Florida Coastal Everglades Long Term Ecological Research (FCE LTER)Newsletter Volume 4, Number 3 Fall 2014



Florida Coastal Everglades Long Term Ecological Research

News from the Sloughs



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Feature Article: New Co-P.I. Dr. Kominoski

The Florida Coastal Everglades LTER has a new Co-Principal Investigator, Dr. John Kominoski, a position previously filled by Dr. Laura Ogden. All of FCE thanks Dr. Ogden for her extraordinary efforts and dedication to FCE. Working with FCE III since before its renewal proposal was awarded in 2012, Dr. Kominoski has stepped up to the plate for growing research, education and science communication programs that work well with the framework of FCE objectives. John is no stranger to leadership

in large research programs and has been Co-P.I. of a large, collaborative NSF grant called "SCALER: Scaling Consumers And Lotic Ecosystem Rates" since 2011. This novel research investigates how stream patterns and processes vary at different scales within river networks across different biomes. SCALER is a partnership with the Luquillo, Coweeta, Konza, and Arctic LTERs as well as a non-LTER site in Alaska (Caribou Poker Creek). Dr. Kominoski is also lead or Co-P.I. on several research projects in the greater Everglades system and across the U.S.

from the Southwest to the Southeast that range from the effects of nutrients concentrations and ratios on carbon processing in various aquatic and terrestrial ecosystems to fish community dynamics along gradients in land use and hydrology to whole-ecosystem metabolism in ridge and slough habitats of the Central Everglades to global change drivers (vegetation regime shifts and sea-level rise) on coastal carbon storage in Texas and Florida. John's research collaborations stretch around the globe.

Dr. Kominoski is an Assistant Professor at Florida International University and the Southeast Environmental Research Center in Miami, and he is teaching a new, writing-



intensive course on Communicating Science for graduate students this semester.

After learning John's diverse background in ecology, I asked John what message he would like to pack into each human's lunchbox about our individual roles in the ecosystem and he replied,

"We have a responsibility to understand and care for the ecosystems upon which human civilization relies so heavily. One way that we can improve our role in this capacity is to communicate clearly to scientists and non-scientists alike about what we don't understand about these ecosystems and why enhanced knowledge is so critical for our own health, well-being, and survival."

Story by Susan Dailey, Photo Above of Dr. Kominoski atop the Archbold Biological Stations's fire tower. Photo Below John Kominoski and Anna Armitage (Texas A&M Galveston, FCE collaborator) meeting with ecologists at the Xianjiang Mangrove Conservation & Education Center, Xianjiang, China. Photo Credit: Yihui Zhang, Xiamen University, China.

FCE Digestions: Updates from the Consumer Working Group

This quarterly working group update comes from the Consumers working group where research on consumers sought to improve understanding on how the freshwater and estuarine fish community responds to hydroclimatic variation. Specifically, these researchers have striven to document the response of the fish community to extreme climatic events (Boucek & Rehage 2014), specifically a cold front (2010) and a drought (2011). To obtain more extensive long-term data on fish response to hydroclimatic variation, we expanded a successful citizen science project. We sought to improve our ability to track trophic linkages mediated by large predator



movements through tracking, and by improving techniques for food web analysis and we planned to initiate experimental studies to assess the role of freshwater flow changes in marsh community dynamics and the movement of alligators.

The culmination of the efforts of the citizen science angles team (CAST) was captured in an incredible new video about the Rehage lab research and the citizen angles science team, thanks to Richard Kern and Odyssey Earth!

Check out the CAST video and annual report on our FCE webpages!

Collaborator Spotlight: Dr. J. Onsted



Working with urban growth models? Want to improve their accuracy with an innovative approach using a variable ubiquitous across the US? Try zoning. Dr. Jeffrey Onsted has done just that

and risen to the challenge of tying our human dimensions to our South Florida and greater Everglades landscape using zoning in a model called SLEUTH, and it uses cellular automata to simulate urban growth. Onsted and coauthor Dr. Rinku Roy Chowdhury published their findings earlier this year. Better models are a tool we need now to address planning scenarios for sea level rise and climate change. Congratulations to Dr. Onsted and Dr. Roy Chowdhury for their efforts developing this timely research! Story from the editor.

Student Spotlight: You Are Invited!

We are deep into the semester and FCE student group events and opportunities are abound! We invite all interested students!

Please visit our FCE student group pages to keep posted and



visit our Wading Through Research Blog. This month we feature blogs from Dr. Lagomasino and Nick Shulte with adventures from Columbian mangrove mud to diatoms and algae in the Everglades. Stay tuned to Ustream for research presentations we broadcast. We have also started a new tradition this semester, a monthly Student Brown Bag research seminar.

