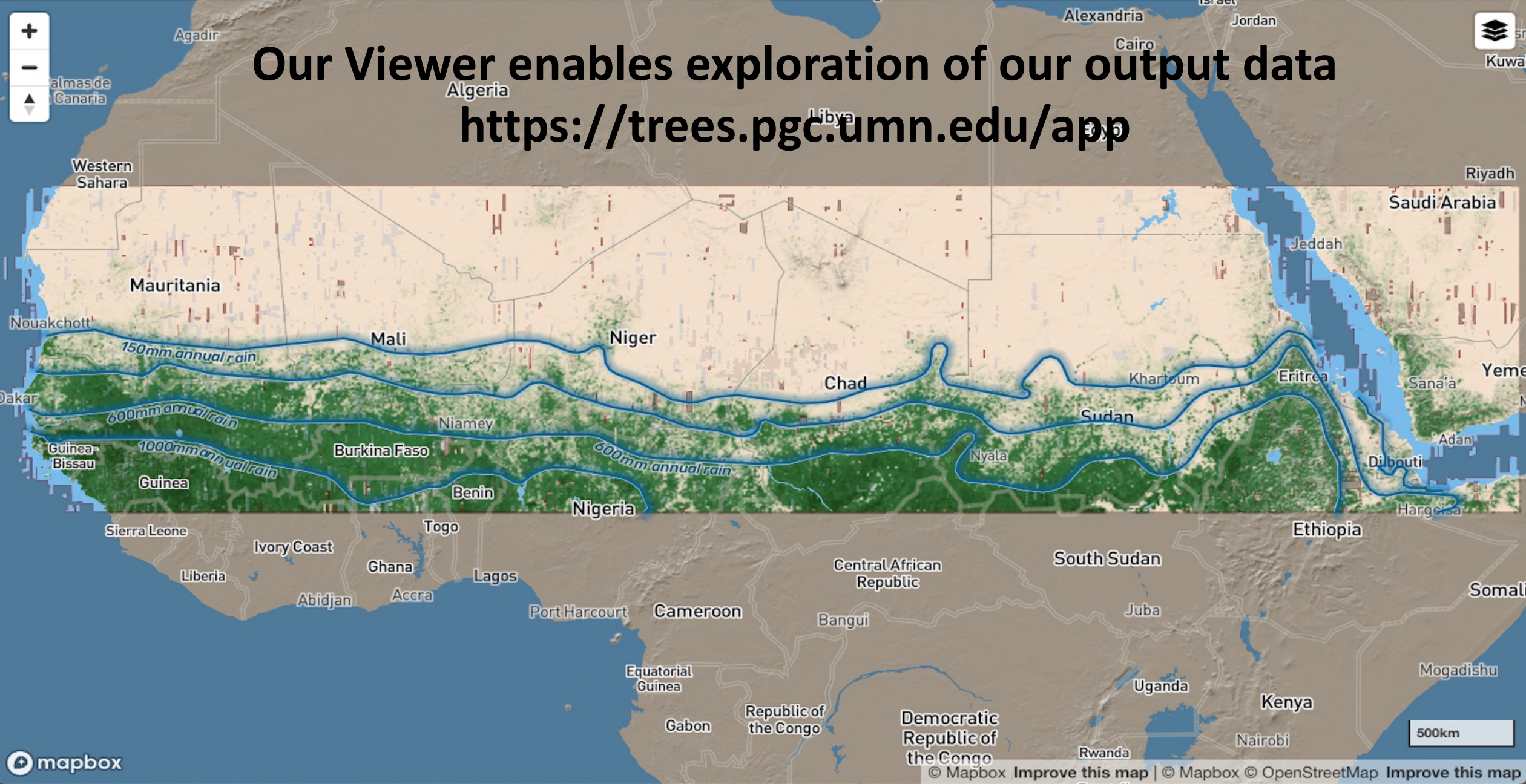


Our Viewer enables exploration of our output data
<https://trees.pgc.umn.edu/app>



General Guidance for using the Viewer

Our viewer was developed to function with Mapbox Studio and browsers that support WebGL: Google Chrome, Apple Safari 9 and above, Microsoft Edge 13 with the Win10 update, and the latest Firefox. Our viewer is not compatible with Internet Explorer. We cannot guarantee that our viewer will work with browsers that only support WebGL experimentally.

