



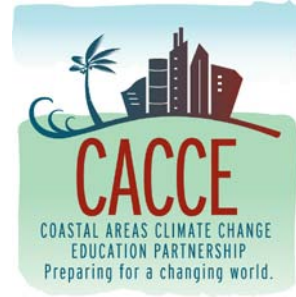
COASTAL AREAS CLIMATE CHANGE EDUCATION PARTNERSHIP

**CACCE**

Preparing for a changing world.

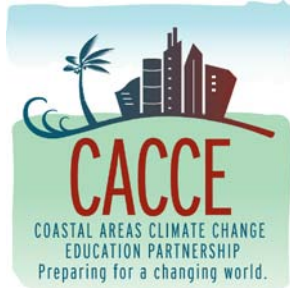
**The Coastal Areas Climate Change Education (CACCE) Partnership: Phase 1 Activities and Planning Efforts for Climate Change Education in Florida and the Caribbean**

# What is CACCE?



- **Coastal Areas Climate Change Education Partnership (CACCE) “catchy”**
  - ***Two-year project funded by the National Science Foundation (One of 15 Phase 1 CCEP)***
  - ***NSF CCEP Goals:***
    - Pursue innovative approaches to teaching and learning about climate change;
    - Develop new strategies to increase adoption of effective educational resources and practices across a range of stakeholders.
  - **Deliverables:**
    - An expanded Partnership
    - An implementable Strategic Climate Education Plan

