



[floridawca.org](http://floridawca.org)

# WORKSHOP REPORT

## Workshop Eight

Wednesday, February 27, 2013

8:30 – 4:00pm

Prepared by

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Hosted by

Orlando Utilities Commission in Orlando, Florida

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**Florida Water and Climate Alliance (FloridaWCA)**  
**WORKSHOP Eight – Wednesday, February 27, 2013, 8:30 – 4:00 pm, Orlando Florida**

**Executive Summary**

The **Florida Water and Climate Alliance (FloridaWCA)** brings together interested stakeholders to increase the relevance and usability of climate change and variability data and tools to the specific needs of public water supply utilities and resource managers and planners. The **FloridaWCA** links interested stakeholders from public water supply utilities, local governments, water management districts and academic institutions in Florida focused on increasing the relevance and usability of climate change and variability data and tools. The partners are interested in understanding and addressing how climate variability/change and sea level rise may impact planning and operations of Florida's public water supply utilities. Initiated in 2010 by the UF Water Institute, in partnership with the Southeast Climate Consortium (SECC), Florida Climate Institute and the UF IFAS Center for Public Issues Education in partnership with six major public water supply utilities and three water management districts, the group continues to expand. Detailed information on the FloridaWCA is available at the UF Water Institute website [http://waterinstitute.ufl.edu/workshops\\_panels/PWSU-CIWG.html](http://waterinstitute.ufl.edu/workshops_panels/PWSU-CIWG.html). A new interactive website FloridaWCA.org is underdevelopment.

This is a report of the eighth workshop ([all workshop reports are available on line](#)). Core participation in the workshops remains high (*see Appendix 1 for workshop participant list*).

The specific objectives of this workshop were to 1) advance working group interests and sustainability (history, update, new website, next steps toward sustainability); 2) Learn about relevant projects/programs relevant to water - Central Florida Water Initiative (CFWI); and 3) Share science research results of NOAA project technical group focused on long-term climate scenarios, and discussion focused on science to action.

Outcomes included: The Florida and Water Climate Alliance website is on a soft roll out (<http://FloridaWCA.org>) and a web site management and review team was formed. Longterm Climate Scenarios technical team shared results of their on-going assessment of dynamically downscaled Global Climate Models (GCMS) and formed a small group to discuss technical questions posed to help guide future research directions. The next **FloridaWCA workshop (#9)** will be scheduled in June 2013.

Participant comments in the feedback form regarding the most important next step for the Florida Water and Climate Alliance emphasized a strong need for “clear communication” at several levels, including communicating a simple message of FloridaWCA benefits, efficient internal communication strategies, continue communicating content of technical information and finding better translation to non-technical members of group, and determine applicability and feasibility of water utility adaptation strategies for climate change in Florida.

## **Background, Goals and Objectives:**

**Overall Working Group Goal:** Unfold the need for, and enhance the usability of, climate change and variability data and tools in the planning and operations of Florida's public water supply utilities

**Overall Goal of Workshops:** The goal of each of the workshops is to create spaces for discussion, sharing and capturing knowledge from the multiple perspectives and contexts of tool providers, users, and ultimately policy makers that will contribute to increased relevance and usability of climate and sea level rise data and tools for water managers in Florida.

**Specific Workshop Objectives:** The specific objectives of this workshop were to:

1. Advance working group interests/ sustainability
  - a) Where from...what now..... where to...
  - b) Updates from participants and projects
  - c) Unveil the new website as a collaboration tool – discuss management.
  - d) Next steps toward sustainability
2. Learn about climate change, climate variability and sea level rise projects/programs relevant to water utilities - invited presentation: Central Florida Water Initiative (CFWI)
3. Share NOAA project technical group's results (focused on long-term climate scenarios), and discussion focused on science to action.
4. Determine next steps.

**Workshop Outcomes:** Next Steps from FloridaWCA Workshop 8 - Wednesday, February 27th, 2013 include:

1. **The Florida and Water Climate Alliance website** is on a soft roll out and was presented to the group for review. For those of you who were not able to be at the workshop, please visit the website (<http://FloridaWCA.org>) and if you have any comments or suggestions, please send them to Erica Odera [ericalin@ufl.edu](mailto:ericalin@ufl.edu) **Erica Odera** will work with the design team to implement some of the suggested changes.
2. **A Site Management and Review Team** was suggested to focus on the management of the webpage and a content review process. The Team will include Fran Henderson, Rhonda Haag - from previous subcommittee- and new volunteers including Tirusew Asefa, Jessica Bolson and Lydia Stefanova (*with the suggestion of Mike Cullum who was not present*). **Lisette Staal** will contact and schedule a meeting with the FloridaWCA.org **Site Management and Review Team**. We welcome others to volunteer. If you are interested in participating on the Team, please let Lisette know ([lstaal@ufl.edu](mailto:lstaal@ufl.edu))
3. **Working Group Sustainability.** Lisette Staal will continue to look to members of the NOAA Project Executive Advisory Board for input on working group issues central to the overall group identity, activities, and strategic efforts. **Action: Lisette Staal** will contact Advisory Board as issues arise.

4. **The NOAA Project Long-Term Climate Scenarios technical team.** Syewoon Hwang presented results of their on-going assessment of dynamically downscaled Global Climate Models (GCMS). **Wendy Graham** will follow up with a small group to discuss questions



Syewoon posed to help guide future research directions. **Wendy** will convene the small group (*Alison Adams, Jayantha Obeysekara, Tirusew Asefa, Satish Bastola, Lydia Stefanova, Syewoon Hwang, Vasu Misra (not present but added)*). Also mentioned was potential consultation with Ken Herd SWFWMD, Hal Wilkening and Tom Bartol at SJRWMD. If anyone is interested in finding out more or participating with this small group please contact Wendy Graham ([wgraham@ufl.edu](mailto:wgraham@ufl.edu)).