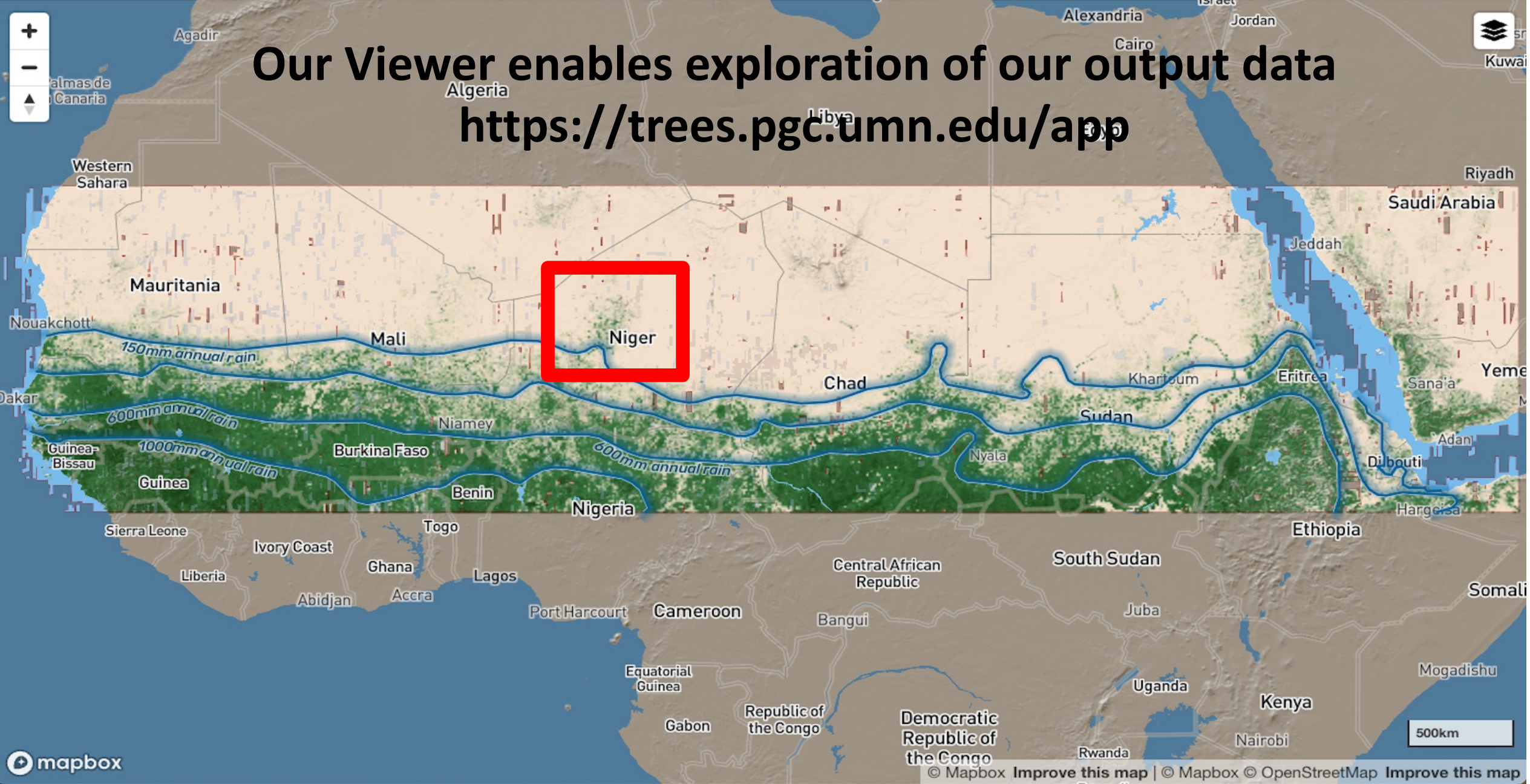
The URL of the Viewer is important. Saving the URL will take you back to exactly the same viewing area and zoom factor, e.g. “<https://trees.pgc.umn.edu/app?zoom=9.00000&lng=14.51161&lat=12.58932>”

There are two viewing modes: Terrain and Satellite. The Terrain mode only displays tree crowns while the Satellite mode displays tree crowns superimposed upon Mapbox’s background imagery. Many find it useful to use Terrain mode for data exploration and then switch to Satellite mode for setting context.

There are portions of 94,502 Maxar images that were selected for our input mosaics. When you click on image data in the viewer, the image particulars for the Maxar quick look image associated for that image will be displayed. Users must register on the Maxar website to be able to ascertain particulars about images in question. Also, there is not a 1:1 mapping or display of the Maxar quick look image and the incorporation of that image into our input mosaics. Frequently, input images may be broken up into multiple image segments that are not contiguous within our input mosaics.

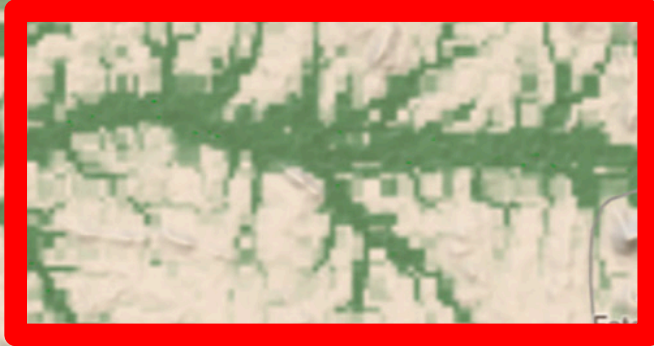
Please bring comments or observations to our attention in the comments section

Our Viewer enables exploration of our output data
<https://trees.pgc.umn.edu/app>





