



United States Department of Agriculture

# Survey of Irrigation Organizations

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The Findings and Conclusions in This Preliminary Presentation Have Not Been Formally Disseminated by the U. S. Department of Agriculture and Should Not Be Construed to Represent Any Agency Determination or Policy.

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# 2019 Survey of Irrigation Organizations

- 1978 Census of Irrigation Organizations
  - All organizations moving off-farm surface water
  - Focused primarily on water budgets
- 2019 Survey of Irrigation Organizations
  - Organizations that directly interact with irrigators
  - Additional topics (conservation, transfers, ...)
  - Includes groundwater districts



# USDA Lead Agencies

- *Economic Research Service (ERS)*
  - *Questionnaire development*
  - *Research plan and stakeholder engagement*
- *National Agricultural Statistics Service (NASS)*
  - *Pre-testing and OMB clearance*
  - *Implementation and data collection*
- *Office of the Chief Economist (OCE)*
  - *List frame geodatabase development*



# 1978 Census

Type of Organization	Percent of Water Delivered	Share of Organizations
Irrigation Districts	50	11
Ditch companies (mutual)	40	83
USBR Projects	31 *	5*
Other	7	4

Percentages add to more than 100 because some USBR user-operated projects are counted twice. Source: 1978 Census of Irrigation Organizations, Table 4.