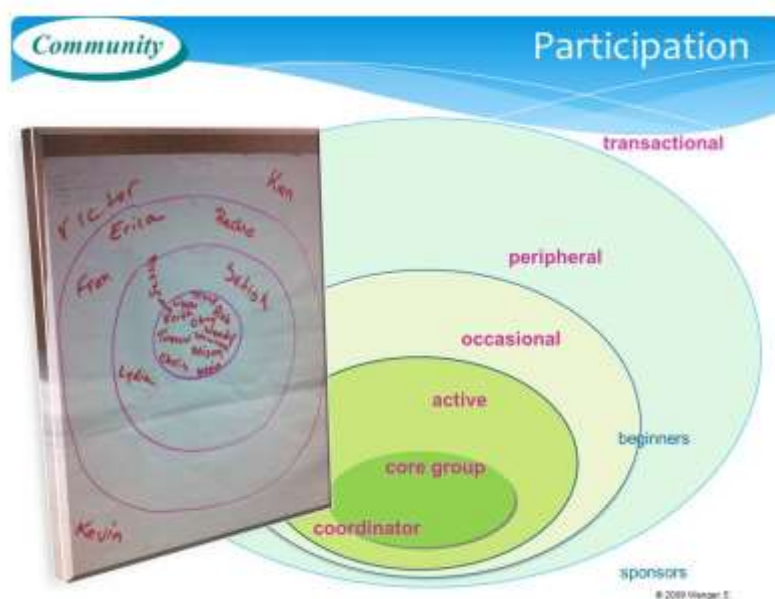
5. The next **FloridaWCA workshop (#9)** will be scheduled in May/June 2013. **Lisette** will follow-up with facilitation team to plan next workshop taking into consideration as possible the suggested topics and presentations from the workshop participants. Please let Lisette ([lstaal@ufl.edu](mailto:lstaal@ufl.edu)) know if you are interested in participating in the planning of the next workshop.

**Detailed Summary of Workshop 8:** See APPENDIX 2 for the detailed agenda.

### Session 1: FloridaWCA Introductions and Updates

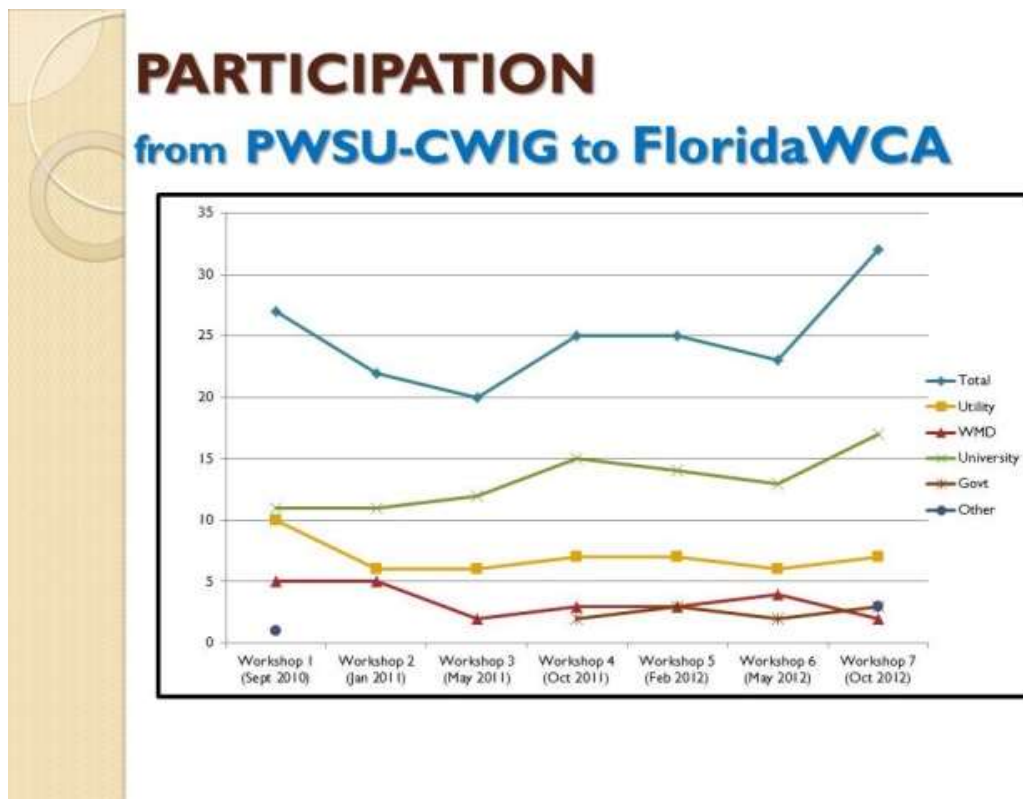
Lisette Staal, workshop facilitator opened the workshop by recognizing the new name and logo (Florida Water and Climate Alliance), resulting from discussions at previous workshops and a survey. She emphasized that one of the key elements of the working group is a shared identity, and reiterated the importance of getting to know more about one another and our interests, expertise.

**Introductions** - The facilitator asked the group to find someone they know least! They were then asked to interview each other briefly and told that they would introduce each other. Information requested was name, profession, why they are here, their use of climate -hydrologic models in their work, and how often they have been to these workshops. Names were written in the appropriate circle on the flipchart as each person was introduced. (*center = people participating in 6-8 workshops, then 3-5, 2, 1 respectively outwards*).



