Center for International Earth
Science Information Network
EARTH INSTITUTE | COLUMBIA UNIVERSITY

FAIR Practices at SEDAC

Dr. Robert R. Downs[1]

[1] rdowns@ciesin.columbia.edu

Center for International Earth Science Information Network (CIESIN)
The Earth Institute, Columbia University

NASA Socioeconomic Data and Applications Center (SEDAC)

Presented to
CODATA 2019 Beijing
Towards next-generation data-driven science: policies, practices and platforms
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19-20 September 2019

Session:

Data Centers from Around the World: Sharing Best Practices for FAIR Data

Abstract

- The Socioeconomic Data and Applications Center (SEDAC) is one of the Distributed Active Archive Centers (DAACs) in the Earth Observing System Data and Information System (EOSDIS) of the U.S. National Aeronautics and Space Administration (NASA). Focusing on human interactions in the environment, SEDAC has as its mission to develop and operate applications that support the integration of socioeconomic and earth science data and to serve as an "Information Gateway" between earth sciences and social sciences. Across several themes, SEDAC provides open access to and fosters use of over 240 curated data products, within 44 collections. SEDAC also provides access to over 2000 open access maps and facilitates open access to a variety of services for analyzing and visualizing the Earth science data that it manages. SEDAC is a member of the International Science Council (ISC) World Data System (WDS) and the Earth Science Information Partners (ESIP) and contributes to various international initiatives, including the Research Data Alliance (RDA) and the Group on Earth Observations (GEO). SEDAC is operated by the Center for International Earth Science Information Network (CIESIN), a research and data center of the Earth Institute of Columbia University. CIESIN is an interdisciplinary department that works at the intersection of the social, natural, and information sciences, and specializes in on-line data and information management, spatial data integration and training, and interdisciplinary research related to human interactions in the environment. The SEDAC website is accessible from the https://sedac.ciesin.columbia.edu/ webpage.

- A NASA Distributed Active Archive Center (DAAC)
- Focus on integration of socioeconomic and earth science data
- Information Gateway between earth sciences and social sciences

https://sedac.ciesin.columbia.edu/

Findable SEDAC Data Products and Services

SEDAC data also are discoverable and harvested from various catalogs, including the NASA Global Change Master Directory, the GEOSS Portal, and DataCite

https://sedac.ciesin.columbia.edu/

Accessible SEDAC Data Products and Services

Gridded Population of the World (GPW), v4

Follow Us: | Share:

Population Density, v4.11 (2000, 2005, 2010, 2015, 2020)

Collection Overview

Methods

Data Sets (9)

Population Density, v4.11 (2000, 2005, 2010, 2015, 2020)

⊞ Show All...

Map Gallery (97)

Map Services (104)

Citations

FAQs

Documentation

What's New in GPWv4

What's New in Revision 10

What's New in Revision 11

What is UN WPP-adjusted population data?

| Set Overview | Data Download | Maps | Map Services | Documentation | Metadata |

Purpose:

To provide estimates of population density for the years 2000, 2005, 2010, 2015, and 2020, based on counts consistent with national censuses and population registers, as raster data to facilitate data integration.
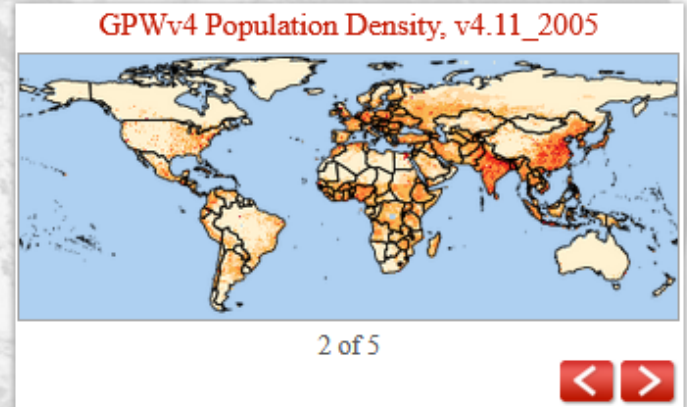
Abstract:

