

FAIR Practices at SEDAC

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

NASA Socioeconomic Data and Applications Center (SEDAC)

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Towards next-generation data-driven science: policies, practices and platforms
Beijing, China,
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.



SOCIOECONOMIC DATA AND APPLICATIONS CENTER (SEDAC)

A Data Center in NASA's Earth Observing System Data and Information System (EOSDIS) — Hosted by CIESIN at Columbia University



Search SEDAC... Data [Q] [User Icon]

- DATA ▾
- MAPS ▾
- THEMES ▾
- RESOURCES ▾
- SOCIAL MEDIA ▾
- ABOUT ▾
- HELP

- AGRICULTURE
- CLIMATE
- CONSERVATION
- GOVERNANCE
- HAZARDS
- HEALTH
- INFRASTRUCTURE
- LAND USE
- MARINE AND COASTAL
- POPULATION
- POVERTY
- REMOTE SENSING
- SUSTAINABILITY
- URBAN
- WATER

Data Collections (44)

2 of 3
Prev | Next

Human Appropriation of Net Primary Productivity (HANPP)

This global spatial data set describes global patterns of net primary productivity (NPP) and human consumption of NPP; a complementary tabular data set provides total estimated consumption of NPP in the form of food, paper wood, and fiber by country.

Indicators of Coastal Water Quality

Uses chlorophyll-a concentrations from NASA's SeaWiFS to analyze trends from 1998-2007, to help identify near-coastal areas that may need management intervention.

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- 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

The screenshot shows the SEDAC website interface. At the top, the NASA logo is on the left, followed by the text "SOCIOECONOMIC DATA AND APPLICATIONS CENTER (SEDAC)" and "A Data Center in NASA's Earth Observing System Data and Information System (EOSDIS) — Hosted by CIESIN at Columbia University". Below this is a search bar with "Search SEDAC..." and a "Data" dropdown menu. The main navigation menu includes "DATA", "MAPS", "THEMES", "RESOURCES", "SOCIAL MEDIA", "ABOUT", and "HELP". A dropdown menu for "DATA" is open, showing options: "DATA SETS", "DATA COLLECTIONS", "FEATURED DATA USES", "DATA CITATIONS", "CITATIONS DATABASE", and "DATA SUBMISSION". A green arrow points to "FEATURED DATA USES". Below the navigation is a "Tools and Applications" section featuring "Population Mapper - Android". The application interface shows a map with a legend for "Population Count 2015", "Fires (48 hours)", "Aerosol Optical Depth", and "Plate Boundaries". A green Android robot icon is overlaid on the map. To the right, there are sections for "Data Citations", "Follow Us" (with social media icons), and "Share". Below the application preview, there is a "Featured Data Sets" section with a "More..." button and a "News" section with a "More..." button. Green arrows point to the "DATA" menu, the "FEATURED DATA USES" option, the "Population Mapper - Android" application, and the "Featured Data Sets" section.

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:  

Collection Overview

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

Methods

Set Overview

Data Download

Maps

Map Services

Documentation

Metadata

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?

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:

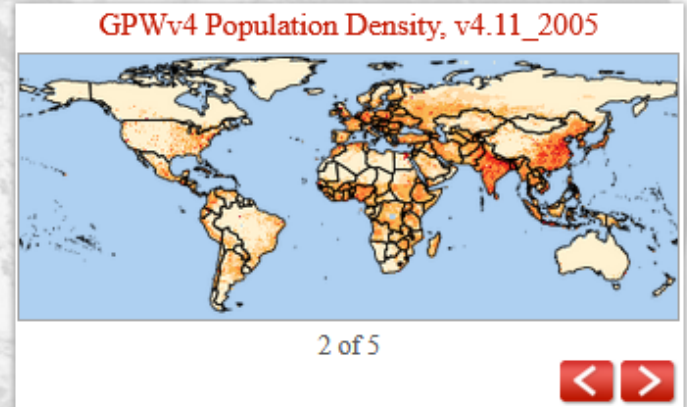
The Gridded Population of the World, Version 4 (GPWv4): Population Density, Revision 11 consists of estimates of human population density (number of persons per square kilometer) based on counts consistent with national censuses and population registers, for the years 2000, 2005, 2010, 2015, and 2020. 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)



