CARBON SINKS ATLAS FOR SOUTH AFRICA
Savanna Above Ground Woody Biomass (tDM/ha)

Metadata Date Stamp:

27 January 2017

DATASET DESCRIPTION

File Names:

Data:

100m_Savanna_AboveGroundBiomassWoody_tonnes-ha_CSIR_NRE_2017_01-27

Metadata:

100m_Savanna_AboveGroundBiomassWoody_tonnes-ha_CSIR_NRE_2017_01-27_OR_2017_Q1_METADATA

Dataset Reference Date:

2016/12/15

Data quality:

Good – The product was developed through the integration of 2010 ALOS PALSAR-1 synthetic aperture radar images, STRM30m DEM parameters (elevation, slope and aspect), LiDAR tracks, and field data of woody biomass. Accuracies of this layer are dependent on the accuracies of various base layers used in the different modelling stages.

Dataset Responsible Party:

Department of Environmental Affairs / Director Enterprise Geospatial Information Management

Geographic Location of the Dataset: RSA

West: 18.815694

East: 32.800179

North: - 21.686653

South: - 33.9719

Keywords:

Above ground woody biomass, LiDAR, ALOS PALSAR, SAR

Dataset Language:

English (SOUTH AFRICA)

Dataset Character Set:

utf8 - 8 bit UCS Transfer Format

Dataset Topic Category:

007 = Environment (ISO 19115 Topic category)

Dimensions:

X: 13044 Y: 13100 Bands: 1

Spatial Resolution of the Dataset:

100.00 Meter

No Data Value:

-1

Data Type:

Float64 – Sixty four bit floating point

Raster Format:

IMG (ERDAS Image file extension)

Data Release classification:

Release classification	Description	Time frame	Example
OR	Official release	Quarter 1 28 February 2017	_OR_2017_Q1

Citation:

Originator: CSIR Natural Resources and Environment (unpublished)

Abstract:

Above Ground Woody Biomass (AGB $_{woody}$) is the total dry biomass of woody plants above 1m height and is expressed in tonnes per hectare. The product was developed through the integration of 2010 ALOS PALSAR-1 synthetic aperture radar images, SRTM30m DEM parameters (elevation, slope and aspect), LiDAR tracks, and field data of woody biomass. The LiDAR tracks were processed to derive a canopy height model for woody vegetation above 0.5 m at 1m pixel size. A detailed LiDAR (AGB $_{woody}$), product was generated at 30m pixel size using LiDAR woody cover and height products and field data. The dual-polarized (HV, HH) SAR bands and DEM parameters were modelled using the LiDAR woody aboveground biomass as reference data for calibration and validation of the final SAR woody aboveground biomass (AGB $_{woody}$) map.

The maps were produced and can be viewed in the on-line atlas at 100m resolution, but are downloadable at 1km resolution.

Units: Above Ground Woody Biomass in (tonnes) per hectare at a 100m x 100m resolution

Purpose:

This data set is part of a series of output data layers generated by CSIR for the Department of Environmental Affairs (DEA) as part of the South African Carbon Sinks Atlas. The data demonstrate a potential for improving existing estimations of Above Ground Woody Biomass (AGB $_{woody}$) using SAR and LIDAR remote sensing data

Supplemental Information:

None

Lineage Statement:

An original Lowveld map was created in October 2015 and released on-line in November 2015. This new Savanna-based map was produced in December 2016, and is being released on-line in early 2017

ATTRIBUTE INFORMATION				

Field name	Alias Name	Data type	Description	Example
Cell value	Cell value	64-bit Floating point	This field contains Above Ground Woody Biomass as measured in Tonnes Dry Matter per hectare (tDM/ha)	50

SUPPLEMENTARY INFORMATION

None

DATA MAINTENANCE

Dataset last updated:
2017/01/15

Time Period of Content:

Calculated to represent Above Ground Woody Biomass (AGB $_{woody}$) for the year 2010

Maintenance and update frequency:

No updates

DISTRIBUTION AND CONSTRAINTS

On/line Resource:

The South African Environmental Observation Network (SAEON)
http://www.saeon.ac.za/

Distribution Format:

IMG (ERDAS Imagine file extension)

Copyright:

© CSIR 2016

You may re-use this information (excluding logos) free of charge in any format or medium under the terms of Creative Commons Attribution 4.0 International License. To view this license, visit http://creativecommons.org/licenses/by-nc-sa/4.0/

For any intended use that falls outside of this copyright and use agreement, permission must be obtained from the copyright holder

Terms of use:

The data can be used and copied for non-commercial purposes. The user shall not sell or license the spatial data or digital maps. The Department of Environmental Affairs cannot give any warranty on the accuracy of the map. The Department of Environmental Affairs shall in no way be liable for results related to the use of these maps. Users of these digital maps must acknowledge the copyright for the digital map. Source: Department of Environmental Affairs.

Acknowledgments:

The development of the online Carbon Sinks Atlas and website was funded by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). Visit https://www.giz.de for more information on GIZ.

The models for estimation of woody carbon content layer was done by CSIR as a demonstration of using Synthetic Aperture Radar (SAR) and LiDAR data for estimating improved Above Ground Woody Biomass data.

METADATA INFORMATION

Metadata Contacts:

Barney Kgope
Department of Environmental Affairs
Bkgope@environment.gov.za
+27123999165

Director: Enterprise Geospatial Information Management
DEADATA@environment.gov.za
+27 12 399 8916

Postal Address:

Department of Environmental Affairs
Directorate: Enterprise Geospatial Information Management
Private Bag X447
Pretoria
Gauteng
South
Africa 0001

Physical Address:

Environmental House
473 Steve Biko, Arcadia
Pretoria
0083

Point of Contact for Producers of Data:

Dr. Renaud Mathieu

CSIR-NRE

rmathieu@csir.co.za

Additional Extent information for the Dataset (Vertical & Temporal):

N/A

Spatial Representation Type:

Raster – Area

Spatial Reference:

Coordinate Reference: GCS_WGS_1984

Projection - Albers_Conic_Equal_Area

Projection:

PROJCS["Albers_Equal_Area_Conic_South_Africa",

GEOGCS["GCS_WGS_1984",

DATUM["D_WGS_1984",

SPHEROID["WGS_1984",6378137,298.257223563]],

PRIMEM["Greenwich",0],

UNIT["Degree",0.0174532925199433]],

PROJECTION["Albers"],

PARAMETER["False_Easting",0],

PARAMETER["False_Northing",0],

PARAMETER["central_meridian",25], Page | 5

PARAMETER["Standard_Parallel_1",-12],

PARAMETER["Standard_Parallel_2",-31],

PARAMETER["latitude_of_origin",0],

Metadata File Identifier:

100m_Savanna_AboveGroundBiomassWoody_tonnes-ha_CSIR_NRE_2017_01-27_OR_2017_Q1_METADATA

Metadata Standard Name:

SANS 1878

Metadata Standard Version:

SANS 1878/1:2005

Metadata Language:

English

Metadata Character Set:

US/Ascii