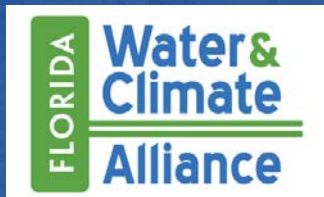


The Florida Water and Climate Alliance

Chris Martinez
Associate Professor
University of Florida



The Florida Water and Climate Alliance

Funded by NOAA Climate Program Office



- Partnership of:
 - Water utilities
 - State agencies
 - Researchers
 - Local governments
- Formed in 2010



The Florida Water and Climate Alliance

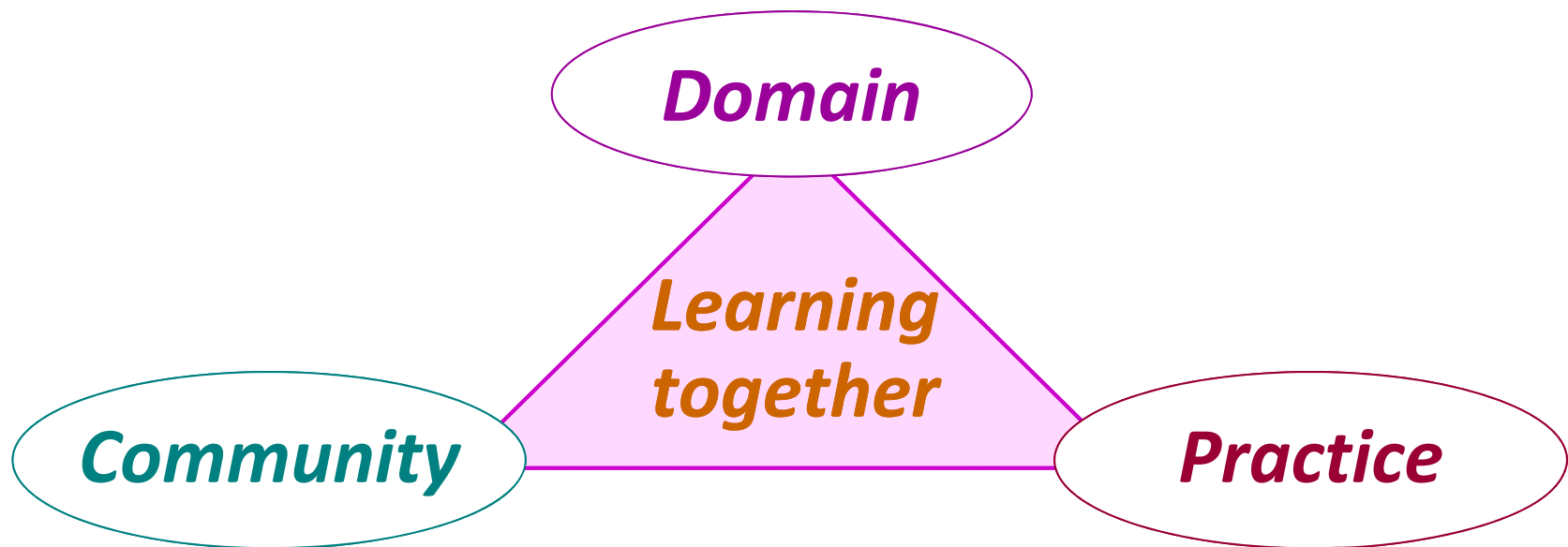


Goal:

To increase the regional relevance and usability of climate and sea level rise models for the specific needs of water suppliers and resources managers in Florida.

