

# Rainfall Dataset Development

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## QA/QC Procedures



- **Period of Record is 1914-2005**
- **Hundreds of rainfall stations at any point in time (except for the early records)**
- **Identification and quality classification of daily data having extreme values**
- **Testing and elimination of some extreme daily values**
- **Screening of data with zero monthly rainfall**
- **Screening of rainfall data having extreme low annual values and high monthly values**
- **Data screening through visualization**
- **Building DSS files for data storage, and producing the rainfall binary file as input to the model**



## Rainfall-Screening Tasks



- **Extreme daily rainfall** - Data quality is classified according to the value difference from, and its proximity to, the nearest 6 neighbors then accept or flag as missing
- **Monthly rainfall above 20 inches, zero Monthly rainfall, and Annual rainfall below 30 inches** - contributing sources checked for systematic errors, compared with the corresponding local rainfall statistics, and accept or flag as missing
- **3 months or more of consecutive zero rainfall** - look for data acquisition problems (DBHYDRO)



## Rainfall-Screening tasks

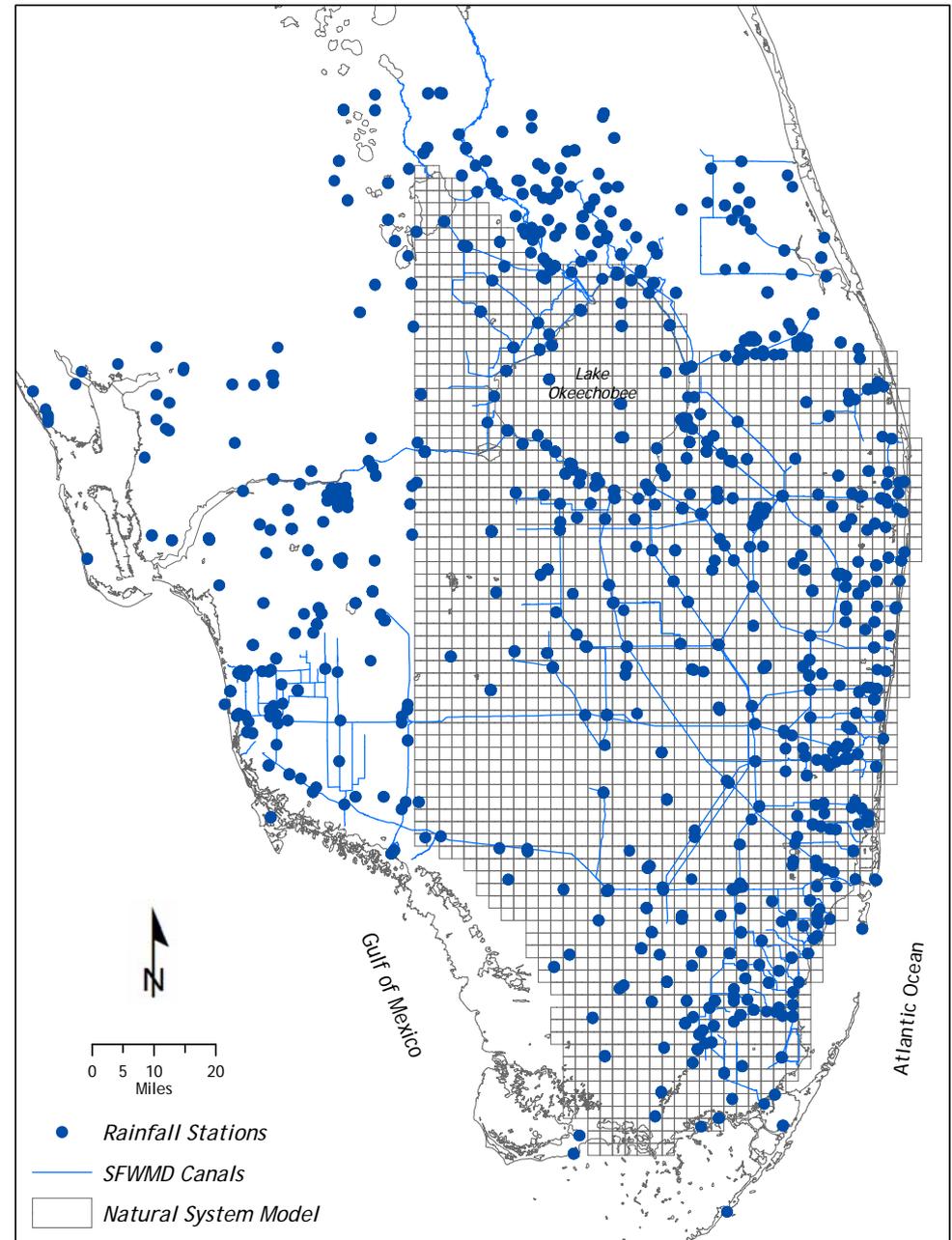


### Comparison with other sources of data

- **Global statistics were compared against existing studies (Ali et. al. 1999a, and Ali and Abtew 1999b)**
- **Spatial images were compared to existing studies (Ali et. al. 1999a)**
- **Spatial images were compared against PRISM (Parameter-elevation Regressions on Independent Slopes Model) data**
- **All comparisons were done qualitatively**
- **District weather archived image database**

# Rainfall Stations Spatial Distribution

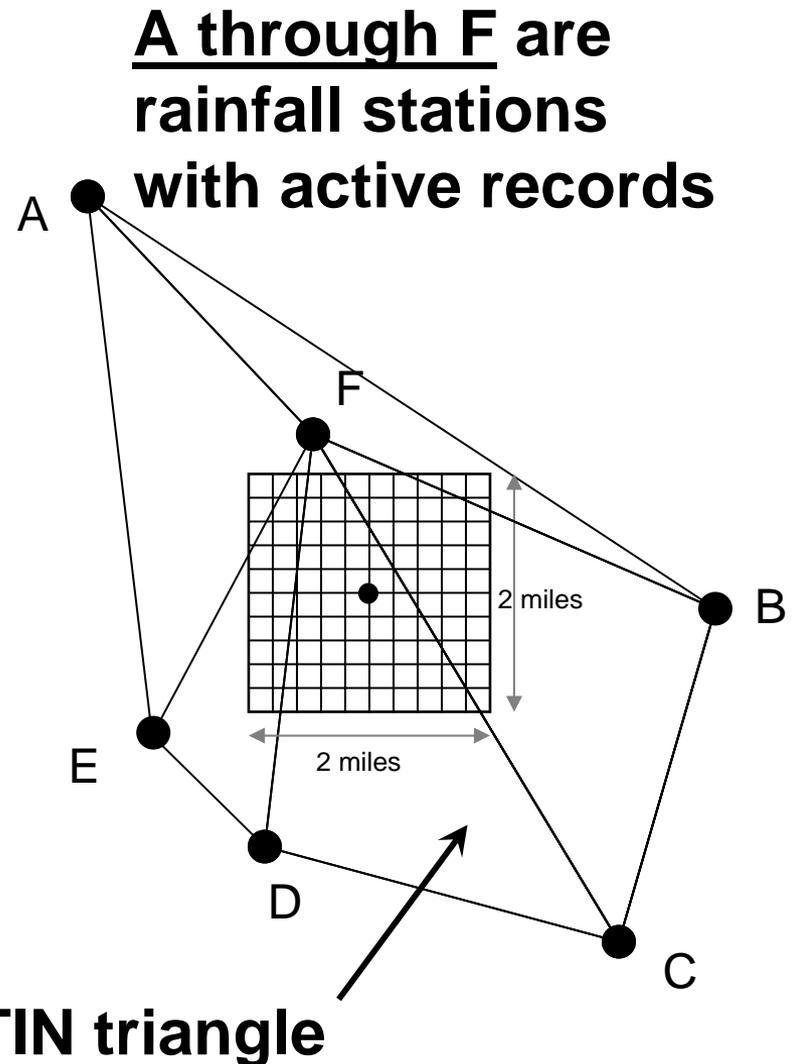
- Number of stations with existing records changes with time and was left unspecified



