

EPA R4 SWPBA Newsletter 2014

Everglades

EPA Region IV recently conducted Phase IV of the Everglades Ecosystem Assessment, aka Everglades REMAP. In 16 days during September we collected over 2000 samples from 119 remote locations in a 2000-square mile area with 24 personnel (18 SESD, 3 Water Division, 3 contractors). This is the 17th time EPA has completed REMAP canal or marsh sampling in the Everglades since 1993. The sampling has become more complicated as we have learned from previous efforts, added media and analytes, and refined field methods. Many of the field methods were developed specifically for this Program.



Photos from the recently completed Phase IV survey are posted on the EPA Region 4 Facebook page:

<https://www.facebook.com/media/set/?set=a.546853992081157.1073741858.173522356080991&type=3>

Florida International University hosts EPA during our surveys, and several FIU faculty are Co-Principle Investigators in the Program. FIU serves spatially referenced data and photographs from the 2005 survey: <http://digir.fiu.edu/gmaps/EverREMAP.php>

Project reports containing implications for managers, as well as all Program data, can be found on the South Florida page of EPA Region IV's internet site:

http://www.epa.gov/region4/sesd/sesdpub_completed.html

Background -- Phases I/II/III: Since 1993, USEPA Region 4 has been conducting a landscape-level assessment of the Florida Everglades ecosystem in association with many partners. The Project uses an EMAP statistical survey design to sample all of the Marl Prairie/Rocky Glades and the Everglades Ridge and Slough physiographic regions, which make up the central Everglades flow-way. The Everglades Ecosystem Assessment (EEA) is the only system-wide monitoring and assessment program which accomplishes several monitoring and assessment objectives for Everglades restoration, including documenting status and trends, determining baseline variability, detecting responses to management actions, and improving the understanding of cause and effect relationships. In Phases I (1993-1996) and II (1999) EPA provided pre-2000 baseline conditions for a broad array of indicators against which future changes can be measured. In Phase III (2005) changes were detected in mosquitofish mercury burdens and soil phosphorus concentrations.



Design -- The probability design used to sample the Everglades marsh was developed from the EMAP base grid in order to ensure spatial coverage. The design includes stratification by the major subareas of the system, to ensure that coverage of smaller subareas is adequate for obtaining variance estimates. A consistent sample size of approximately 125 sites per seasonal survey ensures acceptable confidence intervals around estimated environmental parameters. This design criterion is compatible with logistical considerations allowing helicopter-supported crews to complete all sampling in about two weeks, which also matches throughput capacities of cooperating analytical laboratories. In each



Phase a similar design is used, but with a new random point selection. This approach is the only one that produces quantitative statements with known confidence about environmental condition across the entire population over space and time; for example, that the proportion of the Everglades having a total phosphorus concentration greater than 400 mg/kg in soil was 49.3 ± 7.1 % in 2005, and that this proportion is statistically significantly greater than the 33.7 ± 5.4 % measured in 1995-1996.



For more information on the Comprehensive Everglades Restoration Plan, visit:

<http://www.nps.gov/ever/naturescience/upload/CERPFSLoResSecure.pdf>

For more information on National Park Service Aviation Management, visit:

<http://www.nps.gov/fire/aviation/>

Nutrient Updates

Region 4 has been collaborating with states and tribes on a number of nutrient related projects. The regional lab has assisted South Carolina in testing continuous chlorophyll probes and assisted Georgia with algal growth potential tests across the state's estuaries. Contractor support has been provided to help North Carolina analyze reservoir nutrient monitoring data, and for Mississippi to continue numeric nutrient criteria derivation. EPA Headquarters hosted a three-day meeting in Atlanta describing advances in nutrient criteria development methods, and the region has organized periphyton and nutrient workgroups to support information exchange amongst states and tribes.

Region 4 work addressing hydrologic alteration

Region 4 recognizes that hydrologic alteration is a leading cause of ecological impairment. After incorporating feedback from their SWPBA 2013 presentation, Lisa Gordon and Dave Melgaard presented, "Monitoring and Assessing Waters to Capture Impairments due to Hydrologic Alteration" during the Region 4 bimonthly monitoring and assessment program call, which included several state program managers. Using all of the feedback gathered, Lisa and Dave presented this to several managers and staff at EPA headquarters where it was very well received. This has sparked national discussion around how to accurately capture and assess flow information and impairment. Additionally, when hydrologic alterations are evaluated, EPA has been working with the U.S. Army Corps of Engineers

to ensure instream flow management to protect designated uses, criteria and antidegradation requirements.