Zoom=11.31359&lng=8.18842&lat=17.93165

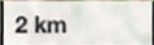


Guissat Offtal

houát



Agaloua

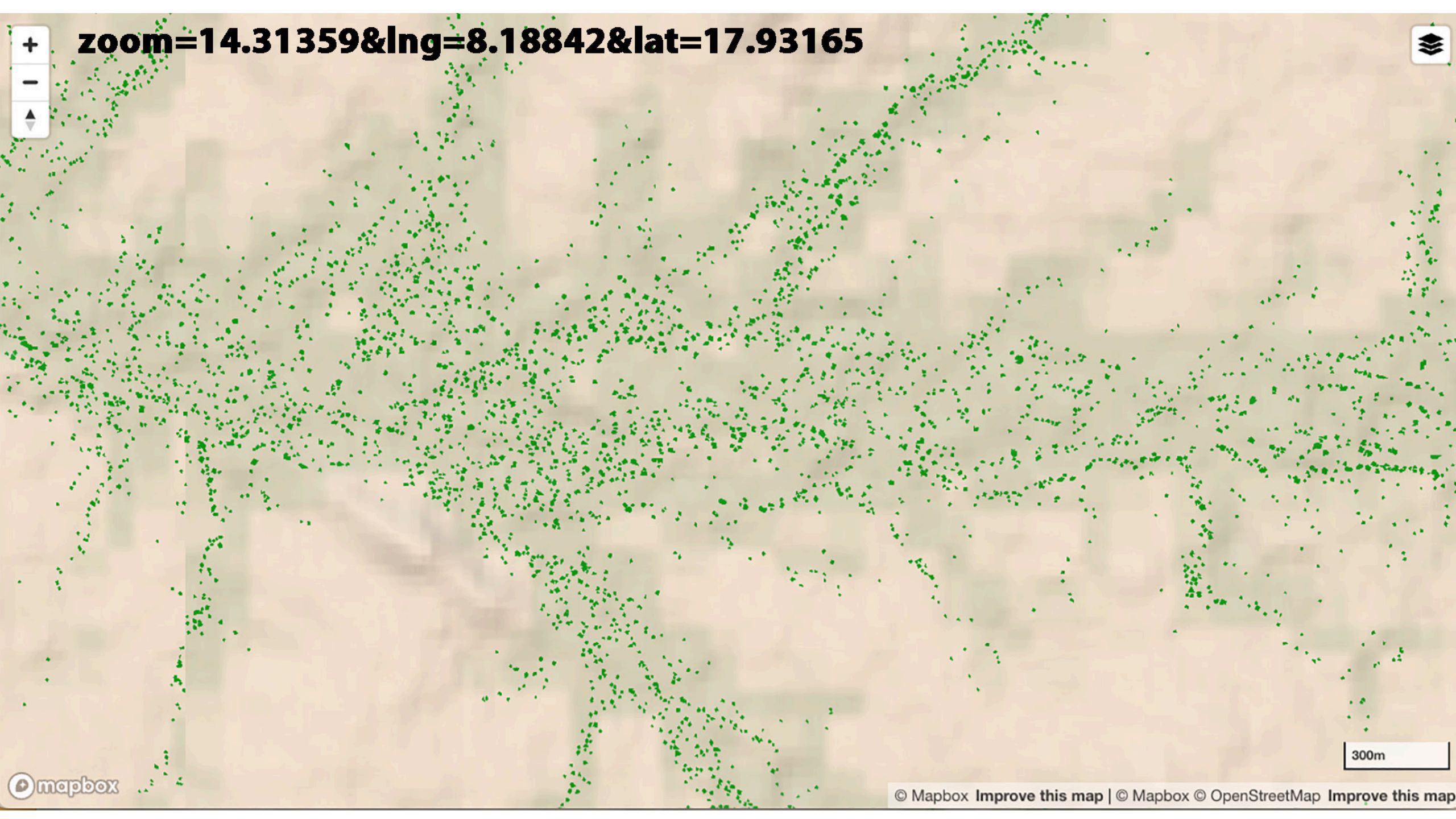


zoom=13.31359&lng=8.18842&lat=17.93165





zoom=14.31359&lng=8.18842&lat=17.93165



300m



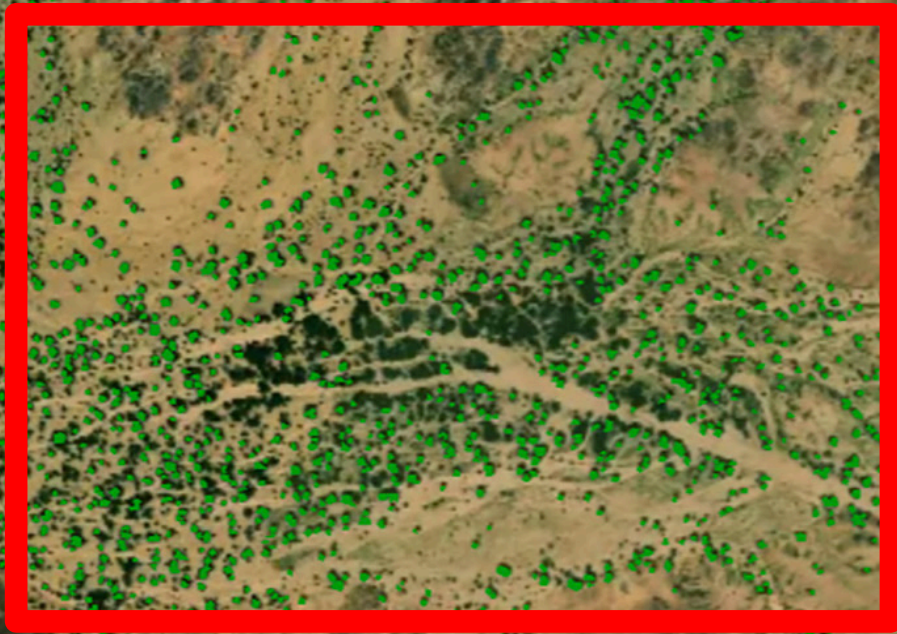
Polygons may be offset relative to basemap imagery due to differences in imagery and/or [orthorectification](#).



zoom=14.31359&lng=8.18842&lat=17.93165

Dec 8, 2016 ✕
Source image date

Preview source imagery [↗](#)
© Maxar 2016



300 m



Polygons may be offset relative to basemap imagery due to differences in imagery and/or [orthorectification](#).

