

# Integrating NASA Earth Systems Data into Decision-Making Tools of Member Utilities of the Florida Water and Climate Alliance



[www.FloridaWCA.org](http://www.FloridaWCA.org)

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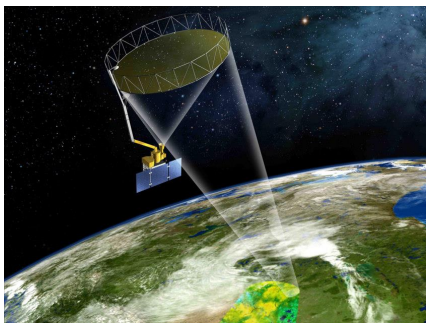
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Karen Schlatter, University of Florida

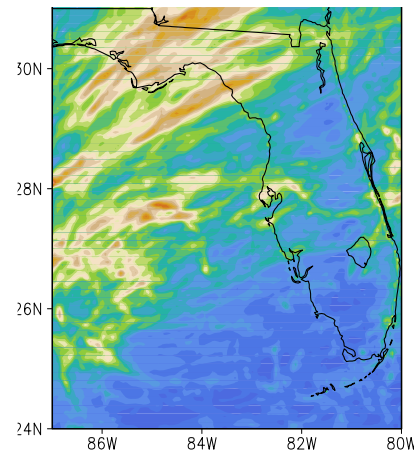
# The Project



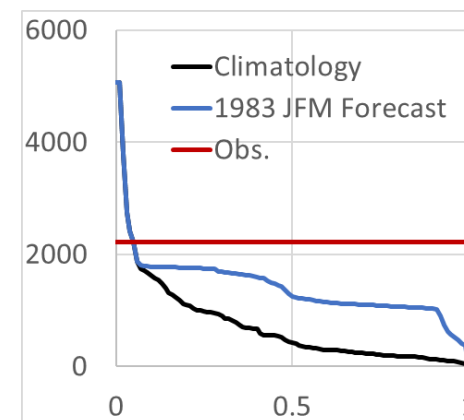
## Remotely Sensed Soil Moisture, LAI



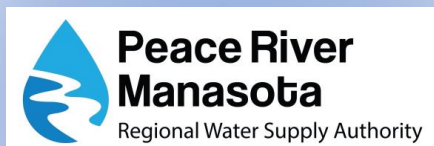