The participatory activity helped to reinforce the varying interests and expertise in the group, and to “see” the level of participation in the working group to date. The different levels of participation in the figure depict general understanding of different levels of participation in Communities of Practice (Etienne Wenger). One participant commented that the FloridaWCA seems to have a larger center core with more people participating in most of the workshops than some other groups they have experience with.

Participation in these types of groups changes over time. This graph shows the level of participation by different stakeholder groups since the inception of the group. Although in general they have remained constant, the specific individuals may vary requiring introducing & re-visiting the group’s goals.



**Participant Updates:** Several participants shared recent activities that they felt are relevant to the FloridaWCA working group development, outreach and general interests.

**Chris Martinez and Jessica Bolson** shared that there has been significant progress on the 2<sup>nd</sup> FloridaWCA NOAA funded project, [“Use of seasonal climate forecasts to minimize short-term operational risks for water supply and ecosystem restoration,”](#) introduced at the previous workshop in October. Chris and his student, Di Tian, have evaluated 7-9 seasonal climate models across South Florida with some interesting findings (It was suggested that these findings be shared at the next FloridaWCA workshop). Jessica is developing an interview process to implement this spring with the three organizations involved with the project (Peace River Manasota Regional Water Supply Authority, Tampa Bay Water and the South Florida Water Management District). She is focusing on understanding the benefits and limitations of using seasonal climate forecasts for their operational needs. This may prove to be a good model to use with other organizations in the FloridaWCA in future proposals.

**Pedro Palomino**, Masters of Engineering (ME), UF shared that he is working on a project with coastal water utilities to understand current management practices related to climate change and sea level rise to develop adaption strategies and incorporate new findings on the impact of increased saltwater intrusion on disinfection byproduct formation into their planning framework. [“Florida as a Laboratory For Sea-Level Rise And Future Health Risks of Drinking Water Sources”](#) (Boyer, T. Et Al) He is working with the [Climate Resilience Evaluation and Awareness Tool \(CREAT\)](#) available as part of the [EPA Climate Ready Water Utilities Toolbox](#). He is interested in sharing the tool and experience at future FloridaWCA workshops.

**Rob Teegarden** noted that the Central Florida Water Initiative is using multiple models in its planning efforts. He also has mentioned the FloridaWCA in recent presentations, including one at the Orlando League of Women Voters.

**Alison Adams** has participated in several conferences/workgroup meetings relevant to the interests of the Florida WCA including the Community Earth System Model (CESM) Societal Dimensions Working Group held at the [National Center for Atmospheric Research \(NCAR\)](#) in Boulder. In particular, she provided a presentation on the research efforts focused on the hydrologic implications of climate change in the Tampa Bay region and she highly Tampa Bay Water’s use of ENSO forecasts in seasonal water supply planning. In addition, she participated in an invitation only meeting of the North America [CORDEX](#) project. The goal of the workshop was to bring together potential NA-CORDEX participants to coordinate the Science, Applications and Services goals, refine the key science and applications questions, plan the project timelines and scope out resources required for success.

**Wendy Graham** shared that she had a blog article highlighting the FloridaWCA collaboration for the Center for Public Issues Education. <http://www.centerpie.com/2013/02/12/wendy-graham-collaboration-tackles-climate-impacts-on-water-supply/>

**Jayantha Obeysekara, Keith Ingram, Wendy Graham and others** recently participated in a townhall meeting focused on the National Climate Assessment. Both Obey and Keith gave presentations. USGCRP organized the meeting and it was held at the Patel Center in University of South Florida.

**Jayantha Obeysekara** also appeared on a panel at the screening of “Chasing Ice,” and also made a presentation on climate scenarios for the everglades and results of hydrologic modeling of selected scenarios. He has recently published 3 papers on climate change and sea level rise.

**Tracy Irani** – Reported that a survey of Florida citizens regarding their views of water resources in our state was conducted by the UF/IFAS Center for Public Education (PIE). The news release can be found at: <http://news.ufl.edu/2013/02/18/water-survey/> Also, a video can be found in the following link in which Dr. Tracy Irani, Director of the PIE Center, explains the significance of the survey. <http://www.youtube.com/watch?v=rk0POI4SRUE>



## Session 2: FloridaWCA Website - new collaboration tool and logo

Tracy Irani, UF and Erica Odera, UF shared the new content management system that has been developed with the group, and in direct consultation with a subcommittee (Jayantha Obeysekera, Alison Adams, Fran Henderson, Wendy Graham, and Rhonda Haag). The presentation [‘Florida Water and Climate Alliance: Knowledge Management System & FloridaWCA.org’](#) reviewed the process of creation and a tour of the site. They asked for suggestions from the group. The group expressed pleasure in having a space and identity and provided some constructive suggestions that will be incorporated as the development goes forward.



During discussion of a need for the new “site management and review,” suggestions were made, and a SUBCOMMITTEE proposed to include Expert reviewers. Volunteers were solicited in the afternoon during next steps, at which point several people volunteered to participate in determining management and review for site in future. (See next steps Section 7, #2)

## Session 3: National Climate Assessment

**Presentation:** Jayantha Obeysekera, SFWMD, provided an [overview of the 2013 National Climate Assessment process and report](#), mandated by the National Climate Assessment GCRA(1990, Section 106). The goal of the 2013 NCA is to enhance the ability of the United States to anticipate, mitigate, and adapt to changes in the global environment. He provided a summary of the report findings. He also noted that the products and outcomes are building a foundation for strong communications products and processes useful to a variety of audiences, including national, regional, state, and local decision makers. It will be helpful for FloridaWCA to consider the practical applicability and their potential interests in future assessments.