A Collaborative Working Group

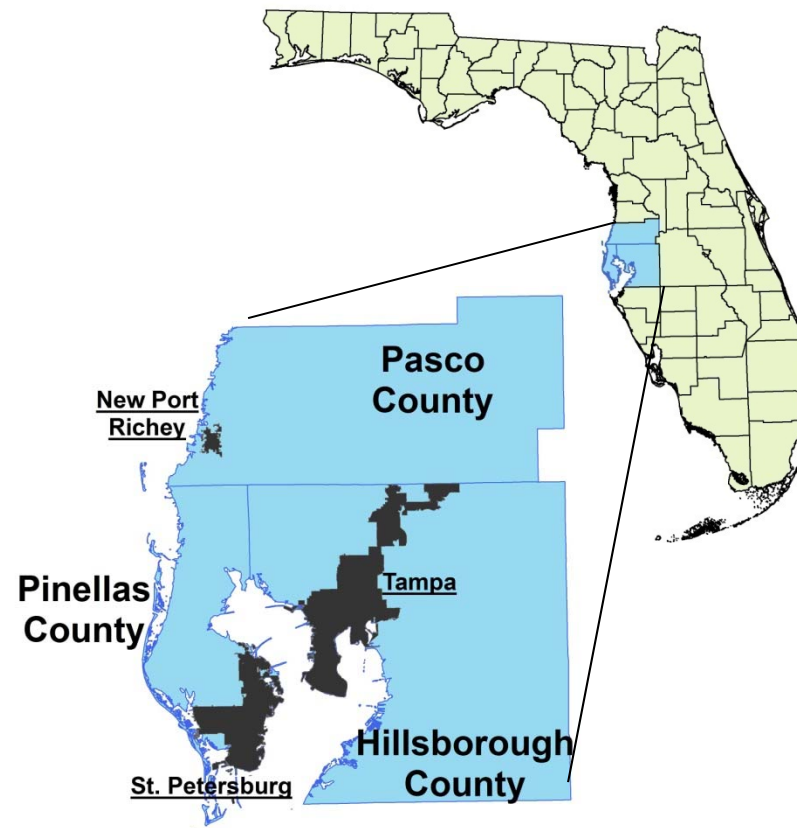
Actionable climate science -
Data/models/tools



Public water suppliers, resource managers,
climate, social and hydrologic scientists,
local planners

Workshops, projects, research,
website, reports, emails, personal
communication, outreach

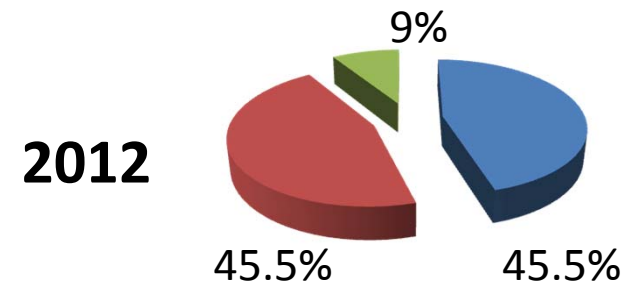
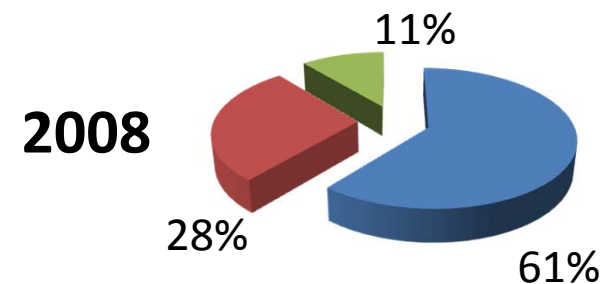
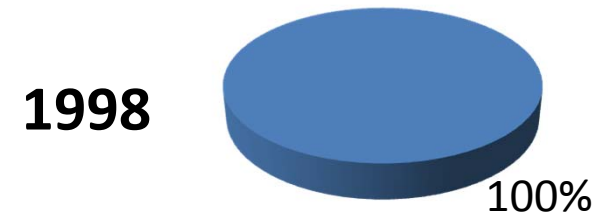
- Regional wholesale water supply authority
- Non-profit, special district created by inter-local agreement
- 6 member governments
- Serving 2+ million people



- Current sources:
 - Groundwater (13 Wellfields)
 - Hillsborough and Alafia Rivers
 - C.W. Bill Young Reservoir
 - Desalination Plant