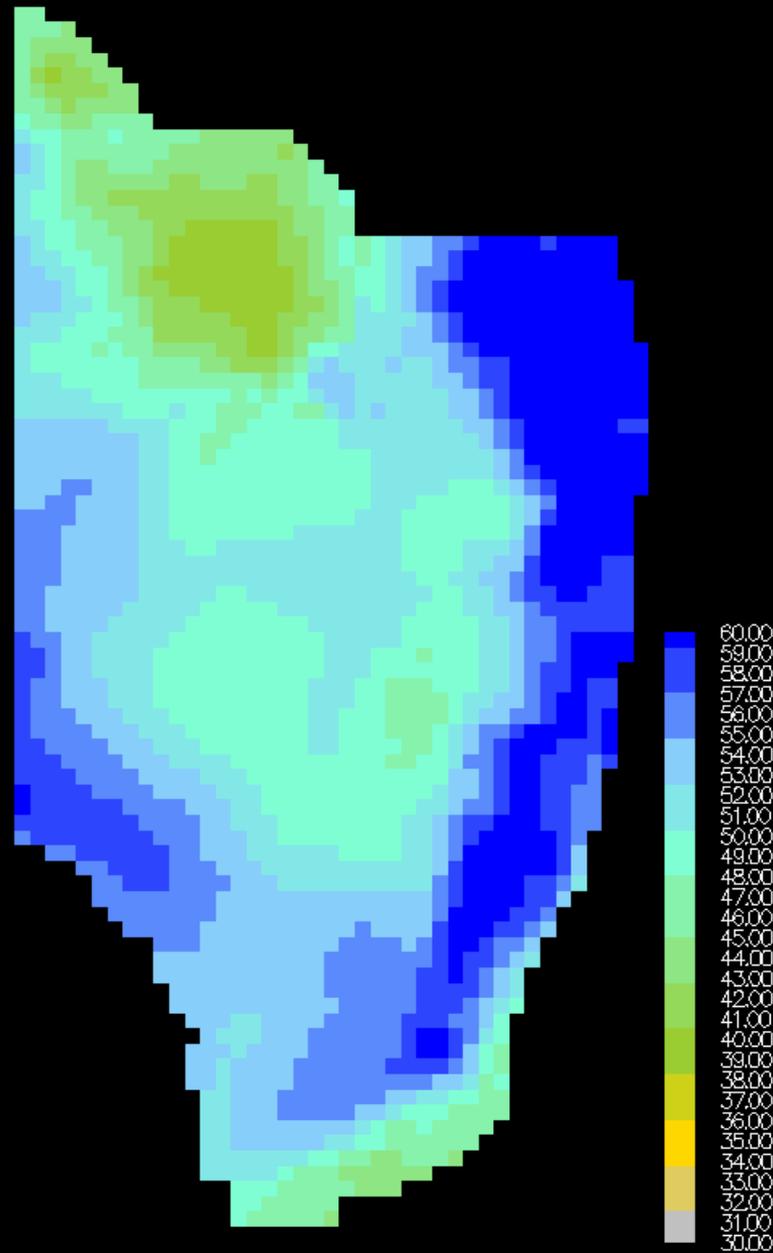
## TIN-10 Estimation for Model Grid Cell



- A 2x2 mile model grid is divided into 10x10 sub-cells
- Each TIN triangle plane is used to interpolate rainfall at the centroids of the intersected sub-cells
- The average of rainfall at the 100 sub cells provides rainfall estimate at the centroid of the 2x2 mile cell



# Rainfall Annual Average 1965-2005



Annual Average