**Keith Ingram, UF**, shared the [“Southeast Region Technical Input Report to the National Climate Assessment.”](#) The full report, it is available at [http://downloads.usgcrp.gov/NCA/Activities/NCA\\_SE\\_Technical\\_Report\\_FINAL\\_7-23-12.pdf](http://downloads.usgcrp.gov/NCA/Activities/NCA_SE_Technical_Report_FINAL_7-23-12.pdf). He shared information on the report development process and findings including, trends and future projections for the SE. The report includes case studies on topics such as adaptive capacity; climate change effects on freshwater availability and quality; regional and community economies; urbanization, transportation, and infrastructure vulnerabilities; ecosystem services; and agriculture sustainability. All regional reports will be available electronically at <http://cakex.org/NCAreports> in the future.

## Session 4: Central Florida Water Initiative Modeling Efforts

**Presentation:** Ken Herd, SWFWMD, shared information about the ground water modeling being used by Central Florida Water Initiative (CFWI) that involves three water management districts, and multiple ground and surface water basins. The three districts are studying whether the



Floridan aquifer system is reaching its sustainable limits of use and exploring the need to develop supplemental sources of water. Ken's presentation ["Central Florida Water Initiative - Background and Model Overview."](#) provided an overview of the modeling. He noted that public water supply will have the greatest need, and that future supplies will be from a combination of sources. The CFWI models for planning purposes only and regional solutions need to be encouraged.

## **Session 5: Climate Science and Tools: Long Term Climate Scenarios Research - NOAA project results**

**Presentation: Syewoon Hwang, UF,** presented recent research focused on understanding possible hydrologic implications of future changes in temperature and precipitation over Florida, ["Climate Change Impact Assessment over West Central Florida"](#) Working with Wendy Graham, UF, he used dynamically downscaled bias corrected CMIP3 retrospective and future climate projections in a hydrologic model to evaluate potential impacts of future climate change on hydrology in west central Florida. The results show that different dynamically downscaled bias-corrected CMIP3 retrospective simulations reproduce historic hydrologic behavior adequately. Different dynamically downscaled bias-corrected CMIP3 future projections produce very different future hydrologic behaviors for the same emissions scenarios. GCM future predictions are highly uncertain, need to evaluate more GCMs to come to any reliable conclusions.

They shared their conclusions of hydrologic implications and raised a few questions which they would like to explore further with other members of the FloridaWCA relative to long term climate scenarios research, and possible future work.

### **Hydrologic implications**

- Even with consistent increased temperature estimates, differences among future precipitation estimates propagate into significant differences in future hydrologic predictions ( i.e. ET, mean streamflow predictions, and 7Q10 estimates).
- Precipitation signal overwhelms temperature signal in predicting hydrologic implications of projected future changes.

**Questions** to get input on (by a task group) in planning for possible future work.

1. How many GCMs are required to get an accurate representation of range of possible future precipitation projections and thus range of possible hydrologic change?
2. Should we continue to use CCSM in our analysis? These questions included:

**Possible future work** being considered:

1. Consider other climate model products & GHG scenarios... ? – *NARCCAP, CMIP5, COAPS products, etc.*
2. Other methodologies to downscale/bias-correct climate model results? – *Statistical downscaling methods in order to increase number of GCMs considered?*
3. For other regions of Florida? – *Using hydrologic models from other agencies*

It was agreed that a smaller technical advisory team was needed to focus on these issues. (See details in next steps in session 7 - #4)

## Session 6: Science to Action

Given the continued interest in addressing needs of the users, and moving toward finding specific potential applications for the research and tools, this session was designed to provide an opportunity for the participants to reflect on the FloridaWCA process, to review its progress and to continue to consider how to reach the overall goal of the group--- the practical application of climate science to address climate impact on water resources and supply. To start, Lisette Staal provided [a brief presentation](#) reminding the participants of the goal and the conceptual framework guiding our working group. She also emphasized key questions that the group continues to raise about climate science, data and tools, particularly: 1) who are the users of climate science? 2) what climate science is available? 3) what are the opportunities for climate science to inform water supply? and 4) what are the risks of using climate science?

FloridaWCA identified specific water supply utilities' needs for climate science in the very first workshop, and has continued to refine them. These needs included predictions and projections of temperature and rainfall at different timescales (operations: 3-12 months; permitting: 20 years and capital planning: 20-50 years; impacts and projections of sea level rise over time with probabilities.

**Group Activity and Discussion** – Moving toward using climate data/models/information in planning and decision making processes. Just about two years ago, during the second working group workshop (January 20, 2011) workshop participants were presented with a scenario to describe the working group two years into the future (**see box below and Appendix 3**)

**Scenario/Situation:** It is 2 years from today's date and you have, outrageously enough, created the PWSU-CIWG that you most wanted to create, and achieved the things you most desired. Now it is your job, as a team, to describe the GROUP as if you are able to see it, realistically, around you at this present moment.

**The Task:** Develop a description of the PWSU-CIWG as you hope someone would write the description at the end of 2 years.

That activity, two years ago, resulted in some anticipated Products and Outputs including 1) Climate Science and Impacts updates, 2) Improved rainfall prediction tools for Florida (North, Central, and South) at seasonal (1-12mo.) and Midterm (10-50yrs.), and 3) Communication Plan to include website and data sharing. In small group discussions (mixed by roles and organizations), the participants were asked to describe the FloridaWCA's current progress to date on its anticipated products and outputs; and outline a report to share details of progress and recommendations for further action.

