

Unique Mix – Cerrado

Gerber Interiano

O Cerrado Brasileiro

Coordinates: 14°00'12.30" S , 47°41'2.75" W¹

Cerrado in Brazil

Fusion of savanna, forest, and woodland

2nd largest biome (2 mil km²) in South America,
beaten by the Amazon, which borders it.



Figure 1: Image (above) shows the *Cerrado*, or the grassland, of Brazil.

Wild Brazil (2019). *The Cerrado*. Retrieved from
<http://wildbrazil.com.br/cerrado>

Abiotic Factors (1/2)¹

Dry Winter
(April-September)

Wet Summer
(October-March)

Average Annual Temperature: 18–28 °C (64.4–82.4 °F)

Average Annual Rainfall: 8 cm - 2 m

Soil pH: Low (no specifics)

Soil Content: High Aluminum, Low Magnesium & Calcium

Soil Quality: High

Abiotic Factors (2/2)^{1, 2, 3}

Flat land

Little Wind Activity (see Figure 2)

The little rain is a limiting factor

High solar radiation (energy source for solar panels)

High UV concentrations

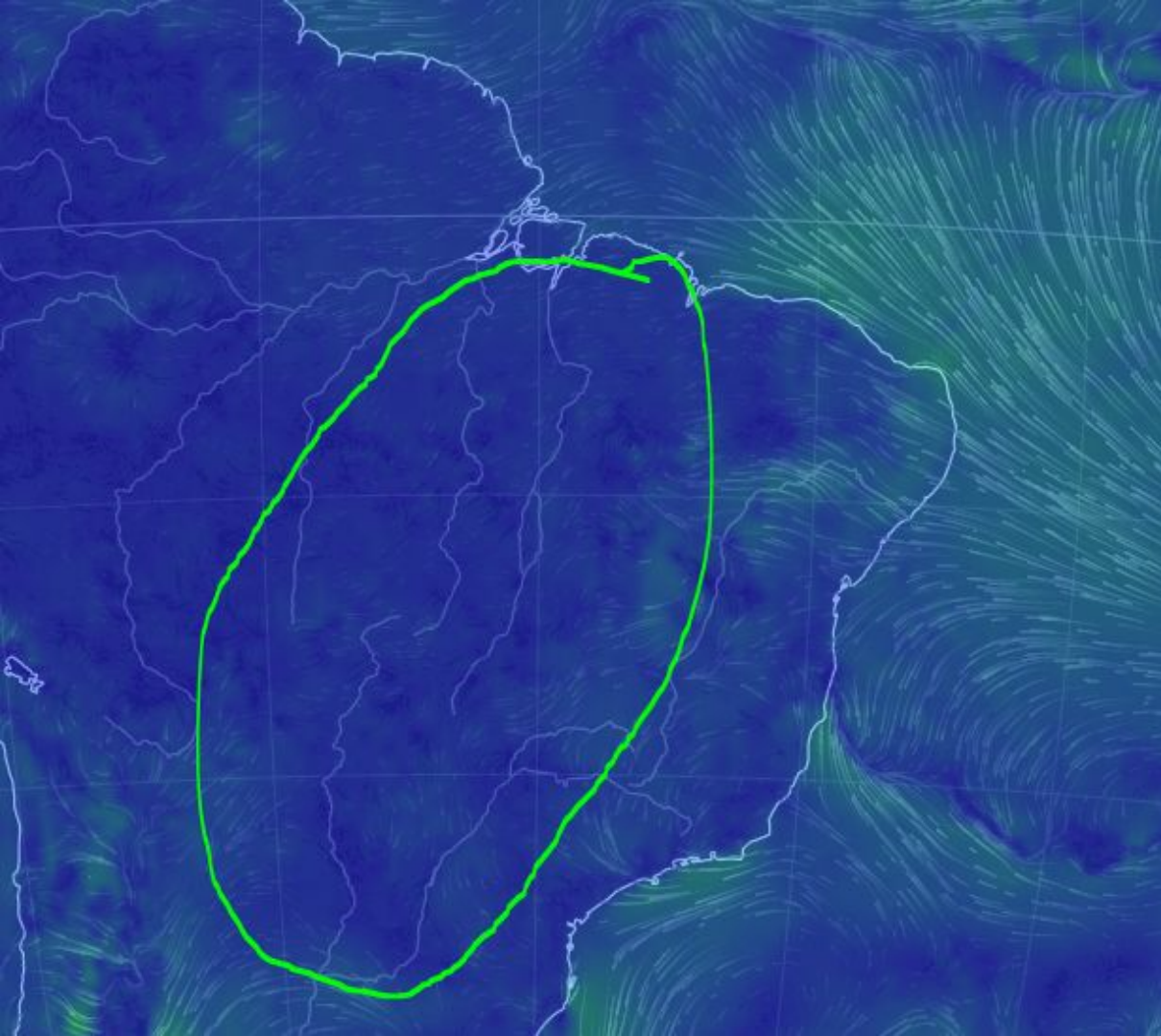


Figure 2: Wind Current as of 10/24/2019 at 11:28 A.M. The green circle area is a rough estimate as to where the *Cerrado* is located.

