

Data Intake Processing and Verification Report

Background Information

- **Original Dataset Name:** Gridded Population of the World, Version 4 (GPWv4): Population Density, Revision 11
- **GHG Center Dataset Title:** SEDAC Gridded World Population Density
- **Dataset Provider:** NASA
- **Date Obtained:** August 2023
- **Location Obtained From:**
 - <https://sedac.ciesin.columbia.edu/data/set/gpw-v4-population-density-rev11>
- **Data Location in GHG Center:** sedac-popdensity-yeargrid5yr-v4.11
- **Data POC(s):** Dr. Alex de Sherbinin, Dr. Susana Adamo, Dr. Robert Downs
- **Dataset File Type(s):** GeoTIFF
- **Projection (if different from WGS84):** N/A

Data Transfer Confirmation

An SHA-256 checksum is used to detect high-level errors within data transmissions. Results from individual checksum file comparisons of pre-transfer and post-transfer shows all files were transferred successfully and no individual files had any transfer issues.

Data Intake Process

- https://us-ghg-center.github.io/ghgc-docs/data_workflow/sedac-popdensity-yeargrid5yr-v4.11_Data_Flow.html

Overall Dataset Statistics

GeoTIFF (original data) and COGs (transformed cloud optimized GeoTIFF) files were read to generate the statistics.

- Statistics for 2000:

	Minimum (Tg CH4/yr)	Maximum (Tg CH4/yr)	Mean (Tg CH4/yr)	Standard Deviation
Original Data	-3.4028230607370965e+38	441419.90	38.35	328.27
Transformed Data	-3.4028230607370965e+38	441419.90	38.35	328.27

- Statistics for 2005:

	Minimum (Tg CH4/yr)	Maximum (Tg CH4/yr)	Mean (Tg CH4/yr)	Standard Deviation
Original Data	0.0	454966.03	40.45	347.42
Transformed Data	0.0	454966.03	40.45	347.42

- Statistics for 2010:

	Minimum (Tg CH4/yr)	Maximum (Tg CH4/yr)	Mean (Tg CH4/yr)	Standard Deviation
Original Data	0.0	468927.875	42.98	372.24
Transformed Data	0.0	468927.875	42.98	372.24

- Statistics for 2015:

	Minimum (Tg CH4/yr)	Maximum (Tg CH4/yr)	Mean (Tg CH4/yr)	Standard Deviation
Original Data	0.0	483318.21	46.03	404.50
Transformed Data	0.0	483318.21	46.03	404.50

- Statistics for 2020:

	Minimum (Tg CH4/yr)	Maximum (Tg CH4/yr)	Mean (Tg CH4/yr)	Standard Deviation
Original Data	0.0	810693.56	49.82	457.73
Transformed Data	0.0	810693.56	49.82	457.73

- Link to transformation record in [Jupyter Notebook](#)
- All values are in expected range

Summary

- We are confident that the transformation and display of data in the GHG Center is correct
- There were no problems identified in the data
- Link to [user notebook](#)
- Link to GHG Center data catalog [overview page](#)

Report Completed on: 11/14/2023

MSFC POC for questions: [Deborah Smith](#), [Siddharth Chaudhary](#)