West Africa Coastal Vulnerability Mapping:
Subset of High and Low Resolution Altimeter Corrected Elevations 2 (ACE2)

September 2018

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DESCRIPTION

This data set was used as an indicator in the analysis presented in the report, "Mapping the Exposure of Socioeconomic and Natural Systems of West Africa to Coastal Climate Stressors" (de Sherbinin et al., 2014; de Sherbinin et al., 2015). The table below provides information about the indicator as it was used in the analysis, including a description of the input data (where relevant) and of the processing completed to produce the indicator.

Title:	ACE2, Altimeter Corrected Elevations 2
Indicator Code:	ACE2
Component:	Exposure
Rationale:	ACE2 provides a best available measure of coastal elevation in forested ecosystems.
Data Set:	The Altimeter Corrected Elevations 2 (ACE2) data set was created by synergistically merging the Shuttle Radar Topography Mission (SRTM) data set with Satellite Radar Altimetry within the region bounded by 60°N and 60°S (Berry et al., 2008). Over the areas lying outside the SRTM latitude limits, other sources have been used including Global Observations to Benefit the Environment

	(GLOBE) and the original Altimeter Corrected Elevations (ACE) digital elevation model (DEM), together with new matrices derived from reprocessing the Economic and Social Research Institute (ERS1) Geodetic Mission data set with an enhanced re-tracking system, and the inclusion of data from other satellites. The ACE2 3 arc-second and 30 arc-second version 1.31 data sets were created November 2, 2009 by Richard Smith at EAPRS Laboratory, De Montfort University, Leicester UK. The ACE2 3 and 30 arc-second data tiles covering the ten Guinea Current countries of coastal West Africa were mosaicked and then subset to the 200 km coastal zone to produce the Subset of High and Low Resolution Altimeter Corrected Elevations 2 (ACE2) rasters. Input data source citation: Berry, P. A. M., Smith, R. G., and Benveniste, J. 2010. ACE2: The New Global Digital Elevation Model. In: Mertikas S. (eds) Gravity, Geoid and Earth Observation. International Association of Geodesy Symposia, vol 135. Springer, Berlin, Heidelberg.
Units:	Meters
Limitations:	All global DEMs have limitations in accuracy since they are based on satellite data. Lidar data would be more accurate but are not available over large areas of the world, and especially in West Africa.
Spatial Extent:	The spatial extent of the Subset of High and Low Resolution Altimeter Corrected Elevations 2 (ACE2) raster is the 200 km coastal zone of the ten Guinea Current countries of coastal West Africa: Guinea-Bissau, Guinea, Sierra Leone, Liberia, Cote d'Ivoire, Ghana, Togo, Benin, Nigeria, Cameroon.
Spatial Resolution:	Low resolution: 30 arc-second (~1 km) High resolution: 3 arc-second (~90 m)
Time Period:	1994-2005
Additional Notes:	

ACCESSING THE DATA

SEDAC URL: http://sedac.ciesin.columbia.edu/data/collection/wacvm.

Permanent URL: https://doi.org/10.7927/H4K0726D.

The data are available as compressed zipfiles of GeoTIFFs or shapefiles. 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).

DISCLAIMER

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USE CONSTRAINTS

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RECOMMENDED CITATION(S)

Data set:

Berry, P. A. M., R. Smith, and J. Benveniste. 2018. West Africa Coastal Vulnerability Mapping: Subset of High and Low Resolution Altimeter Corrected Elevations 2 (ACE2). Palisades, NY: NASA Socioeconomic Data and Applications Center (SEDAC). https://doi.org/10.7927/H4K0726D. Accessed DAY MONTH YEAR.

Scientific publication:

Berry, P. A. M., Smith, R. G., and Benveniste, J. 2010. ACE2: The New Global Digital Elevation Model. In: Mertikas S. (eds) Gravity, Geoid and Earth Observation. International Association of Geodesy Symposia, vol 135. Springer, Berlin, Heidelberg.

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Berry, P. A. M., Smith, R., and Benveniste, J. 2008. ACE2: the new Global Digital Elevation Model. IAG International Symposium on Gravity, Geoid & Earth Observation 2008, Chania, Crete, 23–27 June 2008.

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de Sherbinin, A., Chai-Onn, T., Jaiteh, M., Mara, V., Pistolesi, L., and Schnarr, E. 2014. Mapping the Exposure of Socioeconomic and Natural Systems of West Africa to Coastal Climate Stressors. Technical Report for the USAID African and Latin American Resilience to Climate Change (ARCC) project. Washington, DC: USAID. http://sedac.ciesin.columbia.edu/downloads/docs/wacvm/tbw04-02wacoastalmappingresults_cleared.pdf.

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