**Percentage of
Water by Source**



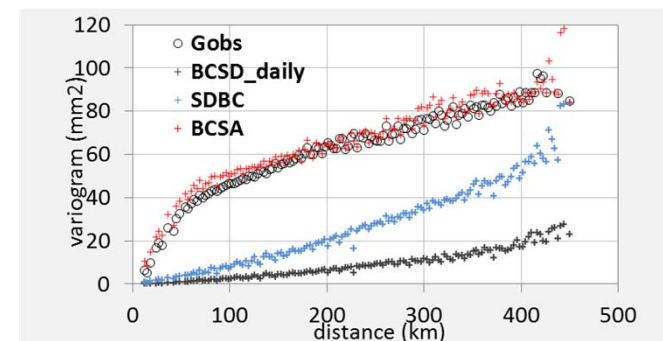
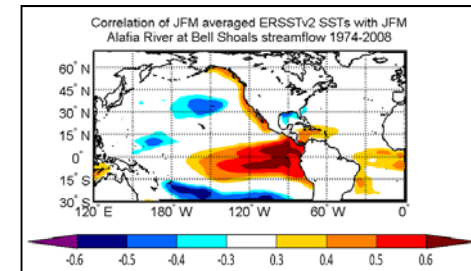
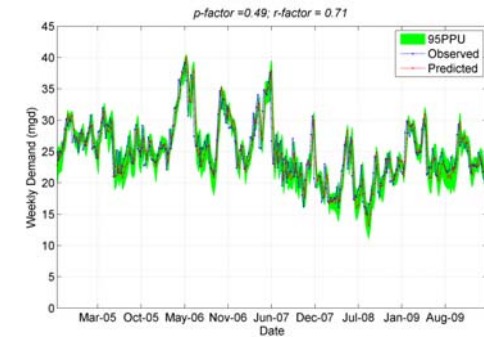
■ Groundwater
■ Surface Water
■ Desalination



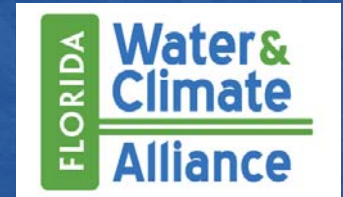
Links Between Information and Decisions

Decision	Time-Scale	Required Information
Operational Allocations	1 Week to 1 Month	Demand forecasts
Update water-year Allocations	1 Month to 12 Months	Streamflow forecasts
Infrastructure	Decades	Precipitation, Temperature, Streamflow, and Demand Projections

