

### Category: Water Conservation

### Indicator: Irrigation Water Demand

#### Methodology

Irrigation Water Demand is an indicator of agricultural water use efficiency as influenced by water conservation practices and other factors. It is measured by calculating the acre-feet of irrigation water used per acre of irrigated land for every Texas county.

The Texas Water Development Board provided data on acres of land irrigated and the acre-feet of water used for irrigation for each year 2007-2011 for each county in Texas. This dataset also included a breakdown of the total water use into the water use amounts sourced from groundwater, surface water, and waste water for each year and county. Using this dataset, we calculated the annual average total acreage in irrigation, the total acre-feet of water used, acre-feet of water used from each source type and the percent of total water used sourced from each type for the period 2007-2011. Based on these averages, the average acre-feet of water used per acre irrigated for each county was calculated (AF per Acre). This data is mapped in the Explorer web viewer as the Irrigation Demand indicator at the county level. This map can also be overlaid on the precipitation shapefile, allowing users to visually assess how efficient Texas counties are in irrigation water use and how precipitation patterns may or may not affect irrigation water use patterns.

#### Data Sources

Texas Water Development Board. Historical Water Use Estimates. Historical Agriculture Irrigation Water Use Estimates. Data on acres irrigated and acre-feet of water used for irrigation provided to TNC April 2014.

<http://www.twdb.texas.gov/waterplanning/waterusesurvey/estimates/index.asp>

TNRIS. StratMap County Boundaries shapefile.

<https://tnris.org/data-download/#/statewide>

Texas Water Development Board. Precipitation shapefile.

<http://www.twdb.texas.gov/mapping/gisdata.asp>