

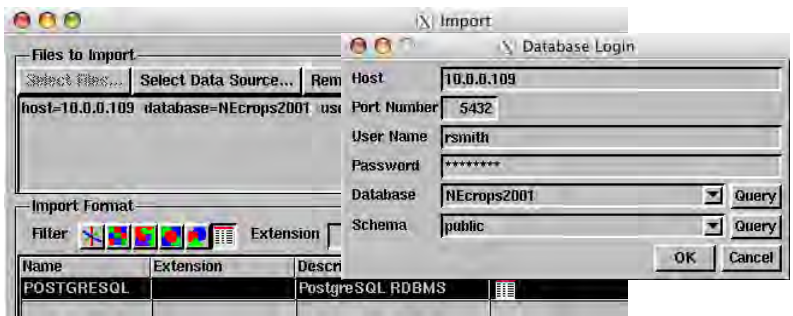
## Import

# Linking to PostgreSQL Databases

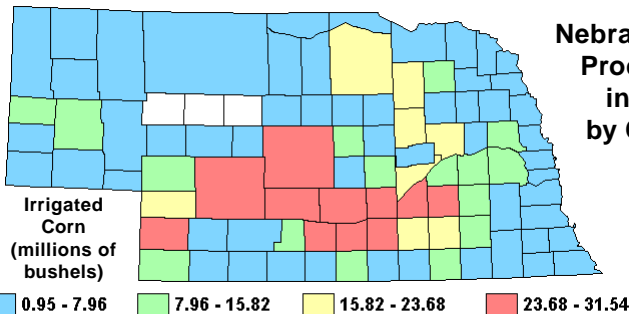
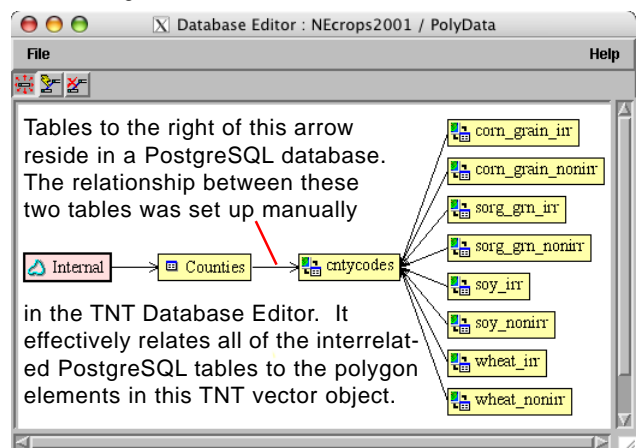
You can use attribute information stored in a PostgreSQL database in conjunction with your TNT geospatial objects by using the Import process in the TNT products to link to the external database. The import/linking procedure for PostgreSQL allows you to log in to the PostgreSQL server host and specify the desired database and schema. You can then choose to link to (or fully import) any or all of the tables in the selected PostgreSQL database. All pre-existing key-field designations and relationships between PostgreSQL tables are maintained automatically by the link connection.

Linked PostgreSQL tables that contain spatial coordinate information can be pin-mapped directly. But if the attributes in PostgreSQL tables pertain to the spatial elements in a TNT geometric object, you will need to make at least one keyfield relationship between a linked table in the PostgreSQL database and a TNT table with records directly or indirectly related to the geometric elements (using the Database Editor or the table's Properties window). Once this relationship has been made, the PostgreSQL attributes can be used as the basis for DataTips, selection queries or other scripts, or geometric element styling, as in the examples shown here. TNT tabular views of the linked tables can be set to automatically refresh at a selected time interval to show any changes made in the attribute values by the PostgreSQL database administrator while the tabular view was open. For geometric objects with styling based on attributes in the linked tables, attributes changed while the spatial object is displayed require a redraw of the layer to update the styles in the View window. Otherwise such attribute changes appear automatically the next time the TNT objects are used.

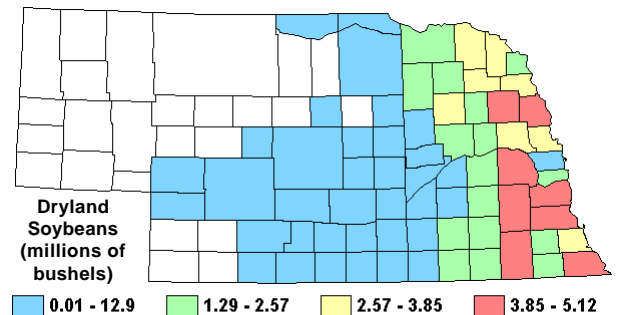
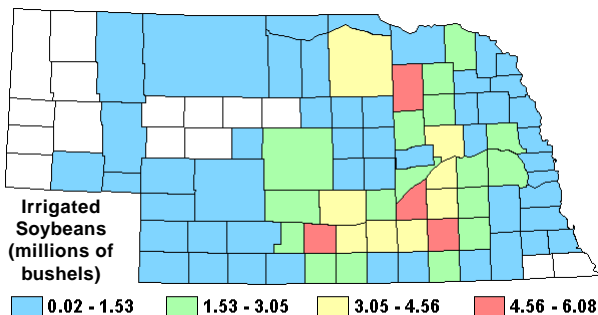
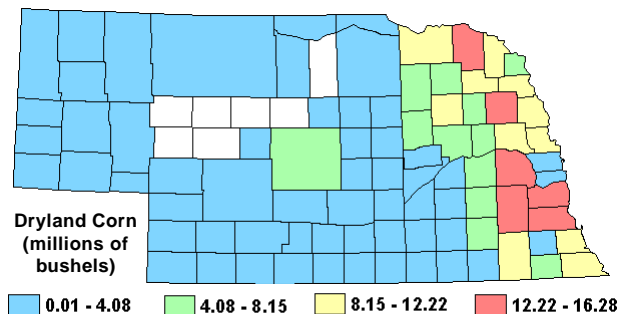
PostgreSQL is a powerful, free, open-source relational database system. Like the TNT products, the PostgreSQL database server can run under all major operating systems, including Windows, Linux, and Mac OS X. Pairing PostgreSQL with the TNT products provides flexible cross-platform capability for handling both geospatial and attribute data. In addition, the TNT products can link to spatial data stored in the PostGIS spatial extension to PostgreSQL (see the color plate entitled *Import: Linking to PostGIS Geodatabase Layers*).



In the example shown here, TNT spatial data on a G5 Mac running Mac OS X 10.4 is linked to a database in the PostgreSQL database server residing on a PC running Windows XP.



**Nebraska Crop Production in 2001 by County**



Theme-maps of Nebraska counties in which the fill colors represent ranges of crop production for the year 2001. Each map is based on values in a field in a separate table in the linked PostgreSQL database shown in the Database Editor view above.