Dec 28, 2014
Source image date

137 kg Root carbon	465 kg Wood carbon	14.1 kg Leaf carbon
-----------------------	-----------------------	------------------------

616 kg
Total carbon

8.18395, 17.93455	0.47 NDVI	147.3 m ² Area
----------------------	--------------	------------------------------

Preview source imagery

© Maxar 2014

Dec 8, 2016
Source image date

40 kg Root carbon	147 kg Wood carbon	5.3 kg Leaf carbon
----------------------	-----------------------	-----------------------

193 kg
Total carbon

8.19143, 17.93448	0.38 NDVI	52.0 m ² Area
----------------------	--------------	-----------------------------

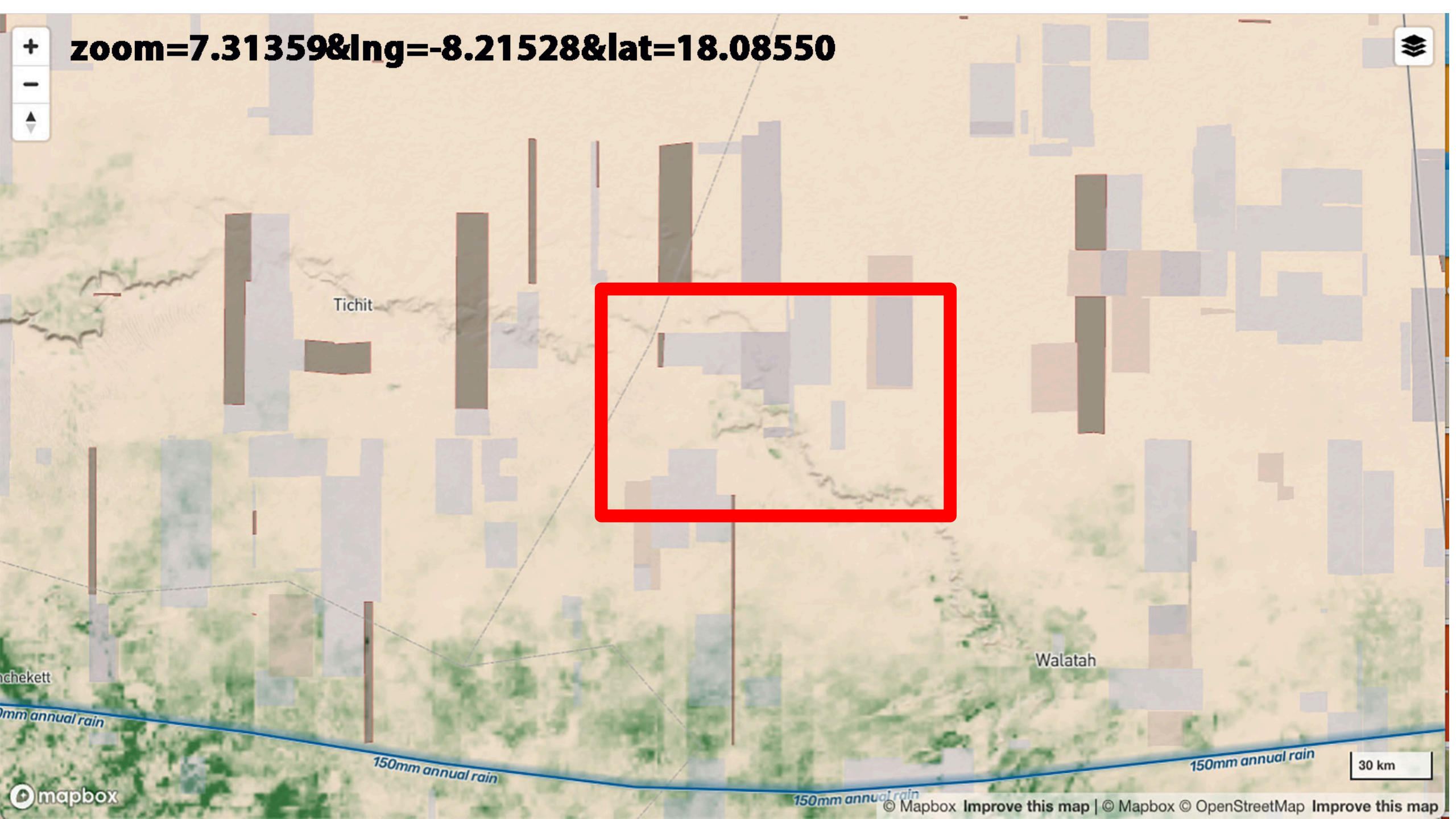
Preview source imagery

© Maxar 2016

zoom=14.31359&lng=8.18842&lat=17.93165

50m

zoom=7.31359&lng=-8.21528&lat=18.08550



chekett

150mm annual rain

150mm annual rain

Walatah

150mm annual rain

30 km

mapbox

150mm annual rain

© Mapbox Improve this map | © Mapbox © OpenStreetMap Improve this map

zoom=9.31359&lng=-8.21528&lat=18.08550



no data →

cloud

**cloud &
AOD>0.6**



**AOD
>0.6**

10 km

zoom=15.31359&lng=-8.22397&lat=18.09235



Dec 7, 2007
Source image date



[Preview source imagery](#)
© Maxar 2007

100 m



Polygons may be offset relative to basemap imagery due to differences in imagery and/or [orthorectification](#).