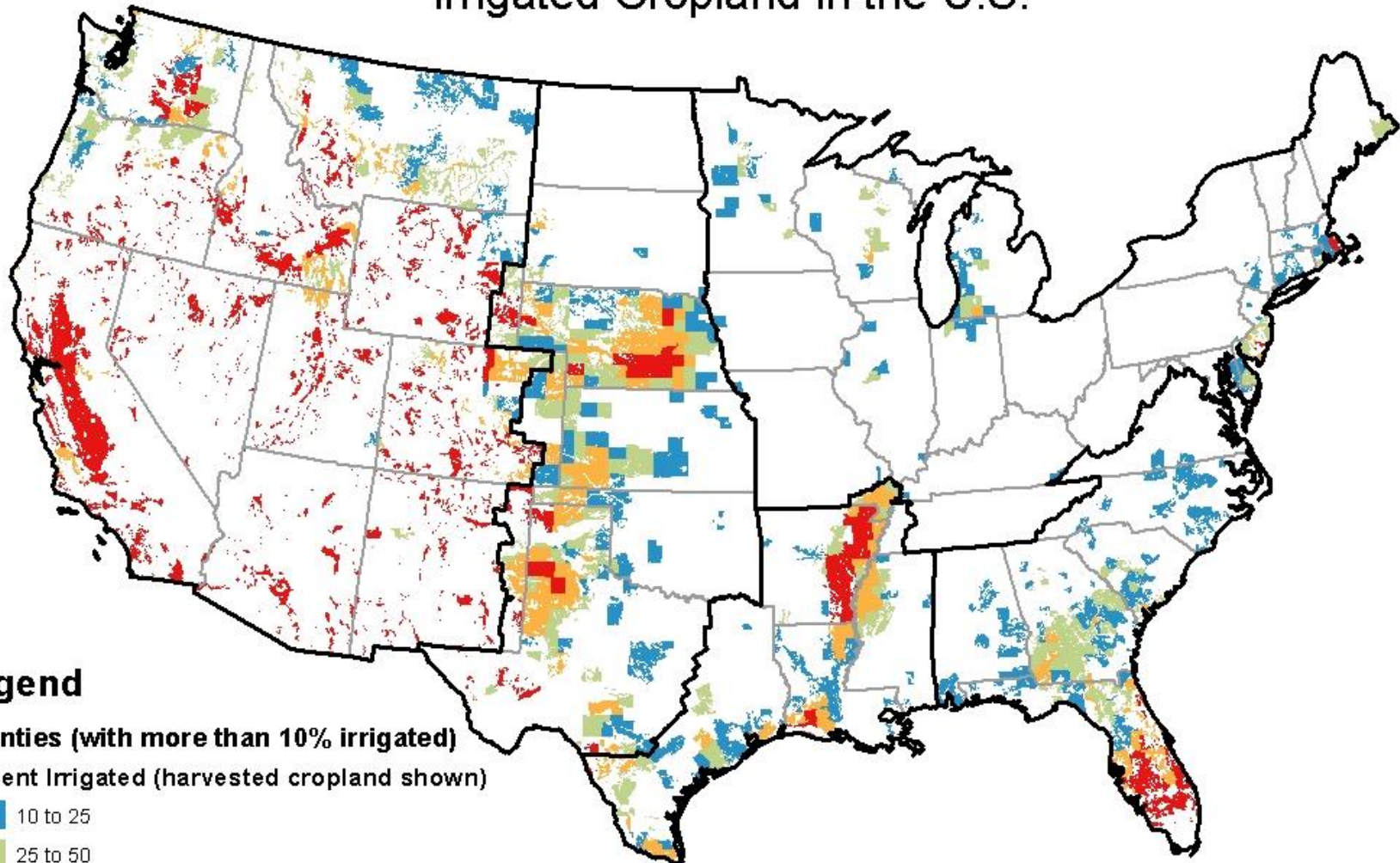
# Scope of Research

- *Irrigation districts and ditch companies (mutual) that deliver off-farm water directly to farms and ranches*
- *Groundwater districts that influence well development, metering, or pumping decisions*
- *Stratify sample to focus on states and regions with majority of irrigated acres*