# Who is CACCE?



## Funded Phase 1 Partners

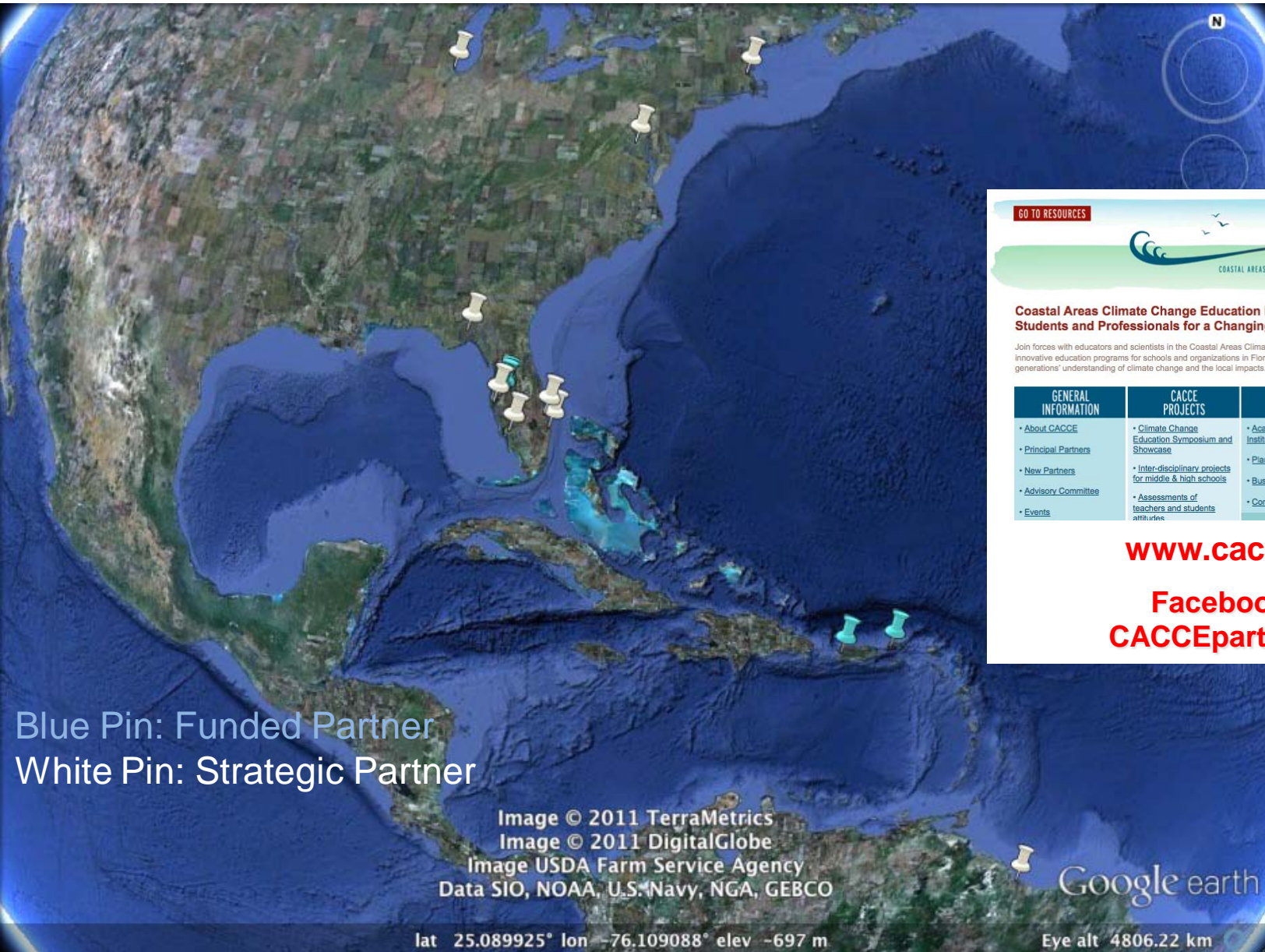


## Strategic Cooperating Partners include:



Muller-Karger





**GO TO RESOURCES**

**Coastal Areas Climate Change Education Partnership Prepares Educators, Students and Professionals for a Changing World**

Join forces with educators and scientists in the Coastal Areas Climate Change Education Partnership (CACCE) to create innovative education programs for schools and organizations in Florida and the Caribbean to improve current and future generations' understanding of climate change and the local impacts.

GENERAL INFORMATION	CACCE PROJECTS	POTENTIAL PARTNERS	EDUCATIONAL RESOURCES
<ul style="list-style-type: none"> <li>• <a href="#">About CACCE</a></li> <li>• <a href="#">Principal Partners</a></li> <li>• <a href="#">New Partners</a></li> <li>• <a href="#">Advisory Committee</a></li> <li>• <a href="#">Events</a></li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Climate Change Education Symposium and Showcase</a></li> <li>• <a href="#">Inter-disciplinary projects for middle &amp; high schools</a></li> <li>• <a href="#">Assessments of teachers and students attitudes</a></li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Academic &amp; Science Institutions</a></li> <li>• <a href="#">Planning Organizations</a></li> <li>• <a href="#">Business Organizations</a></li> <li>• <a href="#">Community Groups</a></li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Go to Resources</a></li> <li>• <a href="#">Submit Resources</a></li> <li>• <a href="#">Visit the Forum</a></li> </ul> <p> <a href="#">Find us on facebook</a></p>

**www.cacce.net**

**Facebook ID: CACCEpartnership**

Blue Pin: Funded Partner  
White Pin: Strategic Partner

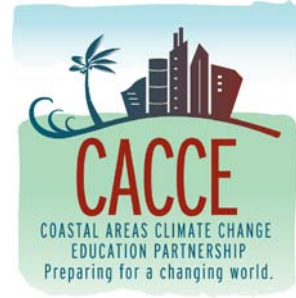
Image © 2011 TerraMetrics  
Image © 2011 DigitalGlobe  
Image USDA Farm Service Agency  
Data SIO, NOAA, U.S. Navy, NGA, GEBCO

Google earth

lat 25.089925° lon -76.109088° elev -697 m

Eye alt 4806.22 km

# Why CACCE?



- ***A de facto admission:*** the “usual messages” are not working. New ideas/strategies required for effective public communication/education on climate change.
- **CACCE’s content emphasis: Near-term, regional impacts of a changing climate in coastal regions:**
  - Sea level rise
  - Storm events and impacts
  - Coastal erosion/damage – beach loss
  - Water resource problems (availability, quality)
- **+ Social and economic resiliency strategies**
  - Adaptation
  - Mitigation
  - Planning



# The CACCE “Message”



For Florida and the Caribbean, climate change is a problem of the here-and-now. Stakeholders need the education and information to make choices regarding near-term climate impacts in our low-lying coastal areas, especially as these impacts affect where people live (the “built environment”).

