



Agenda
Science Forum
Wednesday, February 13, 2008
9:00 am – 12:00 pm
South Florida Community College, Room 118
Arcadia, FL

Presentation and Discussion Topics

1. 2008 Charlotte Harbor Watershed Summit—Catherine Corbett
2. Does nitrogen from sludge farm runoff persist in the Charlotte Harbor Study Area?
Results from FY05 Research and Restoration Partners Grant project—Jason Hale
3. Environmental Indicators—Lisa Beever
4. CF Industries South Pasture Mine—Jim Sampson

THIS FORUM IS OPEN TO THE PUBLIC

Abstracts

1) 2008 Charlotte Harbor Watershed Summit

The 2008 Charlotte Harbor Watershed Summit is scheduled for March 25-27, 2008 at Edison College in Punta Gorda, FL. A draft agenda for the workshop is enclosed. Comments and suggestions are welcomed. Also, the Florida Academy of Sciences has graciously agreed to publish a special issue of the *Florida Scientist* dedicated to articles related to research and monitoring results within the Charlotte Harbor watershed. For those presenters who are interested in submitting a manuscript for this special issue, please let me know as soon as possible but no later than April 30. We are aiming for a publish date of Fall 2009.

2) Does nitrogen from sludge farm runoff persist in the Charlotte Harbor Study Area?

Results from FY05 Research and Restoration Partners Grant project

Broadly, this project was concerned with the impact of subbasin landuses on stream and river water quality. Specifically, researchers addressed questions related to one selected landuse in particular: land application of residuals from domestic wastewater treatment plants (WWTP). Two-thirds of the residuals material produced in Florida is disposed of by land application (Florida Department of Environmental Protection 2007), where it is often considered a valuable source of fertilizer. High nutrients have been associated with two water quality impairments in the upper Charlotte Harbor estuary, low dissolved oxygen and high chlorophyll. Investigators hypothesized that the presence, extent, and impact of nitrogen from land application of residuals on stream and river ecology could be detected using stable nitrogen isotope analysis. The hypothesis is based on the degree of difference between the stable nitrogen isotope ratio of WWTP residuals and ratios resulting from other landuses, including citrus or row crops, beef or dairy cattle operations, etc. To investigate the use of this type of analysis on landuses and stream water quality, we measured the stable nitrogen isotope ratio ($\delta^{15}\text{N}$) in filtered water, suspended particulate organic matter (SPOM), sediment organic matter, and stream-side vascular plants from twelve stations in Hardee and DeSoto counties, along the Peace River, Horse Creek, Joshua Creek, and Charlie Creek. Using these data, we provide the following in the final report:

1), a map of the distribution of ^{15}N -nitrate in rivers and streams of Hardee and DeSoto counties. This map illustrates how ^{15}N -nitrate ratios are markedly different between sub-basins, and implies the effect of different land-uses on stream and river water quality.

2), a simple, 2-endmember mass balance equation based on stable isotope ratios observed during this project as well as those collected from a literature survey.

3), the responses of ^{15}N of stream-associated organic matter to in-stream ^{15}N -nitrate were characterized. Stable nitrogen isotope ratios of nitrate measured in streams accounted for some, but not all of the variation in ^{15}N ratios of suspended particulate organic matter and sediment organic matter in streams. These associations were positive, but less than 1, which may indicate that (a) nitrate is not limiting to organic matter production in streams, and/or (b) another source of nitrogen (e.g. ammonia) is also important to stream production. Stable nitrogen isotope ratios of nitrate were not well associated with those of leaf samples collected on stream banks.

3) Environmental Indicators

During their last meeting on November 2, the Management Committee recommended approval of the Environmental Indicators Report update, pending a review of the final CCMP and that the CHNEP staff work with the SWFWMD staff on the Myakka River Minimum Flow and Levels

targets. Thus, the group will need to discuss the Myakka River MFL targets and associated environmental indicators.

4) CF Industries South Pasture Mine

On November 29, 2007 CF Industries submitted an application to the Department of Environmental Protection for modifications to its existing South Pasture Conceptual Reclamation to accommodate the development and operation of an innovative alternative water resource development project, the Aquifer Recharge and Recovery Project.