# Major Irrigation Regions

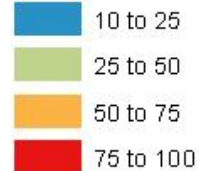
Irrigated Cropland in the U.S.



## Legend

Counties (with more than 10% irrigated)

Percent Irrigated (harvested cropland shown)



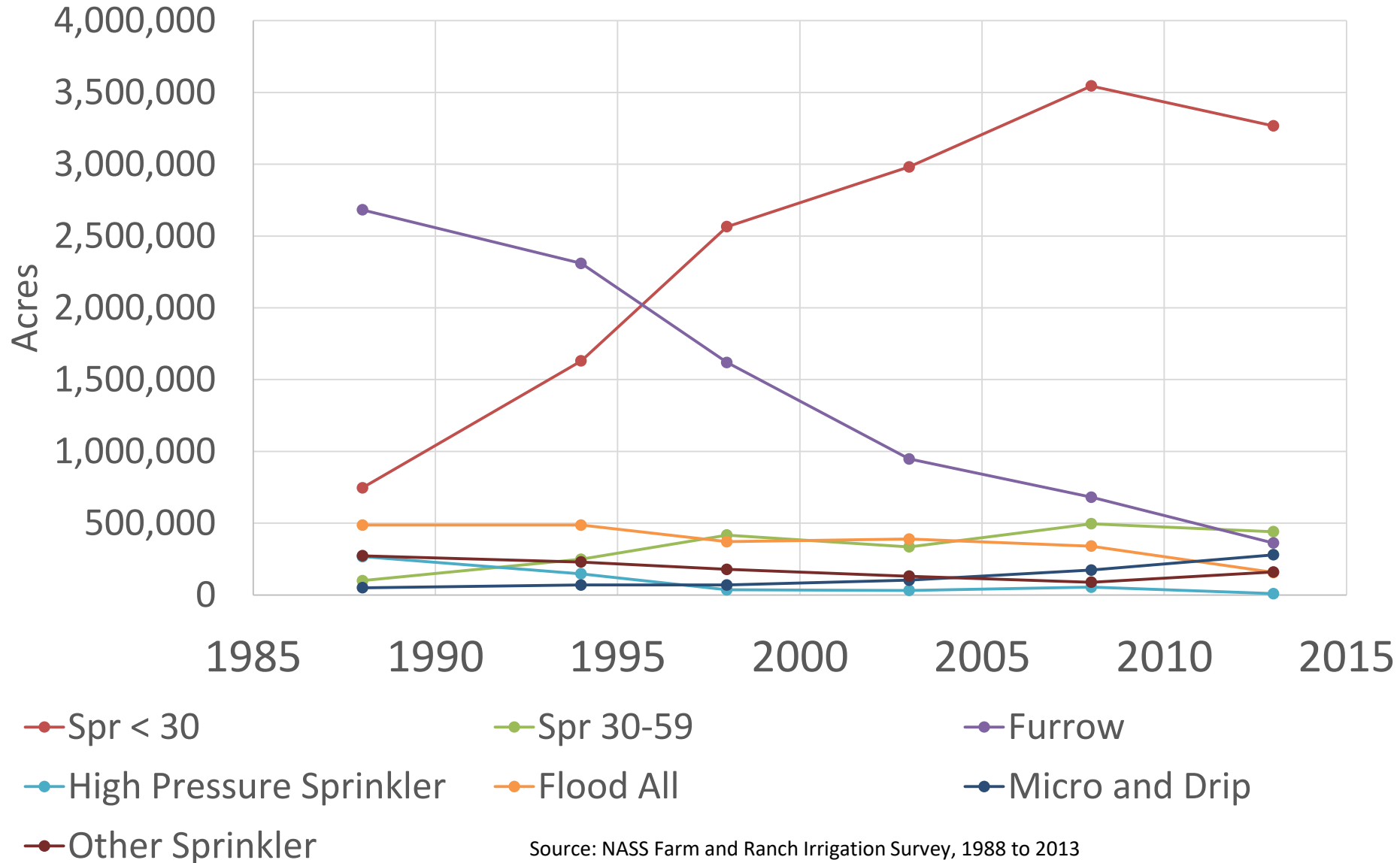
Source: ERS analysis of NASS Census of Agriculture Data 1997 to 2012