Dec 7, 2007 ×
Source image date

21 kg Root carbon	81 kg Wood carbon	3.2 kg Leaf carbon
-----------------------------	-----------------------------	------------------------------

105 kg
Total carbon

-8.20567, 18.08352	0.27 NDVI	30.3 m² Area
-------------------------------------	---------------------	-----------------------------------

[Preview source imagery](#) ↗
© Maxar 2007

zoom=14.31359&lng=-8.21528&lat=18.08550

300m



Polygons may be offset relative to basemap imagery due to differences in imagery and/or [orthorectification](#).



zoom=16.31359&lng=-8.22255&lat=18.09354

Dec 7, 2007
Source image date

29 kg Root carbon	109 kg Wood carbon	4.1 kg Leaf carbon
----------------------	-----------------------	-----------------------

143 kg
Total carbon

-8.21938, 18.09528	0.26 NDVI	39.8 m ² Area
-----------------------	--------------	-----------------------------

Preview source imagery [↗](#)
© Maxar 2007

50m



zoom=8.74064&lng=15.98643&lat=13.99615



150mm annual rain

Aerosol affected area

150mm annual rain

Dourgoulanga

Mélea

Mao

Dec 10, 2017 ✕
Source image date
Preview source imagery [↗](#)
© Maxar 2017

Mondo وندوم

Ngouri

Moussoro

10km

zoom=10.74064&lng=16.28061&lat=13.72809



Dec 10, 2017 ✕
Source image date

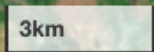
Preview source imagery [↗](#)
© Maxar 2017

