

Parks of Curitiba



Erika Schoeneberg and Ana Rick
Brazil Study Tour 2017

Contents

Introduction

History

Culture

Sustainable
Development

Urban Plans

Geography

Rivers

The Atlantic Forest

Flooding

Popular Parks of
Curitiba

Social Factors

Economic Factors

Future



Introductions

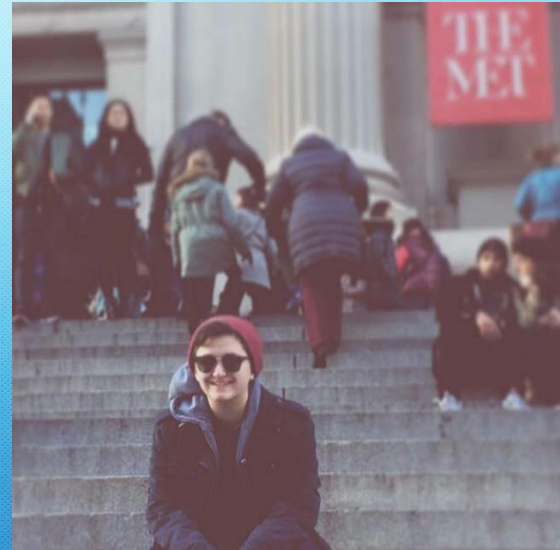
Erika Schoeneberg

Sophomore working toward a sustainability major with a minor in holistic health.



Ana Rick

Junior biology major with an interest in environmental studies.



History of Curitiba

The Curitiba City Council was formed in 1693.



Curitiba has been named after the pine trees that occupied the area when the city was born.

The city originally consisted of agriculture of subsistence and its economic activities were mostly related to mineral extraction.

Cattle driving, harvesting of the mate plant, and wood soon became dominant economic cycles. Soon coffee plantations were everywhere but the weather led them to die out and soybean crops took over.

The soybean harvesting brought in many immigrants and so urban planning began- focused on the dwellers. Soon the city was a melting pot of all races.

Culture of Curitiba

As of 2015, Curitiba is home to 1,879,355 inhabitants

That makes it the 8th most populous city in Brazil

There are 26 municipalities within the city

There has been a drop in birth rate over the years, helping to lower the city's growth rate to 1.7%

There are about 106,000 acres to this city, with the population density of about 17 people per acre of land.



***“If you want to make life better for people
make the cities better for people.”
Jaime Lerner***



Curitiba: the prime example of sustainable urban development

Sustainable development is most commonly referred to as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” as defined in the Brundtland report of 1987.

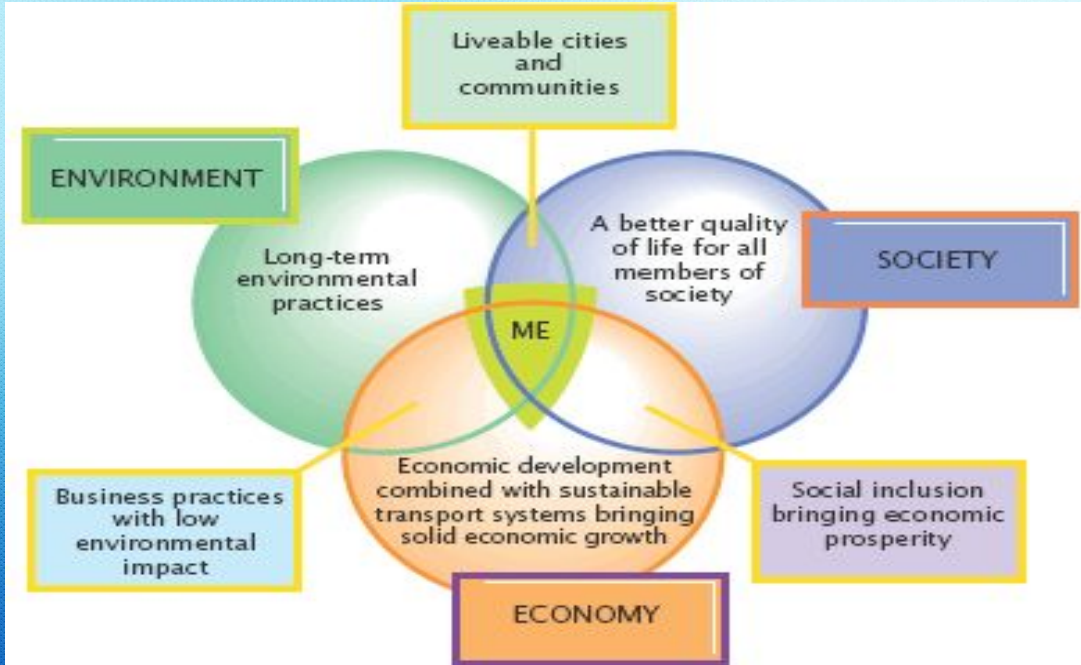
To be considered sustainable, a city must harmoniously balance the three pillars of sustainability:

Economy - Economic activity should serve the common good, be self-renewing, and build local assets and self-reliance.

Ecology - Human are part of nature, nature has limits, and communities are responsible for protecting and building natural assets.

Equity - The opportunity for full participation in all activities, benefits, and decision-making of a society."

Economy, Ecology , Equity



The three pillars of sustainability greatly overlap and must overlap to create a healthy city.

There are certain actions a city council can take that will help to unite all three, such as the construction of community parks.

Reasons Curitiba is sustainable

Runs programs that encourage citizens to keep the city clean, recycle, and take responsibility for their garbage

Bus Rapid Transit system satisfies 70 to 80 percent of the daily trips made by Curitibaanos, lowering carbon emissions by 25% per capita than the average for Brazilian cities.

Pedestrian friendly

Almost 30 parks and urban forested areas



Curitiba's first three urban plans

In 1968, leading architect, urban planner and mayor Jaime Lerner created the city's first urban planning department

1. Form streets straight and parallel.
2. Create a radial layout around the city including large avenues, pluvial systems and regulations to set buildings back 5 meters from the streets.
3. The Master Plan of Curitiba, enacted in 1971. It regulated three basic transformations occurring in the city



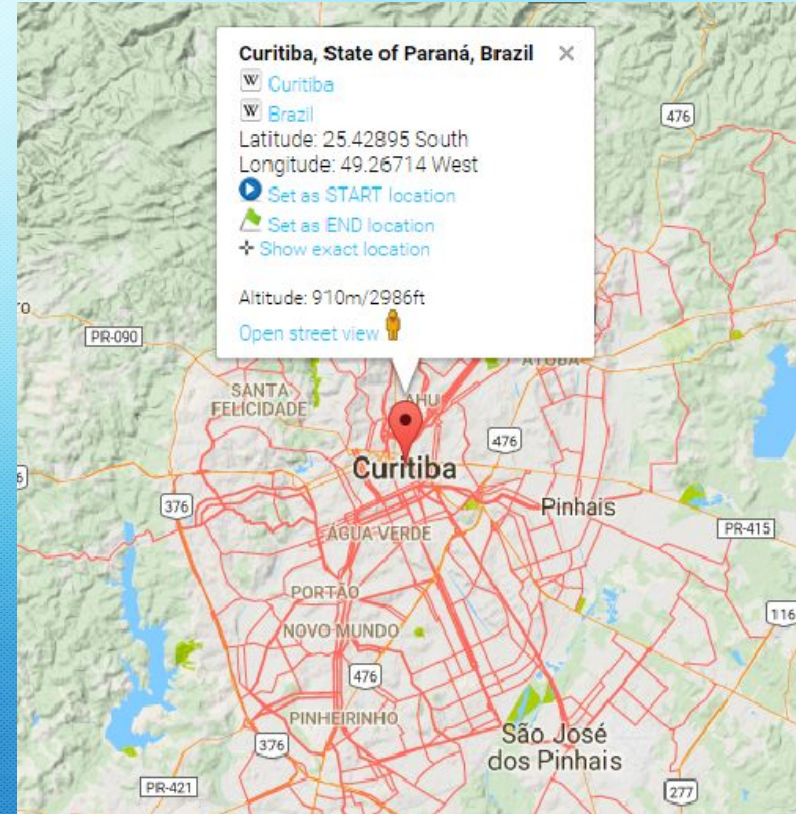
The Master Plan stated the importance of the creation of parks. It was determined that parks would be beneficial to the city for preventing floods, and would help implement the city's water and sanitation system