## Regional Seasonal Climate Forecasts



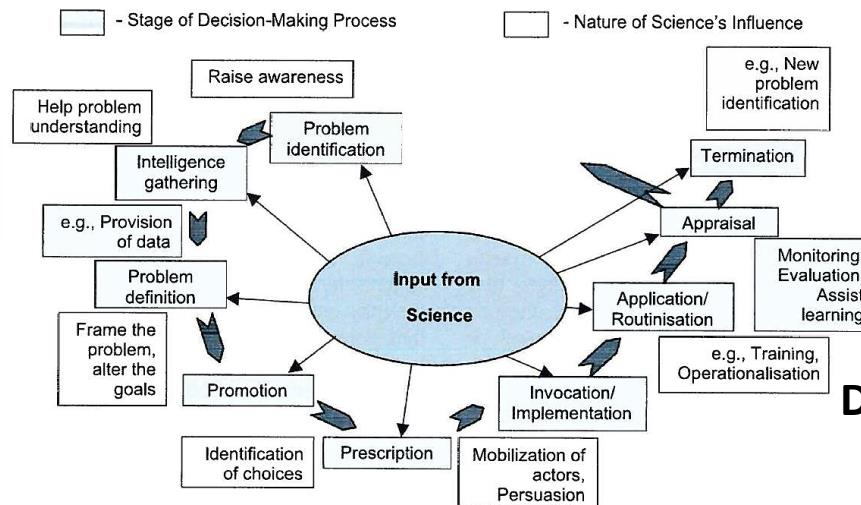
## Seasonal Hydrologic Forecasts



## Source Allocation



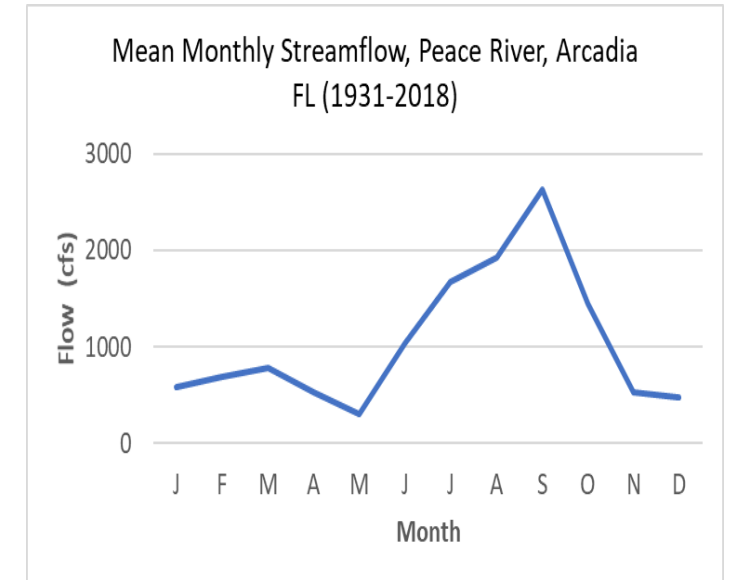
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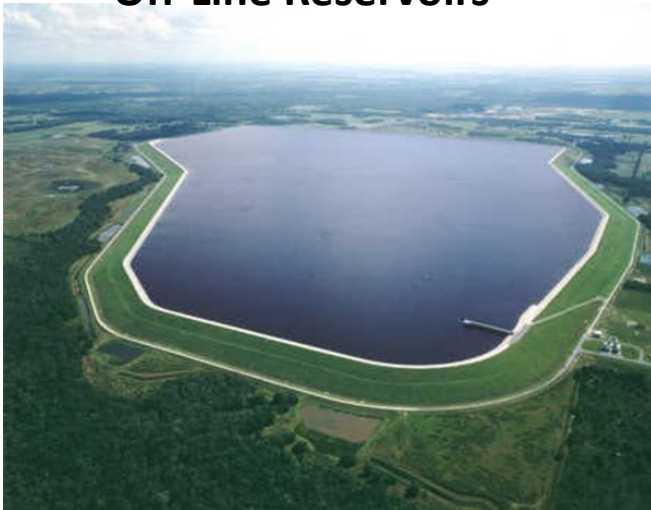
## Decision Making Process

# Motivation

- Florida has distinct wet and dry seasons
- Low capacity for “cheap” storage
- Utilities are now using multiple water sources
- **How to use the right source at the right time?**