Story by Julia Gehring, Above: FCE's First Friday Event September 2014 by Nick Shulte

FCE Spotlight: Dr. Dan Childers!



This quarter we highlight Dr. Dan Childers for his FCE Synthesis Book efforts. Last month Professor Childers traveled from his (other) home LTER site CAP to MIA to work with the authors and editors

face to face as they tackle an ecological task that pushes beyond the borders of what we have come to know in coastal wetlands and particularly for the South Florida landscape and greater Everglades. Dr. Childers has been working with LTER since its inception in the '80's and his work has continued to bring new ecological foci and greater understanding wherever he travels. We tip out marsh hats, raise our sawgrass stems, and ignite the muffle oven in laud for your enormous efforts Dr. Childers!

Awards and Accomplishments

FCE Student Josh Breithaupt, received an EPA Star Fellowship. He is working on accretion rates and organic carbon burial in the mangrove forest as part of the Water, Sustainability, and Climate Project. His



advisor is FCE research Dr. Donny Smoak.

FCE held a synthesis workshop last month for integrative model efforts. The workshop and it participants continue to focus on how water source changes in response to freshwater restoration and sea level rise influence landscape distribution of peat accretion and nutrient concentrations in the coastal Everglades. Efforts continue to constrain model scenarios for specific needs in carbon /nutrient cycling and hydrologic changes with SLR.

Education and Outreach Update: FCE Tech Teachers and Campers!



This summer ten students from across the US arrived at MIA for TechCamp—the second installment of FCE's continuing partnership with the Association of American Geographers (AAG) and one of three TechCamps traveling to Bolivia, Panama, and South Africa. Felipe Tamayo, Christopher Naranjo, and Alexander Waller represented FCE and the Felix Varela Senior High School IPREP/Global Studies Magnet. FCE hosted Bolivia Tech Camp Orientation at FIU's Southeast Environmental Research Center and with our partners at the Deering Estate. Students learned about climate change and the environment in the Florida Coastal Everglades and RET

Jennifer Gambale demonstrated historic water flow patterns using 25'x50' map of South Florida. TechCampers learned from FCE Interns, Adrian Elkind, Christopher Naranjo, and Alexander Waller, and presentations by Christopher Sanchez (shown left), Sara Osorio, and Felipe Tamayo. Next, TechCampers were off to La Paz, Bolivia! They learned GeoTechnologies at the Instituto de Investigaciones Geográficas (IIGEO) and viewed the first-hand effects of climate change on Glacier Chacaltaya. Now back in MIA, the students will continue to work through online collaboration throughout the fall to finish their projects.

Story and photo by Nicholas Oehm

Take Me to Your LTER: Lead Principal Investigator Address



D FCE-Seagrant teamwork! L-R, T. Troxler, S. Servais, V. Mazzei, R. Johnson, B. Wilson Photo by E. Gaiser

Hi Everyone! Sea Level Rise....these three words infiltrate much of our activity these days and it's exciting to see a host of new research projects, interesting results from ongoing ones, and widespread engagement with the public to inform adaptive planning. Today October first as I write this, some FCE folks are meeting at FIU with Dr. John Holdren, Director of the White House Office of Science and Technology Policy, others are at the 6th Annual Southeast Florida Regional Climate Leadership Summit, and yet others in the field setting up new FCE experiments supported through a Florida Seagrant to examine the consequences of sea level rise to peat soils and carbon cycling in the ecotone. It has never been more important to be addressing the key uncertainties of sea level rise, and help our communities create plans to build resilience and adapt to such rapid change!

It was wonderful to see (and hear) so many of our collaborators last week at our book chapter review meetings. The chapters are coming together beautifully and integratively, and Dan, Laura and I are so excited to be moving toward an arrangement with our publisher to see a 2015 publication of our synthesis book!

I look forward to seeing everyone at an early All Scientists Meeting (Jan 5-6, 2015) focused on our mid-term review, and the mid-term review, March 11-13, 2015. Please watch for communications we ramp up for our 3rd year of FCE III! Best wishes to all! Dr. Evelyn Gaiser, FCE LTER Lead P.I.

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For more Florida Coastal Everglades LTER News and past newsletters - visit our <u>website</u>. Please send submissions for our Winter newsletter by **November 13, 2014** to <u>drskdailey@gmail.com</u>. Please address questions or comments about this edition of the newsletter to: <u>drskdailey@gmail.com</u> or <u>sdailey@fiu.edu</u>.

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