## Results of Discussion – FloridaWCA anticipated OUTPUTS and PRODUCTS



<b>Communication Plan to include website and data sharing</b>		
<b>a) Details of progress</b>		
<b>Group 1</b> <ul style="list-style-type: none"> <li>✓ Website development</li> <li>✓ Website data sharing development in Progress</li> <li>✓ Needs assessment for KMS</li> <li>✓ Document and Post workshop minutes on the website</li> <li>✓ NOAA project reports</li> <li>✓ NOAA video documentation</li> <li>✓ TBW documentary movie/clip ; <i>NOAA Climate Program Office brief</i></li> </ul>	<b>Group 2</b> <ul style="list-style-type: none"> <li>✓ Created Website (FloridaWCA.org )</li> <li>✓ Site on Water Institute</li> <li>✓ Additional resources – <ul style="list-style-type: none"> <li>▪ Florida Climate Institute website – datasharing, FSU Dynamical downscaled results</li> <li>▪ Florida Climate Center observations data.</li> </ul> </li> </ul>	<b>Group 3</b> <ul style="list-style-type: none"> <li>✓ Website coming on line</li> <li>✓ Have a name and logo</li> </ul>
<b>b) recommendations for further action</b>		
<ul style="list-style-type: none"> <li>➤ How do we communicate “benefits” to the public</li> <li>➤ Simplify the model so we can translate to the lay person</li> <li>➤ Keep website current – upcoming meetings, new publications, new datasets, blog</li> <li>➤ Allow email alerts of posting to website, managed by user</li> <li>➤ Raise awareness with press – Florida Trends, Orlando sentinel ...</li> <li>➤ Golf outing ☺</li> </ul>		
<b>2 year Climate Science and Impacts Update <i>Unbiased, actionable, short (1-12 months) and midterm (10-50 years)</i></b>		
<b>a) Details of progress</b>		
<b>Group 1</b> <ul style="list-style-type: none"> <li>✓ White Papers – SUS</li> <li>✓ Regional Environmental Change Journal – Peer reviewed article</li> <li>✓ SE Climate Assessment – technical input document for National climate assessment</li> <li>✓ Publication – Island Press</li> <li>✓ Numerous Conference/workshop/Townhall presentations</li> <li>✓ Peer reviewed papers in journal</li> <li>✓ Technical paper from SFWMD</li> </ul>	<b>Group 2</b> <ul style="list-style-type: none"> <li>✓ 4 white Papers BOG project</li> <li>✓ SE Technical Reports NCA</li> <li>✓ SLR Technical Reports</li> <li>✓ Precipitation and temp trends in Florida papers</li> <li>✓ Regional Environmental Change Special Issues</li> <li>✓ Draft NCA SE regional Chapter</li> <li>✓ Lots of Journal Articles</li> </ul>	<b>Group 3</b> <ul style="list-style-type: none"> <li>✓ FCI White papers</li> <li>✓ NCA Assessment</li> <li>✓ Special Issue – peer reviewed papers – regional Environmental Change</li> <li>✓ Media interest has been generated (NOAA, Orlando Sentinel)</li> </ul>
<b>b) recommendations for further action</b>		
<ul style="list-style-type: none"> <li>➤ Make “outputs and products” available on website – story on front page and archived</li> <li>➤ Put upcoming meetings, including ours, on website</li> <li>➤ Frame and deliver a climate message that is relevant to a wide audience (environmental non-scientist, conservative utility engineers.....)</li> </ul>		

## Improved rainfall prediction tools (*climate, temp, SLR*) for Florida (North, Central, and South) at seasonal (1-12mo.) and Midterm (10-50yrs.)

a) Details of progress		
<p>Group 1</p> <ul style="list-style-type: none"> <li>✓ Evaluation of NMME models for seasonal focus (on-going) – Chris Martinez</li> <li>✓ Evaluation of GCM-RCM for Florida – Lydia + FSU</li> <li>✓ Hydrology Evaluation for TBW and Peace River – Vasu and Satish</li> <li>✓ ECFT model for impact analysis (Central Florida Water Initiative) – Ken Herd</li> <li>✓ Assessment of Historical Trends for Temperature and Precipitation for Florida - Chris Martinez, Obey</li> <li>✓ New Statistical downscaling method/tools for Florida – Syewoon</li> </ul>	<p>Group 2</p> <ul style="list-style-type: none"> <li>✓ Seasonal <ul style="list-style-type: none"> <li>▪ FSU Fish 50 – Vasu</li> <li>▪ NMME project evaluated skill looking at next steps</li> </ul> </li> <li>✓ Long term <ul style="list-style-type: none"> <li>▪ Evaluated rainfall and temperature – changes through climate models (12) using a hydrologic model</li> <li>▪ Bias correction methods</li> <li>▪ Downscaling of GCM with RCM and statistical methods</li> </ul> </li> </ul>	<p>Group 3</p> <ul style="list-style-type: none"> <li>✓ Two funded projects looking at dynamic and statistical downscaling precipitation and temperature to local scales – have assessed and noted areas for improvement <ul style="list-style-type: none"> <li>▪ Long term (50 – 100 yrs)</li> <li>▪ Seasonal (NMME, FSU modeling)</li> </ul> </li> </ul>
b) recommendations for further action		
<ul style="list-style-type: none"> <li>➤ Downscale climate information for Florida – precipitation and temp, etc</li> <li>➤ Additional hydrological applications, e.g. flood protection, FEMA map....</li> <li>➤ Evaluation changes in storm surges due to climate change</li> <li>➤ More dynamically downscaled <ul style="list-style-type: none"> <li>▪ Use 2 CMIP5 models</li> <li>▪ How to select what GCMs</li> <li>▪ How to evaluate GCM/RCM output</li> </ul> </li> <li>➤ Decadal skills</li> <li>➤ How to use short-term forecast (8-14 days</li> <li>➤ Identify funding sources <ul style="list-style-type: none"> <li>▪ Continue to pursue SARP funding</li> <li>▪ Pursue NRCS funding</li> <li>▪ Water Sustainability and Climate – NSF</li> <li>▪ USGS/climate science center/LCC</li> </ul> </li> <li>➤ Make downscaled data available on website – seasonal forecasts (like CPC data)</li> <li>➤ Exercised downscaled data in more models</li> <li>➤ Assess and discuss perceptions and understanding of products</li> <li>➤ Work at better translation of results to users – including stormwater, ag, FDOT</li> </ul>		

