

## Everett - EMERGING AQUATIC PROBLEMS IN FLORIDA

### EMERGING AQUATIC PROBLEMS IN FLORIDA

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#### Contents:

- Abstract of Action Plan
- Implementation of Pilot Program
- Schedule of workshop

### EMERGING AQUATIC PROBLEMS IN FLORIDA

I propose to conduct a 5 day workshop for Florida secondary school teachers, during which current and emerging aquatic problems and possible solutions will be explored. The workshop will be broken into 3 sections of emphasis: 2 days on surface water, 2 days on ground water, and 1 day on coastal water. Morning sessions will be primarily lecture based, with speakers drawn from UF faculty/researchers, local water management district staff, scientists from local consulting firms, and area water industry leaders. Afternoons will be devoted to field exercises, conducted in Gainesville area rivers, streams, sinkholes, and caves. Field work will be supplemented with visits to UF research laboratories, including UF's Seahorse Key Marine Research facility, offshore near Cedar Key. It is anticipated that teachers will return to their classrooms, able to present new and thought provoking knowledge of Florida's unique water problems and solutions. The teachers will be adequately prepared to conduct many new, exciting , hands-on, laboratory activities with their classes.

### PILOT PROGRAM

A pilot version of this workshop entitled *Aquatic Systems: Emerging Problems and Creative Solutions* was conducted the week of 6 July 2009 at the University of Florida. Fourteen Elementary, Middle, and High School teachers, from several Florida counties, participated in the workshop. Judging from program observations, participant interviews and participant's written evaluations, the workshop was judged a success and will be offered again next summer by the UF Center for Precollegiate Education and Training. Teachers were given numerous resources for classroom use. These resources included:  
Book – *Mirage, Florida and the Vanishing Waters of the Eastern U.S.*, Cynthia Barnett  
DVD – *Water's Journey, The River Returns*, Karst Environmental Productions  
DVD – *Water's Journey, Hidden Rivers of Florida*, Karst Environmental Productions  
Teachers Guide Based on the Documentary *Hidden Rivers* written by the Northeast Florida Educational Consortium  
DVD – *Florida Waters*, St. Johns River Water Management District  
DVD – *Your Water Resources, Informational Videos*, SJRWMD  
Numerous keys and pamphlets on Florida Fish and Aquatic Invertebrates, UF-IFAS  
Journal articles on pollution of coastal waters

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Two large ring-binders of classroom and laboratory activities compiled by Dr. Chuck Lawrence of UF-Center for Precollegiate Education and Training:

- Environmental Pollution –Chemical and Biological Assay, Environmental Remediation and Contamination Detection
- Water Quality and Biodiversity Field Manual

