

## **Making Sense of Census Data via the World Wide Web**

A Case Study Using the 1997 Census of Agriculture

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### **ABSTRACT**

This paper discusses research conducted at the National Agricultural Statistics Service (NASS) with the intent of enabling data customers to freely and effectively access and analyze NASS data using the World Wide Web. We initially focus on using data from the 1997 Census of Agriculture\* to research and demonstrate methods of display and analysis that could give a better understanding of inherent patterns and structure in the data. We specifically wanted to provide the ability to view, analyze, and dynamically interact with summary data at the state and county level using a web browser connected to the Internet. Historically, such customers have had access to this data in tabular form only.

The paper also discusses the important concepts and technologies that we considered, and documents the selection of specific solutions that we implement on the NASS web site to give data customers the abilities discussed above. We discuss our attempt to design the web site so that information of interest to the largest number of customers is the easiest to access.

Many of the displays included in initial prototypes were produced using "rowplot" and "micromap" functions originally developed in "S-PLUS" programming language by Dr. Dan Carr. We modified the script files made available by Dr. Carr to create plots using NASS data. We also discuss animated maps that we developed and combined with trend charts to help give context in a novel way to those visiting the web site seeking historical data.

While this paper focuses on data from the 1997 Census of Agriculture, the principles and methods discussed can be applied to other sources of survey and census data.

### **Keywords**

Exploratory data analysis, dynamic data display, Multi-variate visualization, interactive graphics, summary data

\*In 1997, responsibility for the Census of Agriculture was transferred from the Bureau of the Census to the National Agricultural Statistics Service (NASS). In large part, this responsibility involves collecting, analyzing and publishing data regarding all places defined as farms. Historically, the Census of Agriculture represents the leading source of local area statistics about U.S. agriculture.