Geography of Area

The topography of the area is very flat, as it is entirely built on a plateau in the land. The elevation of the city is about 910m or 2986 ft above sea level.

The climate of the area is fairly stable throughout the year, ranging from the lowest of 8 degrees Celsius to the highest of 29 degrees Celsius.

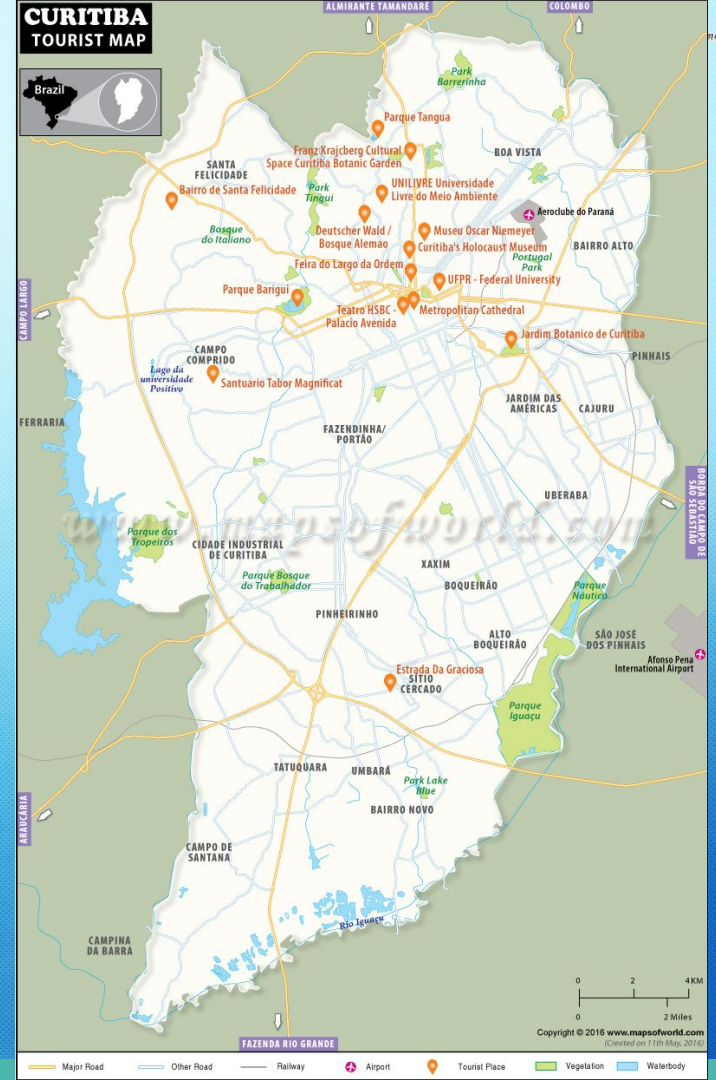
The flatness of the area, with only small hills, makes it easy for flooding to occur with excess rainfall



Rivers that traverse the city

Parks were mainly built around the waterways such as the Iguacu river and its tributaries.

