

Ocean State Spatial Database Summary

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https://github.com/Brown-University-Library/geodata_ossdb

Introduction

The Ocean State Spatial Database (OSSDB) is a geodatabase for conducting basic geographic analysis and thematic mapping within the State of Rhode Island. Created by the Brown University Library's GeoData@SciLi team, it is intended to serve as a basic foundation for contemporary mapping projects, and as an educational tool for supporting GIS coursework and introducing spatial databases and SQL. It includes geographic features and statistical areas from the US Census Bureau, census data tables, and public facility features generated from various state agencies. All features share a common coordinate system: NAD 83 RI State Plane (US-feet), EPSG 3438. Each table has a prefix that indicates what type of information it contains.

a tables: geographic features that represent land areas, intended for thematic and reference mapping. Unique identifiers include the long and short form of the census ANSI / FIPS codes.

b tables: geographic features that represent boundaries for legal and statistical areas, intended for reference mapping.

c tables: tabular data from the Census Bureau, named for the geography, census dataset, and year. Lookup tables relate variable column IDs with variable names. Join 'c' tables to their corresponding 'a' tables to create thematic maps. Unique identifiers include the long and short form of the census ANSI / FIPS codes.

d tables: geographic features that include point (schools, public libraries, hospitals), line (rivers, roads, railroads), and polygon (water bodies, airports) features.

The primary database is in a SQLite / Spatialite format that consists of a single .sqlite file. It can be accessed using many desktop GIS software packages, including QGIS and ArcGIS Pro. You can run SQL and spatial SQL queries in the database using the DB Manager within QGIS, as well as in free relational database managers like the Spatialite GUI. The free DB Browser for SQLite can be used for regular, non-spatial SQL queries and for exporting tables to CSV files. A copy of the database is also available in the ESRI file geodatabase format, as an alternative for ArcGIS users.

QGIS: connect to the Spatialite database using the *Browser*, and then add features to the map view. You can also use the *DB Manager* to connect and view contents of the database, and add features to a project. To map 'c' table data, add it and its corresponding 'a' table to the project, select the spatial layer, and under its *properties* select the *joins* tab and create a join based on the matching identifiers. Alternatively, you can use the *DB Manager* to write SQL join statements.

ArcGIS Pro: hit the *Add Data Button* and navigate to the database (either the Spatialite or ESRI File Geodatabase) as if it were a folder. Clicking in the database will reveal the individual features, which you can add to a project. Or, you can *connect to a folder* that contains the database, and then in the *Catalog pane* browse to that folder and right-click on the db and click *Add to Project - Add*. The database will appear in the *Catalog pane* under the *Databases category*. To map 'c' table data, add it and its corresponding 'a' table to the project, select the spatial layer, and use the *joins and relates* option to create a join based on the matching identifiers.

Database Contents

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Features from the US Census TIGER files

- State and Counties
- Major airports, roads, and passenger railroads
- Major rivers, lakes, and coastal water

Areas from the US Census TIGER files for mapping

- Census Tracts and Population Centroids
- County Subdivisions (CSDs, cities and towns)
- ZIP Code Tabulation Areas (ZCTAs)

Demographic data from the US Census (updated annually)

- 2020 Census data (for CSDs, tracts)
- 5-year American Community Survey data (for CSDs, ZCTAs, tracts)

Point features generated from state sources (updated annually)

- Colleges and universities, schools (public and private, preK-12)
- Hospitals
- Public Libraries
- Train stations

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