Consistent with the provisions of Section 378.212(1)(g), Florida Statutes, CFI is proposing to develop an ARRPs within a previously mined 1,012-acre portion of the South Pasture Mine in lieu of the currently approved reclamation. In general terms, the ARRPs would involve storing excess mine storm water and reclaimed waste water from the City of Wauchula in an existing sand/clay mix area, naturally treating that water through a series of cells consisting of reclaimed wetlands constructed in an adjacent sand/clay mix area, filtering the water through a sand tailings filter basin, and injecting an estimated 2 - 4 mgd of water into the Floridan aquifer to facilitate aquifer recovery or possible future withdrawal by others.

The presentation to the CHNEP TAC will provide details of the proposed ARRPs.

2008 Watershed Summit Abstracts

Group	Title	Presenter	Co-authors
fish	Effects of Habitat Juvenile Snook Diet: A Comparison of Mangrove Creeks of Different Quality	Aaron Adams	R. Kirby Wolfe
fish	Spawning Patterns of Charlotte Harbor Snook: Information Essential for Management	Aaron Adams	R. Kirby Wolfe
shellfish restrn	Role of Shellfish in Setting Water Quality Targets in SW Florida Estuaries	Aswani Voley	Peter Doering, Patricia Sime, Patricia Goodman
restoration	Post-hurricane Restoration of Charlotte Harbor Red Mangrove Shorelines: Improving Corridors for Seasonal Fish Movements	Betty Staugler	T. A. Tattar, D. Scott, J. Greenawalt-Boswell, P. Stevens, R. DeBruler, and E.M. Everham
wq targets w/MW & JR	Refinement of the Charlotte Harbor National Estuary Program's Numeric Water Quality Targets for Lemon Bay, Charlotte Harbor and Estero Bay, Florida	Catherine Corbett	
restoration	Melaleuca Removal from Pop Ash Creek Preserve	Cathy Olson	
fish	Introduced Fishes in the Charlotte Harbor Estuary	Chris Stafford	Chuck Idelberger, S. E. Erickson, A. J. Adams
	Assessment of Water Quality Responses to Sediment Removal in Lake Hancock	David Tomasko	
	Turbidity Maximum in Caloosahatchee River	Dave Fugate	
flow indicators	Hydrological Monitoring of the Six Mile Cypress Slough Preserve	David Ceilley	Jeff Key, Edwin M. Everham III, Brenda L. Thomas and Robert Leisure III
seagrass	Seagrass transplant success linked to sediment bacterial communities	Eric Milbrandt	
shellfish restrn	Effects of heavy metals and pesticides on health and physiology of oysters (<i>Crassostrea virginica</i>) in Hendry Creek, Estero Bay, FL: Implications for management of water quality	Erin Dykes	Aswani Voley, Jennifer Nelson and James T. Winstead
with Kathy	A Tidal Creek Condition Index Based on Ecological Variables and Rapid Survey Methods, for Southwest Florida	Ernie Estevez	J. K. Culter, and K. L. Meaux
fish	Organism crowding during periods of low inflow into the Peace and Myakka estuaries; Evidence from spatial abundance quantiles	Ernst Peebles	Marin F. D. Greenwood
flow indicators	Estero Bay Tributaries Riparian Vegetation Analysis	Edwin Everham	David W. Ceilley, Daniel Hamilton, Brenda L. Thomas, Corrie Pieteron, Robert Leisure III, Brad Kolhoff, Jeff Key, George Wilder, and Mary Kay Cassani

