

Mapping the Enterprise Database

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Abstract

The Potash & Phosphate Institute (PPI) and Foundation for Agronomic Research (FAR) is using ArcGIS to connect to enterprise databases to monitor and manage its publication distribution, and related research activities. PPI/FAR produces agronomic literature from its supported research projects for crop consultants, farmers, and university personnel including periodicals, brochures, and other reports. ArcGIS software has enabled PPI/FAR to analyze its effectiveness in publication distribution and research with respect to target audiences. It has proved a valuable tool in business decisions related to information management issues.

Introduction

PPI with headquarters in Norcross, Georgia, is a worldwide, not-for-profit organization which encourages and supports agronomic research and education programs involving sound agricultural use of potash and phosphate, as well as other crop production inputs. North American producers of potash and phosphate fund PPI. FAR, also a non-profit scientific organization, was created under the leadership of PPI to expand its research and education programs. A sister organization to PPI, FAR is supported by the Institute's member companies along with other fertilizer and ag industry organizations.

Information Management for the Institute

Target Audience

There are three primary target audiences for PPI publications: fertilizer dealers/crop advisers, farmers, and university researchers/extension workers. Many of our contacts among the fertilizer dealer/crop adviser group hold a professional designation of Certified Crop Adviser (CCA). CCA's are a critical group to reach with our information as they directly interact with farmers during the nutrient management decision making process.

Types

The Institute distributes nearly 500,000 pieces of information yearly. Our products range from text literature used in university courses to 'throw away' brochures and pamphlets to journal type magazines. PPI/FAR produces a series of periodic publications including *New & Views* (an agronomic newsletter directed at the issues of a particular region), and *Better Crops With Plant Food (BC)*. *BC* is the premier publication the Institute distributes. With an identity somewhere between an agronomic research journal and a marketing information series, *BC* provides a steady vehicle for reporting news from research related to potash, phosphate and other nutrient management topics.

Delivery

PPI/FAR maintains a contact database in Lotus Notes of approximately 15,000 names in the U.S. Distribution of our periodic publications is usually accomplished through bulk permit mailings. All of our periodic publications are also posted online for immediate access in PDF at our website address of www.ppi-ppic.org or www.ppi-far.org.

Using ArcMap to Analyze Effectiveness

We have approximately 5500 individual subscribers to *Better Crops*. Distribution is easily mapped using a join between the enterprise Lotus Notes contact database and a zip code shape file. In Figure 1 below, the 5500 contacts are summarized by zip code and then mapped as a raster layer according to density, using the Spatial Analyst density tool.

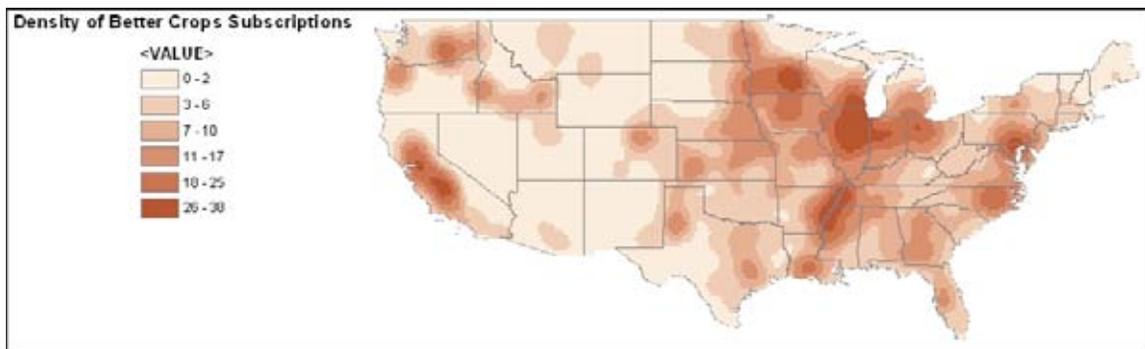


Figure 1. Density of Better Crops Subscriptions.

The density of subscribers is concentrated in the Midwest and Great Plains area of the U.S. down through the Mississippi River basin. These areas with California make up the chief agriculture producing areas of the U.S.

