to reduce the harmful ecological effects of mercury and sulfur, and to define additional mercury and sulfur research needs to restore the Greater Everglades.

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**Workshop Agenda**

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**June 21 (Storch Room, B1)**

10:00a - 10:30a: Attendee Introductions and Workshop Background, Ronnie Best (USGS)

**I: Sulfur Distribution, Biogeochemistry and Impacts**

Moderator – Ronnie Best (USGS)

10:30a - 11:00a: Sulfur Studies in the South Florida Ecosystem - Present Status and Future Research Needs  
Bill Orem, USGS

11:00a - 11:30a: Near Zeroth Order Sulfate Disappearance Rate Estimated using Models of the Arthur R. Marshall  
Loxahatchee National Wildlife Refuge  
Mike Waldon, DOI Everglades Program Team

11:30a - 12:00p: Spatial Patterns of Sulfur Enrichment within the Loxahatchee National Wildlife Refuge  
Paul McCormick, SFWMD

12:00p - 1:00p: Lunch

1:00p - 1:30p: Sulfur Use in the Everglades Agricultural Area: Soil Biogeochemical and Crop Responses  
Alan Wright, UF

1:30p - 2:00p: Dryout-Reflood Impacts on Spatial Gradients and Temporal Variations in Surface and Pore Water  
Chemistry in a South Florida (USA) Stormwater Treatment Area  
Forest Dierberg, DB Environmental Inc

2:00p - 2:30p: Effects of Sulfate Dosing on Phosphorus Mobilization and Vegetation in WCA-3A Mesocosms  
Tom DeBusk, DB Environmental Inc.

2:30p - 2:45p: Break

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## Workshop Agenda (continued)

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### II: Mercury Distribution and Methylation

#### Moderator – Bill Orem (USGS)

- 2:45p - 3:15p: Spatial distributions of total sulfur and mercury in Everglades soils  
Sue Newman, SFWMD
- 3:15p-3:45p: Distribution of Mercury in Tree Islands and Surrounding Marsh in the Everglades  
Lena Ma, UF
- 3:45-4:15p: Mercury and Methylmercury Distributions, Drivers and Trends in Everglades National Park  
David P. Krabbenhoft, USGS
- 4:15-4:45p: Degradation of Methylmercury and Its Effects on Mercury Distribution and Cycling in the Florida Everglades  
Yong Cai, FIU

### June 22 (Storch Room, B1)

#### II: Mercury Distribution and Methylation (continued)

#### Moderator – Bill Orem (USGS)

- 9:00a – 9:30a: From Field to Lab: Advances in Understanding the Dissolved Organic Matter-Mercury Connection  
George R Aiken, USGS

#### III: Mercury and Wildlife

#### Moderator – Don Axelrad (FDEP)

- 9:30a - 10:00a: Effects of Ecologically Relevant Exposure of White Ibises to Methylmercury: Endocrine and Reproductive Effects  
Don Axelrad, FDEP
- 10:00a - 10:35a: Spatial and Temporal Trends in Mercury Concentrations in Blood and Hair of Florida Panthers (*Puma concolor coryi*)  
April Brandon, FGCU
- 10:35a – 10:50a: Break
- 10:50a - 11:20a: Temporal and Spatial Trends of Mercury in Largemouth Bass  
Ted Lange, FFWCC
- 11:20a - 11:50a: Trophic Position and Variations of Mercury in Largemouth Bass  
Ben Gu, SFWMD
- 11:50a - 1:00p: Lunch

#### IV: Workshop Summary

#### Moderator – Bill Landing (FSU)

- 1:00p - 3:30p: Conclusions, Recommended Actions, and Future Research Needs

#### Workshop Organizers:

- Dr. Ben Gu**, SFWMD 561-682-2556, 561-313-8419 M, [bgu@sfwmd.gov](mailto:bgu@sfwmd.gov)  
**Dr. Ronnie Best**, USGS 954-577-6354, 954-658-4676 M, [Ronnie\\_Best@usgs.gov](mailto:Ronnie_Best@usgs.gov)  
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