

Vital Signs: Air Quality-Deposition, Air Quality-Mercury [Shortened name: Air_Quality]

Parks Where Vital Sign will be Implemented & SFCN role:

EVER, VIIS – SFCN gathers data from other groups & analyzes

Justification/Issues being addressed: Good air quality is important for both human and ecosystem health. South Florida parks have serious problems with mercury toxicity which primarily comes from aerial deposition. Virgin Island parks have challenges with African dust and volcanic eruptions that decrease air quality to the extent that asthma cases rise among children during these events. Both South Florida and Virgin Islands parks are experiencing rapid urbanization with associated rises in aerial pollutants such as atmospherically deposited nitrogen. The NPS-Air Resources Division is working with the Inventory and Monitoring program to achieve reporting of air quality across NPS parks. As both EVER and VIIS receive funding for air quality monitoring from the NPS – Air Resources Division and both parks have goals regarding air quality, SFCN added air quality to the list of vital signs. This vital sign compliments the mercury monitoring in pig frogs in the Amphibians vital sign.

General Monitoring Questions:

- What are the status, trends, and episodic events in air quality in SFCN parks, as measured by wet and dry deposition?
- What are the status and trends in mercury deposition?

Measures:

Wet/dry deposition of anions, cations, mercury

Basic Approach:

If the NPS-ARD program or park staff produce reports of air quality trends by park, SFCN will merely summarize those reports and post the reports or links on the web page.

Otherwise, SFCN will gather data from the EVER and VIIS air quality monitoring stations from the National Atmospheric Deposition Program/National Trends Network (NADP/NTN) network (<http://nadp.sws.uiuc.edu>), the Mercury Deposition Network at EVER (MDN; <http://nadp.sws.uiuc.edu/mdn/>), Clean Air Status and Trends Network (CASTNet; <http://www.epa.gov/castnet/>) (Note: CASTNet station at VIIS discontinued in 2004), and analyze the data for trends.

Principal Investigators/Key Contacts and NPS Lead:

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Development Schedule, Budget, and Expected Interim Products:

By the end of 2011, SFCN will work to place summaries on the SFCN public web page and intranet page. Estimated time required: 1-3 weeks with a combination of Quantitative Ecologist and support staff.

Expected SFCN staff time requirements once program is fully implemented in 5 years:

SFCN Staff	Full Time Equivalent (FTE)
Coordinator	
Marine Ecologist	
Fisheries Biologist	
Marine Biologist Technician (So FL)	
Marine Biologist Technician (VI)	
Community Ecologist	
Wildlife Technician (Wildlife)	
Wildlife Technician (Vegetation)	
Quantitative Ecologist	0.01
Data Manager	
GIS/Data Tech	
Interns	0.02
SFCN Total	0.03