**UF CENTER FOR PRECOLLEGIATE EDUCATION AND TRAINING**  
**AQUATIC SYSTEMS: EMERGING PROBLEMS AND CREATIVE SOLUTIONS**

<p><b>Sunday, 5 July 2009</b></p> <p><b>6:00 – 7:00 ish</b></p> <p><b>(Dinner provided)</b></p>	<p><b>Keys Residential Housing check-in 2-4 pm</b></p> <p><b>Location: Keys Recreation room</b></p> <ul style="list-style-type: none"> <li>• Welcome, introductions and dinner</li> <li>• Program overview and review of scheduled events</li> </ul>
<p><b>Monday 6 July, 2009</b></p> <p><b>**Please note early start Time!</b></p> <p>(lunch on your own- HSC)</p> <p><b>Evening Free!</b></p>	<p><b>Morning 8:00am – 9:00</b></p> <p><b>Location: Health Science Center – Lecture room C-1-7</b></p> <p><b>** Note:</b> This presentation will be in conjunction with Student Science Training Program</p> <ul style="list-style-type: none"> <li>• Presentation: Ms. Cynthia Barnett - <i>Blue is the New Green</i></li> <li>• Q and A follow-up for teachers with Ms. Barnett</li> </ul> <p><b>10:00 Room MDL - 2</b></p> <ul style="list-style-type: none"> <li>• Presentation: Dr. Dan Evans - <i>Sea Turtle Troubles</i></li> </ul> <p><b>11:00 DVD <i>The River Returns</i> (short version)</b></p> <p>Lunch on your own (HSC) 11:30-</p> <p><b>1:00 pm</b> Board van for visit to Dr. Lou Guillette's lab</p> <p><b>2:15 pm</b> Board van for visit to SEEP Area</p> <ul style="list-style-type: none"> <li>• Guided tour/lecture by Dr. Mark Clark (Don't forget: we are going to get grungy)</li> </ul> <p><b>4:00 pm</b> Board van for ride back to Keys <b>and</b> shower</p>
<p><b>Tuesday 7 July, 2009</b></p> <p><b>8:30 am – 4:30 pm</b></p> <p><b>7:00 pm – 9:00 pm</b></p> <p>(lunch on your own – HSC)</p> <p>(dinner on your own)</p>	<p><b>Morning 8:30 am – 12:00 pm</b></p> <p><b>Location: Health Science Center MDL – 2</b></p> <ul style="list-style-type: none"> <li>• Presentation: Mr. Casey Fitzgerald – <i>Florida's Surface Waters</i></li> <li>• Presentation: Dr. Greg Kiker – <i>Ownership of Water and the Tri-State Water War</i></li> <li>• Presentation: Dr. Andy Kane – <i>Aquatic Pathology and Toxicology</i></li> </ul> <p>Lunch on your own (HSC)</p> <p><b>Afternoon 1:30 – 4:00 pm</b></p> <ul style="list-style-type: none"> <li>• Board van for an afternoon of sampling along : UF Campus creeks, Lake Alice, Hogtown Creek and Haile Sink</li> </ul> <p>Dinner on your own</p>

<p><b>Evening 7 July</b> <b>7:00 – 9:00 pm</b></p>	<p><b>7:00 pm – 9:00 pm</b> <b>CPET Conference Room 326 Yon Hall</b></p> <ul style="list-style-type: none"> <li>• Dr. Chuck Lawrence – Water sample analysis, macro-invertebrate identification, constructed wetlands for classroom applications</li> </ul>
<p><b>Wednesday 8 July 2009</b> <b>8:30 am – 4:30 pm</b> <b>7:00 pm – 9:00 pm</b></p>	<p><b>Morning 8:30 -11:30 am</b> <b>Location: Health Science Center MDL – 2</b></p> <ul style="list-style-type: none"> <li>• Presentation: Mr. Peter Butt – <i>Santa Fe River</i></li> <li>• Presentation: Mr. Aaron Sikarskie – <i>Everything You Always Wanted to Know About Bottled Water</i></li> <li>• Presentation: Dr. Bill Wise – <i>Tracing Surface to Groundwater</i></li> </ul> <p>Lunch on your own – HSC</p> <p><b>1:00 pm</b></p> <ul style="list-style-type: none"> <li>• Board van to IFAS Fisheries Lab – Ms. Sharon Fitzcoy</li> </ul> <p>(Dinner on your own)</p> <p><b>7:00 pm – 9:00 pm</b> <b>Location: CPET Conference Room 326 Yon Hall</b></p> <ul style="list-style-type: none"> <li>• Mystery night?</li> </ul>
<p><b>Thursday 9 July 2009</b> <b>8:30 am – 4:30 pm</b> (lunch will be provided)</p> <p><b>Evening Free!</b></p>	<p><b>Morning 8:30 am</b></p> <ul style="list-style-type: none"> <li>• Board van to: Devil’s Millhopper State Geological Park and Santa Fe College Bat Cave</li> <li>• Lunch in High Springs – city park</li> <li>• Santa Fe River and Rum Island Park –Travis Thomas (FWC) will lead a turtle catching expedition and lab experience. There will be plenty of opportunity to get cool and wet while exploring the river and springs.</li> </ul>
<p><b>Friday 10 July 2009</b> <b>8:30 am – 4:00 pm</b> (Lunch will be provided)</p>	<p><b>Morning 8:30 am</b></p> <ul style="list-style-type: none"> <li>• Board van for trip to Cedar Key</li> <li>• Board UF Research vessel for trip to Seahorse Key Marine Lab and trawling</li> </ul>