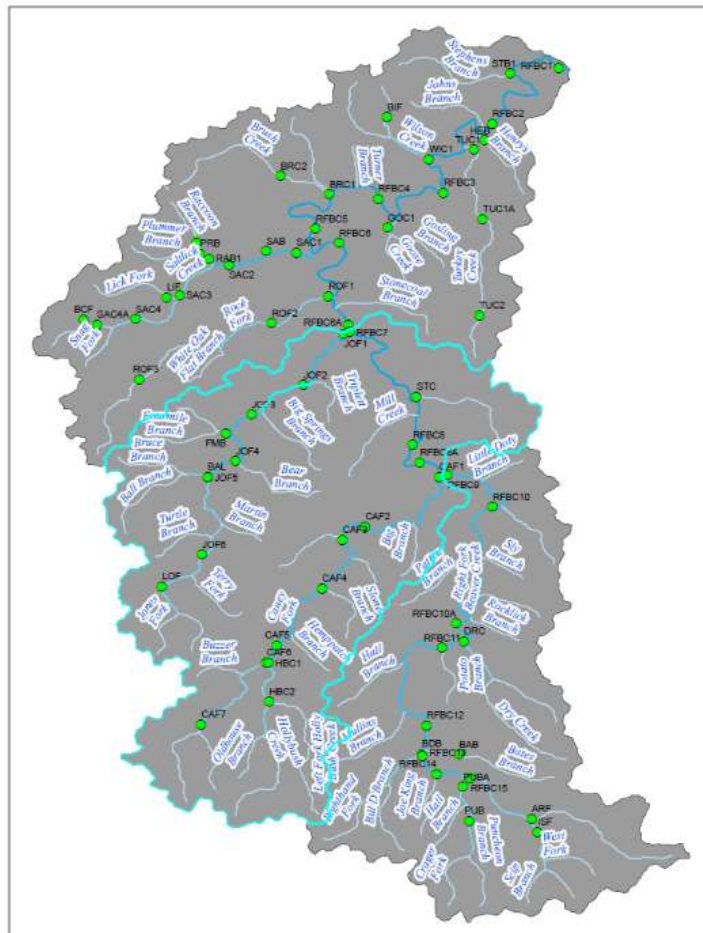
Cumulative Impacts of Mining in Eastern Kentucky (CIMEK)

In the winter of 2012, EPA initiated this project to evaluate the cumulative impacts of coal mining in 3 HUC 12 watersheds in the Big Sandy River Basin in Eastern Kentucky. This project seeks to provide information on the condition of the watershed, the relationship of the health and condition of the watershed to historical and current surface mining, and the parameters that best measure cumulative impacts to surface mining. SEDS has collected 7 quarters of chemical grab samples, two annual macroinvertebrate samples, and two annual fish tissue samples at 60 locations, as well as approximately 1 year of data from continuous conductivity loggers at 28 sites. EPA Headquarters, Office of Research and Development (ORD), and Region 4 are collaborating to analyze the data and develop possible plans for future monitoring to fill in data gaps.

Region 4 Water Protection Division Reorganization

As many of you may be aware, the EPA R4 Water Protection Division is undergoing a reorganization, planned to be effective in November of 2014. There will be some significant changes to the monitoring, 303(d), and TMDL section organizations. Previously, TMDL's and 303(d)/305(b) with monitoring responsibilities were assigned to 2 different sections. In the new reorganization, TMDL's and 303(d)/305(b) responsibilities will be recombined and monitoring duties will reside in a new section, entitled "Monitoring, Data and Information Analysis". Once finalized, the organizational charts and personnel changes will be shared with state counterparts.

Figure 1: CIMEK Monitoring Station Locations (in green)



Previous Organization	New Organization
Water Quality Planning Branch (Chief: Joanne Benante)	Water Quality Planning Branch (Chief: Joanne Benante)
- Water Quality Standards Section	- Water Quality Standards Section
- Data and Information Analysis (Monitoring and 303(d)/305(b)) Section	- Monitoring and Data and Information Analysis Section (with 5 modelers)
- Watershed Coordination Section	- TMDL, Assessment, and Listing Section
Pollution Control and Implementation Branch (Chief: Chris Thomas)	New Branch: NPDES Permitting and Enforcement (Chief: Denisse Diaz)
- TMDL section	New Branch: "Communities and Watershed Protection Branch" (Chief: Chris Thomas)

Retirements – Congrats Ed Decker and Jim Harrison!



Ed Decker



Jim Harrison