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# Introduction

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## PURPOSE AND SCOPE OF THE SURVEY

The 2003 Farm and Ranch Irrigation Survey provides data that supplement the basic irrigation data collected from all farm and ranch operators in the 2002 Census of Agriculture. Irrigation data from this survey combined with 2002 census data provide one of the most complete and detailed profiles of irrigation in the United States.

The 2003 Farm and Ranch Irrigation survey collected detailed data for on-farm irrigation practices in 2003. These data include acres irrigated by category of land use, acres and yields of irrigated and nonirrigated crops, quantity of water applied and method of application to selected crops, acres irrigated by type of water distribution system, and number of irrigation wells and pumps. Also, included are data for irrigation expenditures in 2003 for maintenance and repair of irrigation equipment and facilities; purchase of energy for on-farm pumping of irrigation water; investment in irrigation equipment, facilities, and land improvement; and cost of water received from off-farm water suppliers.

The 25,014 operations sampled for the 2003 survey were selected from farms and ranches reporting irrigated acres in the 2002 census, including American Indian reservations. Farms that reported horticultural crop sales of at least \$10,000 and all institutional, research, and experimental farms were excluded from the survey. Therefore, 23,767 irrigation operations were excluded from the sample. Most of the irrigated farms (23,116) excluded were horticultural specialty farms which accounted for 1,011,012 acres irrigated, or 2 percent of the land irrigated in 2002. In the 2002 census, 806 institutional, research, and experimental farms accounted for 125,535 acres irrigated, or less than 1 percent of all acres irrigated in the nation.

Some changes occurred between the 2002 Census of Agriculture and the 2003 Farm and Ranch Irrigation Survey. Between 2002 to 2003, 16,088 farms irrigating 2.9 million acres in 2002 ceased operation under the name identifying them in the 2002 census. In addition, results of the 2003 survey show 32,489 irrigation operations reporting irrigation on 1.85 million acres in 2002 did not irrigate in 2003. No attempt was made to identify and select new irrigation operations for 2003.

## HISTORY

Selected irrigation data for on-farm irrigation operations have been collected in the census of agriculture since 1890. A census of farms which reported irrigation in the 1900 Census of Agriculture was authorized by Congress. Surveys of irrigation in humid areas were taken in connection with the 1954 and 1959 censuses.

The 2003 Farm and Ranch Irrigation Survey is the sixth survey devoted entirely to collecting on-farm irrigation data for the United States. The 1979, 1984, 1988, and 1994 Farm and Ranch Irrigation Surveys were conducted by the U.S. Department of Commerce, Bureau of Census. Responsibility for the survey was transferred from the Bureau of Census to the U.S. Department of Agriculture (USDA), National Agricultural Statistics Service (NASS) in 1997. The 1998 survey utilized the resources of the 45 NASS State Statistical Offices (SSO) which expanded opportunities for telephone follow-up or personal enumeration of nonresponse cases. The 1998 Farm and Ranch Irrigation Survey was the first survey to collect and publish data for each of the 50 States. Previous farm and ranch irrigation surveys published data only for leading irrigation States, with a U.S. total, excluding Alaska and Hawaii.

## **AUTHORITY**

The census of agriculture is required by law under the "Census of Agriculture Act of 1997", Public Law 105-113 (Title 7, United States Code, Section 2204g). The law authorizes the Secretary of Agriculture to conduct surveys deemed necessary to furnish annual or other data on the subjects covered by the census. The 2003 Farm and Ranch Irrigation Survey was conducted under the provisions of this section.

## **FARM DEFINITION**

The census definition of a farm is any place from which \$1,000 or more of agricultural products were produced and sold, or normally would have been sold, during the census year. The definition has changed nine times since it was established in 1850. The current definition was first used for the 1974 Census of Agriculture and has been used in each subsequent agriculture census and related surveys. This definition is consistent with the definition used for current USDA surveys.

## **WATER RESOURCES AREAS MAP**

The map on page 1 shows Water Resources Areas delineated on the basis of county boundaries that approximate actual basin boundaries based on topographic drainage characteristics. Data are tabulated separately for each of the 20 water resources areas shown on the map.

## **PERCENT OF NORMAL PRECIPITATION MAP**

The map on page 2 shows the areas of the United States with deviations from normal precipitation during 2003. The map is included for reference purposes only.

## **TABLES AND APPENDIX**

Table 1 shows farms and acres irrigated for the 1982 through 2002 censuses for each State. Tables 2 through 41 present detailed irrigation operation data collected in the survey from irrigation operations that reported irrigated land in the 2002 census and also irrigated in 2003. Table 42 presents data for farm operations that irrigated in 2002, but discontinued

irrigation either temporarily or permanently in 2003 while continuing to operate a farm or ranch. Data from the 2003 survey are reported for each State and for the 20 Water Resources Areas. Additional text tables are shown in the General Explanation. The appendix provides facsimiles of the report form used to collect the data.

## **RESPONDENT CONFIDENTIALITY**

In keeping with the provisions of Title 7 of the United States Code, no data are published that would disclose information about the operations of an individual farm or ranch. All tabulated data are subjected to an extensive disclosure review prior to publication. Any tabulated item that identifies data reported by a respondent or allows a respondent's data to be accurately estimated or derived, was suppressed and coded with a 'D'. However, the number of farms reporting an item is not considered confidential information and is provided even though other information is withheld.

## **DATA PRODUCTS**

The 2003 Farm and Ranch Irrigation Survey data, as well as the 2002 Census of Agriculture Volume 1 Geographic Area Series and related reports, are available on the Internet at [www.usda.gov/nass](http://www.usda.gov/nass) and in printed reports. Printed reports can be ordered by calling 1-800-727-9540.

## **CUSTOM TABULATIONS**

Special studies such as the 2003 Farm and Ranch Irrigation Survey and 2005 Census of Aquaculture are part of the census program and provide supplemental information to the 2002 Census of Agriculture in the respective subject area. Results are published in print and on the internet.

Custom-designed tabulations may be developed when data are not published elsewhere. These tabulations are developed to individual user specifications on a cost-reimbursable basis and shared with the public. The census Volume 1 on CD-ROM is an alternative data source that should be investigated before requesting a custom tabulation.

All special studies and custom tabulations are subject to a thorough disclosure review prior to release to prevent the disclosure of any individual respondent data. Requests for custom tabulations can be submitted via the internet from the NASS home page, by mail, or by e-mail to:

Associate Administrator  
National Agricultural Statistics Service  
1400 Independence Avenue, S.W.  
Washington, D.C. 20250  
or  
HQ AA@nass.usda.gov

## DEFINITIONS AND EXPLANATIONS

Definitions and explanations of selected terms used in the tables are defined in the General Explanation.

## ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used throughout the tables:

- Represents zero.
- cwt Hundredweight.
- (D) Withheld to avoid disclosing data for individual farms.
- gpm Gallons per minute.
- (NA) Not available.
- psi Pounds per square inch.
- WRA Water Resources Areas.
- (X) Not applicable.
- (Z) Less than half of the unit shown.