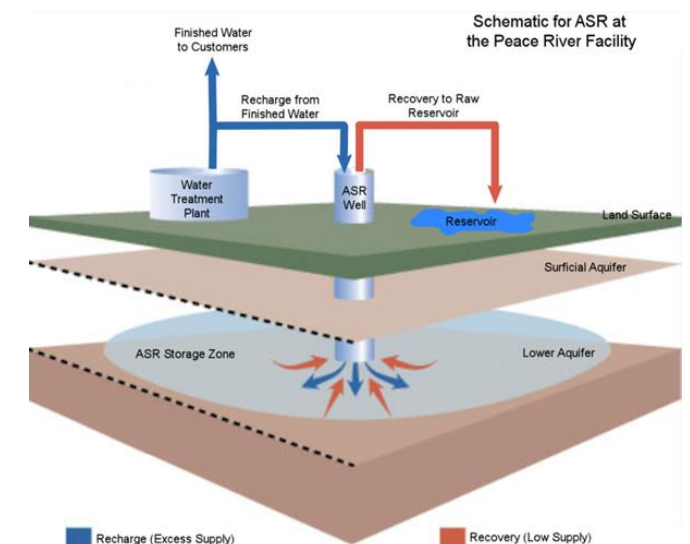
Off-Line Reservoirs



Desalination



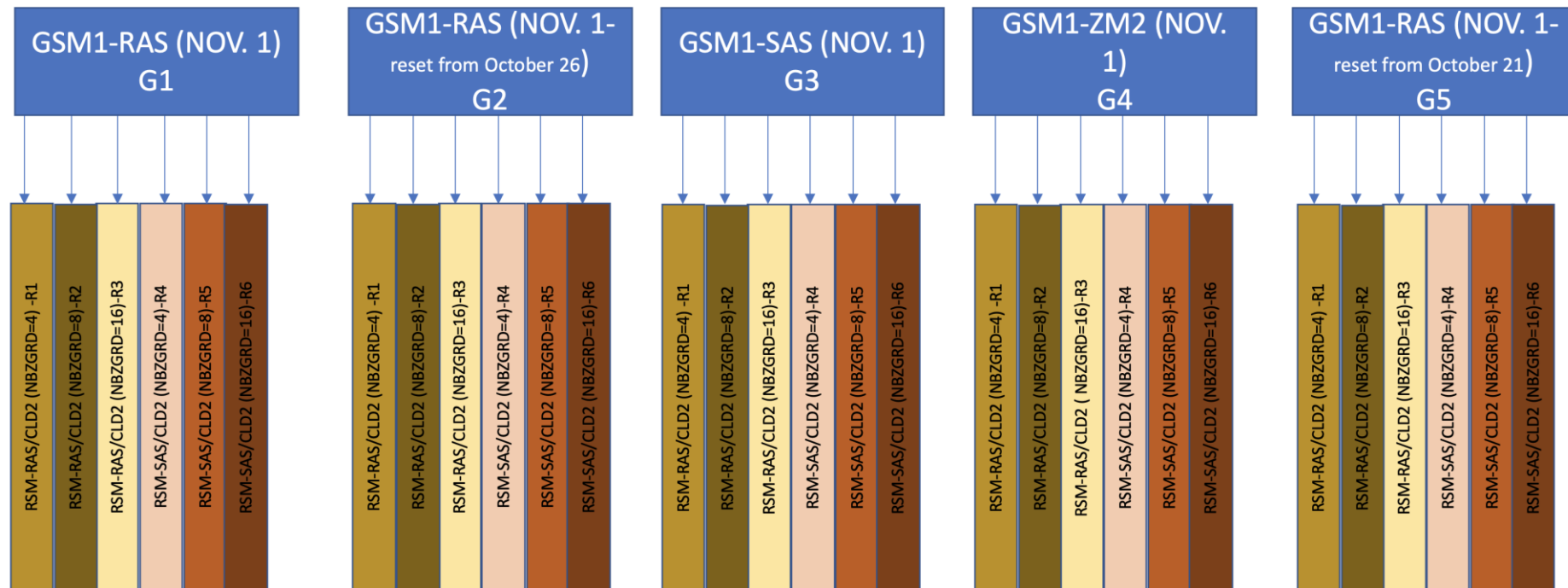
Aquifer Storage and Recovery





# Year One

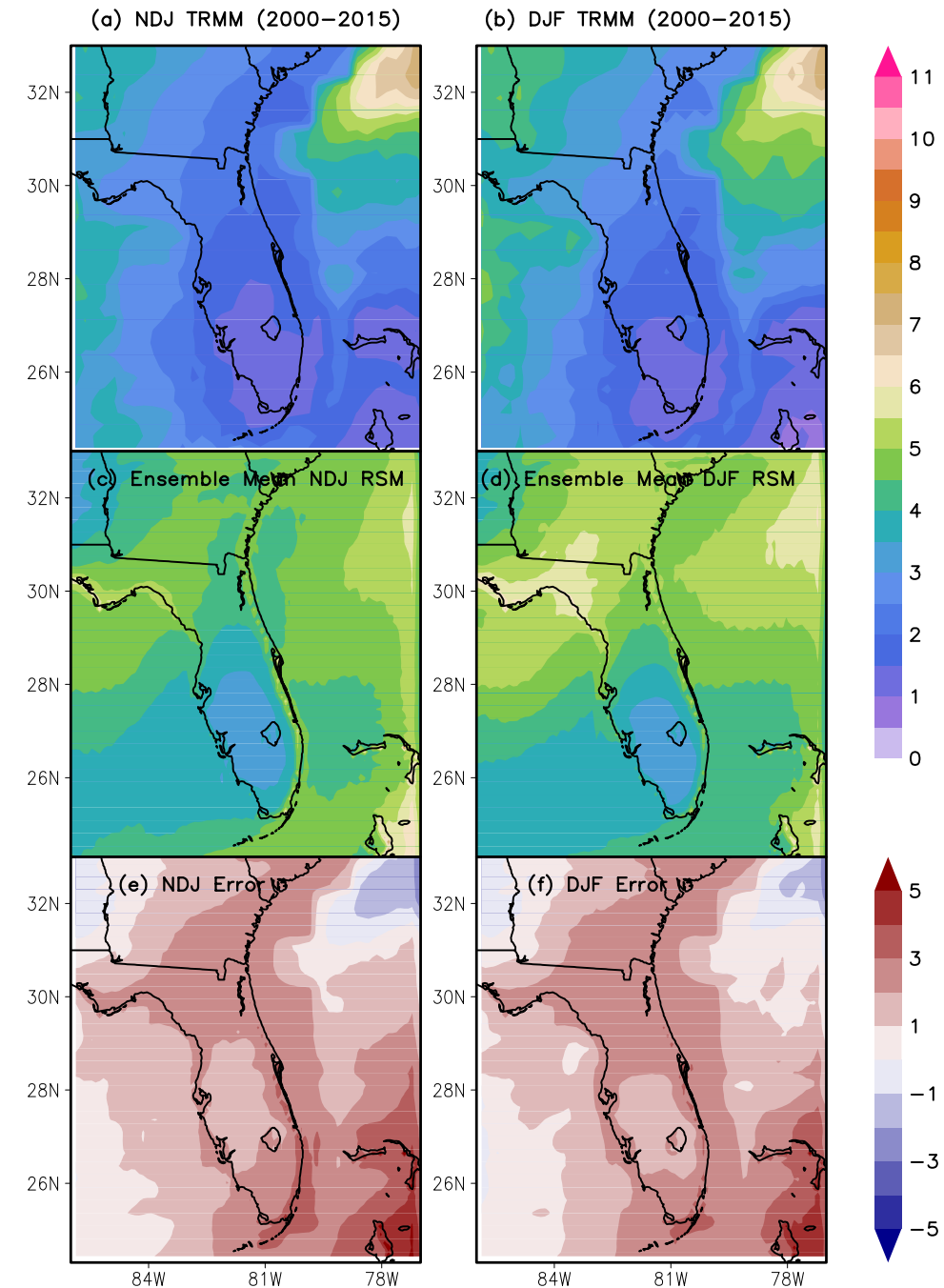
- 2000-2019 Regional Climate Forecasts of NDJF at 10 km resolution
- 5 GCM x 6 RCM forecasts = 30 ensemble members
- Daily and Monthly Data for **32 variables** are available



# Year One

- Seasonal Mean precipitation for NDJ and DJF forecasts compared to TRMM

*This is the baseline to  
compare RSMs initialized  
with remotely sensed  
data*



