

ARSET

Applied Remote Sensing Training

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Overview and Access of Socioeconomic Data

Amita Mehta

amita.v.mehta@nasa.gov

Erika Podest

erika.podest@jpl.nasa.gov

Learning Objective

By the end of this presentation, you will be able to:

- Retrieve **socioeconomic data**
- Evaluate and apply socioeconomic data useful for assessing flood risk and relief planning

Outline

- Overview of NASA Socioeconomic Data and Application Center (SEDAC)
- Demonstration of data access from SEDAC

A topographic map showing a river system with a semi-transparent white text box overlaid in the center. The map uses a color gradient from brown (high elevation) to green (low elevation).

Overview SEDAC

Socioeconomic Data and Applications Center (SEDAC)

<http://sedac.ciesin.columbia.edu/>



User
Registration
Required

Socioeconomic Data and Applications Center (SEDAC)

<http://sedac.ciesin.columbia.edu/>

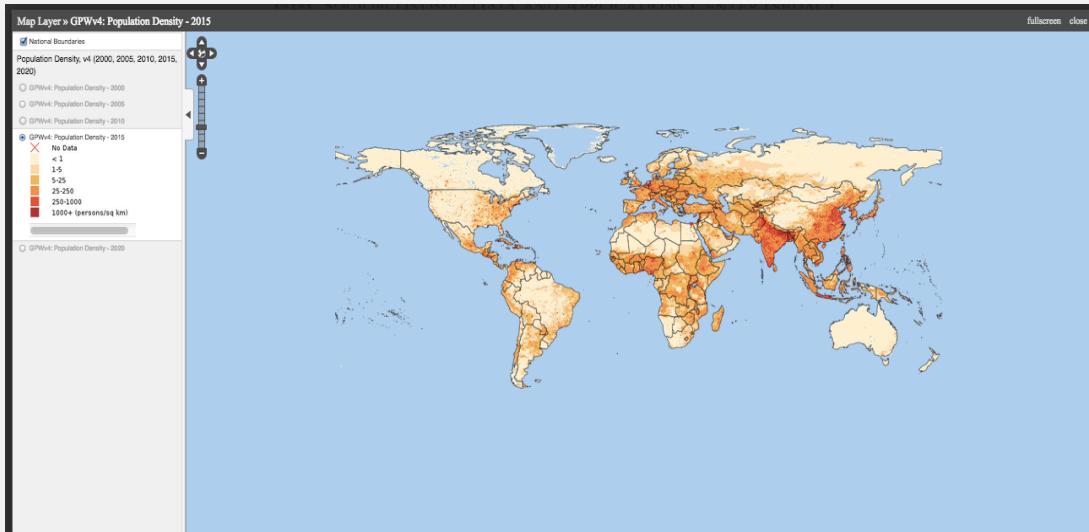
The screenshot shows the SEDAC website interface. At the top, there is a NASA logo and the text 'SOCIOECONOMIC DATA AND APPLICATIONS CENTER (SEDAC)'. Below this is a navigation menu with options like DATA, MAPS, THEMES, RESOURCES, SOCIAL MEDIA, ABOUT, and HELP. A search bar is located in the top right. The main content area is titled 'Data Sets (203)' and includes a search filter on the left, a list of data sets in the center, and a 'Theme' filter on the right. The search filter is highlighted with a red box. The data sets listed include 'Dar es Salaam Land Use and Informal Settlement Data Set, v1', 'Global Gridded Geographically Based Economic Data (G-Econ), v4', 'Global Urban Heat Island (UHI) Data Set, v1', 'Global Summer Land Surface Temperature (LST) Grids, v1', 'Population Density, v4', and 'UN-Adjusted Population Density, v4'. Each data set entry includes a thumbnail, a title, a description, and options for 'Overview', 'Download Documents', 'Maps', and 'WMS'.

- There are 203 datasets from 16 thematic areas
- Information and documents about the datasets are available online
- Multiple options for data formats and downloads
- Interactive mapping and visualization possible

SEDAC: Global Population Density

<http://sedac.ciesin.columbia.edu/data/set/gpw-v4-population-density>

Global Population Density



- Socioeconomic data is available that can be used along with flood monitoring tools to facilitate flood management and impact assessment activities
- Example:
 - Global and Urban Areas
 - Population Density
 - Global Roads and Dams
 - Nuclear Power Plant Locations
 - Population Exposure Estimates in Proximity to Nuclear Power Plants

SEDAC: Global Population Density Data Download

<http://sedac.ciesin.columbia.edu/data/set/gpw-v4-population-density>

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

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

Downloads

Data:

[View Recommended Citation\(s\)](#)

Note: For regional to global analyses, users may wish to download the **UN-adjusted** versions of this data set. Further explanations as to the differences between the non-adjusted and UN-adjusted versions of GPWv4 are found on the [What is UN-Adjusted data?](#) web page.