The Gridded Population of the World, Version 4 (GPWv4): Population Density, Revision 11 consists of estimates of human population density (number of persons per square kilometer) based on counts consistent with national censuses and population registers, for the years 2000, 2005, 2010, 2015, and 2020. A proportional allocation gridding algorithm, utilizing approximately 13.5 million national and sub-national administrative units, was used to assign population counts to 30 arc-second grid cells. The population density rasters were created by dividing the population count raster for a given target year by the land area raster. The data files were produced as global rasters at 30 arc-second (~1 km at the equator) resolution. To enable faster global processing, and in support of research communities, the 30 arc-second count data were aggregated to 2.5 arc-minute, 15 arc-minute, 30 arc-minute and 1 degree resolutions to produce density rasters at these resolutions.

Recommended Citation(s)*:

Center for International Earth Science Information Network - CIESIN - Columbia University. 2018. Gridded Population of the World, Version 4 (GPWv4): Population Density, Revision 11. Palisades, NY: NASA Socioeconomic Data and Applications Center (SEDAC). https://doi.org/10.7927 /H49C6VHW. Accessed DAY MONTH YEAR.

⬇ ENW (EndNote & RefWorks)†
⬇ RIS (Others)

GPWv4 Population Density, v4.11_2005

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Interoperable SEDAC Data Products and Services

Browse Metadata

Identification   Data Quality   Spatial Data Organization   Spatial Reference   Entity and Attribute

Distribution   Metadata Reference   File Formats: XML, HTML, Text

Identification Information:

Citation:

Citation Information:

Originator: Oakleaf, J. R., C. M. Kennedy, S. Baruch-Mordo, P. C. West, J. S. Gerber, L. Jarvis, and J. Kiesecker
Publication Date: 20190516
Publication Time:
Title:

Development Threat Index

Edition: 1.00
Geospatial Data Presentation Form: raster, map, map service
Series Information:

Series Name:
Issue Identification:

Publication Information:

Publication Place: Palisades, NY
Publisher: NASA Socioeconomic Data and Applications Center (SEDAC)

Other Citation Details:

Online Linkage: https://doi.org/10.7927/61jv-th84

SEDAC data and metadata are distributed in various schemas and formats

Reusable SEDAC Data Products and Services

SEDAC Data Documentation Template

Documentation for <Dataset Title>

<Documentation Publication Date>

<Authors>

Abstract

Data set citation

Suggested citation for documentation

Contact to provide feedback on documentation

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IV. How to Use the Data

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Appendix 1. Contributing Authors & Documentation Revision History

Appendix 2. Data Revision History

Reaching Beyond FAIR: Open Data and TRUST

- **O**pen **D**ata
  - CIESIN Data Policy "Open by default", encouraging CC By licensing
  - http://ciesin.columbia.edu/documents/CIESINDataPolicy.pdf

- **T**ransparency
  - Publicly accessible data curation policies, capabilities, and services

- **R**esponsibility
  - Accountable provision of data services for the user community

- **U**sers
  - Enable current, and future use of data in line with norms of the community served

- **S**ustainability
  - Capability to continually facilitate long-term stewardship and use of data

- **T**echnology
  - Ongoing advancement of secure, reliable tools, services, and infrastructure

http://bitly.com/trustprinciples

SEDAC Collaborative Activities

- Memberships
  - International Science Council (ISC) World Data System (WDS)
  - Earth Science Information Partners (ESIP) http://esipfed.org