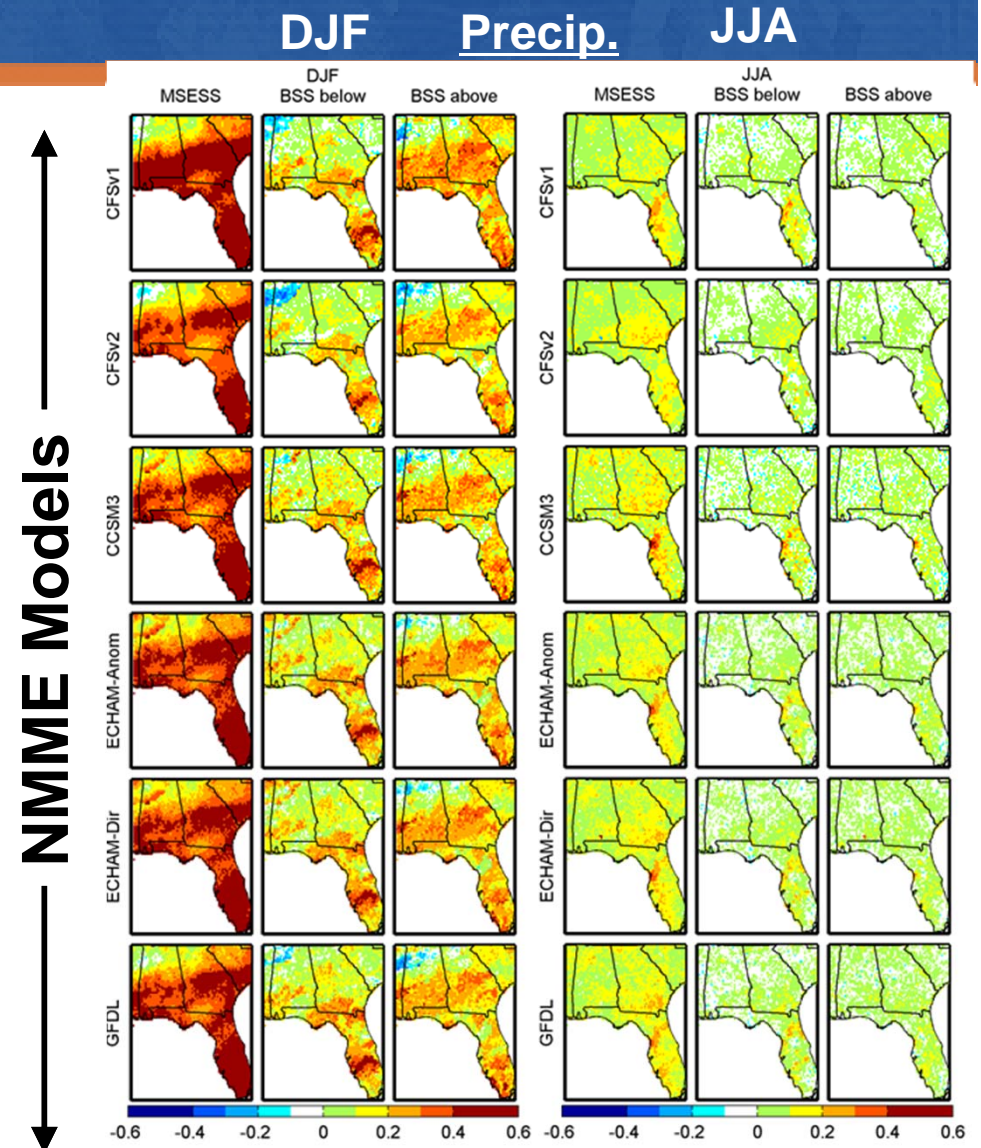
- Weekly Demand Forecasts
 - Global Ensemble Forecast System (GEFS)
 - Reduced uncertainty
- Seasonal Streamflow Forecasts
 - El Niño/Southern Oscillation
 - Probability of Exceedance
- Downscaling Future Climate
 - Multiple GCMs
 - Hydrologic Applications



Seasonal Forecasts using the National Multi-Model Ensemble (NMME)

