



## DATA & APPLICATIONS ONLINE

# Population Estimation Service

### Overview

The Population Estimation Service is a Web-based service for estimating population totals and related statistics within a user-defined region. It enables users of a wide variety of map clients and tools to quickly obtain estimates of the number of people residing in specific areas without having to download and analyze large amounts of spatial data.

The service accepts polygons that define areas of interest, then returns population totals, land area, quality measures, and basic parametric statistics for the requested polygons. These estimates are based on the gridded population data for 2005 from version 3 of the Gridded Population of the World (GPW) data set developed by the NASA Socioeconomic Data and Applications Center operated by CIESIN.

The service is accessible through three standard protocols used by many online map tools and clients: the Open Geospatial Consortium (OGC) Web processing service (WPS) standard, a representational state transfer (REST) interface, and a simple object access protocol (SOAP) interface. Standards-based clients such as uDig are able to submit requests using the OGC WPS. Users of ArcGIS software from ESRI can submit requests through SOAP. The REST interface is intended for use with lightweight javascript clients.

### Service Features

- The parametric statistics returned for each supplied polygon include the count (number of grid cells used in the analysis) and the total minimum, maximum, range, mean, and standard deviation of population counts.
- Two measures of data quality are included in the service results. The first measure reflects the precision



of the input data, and the second indicates when the requested polygons are too small in area compared with the underlying input data to produce reliable population statistics.

### Access

To access the Population Estimation Service, users need to work with an online map client or geographic information system (GIS) software package that supports spatial queries through one of the three supported protocols.

A basic client that illustrates how the service works is available at <http://sedac.ciesin.columbia.edu/gpw/wps.jsp>. To estimate population with this client, users can draw a polygon over the displayed map and the results are returned as a table. The open source client uDIG can access the WPS interface (<http://udig.refractory.net/>). Users of these clients will need to utilize one of the following service URLs to access the service: <http://sedac.ciesin.columbia.edu/wps/WebProcessingService?Request=GetCapabilities&Service=WPS> or <http://sedac.ciesin.columbia.edu/mapservices/arcgis/rest/services/sedac/GPW/GPWServer>.

To learn more, go to <http://sedac.ciesin.columbia.edu/gpw/wps.jsp>