Gridded Population of the World, Version 4 (GPWv4): Population Density are available as global grids in GeoTiff format. Each downloadable is a compressed zip file, which contains: 1) the global GeoTiff for the year of estimate, 2) PDF documentation, 3) a Microsoft Excel file (.xlsx) with country-level information and sources, and 4) a text file (.txt) with a log of changes to the dataset by version.

Year of Estimate	2000	2005	2010	2015	2020 (each download is ~180 MB)
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- Click to download
- Multiple formats available:
 - GeoTIFF
 - PDF
 - Microsoft Excel file (.xlsx) with country-level information and sources
 - Text file (.txt) with a log of changes to the dataset by version

SEDAC Global Roads

<http://sedac.ciesin.columbia.edu/data/set/groads-global-roads-open-access-v1/data-download>

Global Roads Open Access Data Set (gROADS), v1 (1980–2010)

Downloads

Data:

[View Recommended Citation\(s\)](#)

The data are available as zipfiles of Esri file geodatabases (global and regional) or shapefiles (regional only). Downloaded files need to be uncompressed in a single folder using either WinZip (Windows file compression utility) or similar application before they can be accessed by your GIS software package. Users should expect an increase in the size of downloaded data after decompression.

The data are stored in geographic coordinates of decimal degrees based on the World Geodetic System spheroid of 1984 (WGS84). Users should consult the gROADSv1 documentation for complete information on the data set.

Extents of Regional Data Downloads:

Region	Geodatabase (MB)	Shapefile (MB)
Global	196	-
Africa	91.9	206
Asia	86.7	194
Europe	53.9	81.9
Americas	48.1	62
Oceania East	9.5	13.6
Oceania West	425 KB	420 KB

Data Download

Global

Geodatabase (196 MB)

Africa

Geodatabase (91.9 MB)

Shapefile (206 MB)

Asia

Geodatabase (86.7 MB)

Shapefile (194 MB)

Europe

Geodatabase (53.9 MB)

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Americas

Geodatabase (48.1 MB)

Shapefile (62 MB)

Oceania East

Geodatabase (9.5 MB)

Shapefile (13.6 MB)

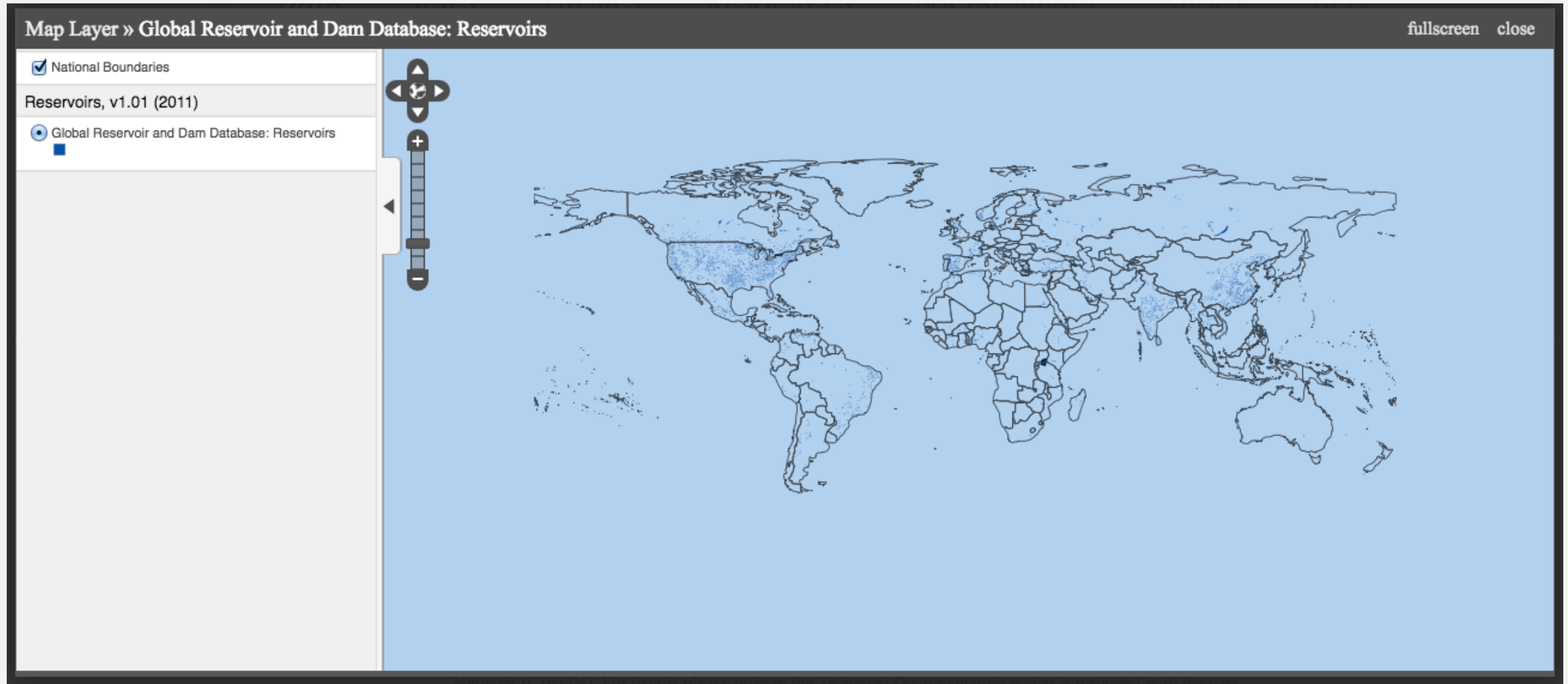
Oceania West

Geodatabase (425 KB)