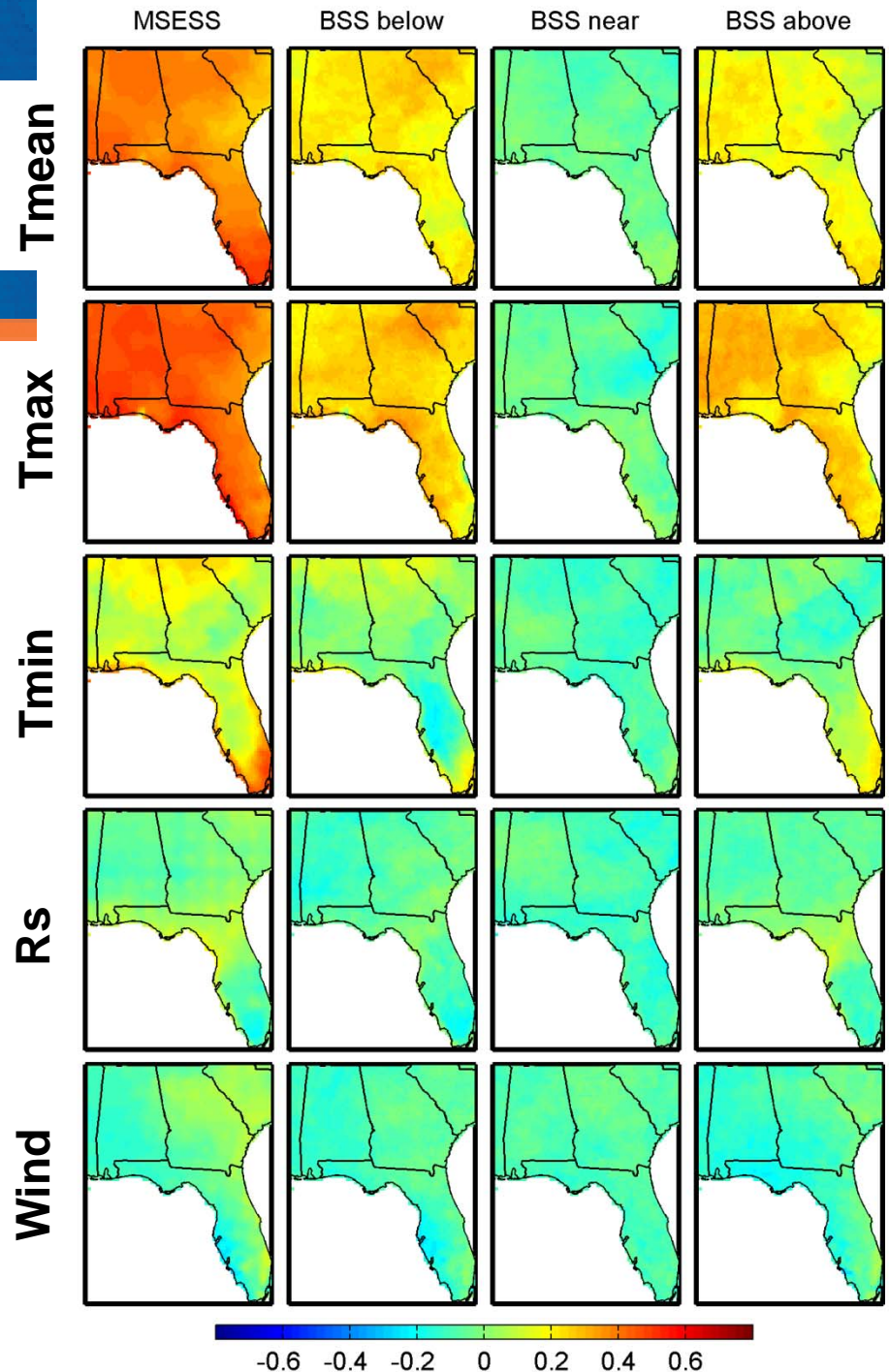


- 6 GCMs downscaled to 12 km
- Multiple downscaling methods



Seasonal Reference Evapotranspiration

- Climate Forecast System v2 (CFSv2)
- Downscaled to 12 km
- Penman Monteith
- Skill highest in winter & during ENSO events

