

DEVELOPMENT OF FUTURE CLIMATE SCENARIOS FOR REGIONAL HYDROLOGIC SIMULATIONS IN SOUTH FLORIDA

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The South Florida region is characterized by low relief, flat topography, and hydrology driven by both rainfall and evapotranspiration. Until recently, the regional hydrologic modeling used for planning major water resources projects assumed “stationarity” which is based on the concept that past hydrology is an indication of what is to be expected over the planning horizon of projects. Given the current focus on climate change, there is an increasing focus on adopting a “nonstationary” approach by using projected rainfall and evapotranspiration scenarios under future conditions for planning major projects associated with Everglades Restoration and Water Supply Planning. Such projections of future climatic conditions depend on the outputs of a variety of climate model datasets developed through both statistical and dynamical downscaling. The study provides an inventory of available climate model datasets and the development of climate scenarios for regional modeling. It includes a discussion of model culling using selected climate metrics appropriate for regional simulations and the challenges in addressing uncertainties and biases associated with climate model outputs.

PRESENTER BIO: Jayantha Obeysekera served as a member of the federal advisory committee which directed the National Climate Assessment in 2014. He was also a co-author of several regional and national sea level rise projections reports. He is a recipient of the 2015 Norman Medal of the American Society of Civil Engineers.