### Session 7: Next Steps, Reflection and Evaluation

Next Steps from FloridaWCA Workshop 8 - Wednesday, February 27<sup>th</sup>, 2013 include:

1. **The Florida and Water Climate Alliance website** is on a soft roll out and was presented to the group for review. For those of you who were not able to be at the workshop, please visit the website (<http://FloridaWCA.org>) and if you have any comments or suggestions, please send

them to Erica Odera [ericalin@ufl.edu](mailto:ericalin@ufl.edu) **Erica Odera** will work with the design team to implement some of the suggested changes.

2. **A Site Management and Review Team** were suggested to focus on the management of the webpage and a content review process. The Team will include Fran Henderson, Rhonda Haag - from previous subcommittee- and new volunteers including Tirusew Asefa, Jessica Bolson and Lydia Stefanova (*with the suggestion of Mike Cullum who was not present*). **Lisette Staal** will contact and schedule a meeting with the FloridaWCA.org Site **Management and Review Team**. We welcome others to volunteer. If you are interested in participating on the Team, please let Lisette know ([lstaal@ufl.edu](mailto:lstaal@ufl.edu))
3. **Working Group Sustainability**. Lisette Staal will continue to look to members of the NOAA Project Executive Advisory Board for input on working group issues central to the overall group identity, activities, and strategic efforts. **Action: Lisette Staal** will contact Advisory Board as issues arise.
4. **The NOAA Project Long-Term Climate Scenarios technical team**. Syewoon Hwang presented results of their on-going assessment of dynamically downscaled Global Climate Models (GCMS). **Wendy Graham** will follow up with a small group to discuss questions Syewoon posed to help guide future research directions. **Wendy** will convene the small group (*Alison Adams, Jayantha Obeysekara, Tirusew Asefa, Satish Bastola, Lydia Stefanova, Syewoon Hwang, Vasu Misra (not present but added)*). Also mentioned was potential consultation with Ken Herd SWFWMD, Hal Wilkening and Tom Bartol at SJRWMD. If anyone is interested in finding out more or participating with this small group please contact Wendy Graham ([wgraham@ufl.edu](mailto:wgraham@ufl.edu)).
5. The next **FloridaWCA workshop (#9)** will be scheduled in May/June 2013. **Lisette** will follow-up with facilitation team to plan next workshop taking into consideration as possible the suggested topics and presentations from the workshop participants. Please let Lisette ([lstaal@ufl.edu](mailto:lstaal@ufl.edu)) know if you are interested in participating in the planning of the next workshop.

## Workshop Evaluation

An exit survey distributed at the end of this, and every, workshop is one of the mechanisms for participant feedback. Response rate continues to be good with a majority of the participants completing the survey. Satisfaction in all aspects of the survey (workshop output, organization, use of time, participation/involvement, and clear steps) received over 4.5 on a scale of 1-5 with 5 being the highest level of satisfaction for both university and public water supply participants. The only exception was a 4.31 (the lowest score of the day) on ensuring that there was opportunities for participating and engagement by all participants. For each of the presentations, we asked "How useful (practically applicable) is this information to your job?" The responses from Utility

participants ranged from 3.0 to 3.5 on a scale of 1-5 with 5 being the highest level of usefulness. For University respondents the scale ranged from 3.25 to 4.25. When asked about next steps for the FloridaWCA, several themes emerged— continued science, improved communication, relevance and level of presentations, and a “need more work to help those of us working heavily with climate/hydrology models to communicate better with those of us who are less familiar with the science.”

A brief summary of exit feedback survey responses appears in **Appendix 4**.

Lisette Staal thanked the participants and OUC for hosting the workshop.

## APPENDIX 1: List of Participants – Workshop February 27, 2013

Last name	First name
Adams	Alison
Asefa	Tirusew
Obeysekera	Jayantha
Graham	Wendy
Morris	Kevin
Henderson	Fran
Ingram	Keith
Martinez	Christopher
Bastola	Satish
Bolson	Jessica
Herd	Ken
Hurlburt	Victor
Hwang	Syewoon
Irani	Tracy
Odera	Erica
Palomino	Pedro
Spear	Kevin
Staal	Lisette
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## **APPENDIX 2: Workshop Agenda - February 27, 2013**

### **Florida Water and Climate Alliance (FloridaWCA)**

#### **WORKSHOP 8 –Agenda**

**Wednesday, February 27, 2013, 8:30 – 4:00pm**

Orlando Utilities Commission (OUC), Safety & Training Conference Room  
at the Gardenia Avenue office, 3800 Gardenia Avenue, Orlando, FL

**Overall Working Group Goal:** Unfold the need for, and enhance the usability of, climate change and variability data and tools in the planning and operations of Florida's public water supply utilities.