- International initiatives
  - ISC Committee on Data for Science and Technology (CODATA)
  - Group on Earth Observations (GEO)
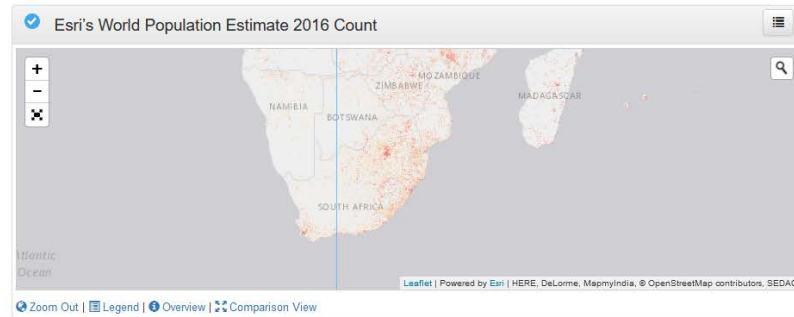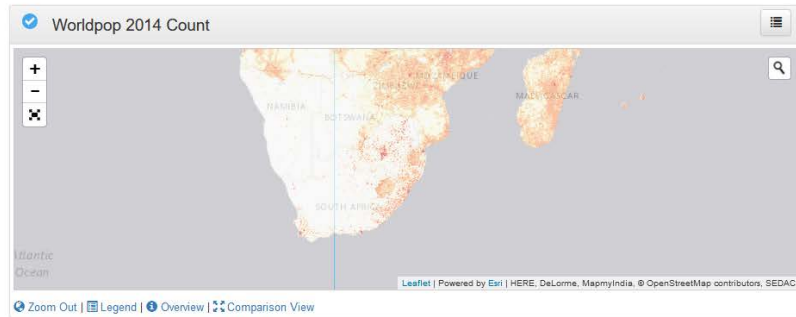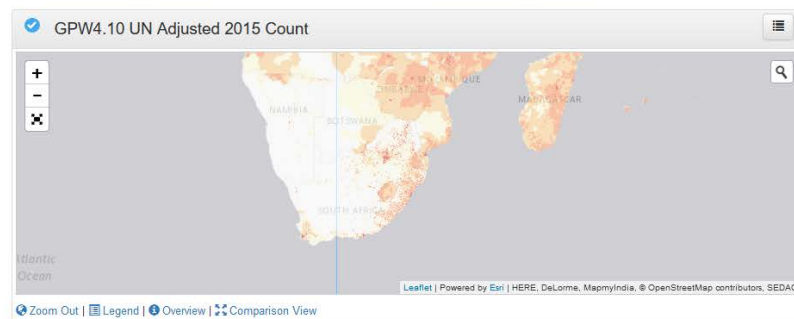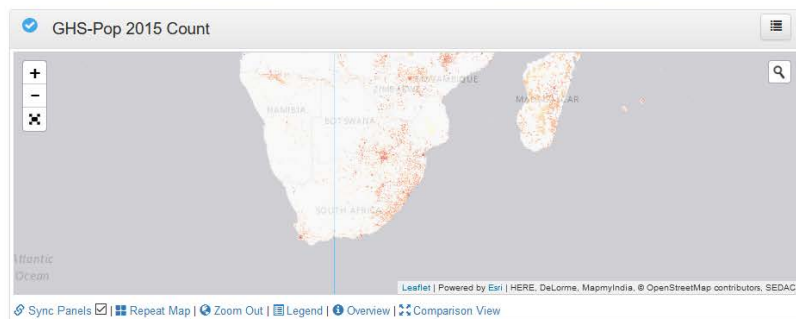 - Research Data Alliance (RDA)

Global Gridded Population Data Products
POPGRID Data Collaborative

- Georeferenced data products
  - Population, human settlements, infrastructure
- PopGrid Data Collaborative
  - Community of gridded population data providers

https://www.popgrid.org/

Source: PopGrid Viewer – https://sedac.ciesin.columbia.edu/mapping/popgrid/

https://sedac.ciesin.columbia.edu/mapping/hazards/