2008 Watershed Summit Abstracts

Group	Title	Presenter	Co-authors
fish	The Smalltooth Sawfish, <i>Pristis pectinata</i> , in the Caloosahatchee River, Florida: Notes on Its Ecology	Gregg Poulakis	Colin A. Simpfendorfer, Philip W. Stevens, Tonya R. Wiley, Amy A. Timmers, Beau Yeiser, and Chris J. Stafford
fish	Influence of Freshwater Inflow on the Spatial and Temporal Distribution of Ichthyoplankton and Gelatinous Zooplankton in Estero Bay	James Evans	Jennifer Nelson, Bethany Bachelor, Scott Burghart, Ph.D., and Greg Tolley, Ph.D.
	A Second Look at Nutrients and Land-Uses in the Charlotte Harbor Watershed	Jason Hale	E. R. Hall and R. M. Duffey
w JB & WD	Developments of Regional Impact in Southwest Florida – Origins of the Legislation, Review and Land-use Legacy	Jason Utley	
shellfish restrn	Partnership to Restore Bay Scallop in Pine Island Sound, Florida: Strategies, Accomplishments and Current Activities	Jay Leverone	Stephen P. Geiger, Jaime Greenawalt-Boswell, Curt Hemmel and William S. Arnold
fish	Influence of Freshwater Inflow on the Distribution and Community Structure of Decapod Zooplankton in the subtropical Florida estuary of Estero Bay.	Jennifer Nelson	
w JU & WD	Growth Management Regulation, Public Investment and Resource Implications for the Estero Bay Watershed	James Beaver	
	Benthic Invertebrate Species Richness & Diversity at Different Habitats in the Greater Charlotte Harbor System	James Culter	Jay Leverone
	Evaluating the Risks that Pharmaceutical-Related Pollutants Pose to Caloosahatchee River Wildlife: Observations on the Bull Shark	Jim Gelsleichter	Nancy Szabo
fish	Ichthyofaunal Survey of Caloosahatchee River Oxbows	John Cassani	K. Watts, D.W. Ceilley and E. M.. Everham III
flow indicators w/ KH & PD	Integrated Surface Water / Groundwater Modeling in the Myakka River Watershed: Management Tools for Ecosystem Restoration	John Loper	Lisann Morris
wq targets w/MW & CC	Protecting Water Clarity in Sarasota County Bays – an Implementation Strategy	John Ryan	
seagrass	Sarasota County Volunteer Seagrass Monitoring	Jon Perry	Amanda Dominguez
seagrass	Are Seagrasses in Charlotte Harbor Migrating Landward in Response to Expected Sea Level Rise?	Judy Ott	

2008 Watershed Summit Abstracts

Group	Title	Presenter	Co-authors
with Ernie	Tidal Creek Condition Index: A Future Watershed Management Tool	Kathryn L. Meaux	
flow indicators w/PD & JL	A Bayesian Approach to Predicting Salinity in the Lower Peace River Estuary	Keith Hackett	Anthony Janicki
seagrass	Does spatial extent of reporting segments affect the interpretation of seagrass mapping results?	Kristen Kaufman	
	The Role of Land Runoff in Algal Blooms in Southwest Florida Estuaries and Coastal Waters	Larry Brand	
	Mangrove Monitoring in Southwest Florida	Lisa Beever	
	'RECON': SCCF's Fully Integrated River, Estuary, and Coastal Observing Network for High Resolution Real-Time Water Quality Sampling	Loren Coen	Eric C. Milbrandt, A.J. Martignette and Jeff J. Siwicke
	A Two Year Look at Continuous Water Quality Data in Matlacha Pass	Melynda Schneider	
	Winter Haven: The Chain of Lakes City – Making Water Quality a Priority	Mike Britt	
wq targets W/CC & JR	Assessing Validity and Reliability of Optical Model Predictions of Light Attenuation in Charlotte Harbor, Florida	Mike Wessel	Catherine Corbett
flow indicators w/KH & JL	A Probabilistic Routine for Predicting Estuarine Salinity to Inform Management Decisions	Peter Doering	C. Qiu
		Ralph Montgomery	
	Lake Hancock Lake Level Modification Project	Randy Smith	
seagrass	A GIS Approach to Analyze Relative Depth Distribution and Persistence of Seagrasses in Charlotte Harbor	Ravic Nijbroek	Anthony Janicki
poster	<i>Poster</i> -Using the Clam <i>Rangia cuneata</i> as an Indicator of Watershed Alterations in the Caloosahatchee River	Ray Leary	Vincent Encomio, Katie Sergent and Aswani K. Volety
poster	<i>Poster</i> - Water Quality and Freshwater Inflow in the Caloosahatchee River Estuary	Ray Pribble	R. Nijbroek, and A. Poe
poster	<i>Poster</i> -Providing Scientific Information to the Public Using Spatial Maps of Water Quality Information	Renee Duffey	Jason Hale

2008 Watershed Summit Abstracts

Group	Title	Presenter	Co-authors
restoration	Shell Creek and Prairie Creek Watersheds Management Plan: Reasonable Assurance Documentation	Roberta Starks	Eric C. DeHaven
1st morning	<i>Not confirmed</i> --meshing public water supply with environmental needs and climate variability	Sid Flannery	
poster	<i>Poster</i> - Community Structure of the Benthos of Shell Creek and the Lower Peace and Myakka Rivers	Stephen Grabe	James Culter and Anthony Janicki
fish	Fish community assessment of the Peace River, Florida	Tom Champeau	
w JB& JU	Global Trends that Threaten Charlotte Harbor Protection and Restoration	Wayne Daltry	