## •CACCE Audiences:

- K-12 Educators
- Informal Science Educators
- “Built Environment” professionals:
  - Urban and Regional Planners
  - Policy Professionals (incl. local elected officials...)
  - Tourism Industry professionals
  - Engineers, Architects



# CACCE Phase I Goals

- 1) Assay existing climate change education resources related to FL/Caribbean/coastal regions
- 2) Engage key players and stakeholder groups to assess constituent perceptions, and information and education needs
- 3) Test new models for formal and informal climate education
- 4) Identify areas for further research on climate change education.
- 5) Develop a climate change education plan based on stakeholder needs and best practices in education and outreach.

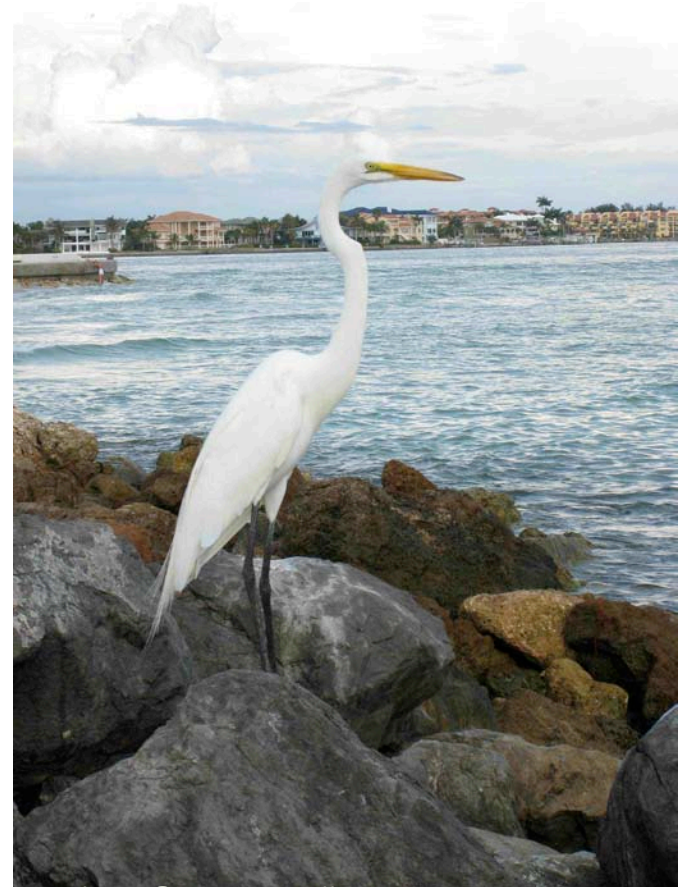
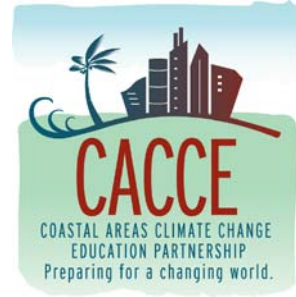


Photo © 2010 F Muller-Karger

# 1) Assay existing climate change education resources related to FL/Caribbean/coastal regions



## Coastal Areas Climate Change Education Partnership Prepares Educators, Students and Professionals for a Changing World

Join forces with educators and scientists in the Coastal Areas Climate Change Education Partnership (CACCE) to create innovative education programs for schools and organizations in Florida and the Caribbean to improve current and future generations' understanding of climate change and the local impacts.

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**Southeast Florida's Resilient Water Resources**  
*A Report to Sea Level Rise and Other Impacts of Climate Change*

FAU  
 Center for Urban and Environmental Solutions  
 Florida Atlantic University  
 2010

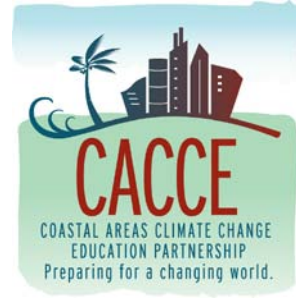
### Rising Temperatures, Disappearing Coastlines



**Results: Surprisingly little is available in terms of learning materials, and even less in Spanish, etc.! But there is a lot of good and accessible information...**



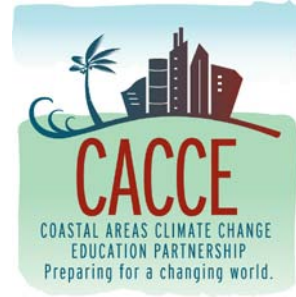
## 2) Engaging key stakeholder groups to assess perceptions, and information and education needs: K-12 education