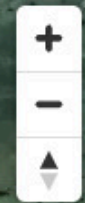


Djemil

Kouri-Kouri 2

HILLÉ
BILLAH
Moussoro



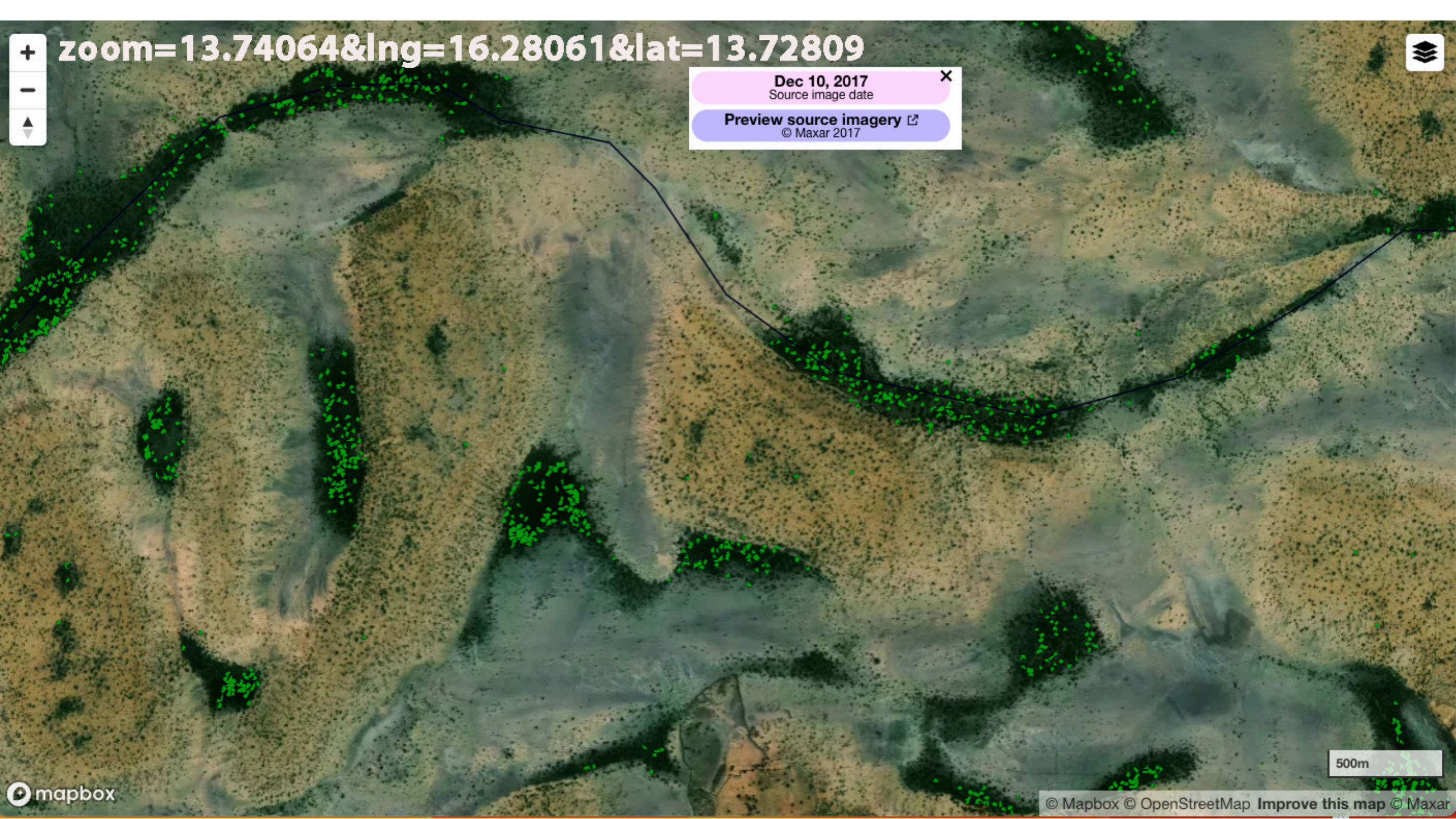


zoom=13.74064&lng=16.28061&lat=13.72809



Dec 10, 2017 ✕
Source image date

Preview source imagery [↗](#)
© Maxar 2017



500m



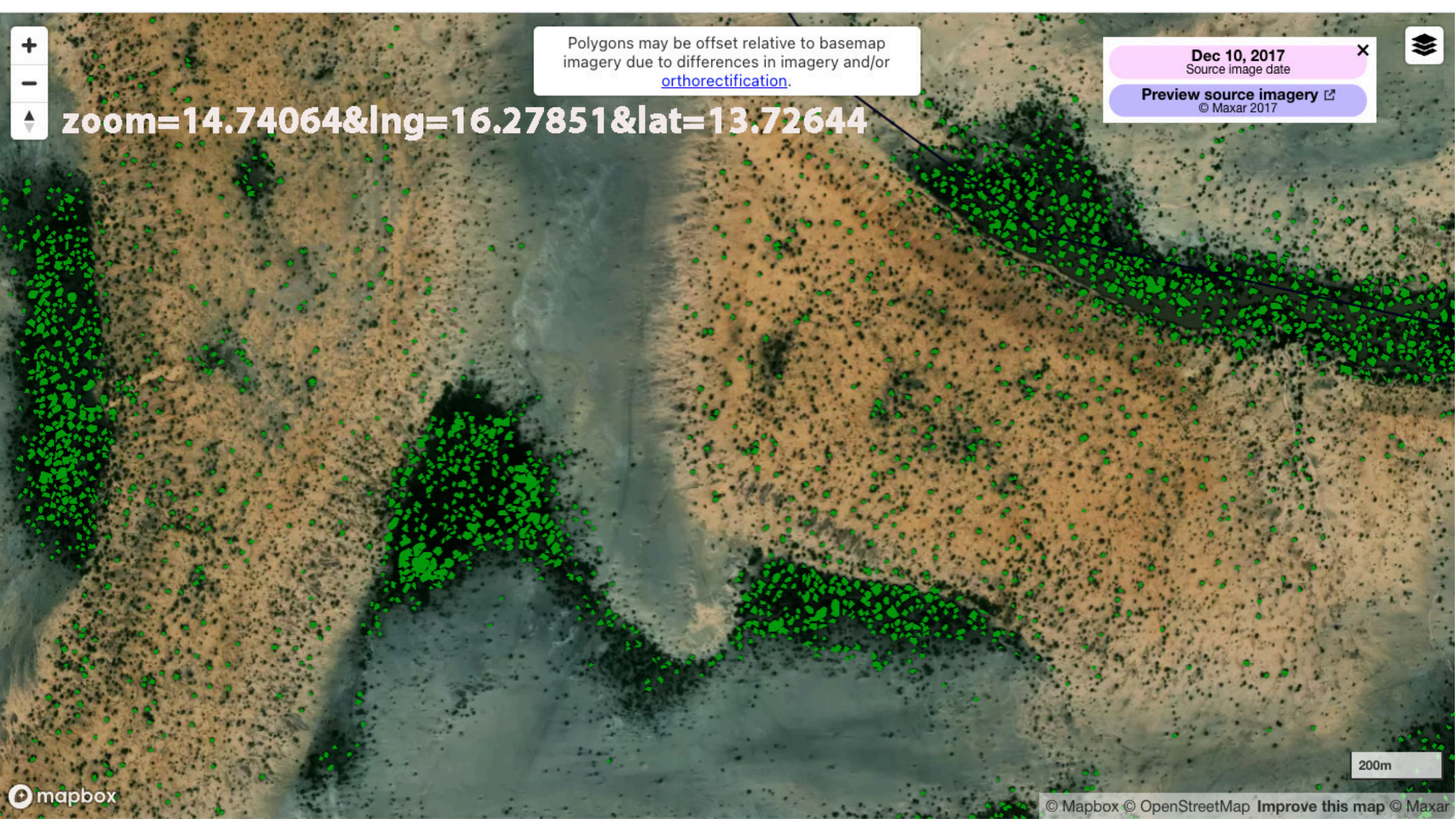
Polygons may be offset relative to basemap imagery due to differences in imagery and/or [orthorectification](#).

Dec 10, 2017
Source image date

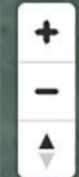
Preview source imagery [↗](#)
© Maxar 2017



zoom=14.74064&lng=16.27851&lat=13.72644



200m



zoom=16.74064&lng=16.27991&lat=13.72754

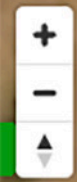
Polygons may be offset relative to basemap imagery due to differences in imagery and/or [orthorectification](#).



Dec 10, 2017 ✕
Source image date

Preview source imagery [↗](#)
© Maxar 2017

50m



Polygons may be offset relative to basemap imagery due to differences in imagery and/or [orthorectification](#).