Parks were also constructed in low lying areas where rainwater and overflow from water sources would otherwise flood streets and homes.



Curitiba and the Atlantic Forest

The Atlantic Forest domain stretches along the entire eastern coast and inland continental areas. It is currently occupied by 70% of the entire Brazilian population.



The Atlantic Forest as a global biodiversity hotspot

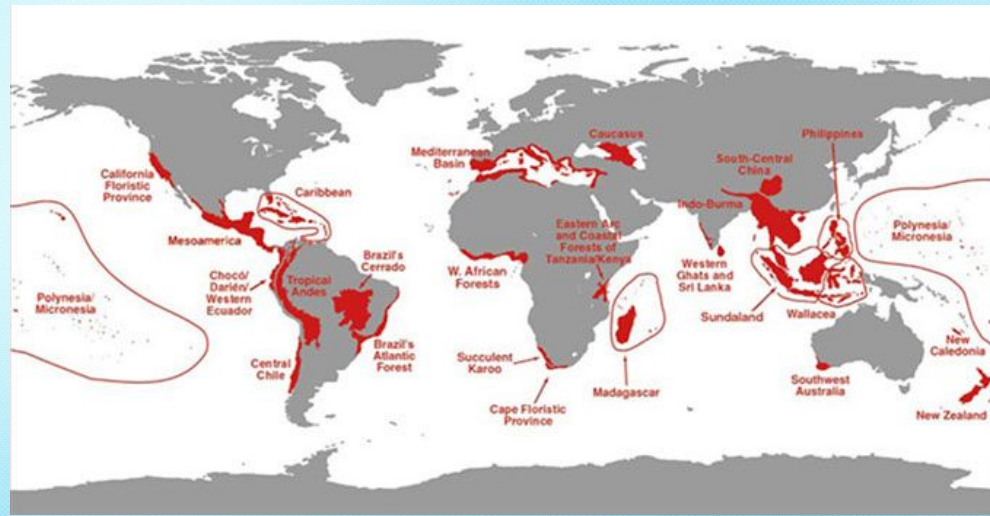
The Atlantic Forest domain is highly heterogeneous and includes:

- coastal and montane evergreen forests
- semi deciduous seasonally-dry forests
- dunes
- marshes along coastal plains
- native grasslands



This variety labels the Atlantic Forest as a global biodiversity hotspot containing 19,355 plant species. (40% are endemic)

Biodiversity Hotspot



“A biodiversity hotspot is a biogeographic region that is both a significant reservoir of biodiversity and is threatened with destruction. The term biodiversity hotspot specifically refers to 25 biologically rich areas around the world that have lost at least 70 percent of their original habitat.”

Creating green spaces and parks with native species helps to conserve native flora and fauna historically found in the area.

Flooding



A solution to the floods



There are about 5,200 acres of land in Curitiba that make up parks along rivers and streams. These parks act as a buffer between the historically flooded areas and the city.

Engineers built small dams and created new lakes to act as holding basins for excess water.

Instead of paying people to mow the grass, they pay them to herd sheep on the grass.