### Surveys of teachers in FL (n=145) and PR (n=479)

- Florida and Puerto Rico secondary science teachers hold naive views about CC and CC science.
  - 46 % FL teachers and 63 % PR teachers responded that the depletion of the ozone layer is a primary cause of CC.
  - 51% FL teachers and 72% PR teachers agreed that CC science needs to be based on controlled experiments in order to be valid.
- Teachers' climate change instructional practices are largely inadequate.
  - 52% FL teachers and 33% PR teachers indicated they only mentioned climate change briefly in their classrooms.
  - Great divergence in “time on task” for climate change:
    - PR ≈ 2 weeks/yr;
    - FL ≈ 2-3 days/yr (!)
- Student surveys (1579 in FL and PR): ongoing

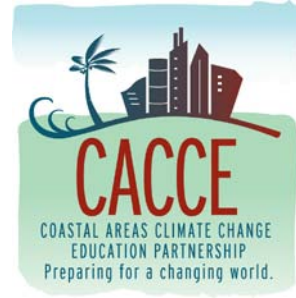
# Formal Education Activities and Outreach



- **\*Curriculum Planning Workshop for Hillsborough County Marine Science teachers, July 2011 (a “CACCE day” on building climate change into the curriculum – a pilot curricular intervention)**
- CACCE Showcase and Symposium for Hillsborough County School System Educators, Nov 2011
- CACCE presentations targeting educators at IEEE and ASTE meetings in 2011 and 2012
- **\*Multiple Outcomes Interdisciplinary Research and Learning (MOIRL) research/education pilot projects**

**\*Allan Feldman and Larry Plank: Tomorrow...**

## 2) Climate Change Education for Professionals of the “Built Environment”

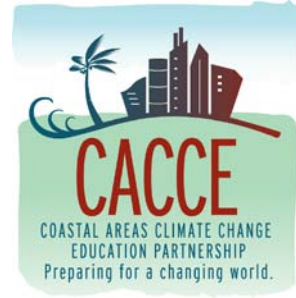







### Objectives:

- Addressing acute needs for detailed, place-based educational content among local/regional professionals and decision-makers responsible for urban planning/management and key industries.
- Fostering more acceptable community “messengers” on climate change, its impacts, and the need for response.

**Key Consulting Liaison: Sunshine State Strategies, LLC (CJ Reynolds)**

# Education/Outreach for Professionals of the “Built Environment”: Urban and Regional Planning Professionals

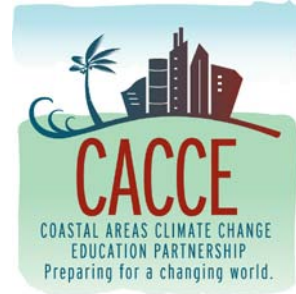


- American Planning Association Florida 
- ICLEI: Local Governments for Sustainability 
- Southwest Florida Regional Planning Council 
- HOK 
- FSU Department of Urban and Regional Planning 

**Key “Academic” Strategic Partner:** Florida Center for Environmental Studies - FAU



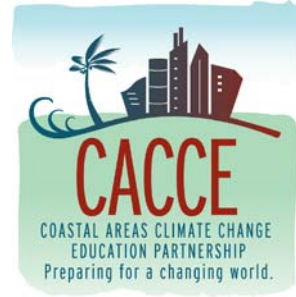
# Climate Change Education for Planning Professionals:



**Goal: To strengthen and standardize knowledge of CC, mitigation and adaption across the region**

- Surveys to assess education/information needs and learning format preferences by job profile **[Ongoing]**
- Define geographic or regional needs, toward providing **place-based, relevant CC content.**
- Identify opportunities for information sharing, cooperation, professional development
- **Develop education plan – universities, continuing education, professional education, and/or certification maintenance activities.**

# CACCE Activities for/with Planners and Professionals:



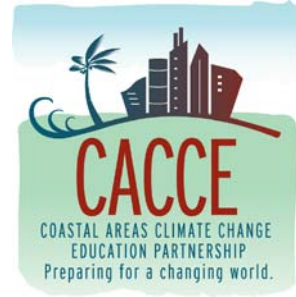
- **Past:**

- Tampa Bay Downtown Partnership “Downtown Debrief” on Climate Change and Adaptation: May 15, 2011
- APA FL Annual Conference, Sept 9-11, 2011 (CACCE sponsorship and exhibits)
- Survey review/strategies meeting (associated with APA Executive Committee meeting) 1/19/12, Orlando, FL

