DAILY ESTIMATES OF EVAPOTRANSPIRATION FOR FLORIDA AND THE SOUTHEASTERN US, 1985-2022

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Since the mid-1990s, the U.S. Geological Survey, in cooperation with the five water management districts of Florida, has computed daily estimates of reference and potential evapotranspiration (RET and PET) for Florida at a 2-km resolution using the Penman-Monteith and Priestley-Taylor equations. The dataset spans the period 1985 through 2022 and calculations are driven by solar insolation data from the GOES satellite and meteorological parameters such as temperature, relative humidity, and wind speed from interpolated weather station observations or the 30-km resolution North American Regional Reanalysis gridded climate dataset. Beginning in calendar year 2021, daily estimates of RET and PET are also available at a 1-km resolution for the southeastern United States using meteorological datasets from a high-resolution Weather and Research Forecasting model.

A web application has been developed to allow easy access to the entire dataset which is available as a series of files produced annually which contain all parameters used in the calculations. Prior to 2019, the data are available in text-formatted files and for calendar years 2019 and onward as self-describing, georeferenced binary NetCDF files. The web application allows users to choose between the 2-km product for Florida or the 1-km product for the southeastern US, select one or more parameters, specify the date range of interest, and choose from a variety of methods to spatially subset the data including by uploading a shapefile for a study area. Output is in the form of a text file containing the pixel IDs, pixel locations, and relevant parameter values for the dates selected. A time-series graphic is also generated to show mean values for the selected data.

PRESENTER BIO: Jason is a hydrologist with 19 years of experience in a variety of areas including groundwater modeling, groundwater-surface water interactions, bathymetric surveys, evapotranspiration calculations, and climate modeling.