This data package, LAGOS-NE-GEO v1.05, is 1 of 5 data packages associated with the LAGOS-NE database-- the LAke multi-scaled GeOSpatial and temporal database. Three of the data packages each contain different types of data for 51,101 lakes and reservoirs larger than 4 ha in 17 lake-rich U.S. states to support research on thousands of lakes. These three package are: (1) LAGOS-NE-LOCUS: lake location and physical characteristics for all lakes. (2) LAGOS-NE-GEO: ecological context (i.e., the land use, geologic, climatic, and hydrologic setting of lakes) for all lakes. These geospatial data were created by processing national-scale and publicly-accessible datasets to quantify numerous metrics at multiple spatial resolutions. And, (3) LAGOS-NE-LIMNO: in-situ measurements of lake water quality from the past three decades for approximately 2,600-12,000 lakes, depending on the variable. This module was created by harmonizing 87 water quality datasets from federal, state, tribal, and non-profit agencies, university researchers, and citizen scientists. The other two data packages contain supporting data for the LAGOS-NE database: (4) LAGOS-NE-GIS v1.0: the GIS data layers for lakes, wetlands, and streams, as well as the spatial resolutions that were used to create the LAGOS-NEGEO module. (5) LAGOS-NE-RAWDATA: the original 87 datasets of lake water quality prior to processing, the R code that converts the original data formats into LAGOS-NE data format, and the log file from this procedure to create LAGOS-NE. This latter data package supports the reproducibility of LAGOS-NE-LIMNO.

The LAGOS-NE-GEO v1.05 module includes information on the ecological context of the census lakes, all lakes > 4 ha in the study extent, their watersheds, and their regions. The information provided in the data tables for this module is organized into three main themes: CHAG - climate, hydrology, atmospheric deposition of nitrogen and sulfur, and surficial geology; LULC - land use/cover, impervious cover, canopy cover, slope and terrain indices, and dam density; and CONN - lake, stream, and wetland abundance and connectivity measures.

Citation for the full documentation of this database:

Soranno, P.A., E.G. Bissell, K.S. Cheruvelil, S.T. Christel, S.M. Collins, C.E. Fergus, C.T. Filstrup, J.F. Lapierre, N.R. Lottig, S.K. Oliver, C.E. Scott, N.J. Smith, S. Stopyak, S. Yuan, M.T. Bremigan, J.A. Downing, C. Gries, E.N. Henry, N.K. Skaff, E.H. Stanley, C.A. Stow, P.-N. Tan, T. Wagner, K.E. Webster. 2015. Building a multi-scaled geospatial temporal ecology database from disparate data sources: Fostering open science and data reuse. GigaScience 4:28 doi:10.1186/s13742-015-0067-4

Citation for the data paper for this database:

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