Shapefile (420 KB)

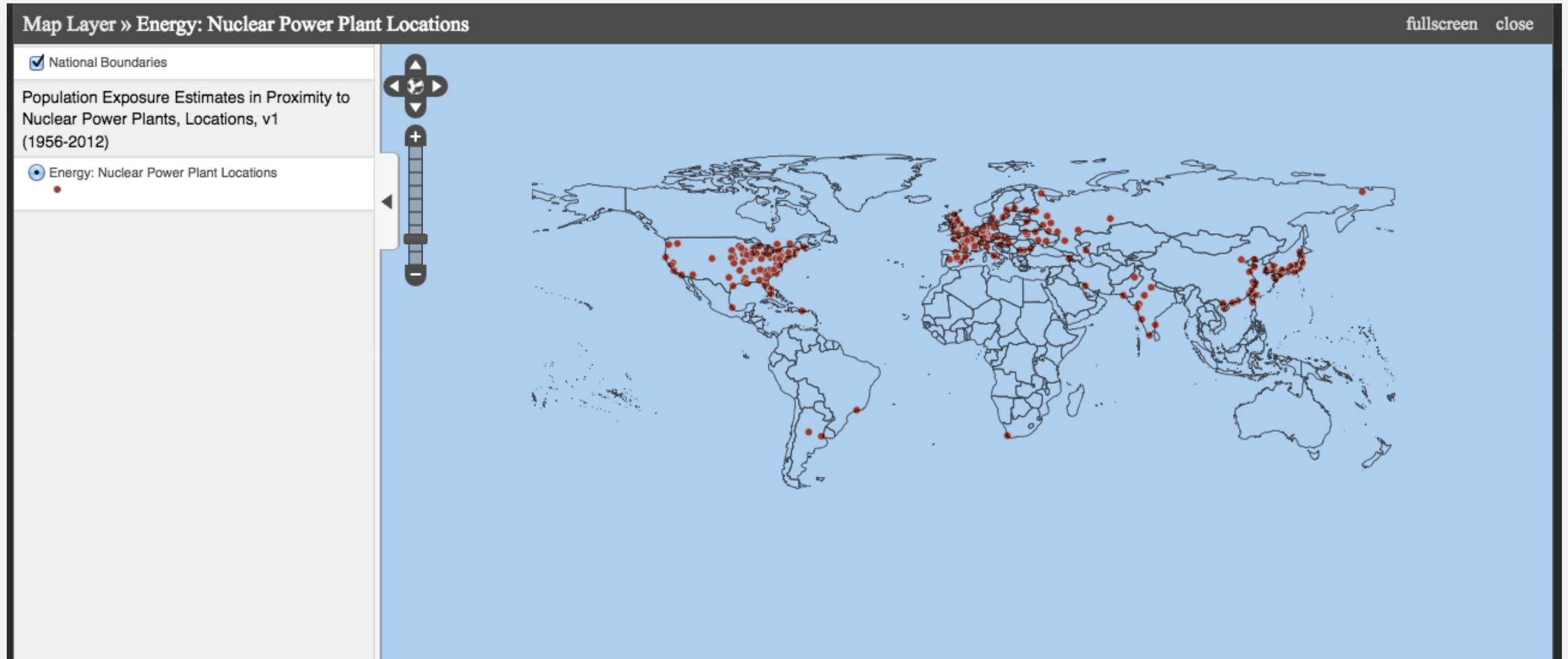
SEDAC: Global Reservoir and Dam

<http://sedac.ciesin.columbia.edu/data/set/grand-v1-reservoirs-rev01>



SEDAC: Nuclear Power Plant Locations

<http://sedac.ciesin.columbia.edu/data/set/energy-pop-exposure-nuclear-plants-locations>



A topographic map of a river basin, showing a network of rivers and tributaries. The map uses a color gradient from brown (higher elevation) to green (lower elevation). A semi-transparent white rectangular box is overlaid on the map, containing the title text. A horizontal line is positioned below the text.

Demonstration of Data Access From SEDAC

A topographic map showing a river valley. The terrain is color-coded by elevation, with greens and yellows for lower elevations and browns for higher elevations. A river flows through the valley, with several tributaries. A semi-transparent white rectangular box is overlaid on the map, containing text.

Next:

Exercise in Flood Case Study Analysis
North Carolina Floods, 7-9 October 2016