zoom=18.74064&lng=16.27928&lat=13.72800

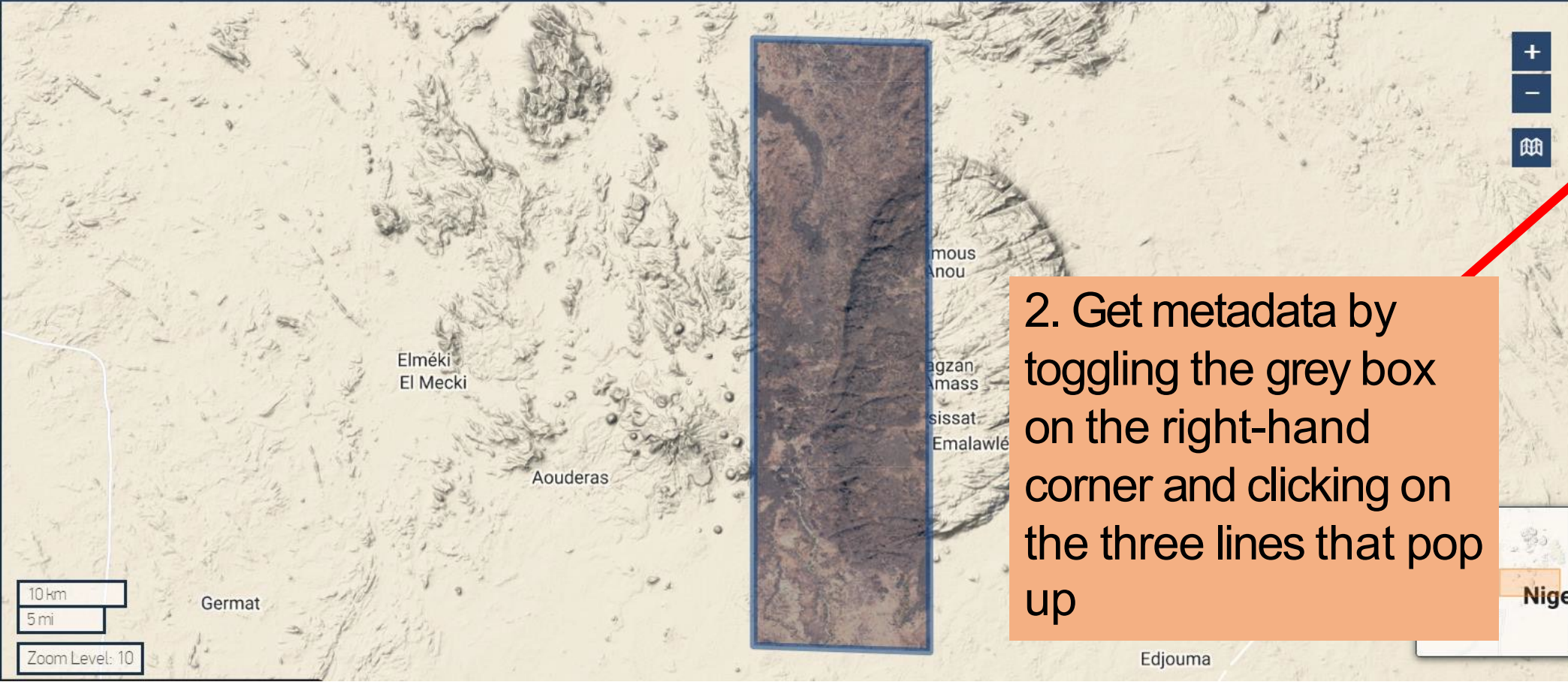
Dec 10, 2017 ✕
Source image date

Preview source imagery ↗
© Maxar 2017

1. Search image id in <https://evwhs.digitalglobe.com/> after login

The screenshot displays the G-EGD (Global Earth Observation Data) web interface. At the top left, the 'G-EGD' logo is visible next to a search bar containing the image ID '103001009C5A0C00'. The search bar is highlighted with a red box. Below the search bar, there are navigation options for 'Map Options', 'My Imagery', 'Use With', and 'Cart'. The top right corner shows the user's name 'Yasmin Fitts' and the text 'World No Domestic NOFORN'. The main map area shows a satellite view of a desert landscape with a vertical strip of a different image overlaid in the center. The map includes various labels for locations such as 'Elméki El Mecki', 'Aouderas', 'Germat', 'Edjouma', 'Tabelot', 'Akrérèb', 'Adaouda', 'Tadara', 'Emalawlé', 'sissat', 'Amass', 'agzân', 'Anou', and 'mous'. The map also features a scale bar (10 km, 5 mi) and a zoom level indicator (Zoom Level: 10). The bottom of the interface has a green banner with the text 'Highest Classification is up to UNCLASSIFIED'. On the right side, there is a vertical toolbar with various icons for map navigation and a 'DG Archive 2019-11-08' notification box.

25



2. Get metadata by toggling the grey box on the right-hand corner and clicking on the three lines that pop up

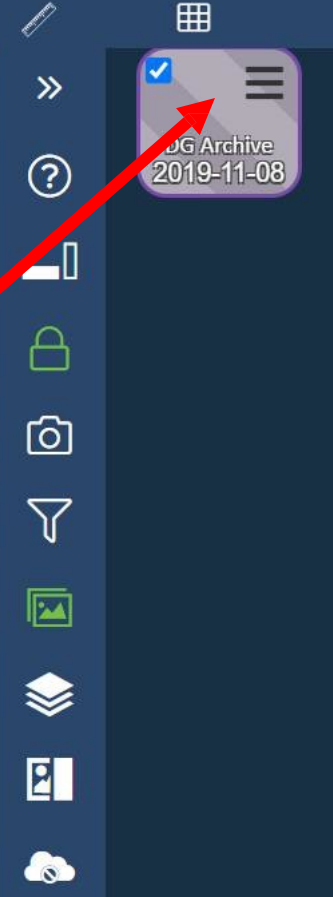
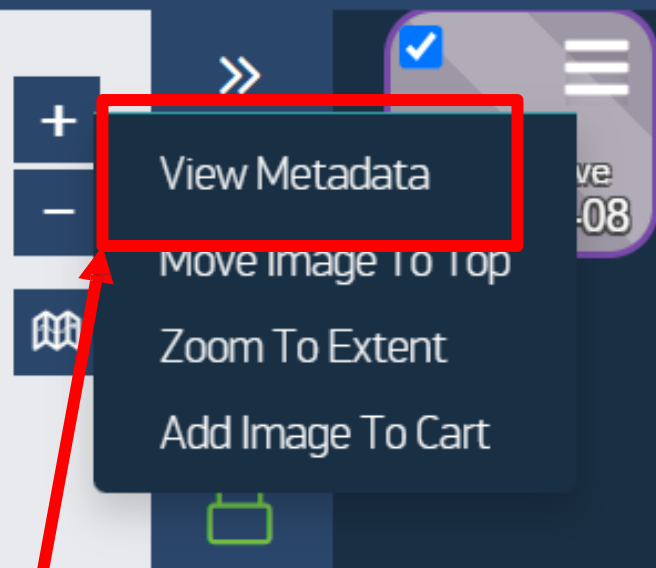