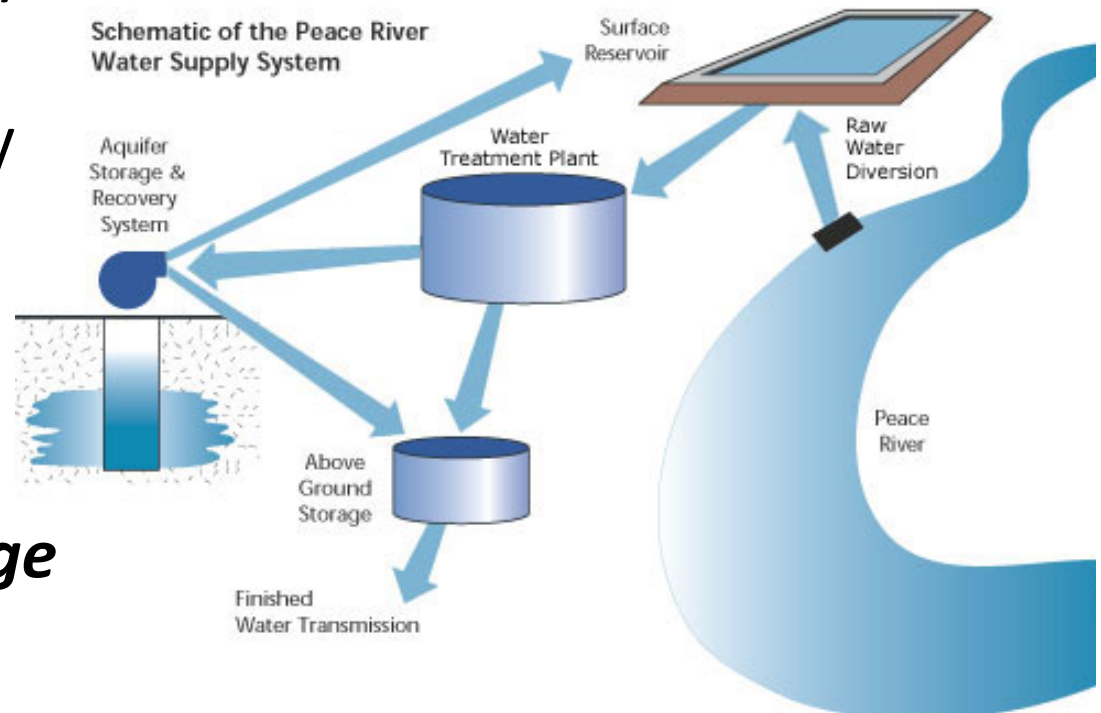




Peace River Manasota Regional Water Supply Authority



- Regional wholesale water supply authority
- Peace River is the only source
- Reservoir
- Largest ***Aquifer Storage and Recovery (ASR)*** East of the Mississippi





When to start ASR recovery?

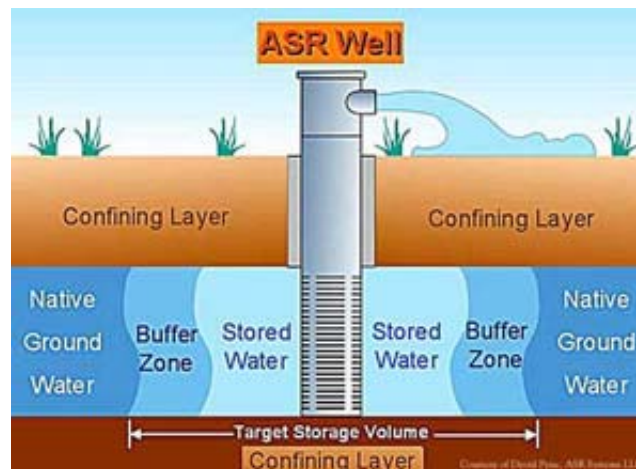


- **Too Soon:**

- Costs rise (ASR Water treated twice!)
- Higher TDS (blended water quality issue)

- **Too Late:**

- Less reservoir water to dilute TDS of ASR water
- Water restrictions
- Salt water upconing