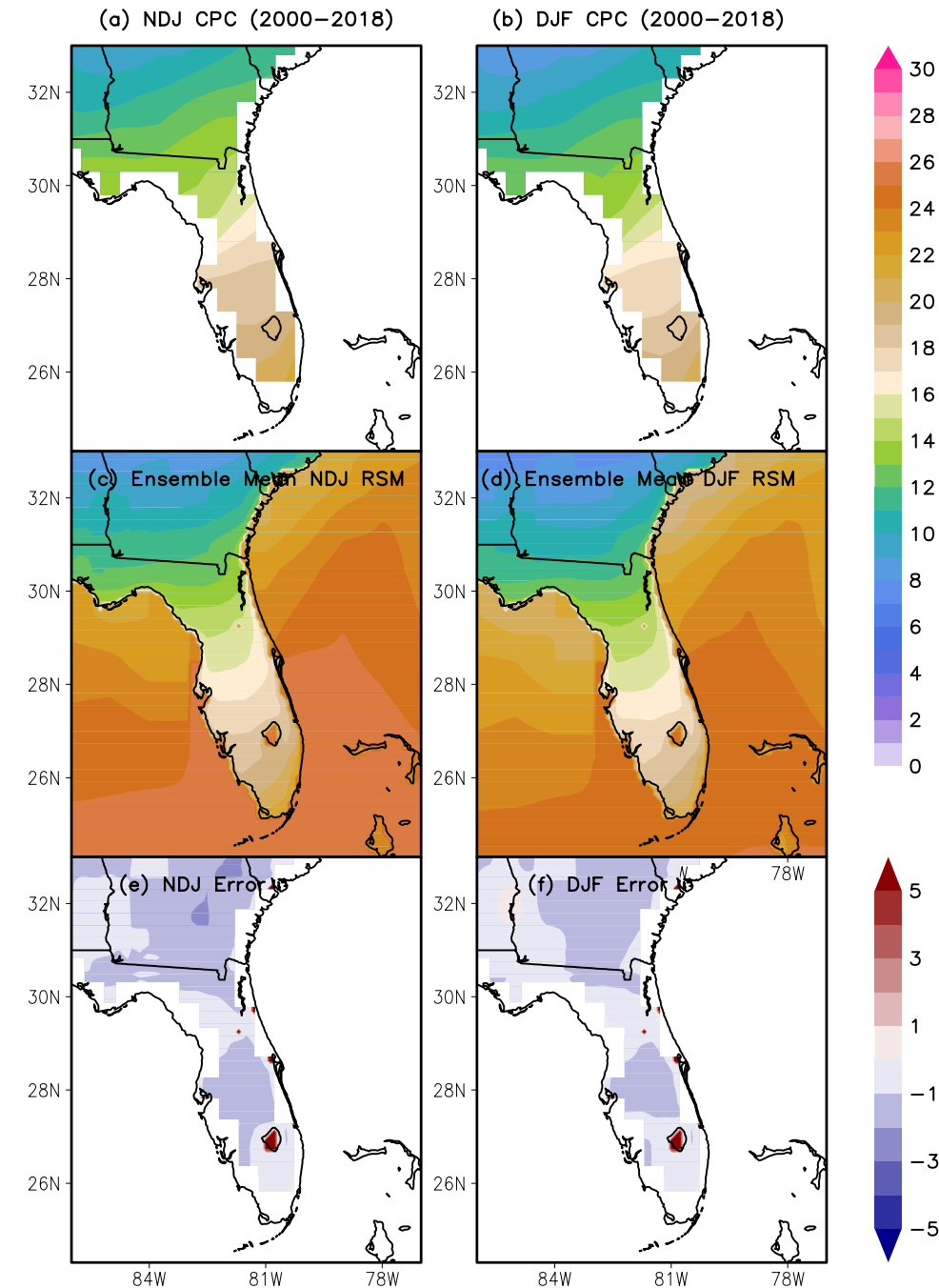
# Year One

- Seasonal Mean temperature for NDJ and DJF forecasts compared to CPC

*This is the baseline to  
compare RSMs initialized  
with remotely sensed  
data*

