
CARBON SINKS ATLAS FOR SOUTH AFRICA

Above Ground Woody Biomass (gC/m²)

Metadata Date Stamp:
25 October 2015

DATASET DESCRIPTION

File Names:

Data:
AboveGroundBiomassWoody_gC_sq.m_DEA_CSIR_1.1.9-2015-10-09

Metadata:
AGBwoody_gC_per_sq.m_OR_2015_Q4

Dataset Reference Date:
2015/09/23

Data quality:

Good – data modelled in Carbon Stocks Model and accuracies of this layer is dependent on the accuracies of various base layers used in modelling

Dataset Responsible Party:

Department of Environmental Affairs / Director Enterprise Geospatial Information Management

Geographic Location of the Dataset: RSA

West 15.637661
East 33.655553
North -21.918463
South -35.027407

Keywords:

Above ground woody biomass, woody cover

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: 1406 Y:1207 Bands: 1

Spatial Resolution of the Dataset:

1189.318433 Meter

No Data Value:

-1

Data Type:*Float32 – Thirty two bit floating point***Raster Format:***GeoTiff***Data Release classification:**

Release classification	Description	Time frame	Example
OR	Official release	Quarter 4 30 November 2015	AGBwoody_gC_per_sq.m_ OR_2015_Q4

Citation:**Citation Information:****Originator:** *Department of Environmental Affairs***Publication Date:** *May 2015***Title:** *South African National Terrestrial Carbon Sink Assessment***Location:** *Pretoria, South Africa***Geospatial Data Presentation Form:** *Raster digital data*

Other Citation Details: *Data of the South African National Terrestrial Carbon Sink Assessment is published on the SAEON shared platform. Link to detailed report: https://www.environment.gov.za/sites/default/files/docs/nationalterrestrial_carbon_sinksassessment_sect1.pdf.*

Abstract:

AGB_{woody} is estimated using the product of tree cover fraction (TCF) and height (H_{veg}), which were both estimated with coarse resolution satellite data, as a proxy for the volume woody vegetation. This volume is converted to aboveground biomass using constant, biome-specific Biomass Calibration Factor (BCF_{biome}).

$$AGB_{woody} = (H_{veg} * TCF) * BCF_{biome}$$

Units: (Two AGB_{woody} outputs are provided in two units)

1. average gC/m² within 1km x 1km pixel

2. average tonne Dry Matter / hectare (tDM/ha) within 1km x 1km pixel

Purpose:

This data set is part of a series of output data layers generated by CSIR for DEA as part of the South African National Terrestrial Carbon Sink Assessment.

Link to detailed report:

https://www.environment.gov.za/sites/default/files/docs/nationalterrestrial_carbonsinksassessment_sect1.pdf.

Link to synopsis report:

[report:https://www.environment.gov.za/sites/default/files/reports/nationalterrestrial_carbon_sinks_synopsisreport.pdf](https://www.environment.gov.za/sites/default/files/reports/nationalterrestrial_carbon_sinks_synopsisreport.pdf)

Supplemental Information:

$$AGB_{woody} = (H_{veg} * TCF) * BCF_{biome}$$

Tree height (H_{veg}) is the mean maximum height of the vegetation at a location (m) interpolated from ICESAT-GLAS LiDAR point records using MODIS satellite data. The ICESAT-GLAS data (2005), which represents a laser 'spot' about 80 m in diameter, is unlikely to be reliable for small vegetation patches, or in steep topography. It may also be unreliable for closed canopy. Tree cover fraction (TCF) is the derived using MODIS satellite data and regression tree models trained with higher resolution satellite data. The average annual MODIS tree fractional cover was calculated for the period 2000-2010.

BCF is the Biomass Calibration Factor, which in principle varies by vegetation type, mainly as a result of different wood density and form factors. The BCF values were estimated for each biome by consulting relevant publications.

Note: The 1km x1km pixels values in represents the average amount of carbon (gC/m^2 or tC/ha) in the pixel and not the total amount of carbon in the pixel. In order to calculate the total amount of carbon in an area, the pixel values need to be multiplied by each pixel's area.

Lineage Statement:

*The first version of the data was generated in 2013, but not released.
The data were released on-line for the first time in Nov 2015*

ATTRIBUTE INFORMATION

Attribute Description:

Field name	Alias Name	Data Type	Description	Example
Cell value	Cell value	32-bit Floating point	This field contains Above Ground Woody Biomass as measured in gC/m^2	550

SUPPLEMENTARY INFORMATION

None

DATA MAINTENANCE

Dataset last updated:

2015/10/06

Time Period of Content:

Carbon stocks were calculated to represent the long-term mean conditions 2000-2010.

Maintenance and update frequency:

No updates

DISTRIBUTION AND CONSTRAINTS

On/line Resource:

The Environment GIS (EGIS) Website

<http://egis.environment.gov.za/>

The Department of Environmental Affairs (DEA) must be acknowledged in the use of the data

as per citation information.

The South African Environmental Observation Network (SAEON)

<http://www.saeon.ac.za/>

Distribution Format:

GeoTIFF

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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 the National Terrestrial Carbon Sinks Assessment for South Africa and the online Carbon Sinks Atlas were developed by CSIR for the South African Department of Environmental Affairs (DEA).

The National Terrestrial Carbon Sink Assessment (2015) was conducted for and published by Department of Environmental Affairs, Pretoria, South Africa. Link to report: https://www.environment.gov.za/sites/default/files/docs/nationalterrestrial_carbonsinksassessment_sect1.pdf.

The National Terrestrial Carbon Sink Assessment for South Africa was funded by UK Department for International Development (DfID). Visit <https://www.gov.uk/government/organisations/department-for-international-development> for more information on DfID

METADATA INFORMATION

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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],
PARAMETER["Standard_Parallel_1",-12],
PARAMETER["Standard_Parallel_2",-31],
PARAMETER["latitude_of_origin",0],*

Metadata File Identifier:

AGBWoody_gC_per_sq.m_OR_2015_Q4_METADATA

Metadata Standard Name:

SANS 1878

Metadata Standard Version:

SANS 1878/1:2005

Metadata Language:

English

Metadata Character Set:

US/Ascii