

Preprocessing

0_preprocess_ET.R

- HUC8 Mean Annual Actual Evapotranspiration (AET)
- Data source: TerraClimate
- Timeframe: 1901-2023 (years before 1958 replaced with basin mean over period of record)
- Unit: mm

0_preprocess_precip.R

- HUC8 Mean Annual Precipitation
- Data source: PRISM
- Timeframe: 1901-2023
- Unit: mm

0_preprocess_temperature.R

- HUC8 Mean Annual Temperature
- Data source: PRISM
- Timeframe: 1901-2023
- Unit: degrees C

1_preprocess_fx.R

annualUSGS_preprocessing function

INPUT: dataframe where column 1 is USGS streamgage number

OUTPUT: list of **results** dataframe and **errors** indices

results is a dataframe with 3 columns: Site_Num, Year, BFI

errors contains the indices of observations that do not fit the filter criteria

- filters through period of record of streamgage and for years with >335 day coverage calculates BFI
- filters through years with BFI to ensure >10 years with positive BFI (some errors produce negative BFI)
- adds filtered sites to results dataframe and error indices to errors list

assignVariables_preprocessing function

INPUT: dataframe where col 1 is HUC8, col 2 is Site_Num, col 3 is Longitude, col 4 is Latitude, col 5 is Year

OUTPUT: dataframe equivalent to input dataframe with associated temperature, precipitation, actual ET, elevation, and spatial data to each year/HUC observation

- Hard coded to access csv files produced in 0_preprocess_ET, 0_preprocess_precip, and 0_preprocess_temperature

2_preprocess_USGSgages.R

Script to load specifics to this study.

- USGS streamgages in AZ (only streams)
- remove Colorado River sites
- feed desired datasets into functions from 1_preprocess_fx