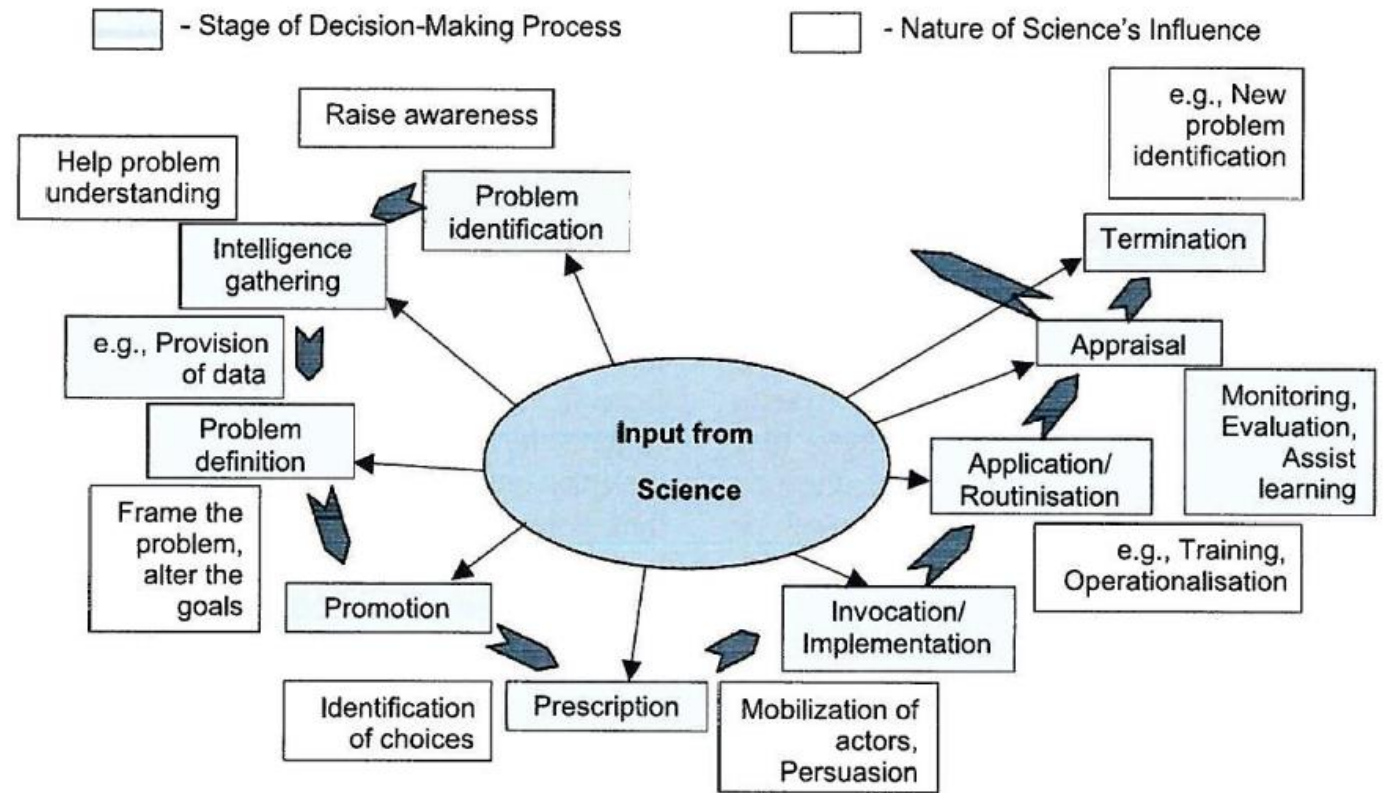


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# Assessment of the Process, Implementation and Effectiveness of Integration into Decision-Making

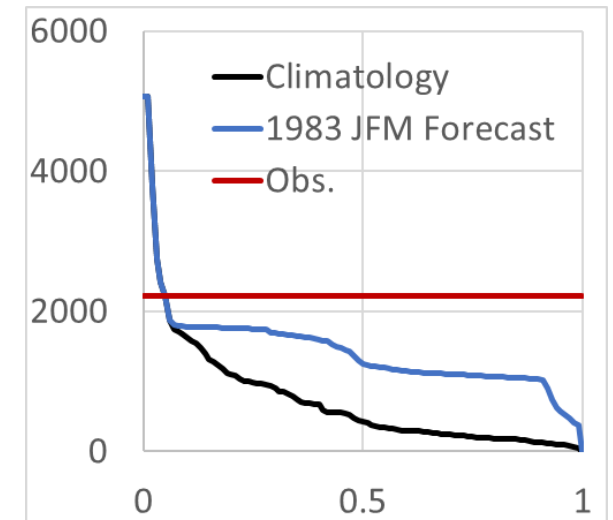
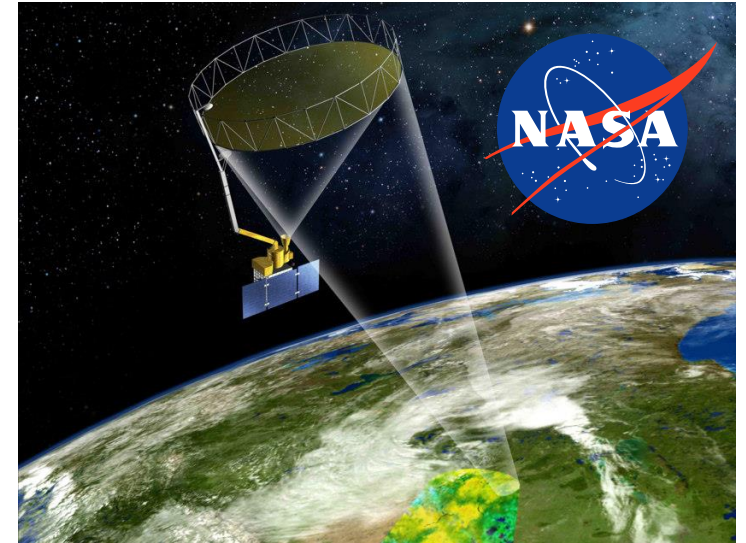
- Where and how does scientific input have an impact on adoption?
- Don't "Build it First"
- What are the impacts of our champions?