Aquifer Storage and Recovery



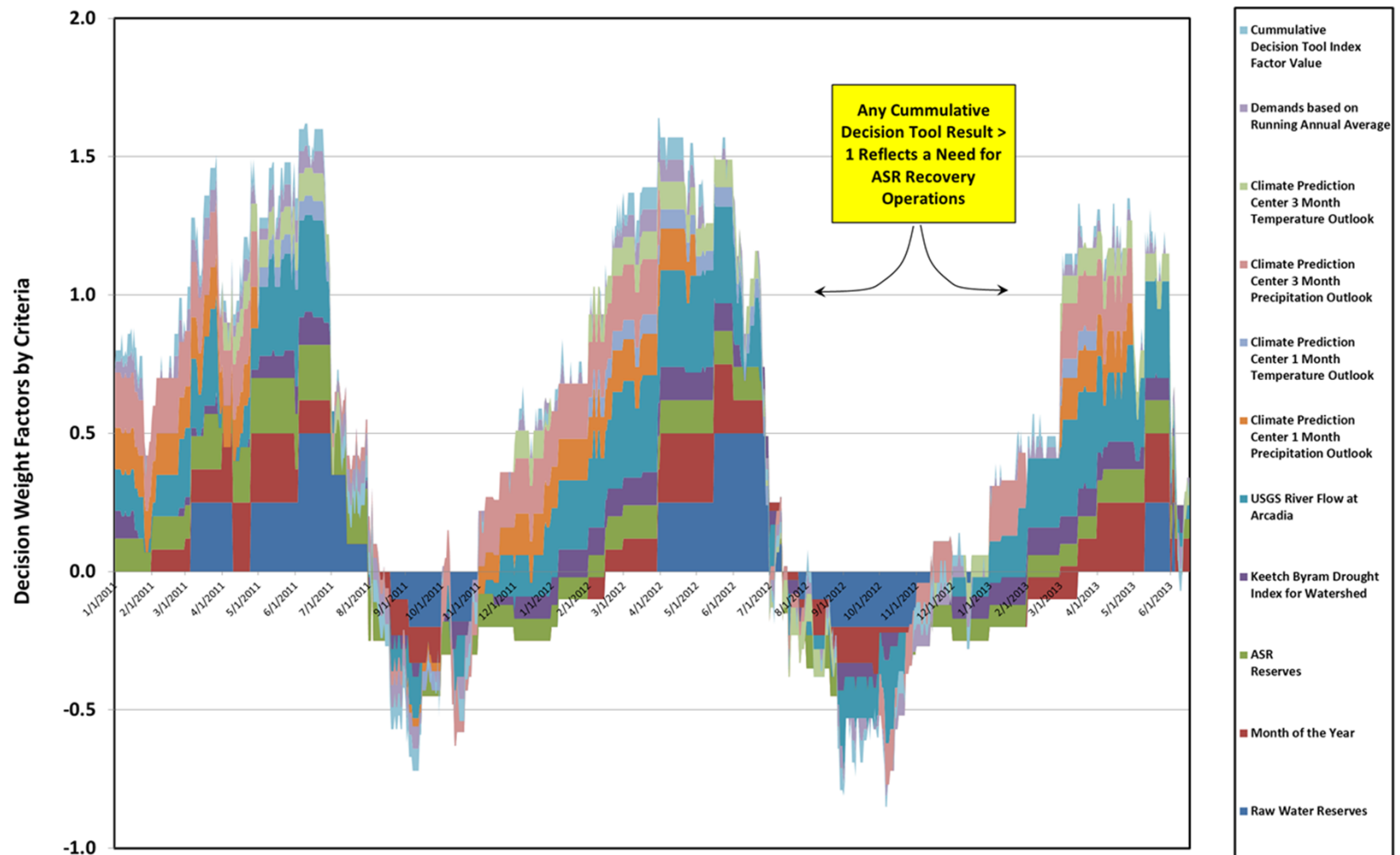
- **Decision Support Tool:**
 - Keetch Byram Drought Index (KBDI)
 - CPC 1 Month Outlooks
 - CPC 3 Month Outlooks
 - Raw water reserves
 - ASR reserves
 - River flow