#### **Workshop Objectives**

1. Advance working group interests/ sustainability
  - a. Where from...what now..... where to...
  - b. Updates from participants and projects
  - c. Unveil the new website as a collaboration tool – discuss management.
  - d. Next steps toward sustainability
2. Learn about climate change, climate variability and sea level rise projects/programs relevant to water utilities - invited presentation: Central Florida Water Initiative (CFWI)
3. Share NOAA project technical group's results (focused on long-term climate scenarios), and discussion focused on science to action.
4. Determine next steps.

#### **Agenda:**

- |              |   |
|--------------|---|
| 8:30         | Registration and Coffee   |
| 8:45- 9:30   | Session 1: FloridaWCA framework, participant introductions, participant updates (projects, activities, etc.) - <i>Chris Martinez, Jessica Bolson, Pedro Palomino, others?</i> |
| 9:30 – 10:15 | Session 2: FloridaWCA Website - new collaboration tool (KMS) presentation and discussion - Tracy Irani and Erica Odera  |
| 10:15        | BREAK   |

10:30 – 11:30 Session 3: National Climate Assessment

- a) “2013 National Climate Assessment Report” a presentation by Jayantha Obeysekara, SFWMD (15 minutes); Discussion- practical applicability from the user perspective. (15 minutes)
- b) “Southeast Region Technical Input Report to the National Climate Assessment” a presentation by Keith Ingram, UF (15 minutes) - the full report, it is available at [http://downloads.usgcrp.gov/NCA/Activities/NCA\\_SE\\_Technical\\_Report\\_FINAL\\_7-23-12.pdf](http://downloads.usgcrp.gov/NCA/Activities/NCA_SE_Technical_Report_FINAL_7-23-12.pdf) Discussion- practical applicability from the user perspective. (15 minutes)

11:30 – 12:00 Session 4: Central Florida Water Initiative

“Central Florida Water Initiative - Background and Model Overview” a presentation by Ken Herd, SWFWMD (15 minutes); Discussion- practical applicability from the user perspective. (15minutes)

12:00 - 1:00 LUNCH

1:00 – 2:00 Session 5: Long Term Climate Scenarios Research - NOAA project results

“Climate Change Impact Assessment over West Central Florida” a presentation by Syewoon Hwang, UF (20 minutes); Discussion - practical applicability from the user perspective. (Wendy Graham, UF) (30 minutes)

2:00 – 3:00 Session 6: Science to Action

Group Activity and Discussion – Moving toward using climate data/models/information in planning and decision making processes

3:00 - BREAK

3:15 – 4:00 Session 7: Next Steps, Reflection and Evaluation

Ending at 4:00 PM

## **APPENDIX 3 - Session 6 Activity: Science to Action: where are we?**

FloridaWCA Workshop February 27, 2013

Florida Water and Climate Alliance is focused on increasing the relevance and usability of climate change and variability data and tools to the specific needs of public water supply utilities in Florida. Since the first Workshop (Workshop 1 - September 2010), there has been a broad, common interest expressed to address uncertainty in climate predictions (rainfall, temperatures, extreme events and sea level rise) at time scales relevant to operations (3-12 months), permitting (20 years) and capital planning (20-50 years).

It was suggested that assessing the strengths and limitations of the available climate science tools and models from the perspective of the public water supply sector could help shape the development and implementation of science-based climate information for operational and longer-term planning and management decisions, and may help improve the adaptive capacity. However, recognizing that there are some limitations to the use of the information, some of the key factors identified by FloridaWCA participants that might be prevent the use of existing climate tools (e.g. models, data, maps) by utilities included:

- ☐ Lack of knowledge about the tools (and the need for an inventory);
- ☐ Uncertainty and lack of confidence in reliability of the tools (spatial scales, timeframes, accuracy of information, source of tools);
- ☐ Possible bias in the tools (incomplete story; “exaggeration of impacts”);
- ☐ A desire to be sure they will “bring in real science.”

In earlier workshops, Water Utility needs were identified as:

### **1. Predictions and projections of TEMPERATURE AND RAINFALL**

- In depth understanding of historical record (rain, temp, groundwater levels, river flow)
- Understanding of strengths/limitations of current climate models.
- Reliable predictive tools,
- reliable predictions and uncertainty analysis, good quantitative estimates of climate projections of rainfall, accurate predictions of precipitation variability
- Rainfall projections (probabilistic at next 3mo, 6 mo, 1 year).
- Short term 1-18 months forecasts with uncertainty bounds
- Realistic science based scenarios of climate at 10, 20, 30 + years
- Decadal to multi-decadal scenarios of possible climate futures with probabilities
- Future estimates of extremes that projects should be planned for?

### **2. Impacts and Projections of SEA LEVEL RISE over time with probabilities**

### **3. Projections of DEMAND based on demographics, socioeconomics, etc.**

During WORKSHOP TWO – January 20, 2011- workshop participants were presented with the following:

**Scenario/Situation:** It is 2 years from today's date and you have, outrageously enough, created the PWSU-CIWG that you most wanted to create, and achieved the things you most desired. Now it is your job, as a team, to describe the *GROUP* as if you are able to see it, realistically, around you at this present moment.

**The Task:** Develop a description of the PWSU-CIWG as you hope someone would write the description at the end of 2 years.