# The Other USDA Irrigation Survey

- The 2018 Irrigation and Water Management Survey (IWMS) collects information about on-farm water use and technology decisions
- Preceded by the Farm and Ranch Irrigation Survey (2013, 2008, 2003 and earlier)
- The Survey of Irrigation Organizations will complement the 2018 IWMS



# FRIS Irrigation Technology in Texas



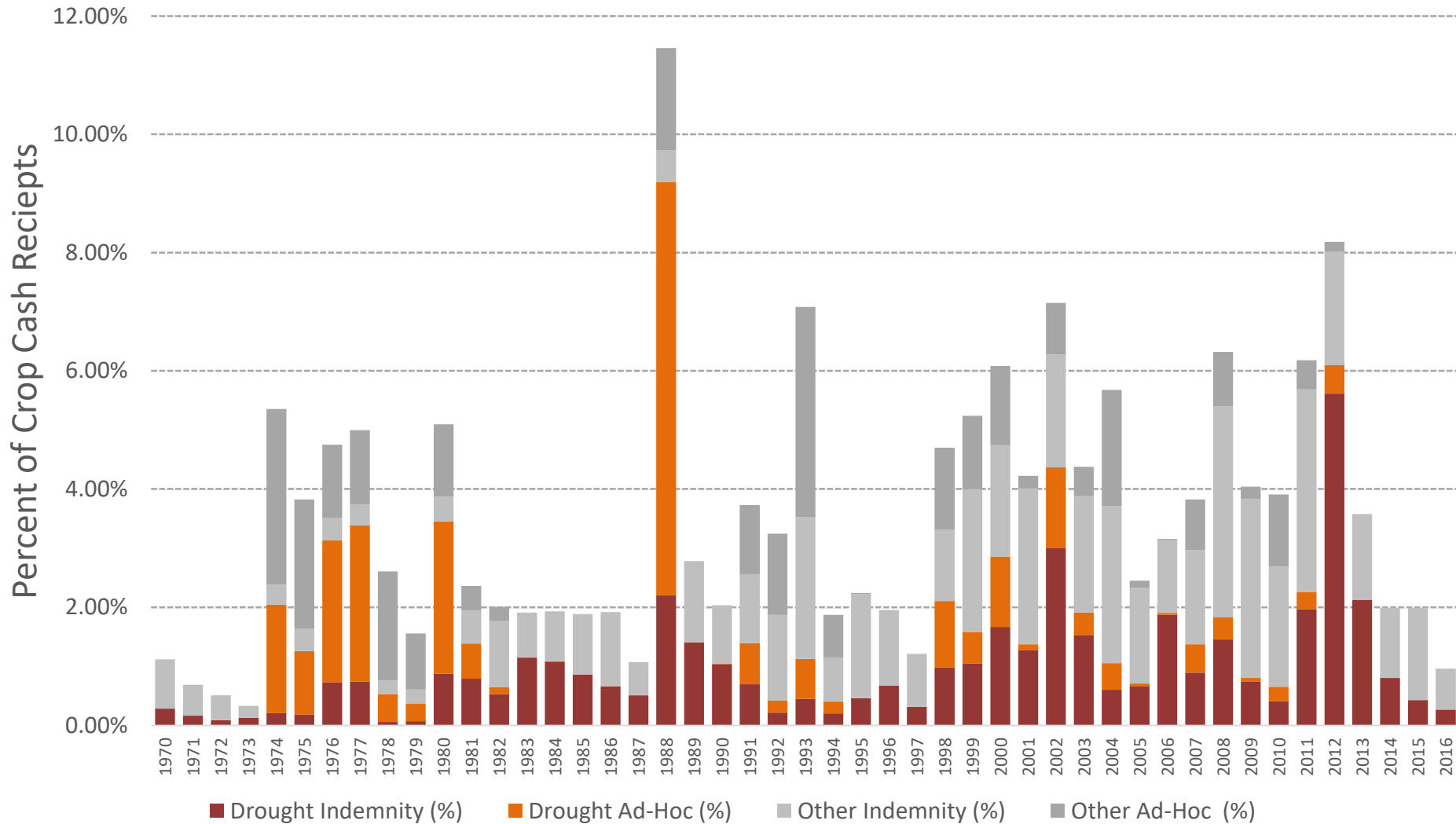


# Drought Resilience is a New Topic

- The 2019 survey will collect information on drought response and planning
  - Ranges of expected water deliveries
  - Use of drought response strategies such as land fallowing program
  - Use of drought resilience strategies such as managed aquifer recharge



# Drought is the Largest Cause of Loss in Crop Insurance and Disaster Assistance



# Groundwater is a New Topic

- The 2019 survey will collect information from groundwater districts
  - Extent of oversight of well development and pumping
  - Use of monitoring and modeling to manage groundwater use
  - Role of local organization in conjunctive management of surface water and groundwater water



# Most Major Aquifers in the U.S. Are Being Significantly Depleted

Aquifer	Depletion (MAF)	Available Water (MAF)	Percent Depleted
Central Valley	125	800	16 %
High Plains	267	3,200	8 %
Mississippi Embayment	150	686	22 %

These three aquifers supply an average of 35 million acre feet of annual withdrawals for irrigation, which is about 70 percent of the total groundwater used for irrigation in the U.S. While a large amount of water remains in these aquifers, regional differences within the aquifer reveal very severe local groundwater depletion.

Sources: USGS groundwater availability studies and USDA Farm and Ranch Irrigation Survey.



# Other Major Topics

- Farms and acreage served
- Costs and revenue
- Canal maintenance and lining
- Data and water measurement
- Conservation programs
- Water trading and transfers



# Project Timeline

- Fall 2018
  - Develop questionnaire, Build list frame
- Early 2019
  - Survey pretesting, Finalize list frame
- Summer 2019
  - OMB clearance, Sampling design
- Early 2020
  - Conduct survey through multiple modes



# Needs for Stakeholder Input

- Feedback on questionnaire development
  - Are any key topics missing from the current proposal?
- Identifying organizations for the list frame
  - How much has the trend in consolidation of mutuals continued?
- Assistance in getting high response rates
  - What is the best way to inform irrigation organizations about the survey?



# Questions?

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