Image Archive
2019-11-08



Elevation: 803 m. 2635 ft



3. A menu should pop up where you can select "View Metadata" and a new window will appear.

Metadata

Ground Sample Distance	48 cm
NIIRS	-
Acquisition Date	2019-11-08 10:12 AM UTC
Age In Days	1243
Cloud Cover	0.00%
Has Cloudless Geometry	No

▼ Show Browse Image

Off Nadir Angle	13.0693°
Sun Elevation	53.1412°
Sun Azimuth	157.2201°
Target Azimuth	145.8219°
Legacy Identifier	103001009C5A0C00
Acquisition Type	Nominal
Sensor Type	OPTICAL
Orbit Direction	DESCENDING
Crs From Pixels	-
Precise Geometry	No
Per Pixel	-
Per Pixel Y	-
CE90 Accuracy	-
RMSE Accuracy	-
Spatial Accuracy	0.0
Company Name	DigitalGlobe

Toggle Time:

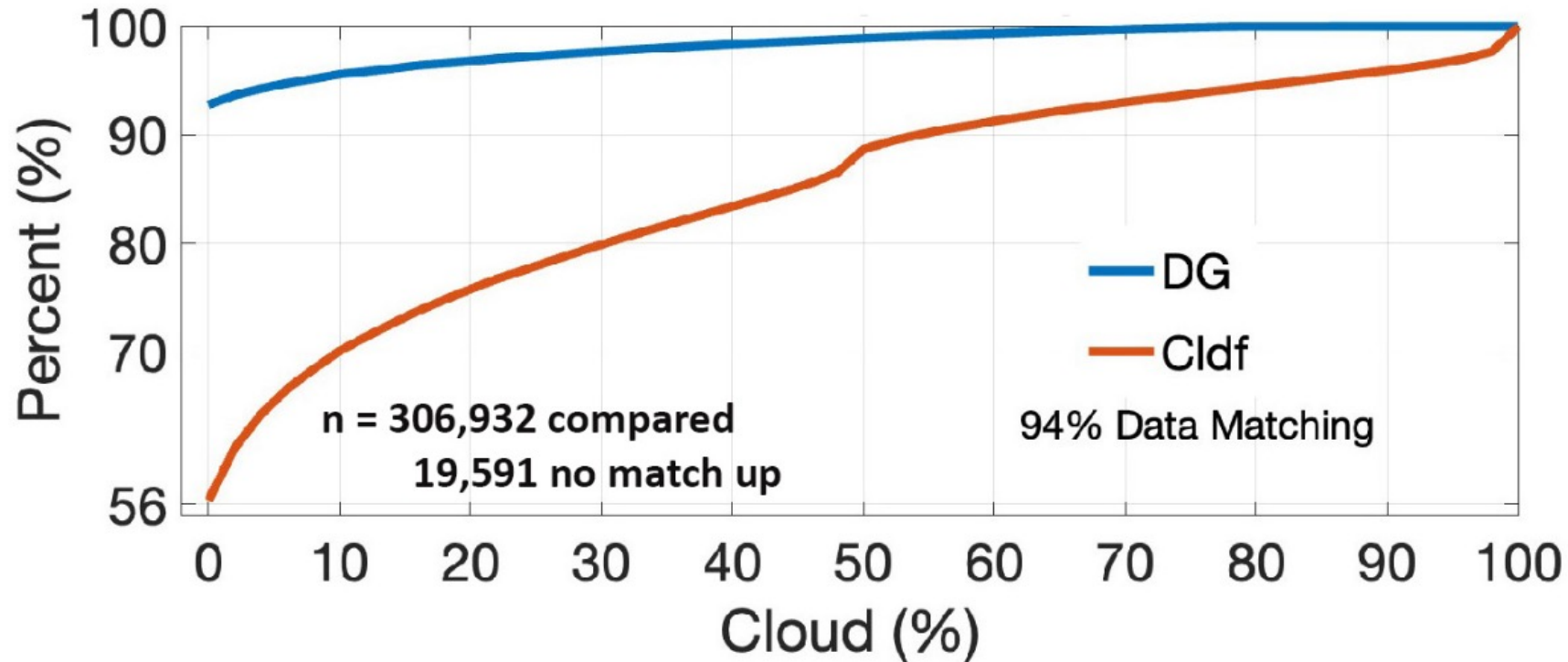
Sample metadata for ID 103001009C5A0C00

A detailed list of metadata is provided by Maxar for the full image strip that was used for each mosaic cutline.

The metadata provides important information on image quality, which affects the tree detection algorithm.

Metadata ✕	
Product Type	CollectedContent
Source	WV02
Source Unit	Strip
Ground Sample Distance	48 cm
NIIRS	-
Acquisition Date	2019-11-08 10:12 AM UTC
Age In Days	1243
Cloud Cover	0.00%
Has Cloudless Geometry	No
▼ Show Browse Image	
Off Nadir Angle	13.0693°
Sun Elevation	53.1412°
Sun Azimuth	157.2201°
Target Azimuth	145.8219°
Legacy Identifier	103001009C5A0C00
Acquisition Type	Nominal
Sensor Type	OPTICAL
Orbit Direction	DESCENDING

Comparison of MODIS and Maxar (DG) cloud fraction



Maxar uses a different cloud detection algorithm than MODIS, and the calculated area is a full image strip as opposed to the partial images input to the mosaic. Cloud cover percentages therefore may be different on Maxar metadata. Maxar does not include aerosol optical depth.