- **Upcoming:**

- **2<sup>nd</sup> Annual Coastal Cities Summit, St. Petersburg, FL** (CACCE-sponsored sessions on Climate Change Impacts): **5/12**
- **Risk and Response: Sea Level Rise Summit** (Target audience: FL policy professionals. Led by FCES-FAU partners; CACCE co-sponsoring and planning education sessions) **6/21-22/12**

## 2) CACCE Education/Outreach to Informal Science Educators



- **Events:**

- FL CACCE Informal Science Educators workshop on Climate Change, 4/15/11



- Communicating Climate Science to Informal Audiences: a joint CACCE COSEE Florida workshop: 8/11/11

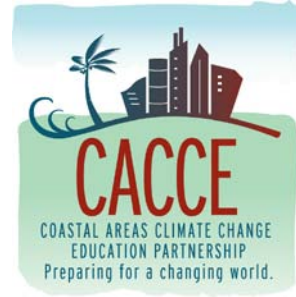


- **Survey of FL informal science educators** (through the FL informal education network) results:

- a) very little being presented on climate change, irrespective of venue (!!);
- b) Need **relevant, place-based climate science content/climate scientists** to work with!

- **Upcoming: Second CACCE Informal Educators Workshop, 3/12**

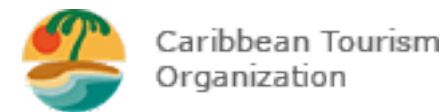
## 2) Education/Outreach to Caribbean Stakeholders (thus far...)



- Lead Partners: UPR-M,   UVI 
- Strategic Partner: Inter-American Development Bank



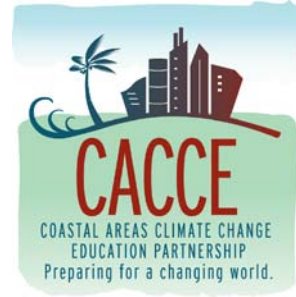
- also working with Sea Grant PR, Caribbean Community Climate Change Centre and the Caribbean Tourism Organization



- Targeting the Tourism industry, policy professionals, and formal educators (college and K-12)



# CACCE Activities in PR, VI, and the Caribbean



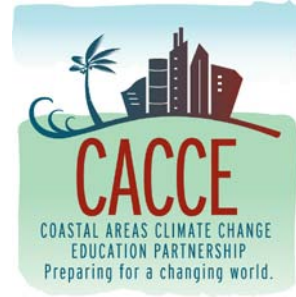
- **Past:**

- Spanish translation of the interagency Climate Literacy document for PR, FL, and Caribbean distribution
- Foro de Cambio Climatico (CoHemis-CACCE Short workshops on climate change issues and responses): 2/11, 3/11, 9/11
- Invited talks on climate change and adaptation strategies at IADB-sponsored meetings in Guatemala, Trinidad, Guyana, and Sweden



- **Upcoming:**

- **CACCE/CoHemis/IADB International Climate Forum 2/1-3/12**
- **CACCE climate change workshop with VI tourism professionals: 4/12 (final date TBD)**
- **CTO Sustainable Tourism Conference, 4/17/12 (CACCE sponsored sessions)**



## **CACCE Phase 2 Implementation Effort:**

- **Letter of Intent submitted to the NSF: 1/24/12**
- **Proposals due to the NSF: 3/21/12**
- **Planning efforts and project design are underway!**

### **Some questions for us to consider:**

- **What are the best formal, informal, and professional education strategies to pursue during a CACCE Phase 2 project in the US Caribbean?**
- **How can a US-based Phase 2 CACCE Partnership program bring benefit to audiences across the Caribbean, given the limitations associated with NSF support?**
- **How can CACCE support and work with new and ongoing efforts to promote climate change education in Caribbean nations?**
- **How can we best share our experiences in helping improve public understanding of and readiness to address climate change and its impacts?**



COASTAL AREAS CLIMATE CHANGE EDUCATION PARTNERSHIP

**CACCE**

Preparing for a changing world.

**Thanks for your  
Attention! Questions?**