Scientific input at stages of the decision-making process (Vogel et al 2007)

# Next Steps

- Forecast Initial Conditions
  - Soil Moisture Ocean Salinity (SMOS)
  - Soil Moisture Active Passive (SMAP)
  - Moderate Resolution Imaging Spectroradiometer (MODIS)
- Integration of Forecasts Into Hydrologic Forecasts
  - Probability of Exceedance Forecast Model
  - Tampa Bay Water's Rainfall-Runoff Models
  - Aquifer Storage and Recovery Index used by Peace
  - River Manasota Regional Water Authority



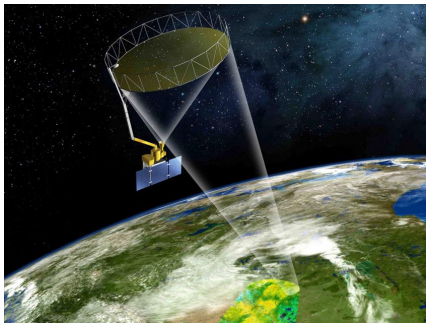


# The End

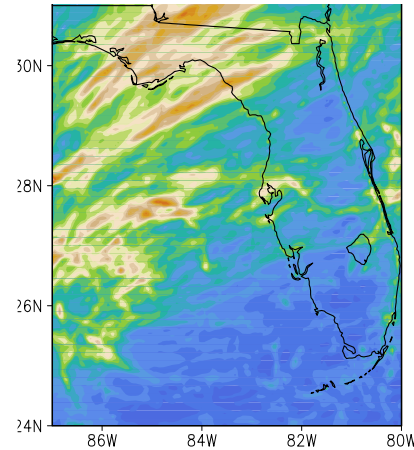
[chrisjm@ufl.edu](mailto:chrisjm@ufl.edu)



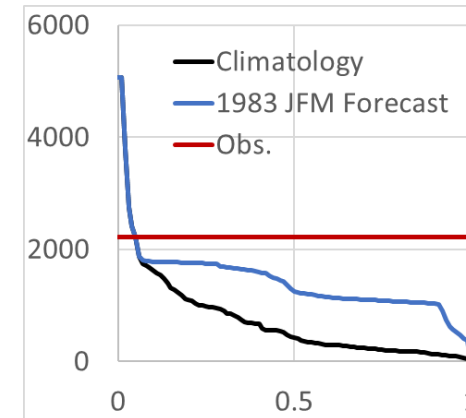
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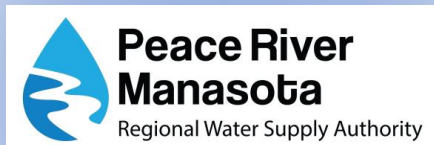
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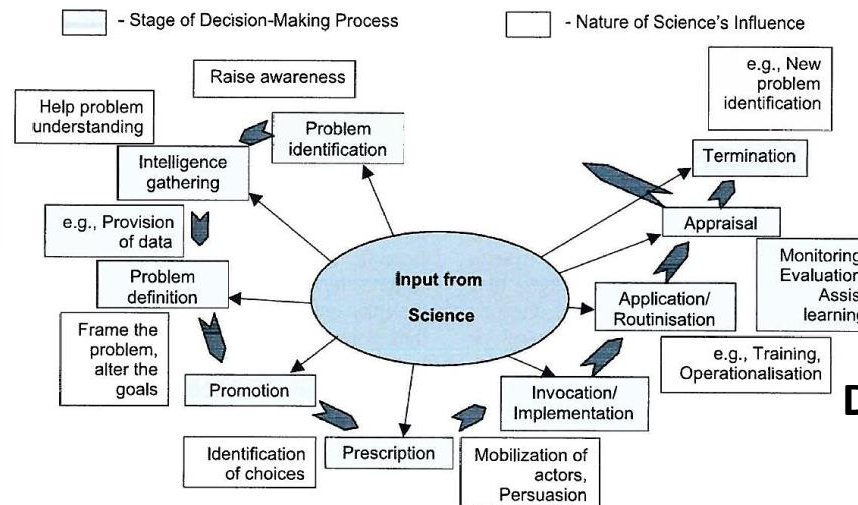
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## Decision Making Process