A similar map showing the density distribution of CCA's is shown in Figure 2. The density distribution of CCA's is positively correlated with the density distribution of *BC* subscriptions.

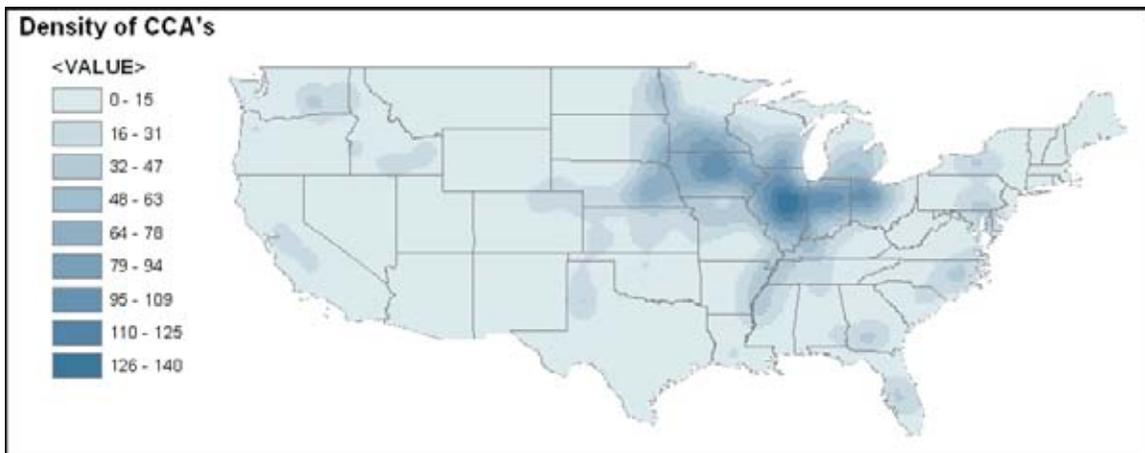


Figure 2. Density distribution of Certified Crop Advisers.

FAR maintains a Lotus Notes database that houses information for each of the nearly 600 projects that have been supported in North America since 1980. The database contains meta data such as the principal investigator contact information, project objectives, and interpretive summaries of the project. Project deliverables are also housed in this database such as annual reports or images taken during the progression of the project. *BC* articles that are generated as a result of project research are also recorded in the Research Database. Projects have been primarily located in the Midwest and eastern regions of the U.S., and through the Canadian prairies (Figure 3).

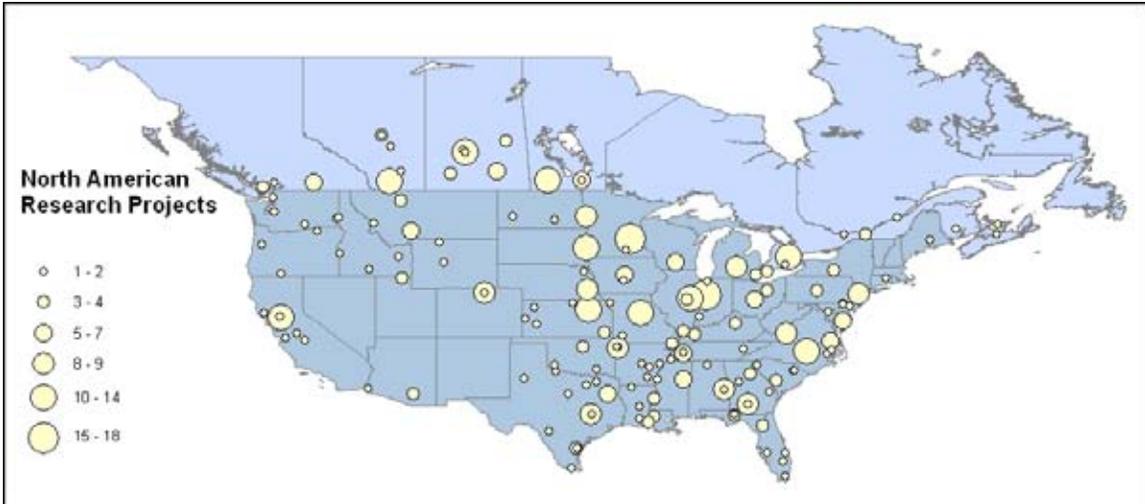


Figure 3. Total North American projects since 1980.