earth (2019). *a global map of wind, weather, and ocean currents*. Snapshot retrieved from <https://earth.nullschool.net/#current/wind/surface/level/orthographic=-51.53,-10.70,853>

Wind Current information retrieved from the Global Forecast System, National Centers for Environmental Predictions, and the US National Weather Service

The following climate graph (Figure 3) has the average precipitation (blue bars) and temperature (red line) in the average year.

The winter months (April-September) are generally the driest, with the driest month being August and the wettest month being January. July's the coldest month, with January being the hottest.

Climate-Data.org (2019). *Cerrado Climate: Average temperature and weather by month*. Retrieved from <https://en.climate-data.org/south-america/brazil/sao-paulo/cerrado-772116/>

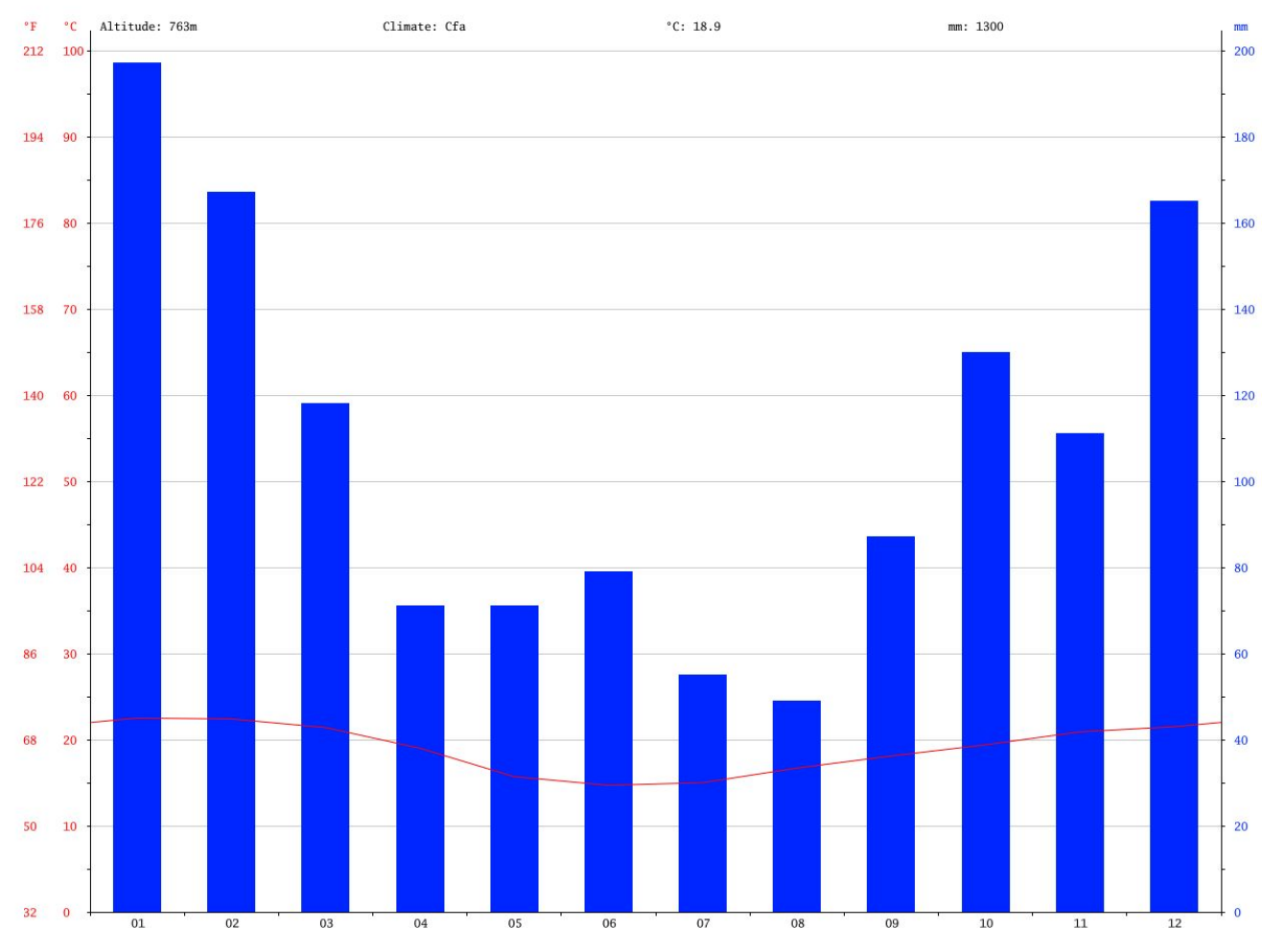


Figure 3

Cerrado Population: Autotrophs

Autotrophs:

- *Miconia albicans*, canela de velho (old cinnamon) tea, shrub (top-left)
- *Calophyllum brasiliense*, guanandi, tree (top-middle)
- *Pouteria torta*, no common name, fruit tree (top-right)
- *Kielmeyera coriacea*, Árvode de Cerrado (savanna tree), medicinal tree (bottom-left)
- *Eugenia punicifolia*, Beach Cherry, fruit tree (bottom-right)



1



2



3



4



5

Cerrado Population

Heterotrophs:

- *Leopardus pardalis*, Ocelot, feline predator
- *Columbina cyanopis*, Blue-eyed ground dove, critically endangered (believed extinct from 1941 to 2016, 12 confirmed still alive)
- *Chrysocyon brachyurus*, Maned wolf, canine predator
- *Myrmecophaga tridactyla*, Giant anteater, predator, vulnerable to extinction
- *Pteronura brasiliensis*, Giant otter, predator, endangered.

Decomposers:

- Ants (like in general)
- *Ophiocordyceps unilateralis*, Zombie-ant fungus
- *Partula* snails
- *Udeonychophora*, Velvet Worm
- *Pleurotus ostreatus*, oyster mushroom

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Deforestation:

- No regulations of protection of *Cerrado*
- Produces *a lot* of soy
- 50% more deforestation than the Amazon (circa 2008)

> 3% protected under regulations (> 600,000 km², slightly bigger than Madagascar)

Cattle production unstable.

A Cerrado em Geral 2

10,000 species of plants total (20% of the original amount)

Wildlife being pushed out by farm animals

GHG cooking the *Cerrado* alive

O Futuro Do Cerrado ⁵

At current rate, *Cerrado* will be mostly wiped out by 2050-2080, becoming more of a vacant wasteland or desert instead of a lush savanna.

Citations

¹ Ratter, J. A. , Riberio, J. F., Bridgewater, S. (1997) *The Brazilian Cerrado Vegetation and Threats to its Biodiversity*. Published by the Annals of Botany Company. Retrieved from <https://pdfs.semanticscholar.org/09bf/537ab8e403b110efa77247e81793c97515cf.pdf>

² CEA Consulting (2016). *Cerrado Biome Assessment: 2016*. Retrieved from http://www.climateandlandusealliance.org/wp-content/uploads/2016/09/Cerrado-biome-appendix_water-and-climate.pdf

Citations

³ ScienceDirect (2019). *Cerrado - an overview*. Retrieved from <https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/cerrado>

⁴ WWF (2019). *Cerrado, the Brazilian Savanna*. Retrieved from http://wwf.panda.org/knowledge_hub/where_we_work/cerrado/

⁵ Elías Velazco, S. J., Villalobos, F., Galvão, F., Marco Jr, P. (2019). A dark scenario for Cerrado plant species: Effects of future climate, land use and protected areas ineffectiveness. Retrieved from <https://onlinelibrary.wiley.com/doi/full/10.1111/ddi.12886>

Image Citations for Slide 7

¹ Mercadante, M. (???) *Flowering Shrub* (photograph). Retrieved from http://tropical.theferns.info/plantimages/sized/f/0/f02b6afefaa1ba5fbc7fafa7e68c221b8cd9f936_400px.jpg

² Photograph of *Calophyllum brasiliense*. Retrieved from <http://treeworldwholesale.com/modules//smartblog/images/78.jpg>

³ Quéno, L. (2018) *Photo 26549188* (photograph). Retrieved from <https://www.inaturalist.org/photos/26549188>

⁴ Torres Rodrigues, J. F. (2017). *Árvode de Cerrado* (photograph). Retrieved from <https://tinyurl.com/arvode-de-cerrado>

Image Citations for Slide 7 (2/2)

⁵ Medeiros, J. (2008) *João de Deus Medeiros - Eugenia punicifolia* (photograph).

Retrieved from

https://upload.wikimedia.org/wikipedia/commons/thumb/7/79/Flickr_-_Jo%C3%A3o_de_Deus_Medeiros_-_Eugenia_punicifolia_%281%29.jpg/800px-Flickr_-_Jo%C3%A3o_de_Deus_Medeiros_-_Eugenia_punicifolia_%281%29.jpg