

# U.S. Geological Survey (USGS) Florida Water-Use Program

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# USGS Florida Water-Use Program

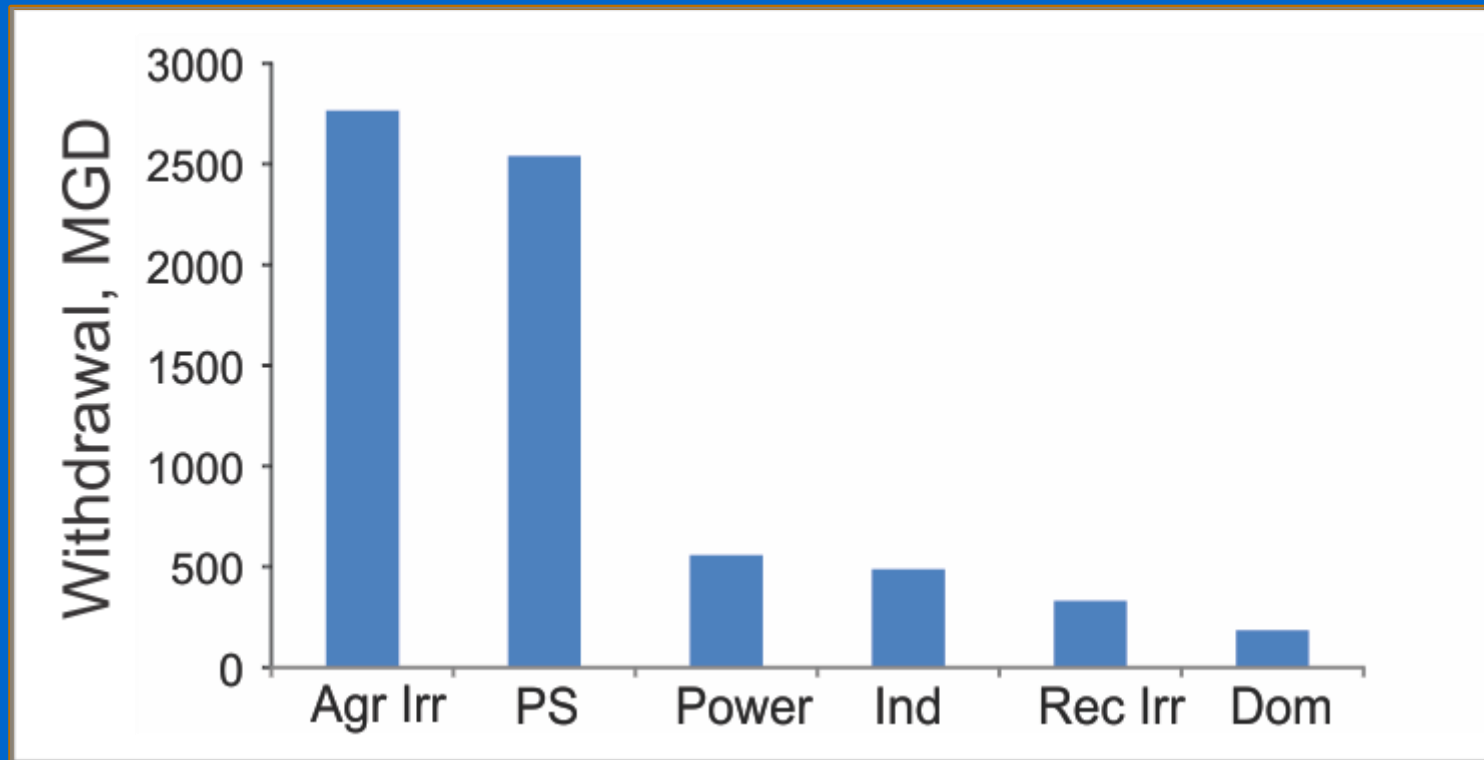
- Ongoing cooperative program with the Florida Department of Environmental Protection (FDEP) and USGS since 1984.
- Requires assistance and data from WMD's.