FAR is currently supporting approximately 85 projects in the U.S. as mapped in Figure 4. Using ArcCatalog, an OLE DB connection is established with the table in the Notes database. The research project maps are created by joining a summary of the project zip field to a zip code shape file. The projects are shown according to the graduated symbol method for quantities symbology. This method was chosen because we have multiple projects within the same zip code.

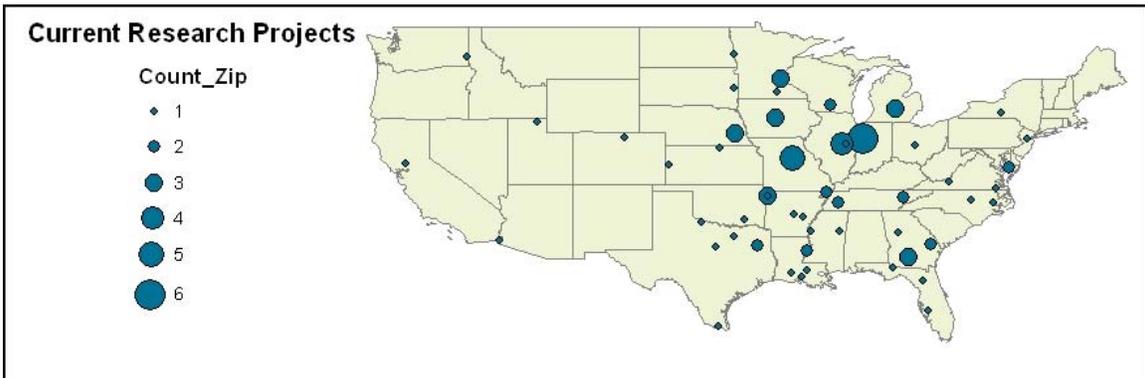


Figure 4. Current U.S. research projects.

Figure 5 compares the current research projects layer with BC subscriptions. The ability to examine this relationship helps the Institute determine where focus should be placed to best serve our audience. The maps indicate an opportunity for greater research activity in California and southern Texas.

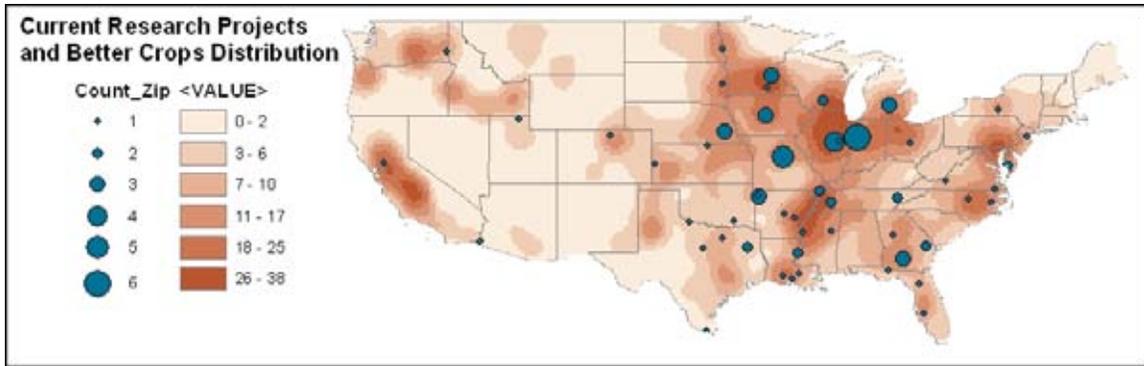


Figure 5. Current research projects and Better Crops distribution.

Conclusion

ArcGIS is helping PPI/FAR analyze its effectiveness in reaching target audiences. GIS applications are providing the Institute new methods for organizing information, and new avenues for accessing data. We envision the extension of these tools to our audience having the benefits of easy data access, and more powerful data analysis. PPI/FAR benefits internally by GIS from an increased ability to direct our efforts in areas of the greatest potential.

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