- ***Different Weights***

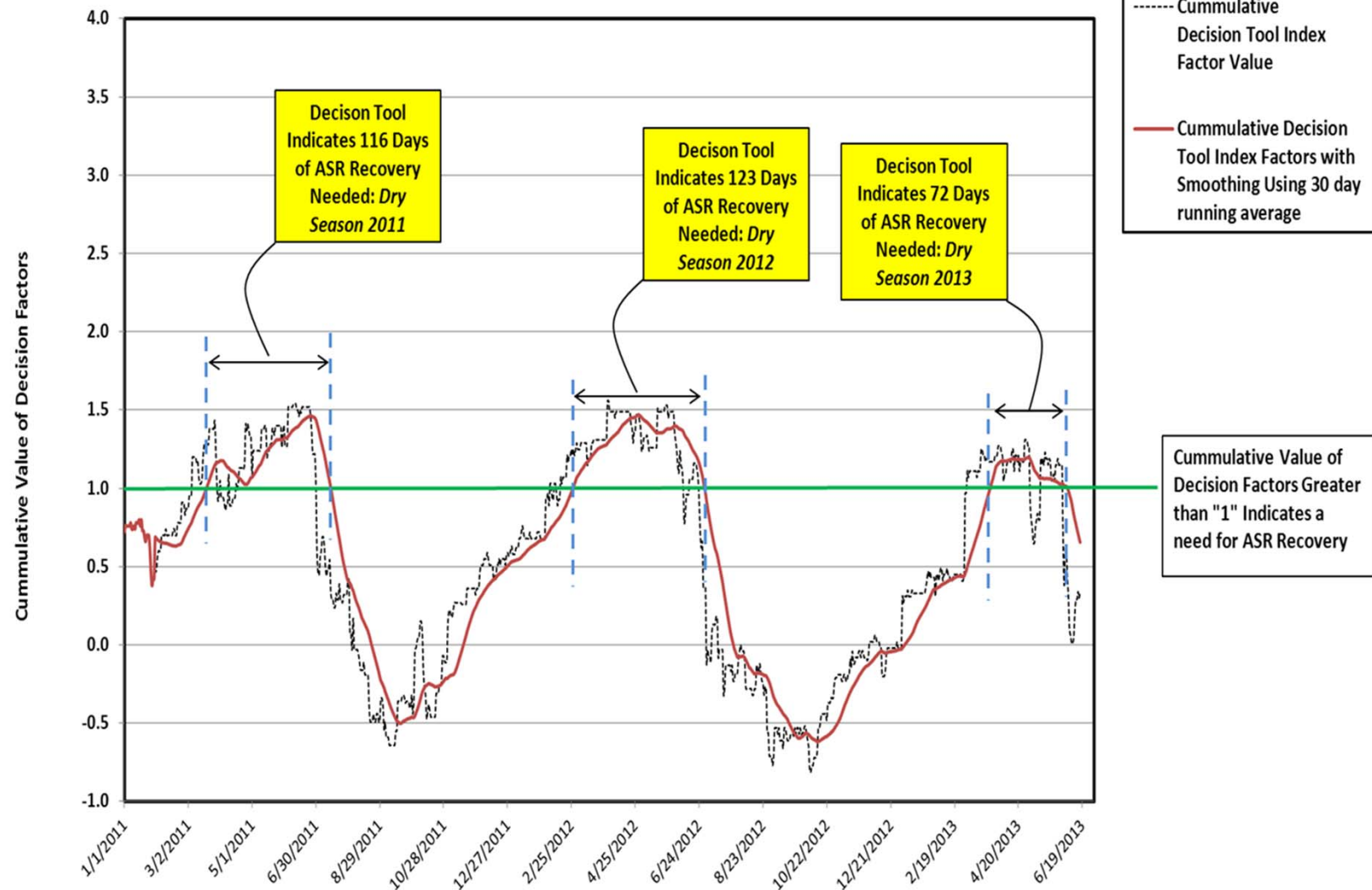
Test 4 - Microsoft Excel																								
File Home Insert Page Layout Formulas Data Review View Window																								

Aquifer Storage and Recovery (ASR)

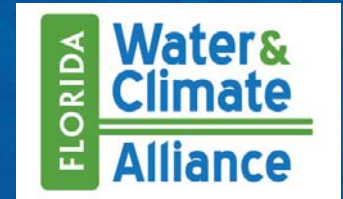
Individual Decision Tool Weight Components



Aquifer Storage and Recovery (ASR)



The Florida Water and Climate Alliance



- Strengths
 - Collaborative
 - Champions
 - University Extension
- Weaknesses
 - Funding
- The Future
 - New Governance Structure
 - Sustained Funding



www.FloridaWCA.org