# USGS-FDEP Water-Use Program

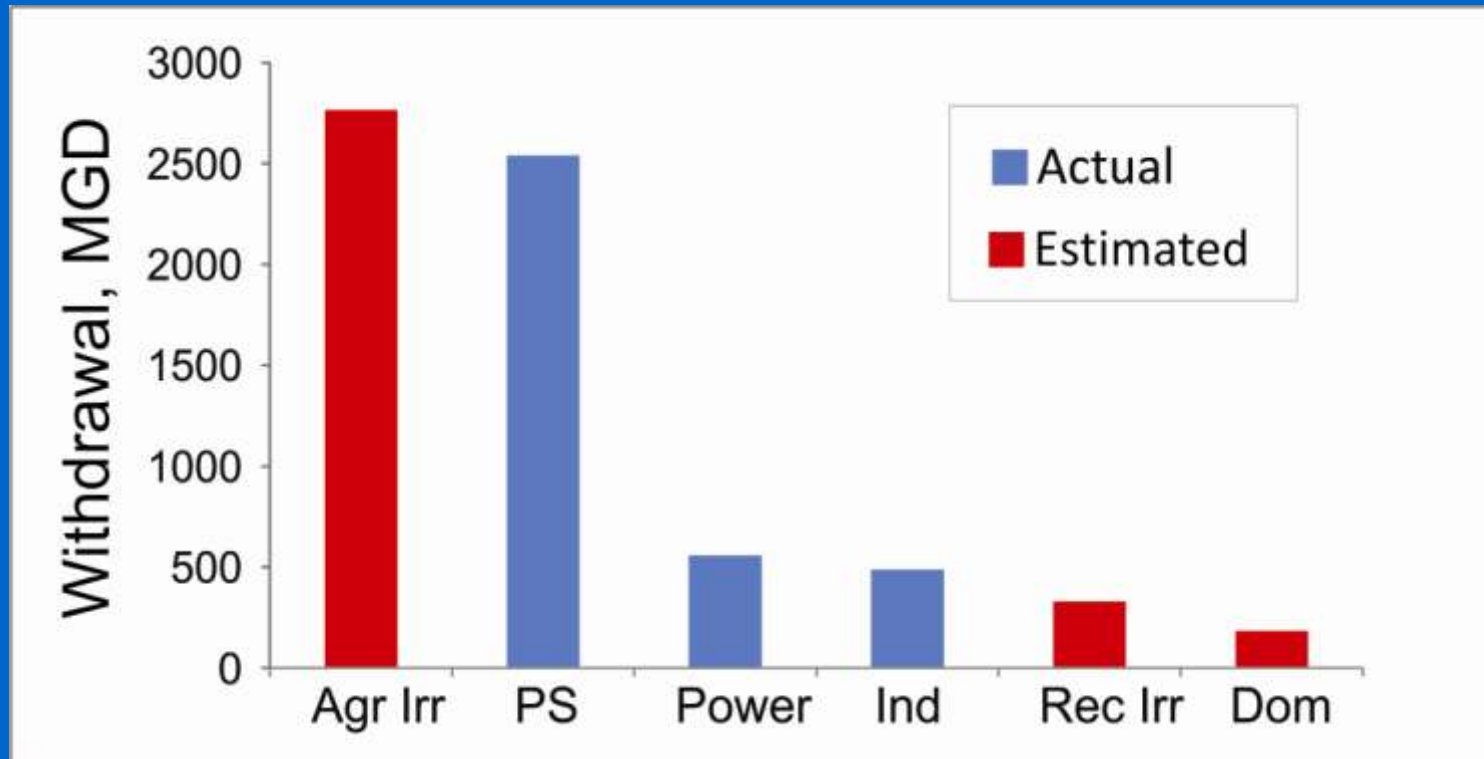
## Main objective

- Collect water-use data for all categories, counties, and water management districts every five years to coincide with the USGS National Water-Use Program.
- Publish and disseminate water-use data every 5 year.

# Freshwater withdrawals by major use category, 2005



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# Water use in Florida, 2005

- Public supply and agricultural irrigation combined accounted for 77 % of the total freshwater withdrawn in Florida
- Almost 100% of public supply withdrawals were metered
- Only 5-10% of agricultural irrigation withdrawals were metered
- Since a small percent of irrigators are metered throughout Florida, data for this category needs to be estimated.

# How agricultural irrigation is estimated

- Estimates based on type of crop grown, acreage per crop type, crop (evapotranspiration) coefficient, and irrigation system type (to establish efficiency).
- Crop type and acreage data obtained from USDA Census, Florida Agricultural Statistic Service, FDACS, IFAS, and others.
- Coefficients from Blaney-Criddle, AFSIRS, Florida Irrigation Guide, and others.
- Irrigation system type obtained from water management districts permit files.

# Agricultural irrigation – estimation challenges

- Lack of consistent sources of crop acreage data:
  - FASS only publishes data for selected crops beginning in 2000.
  - USDA Census of Agricultural is compiled at 5-year intervals: 1992, 1997, 2002, 2007.
- Reported acreage often does not indicate acreage that is actually irrigated.
- Published irrigation acreage values do not detail irrigation system type (flood, low vol., sprinkler).
- Other local data sources are inconsistent from year to year or from one county to another.

# Agricultural irrigation – estimation challenges (cont.)

- Inconsistency between water management districts as some use metered data from various monitor programs to develop coefficients while others use models or even both to determine coefficients.
- Lack of consistency between models and how they are used.
- Uncertainty about how much irrigation water is obtained from groundwater versus surface water.
- Uncertainty on how many acres are irrigated by the various irrigation systems for any given year.
- A large amount water is used for freeze protection which is hard to account for.

# How irrigation estimates can be improved

- Need digital maps of irrigated areas with information on crop type, planting and harvest dates, and source of water (aquifer or stream).
- Increased metering to verify and improve accuracy of estimates and/or require permit holders to report acreage planted and irrigated each year.
- Consistent source of statewide, weather data for estimating rainfall and crop evapotranspiration.
- Statewide database of (linked) well construction, water-use permit, and withdrawal data.



<http://fl.water.usgs.gov>