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

Table of Contents

I. Introduction

II. Data and Methodology

III. Data Set Description(s)

IV. How to Use the Data

IV. How to Use the Data

V. Potential Use Cases

VI. Limitations

VII. Acknowledgments

VIII. Disclaimer

IX. Use Constraints

X. Recommended Citation(s)

XI. Source Code

XII. References

XIII. Documentation Copyright & License

Appendix 1. Contributing Authors &


Documentation Revision History

Appendix 2. Data Revision History

IX. Use Constraints

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Reaching Beyond FAIR: Open Data and TRUST

- **Open Data**
 - CIESIN Data Policy “Open by default”, encouraging CC By licensing
 - <http://ciesin.columbia.edu/documents/CIESINDataPolicy.pdf>
- **Transparency**
 - Publicly accessible data curation policies, capabilities, and services
- **Responsibility**
 - Accountable provision of data services for the user community
- **Users**
 - Enable current, and future use of data in line with norms of the community served
- **Sustainability**
 - Capability to continually facilitate long-term stewardship and use of data
- **Technology**
 - Ongoing advancement of secure, reliable tools, services, and infrastructure



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)

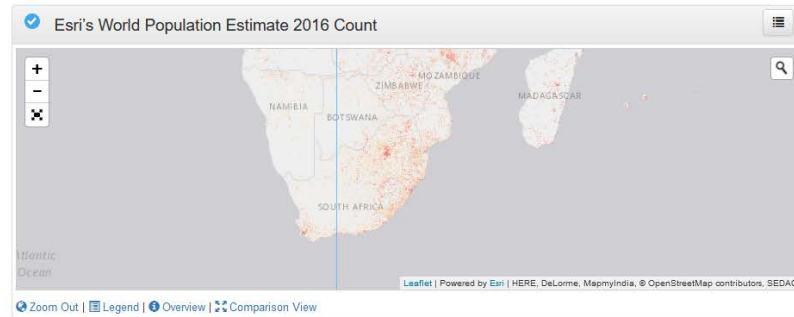
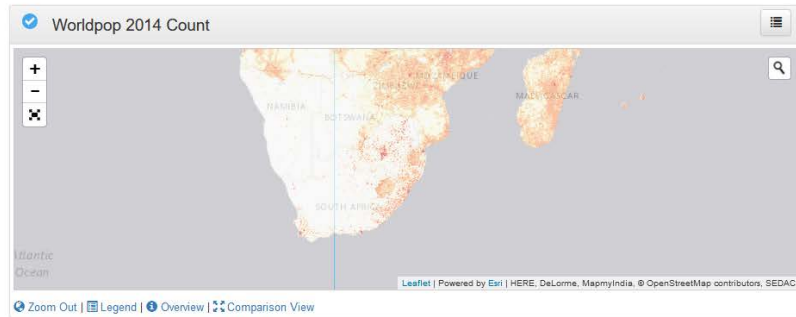
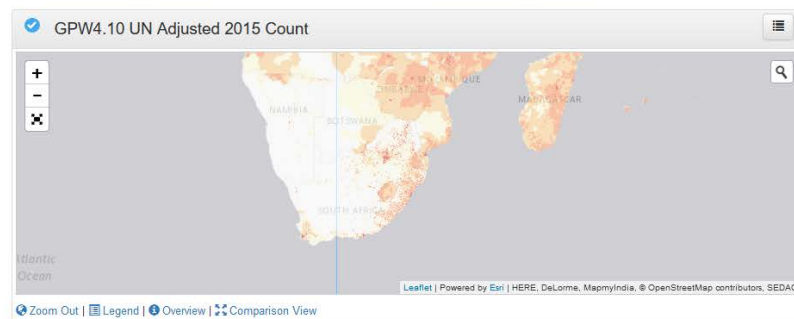
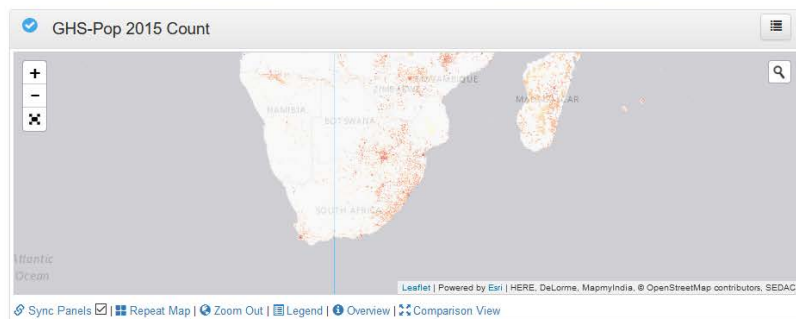


Global Gridded Population Data Products

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/>