Table 1:	Origin, Goals and Impacts (Measures of Success)
Table 2:	Focus and Actions
Table 3:	Products and Outputs
Table 4:	Partners, Participants and People, and Modes of Operation

The summary results for the group working at Table 3 --Products and Outputs\* --- were

- 2 year Climate Science and Impacts update. Unbiased, actionable, short (1-12 months) and midterm (10-50 years)
- Improved rainfall prediction tools for Florida (North, Central, and South) at seasonal (1-12mo.) and Midterm (10-50yrs.) Include sub seasonal?
- Communication Plan to include website and data sharing

\*You can see the summary responses for all groups on the last page of this handout and in the final report of Workshop #2 online.

**Scenario/Situation:** **Scenario/Situation:** It is NOW and you it is your job, as a team, to describe the FloridaWCA progress to date on its anticipated PRODUCTS AND OUTPUTS:

- 2 year Climate Science and Impacts update
- Improved rainfall prediction tools for Florida (North, Central, and South) at seasonal (1-12mo.) and Midterm (10-50yrs.)
- Communication Plan to include website and data sharing

**Task:** Outline a report to share a) details of progress and b) recommendations for further action.

Results from Group Activity in PWSU-CIWG Workshop #2- Jan. 2011 – source: [Summary Report](#)

<b>Group 1: (Goals and Impacts)</b> <i>Develop strong mission statement and strategic plan)</i>	<b>Group 2: (Focus and Actions)</b>	<b>Group 3: (Products and Outputs)</b>	<b>Group 4: (People, Participants, Partners)</b>	<b>Group 4: (Modes of Operation)</b>
●Network for dissemination	◆Synthesize and disseminate national research pertinent to Florida Water Resources and Demand	◆2 year Climate Science and Impacts update. Unbiased, actionable, short (1-12 months) and midterm (10-50 years)	●Identification and engagement of partners, people and participants and Donors	●Developing a structure (steering committee, staff, roles and responsibilities)
◆White paper on research baselines	■Form and facilitate research coalitions to fill gaps in research pertinent to Florida	■Improved rainfall prediction tools for Florida (North, Central, and South) at seasonal (1-12mo.) and Midterm (10-50yrs.) Include sub seasonal?	●Define level of commitment of people, participants, and partners and donors	●Secure funding (seed money, fiscal agent agreement)
■Influence research priorities of those doing relevant research, funding relevant research and posing research questions.	●Disseminate research findings to Florida Water Utilities.	●●Communication Plan to include website and data sharing	●Identify possible beneficiaries and possible benefits (resilient water supply)	●Communication (meetings, website, conference calls, publications...)
<b>Key to symbols:</b> ●External Communication/Engagement (●internal group communication and networking) ◆Synthesizing status of current climate science and impact relevant to utilities in Florida ■Specific Research <i>and Tools</i>				

## APPENDIX 4: Exit Survey Workshop - February 27, 2013

Average response by institutional affiliation - survey responses (1 low - 5 high)

	Public Water Supply Utility	Water Management District	University	Other
1. Output	4.75	na	4.69	5
2. Organization	4.75	na	4.75	5
3. Use of Time	4.50	na	4.56	5
4. Participation-involvement	4.75	na	4.31	5
5. Next Steps clear	4.50	na	4.56	5

### 6. FloridaWCA.org website (knowledge management system)

#### a. How often do you think you will most use this website?

- depending on content, weekly to monthly
- roughly once a week and whenever there is alarm for new updates on it
- every 7-21 days
- once a month
- once or twice a month
- as often as new materials show up
- depends on currency of content
- once a week (2)
- hard to say at this point
- several times a week

#### b. Would you be willing to participate on the subcommittee or expert review team for website? If so, please specify.

5+ YES

### 7. We heard several presentations. How useful (practically applicable) is this information in your job?

	<b>7a. 2013 National Climate Assessment Report</b>	<b>7b. Southeast Region Technical Input Report to the National Climate Assessment</b>	<b>7c. Central Florida Water Initiative - background and model overview</b>	<b>7d. Long Term Climate Scenarios Research - NOAA project results-Climate Change Impact Assessment over West Central Florida.</b>
Utility	3.25	3.00	3.00	3.50
University	4.13	4.25	3.25	4.13
WMD	na	na	na	na
Other	5	5	5	5

### 8. What do you see as the most important next step for the Florida Water and Climate Alliance?

- Funding; building upon existing projects
- 1) Clearly communicate a simplified message of benefits to the public. 2) Prior discussion on what should be presented and discussed among the potential attendees in the next meeting, it will make the meeting more effective and useful.
- Create internal management and communication strategies so everyone knows what's happening.
- Communication
- Reassess goals of participation - set plan for longer term. Decide on participation and group design
  - website; 2) standardize/benchmarks on different technique bias correction, etc.
  - 3) more applications to included things that would interest all.
- Communication of on-going studies and data projections (seasonal)
  - Evaluating the results of downscale /bias corrected climate model output through hydrologic model and determine how to interpret and communicate results. 2) Develop a way to select use of GCM with FSUs RCM to evaluate uncertainty in climate future projections and how to use these projections in hydrologic models.
- Work on new outreach to different agricultural/transportation/stormwater/ ENV groups
- Find a more efficient way to communicate within group. Not sure 15 minute quarterly technical presentations are useful --- more frequent technical meetings --- better translation to non-technical members of group.
- Communicate in simple terms the "benefits" of the Florida WCA"
- Determine applicability and feasibility of water utility adaptation strategies for climate change in Florida.
- Need more work to help those of us working heavily with climate/hydrology models to communicate better with those of us who are less familiar with the science.