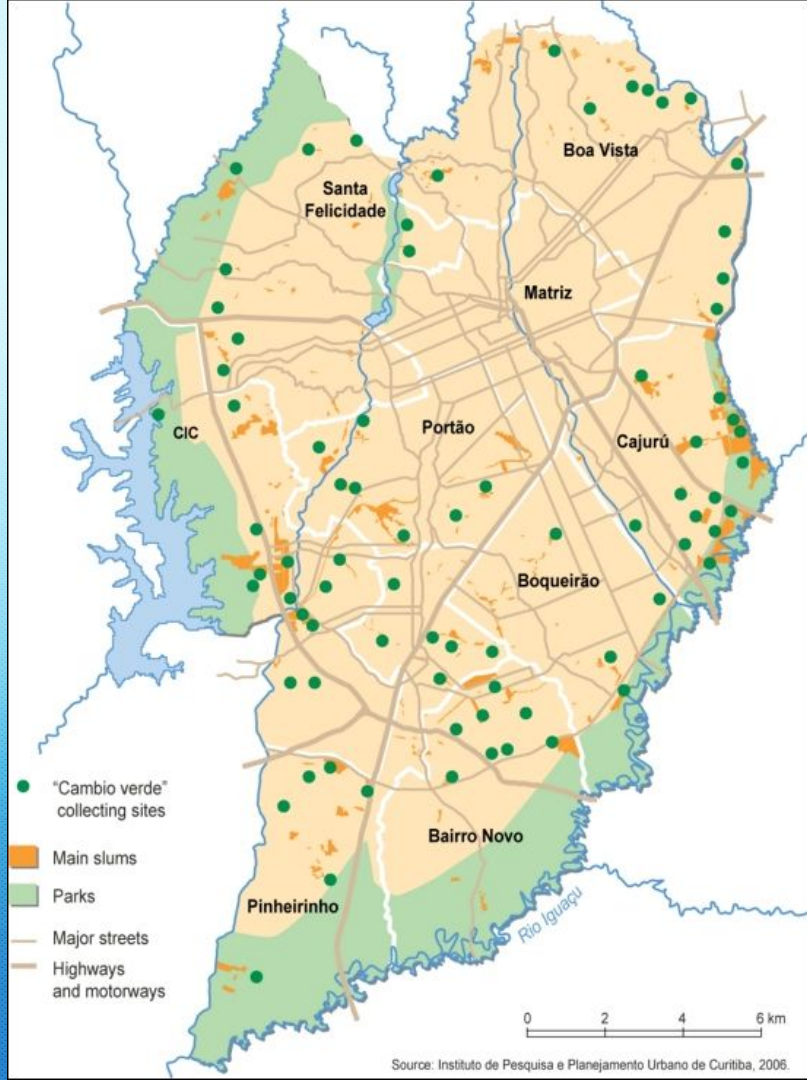
In 1970 Curitiba had only half a meters squared of green space per inhabitant. In 2006 each inhabitant had 51 meters squared of green space.



Popular Parks in Curitiba

Map of Curitiba

<http://www.mapsofworld.com/brazil/cities/curitiba-map.html>



Barigui Park

The park is over 1.4 million square meters long, and wraps around a 400,000 square meter lake. It has a triple track for jogging, running or cycling of 5 km around the lake formed by Barigui River



Barigui Park Wildlife

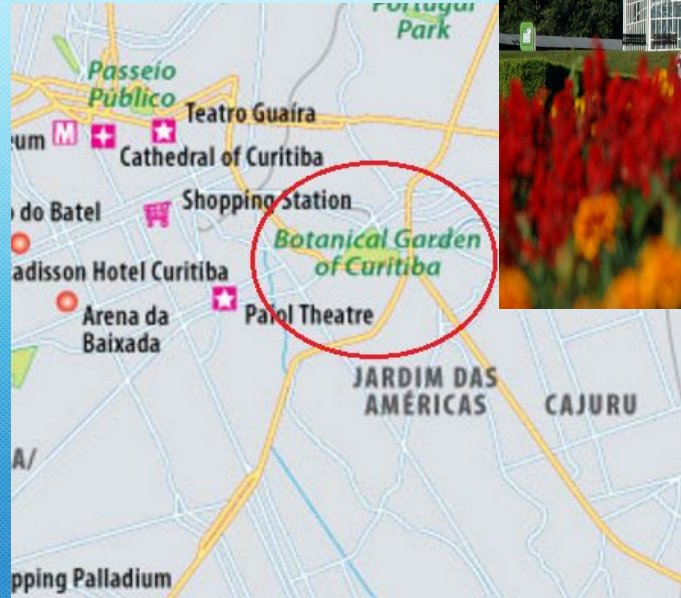
Although there are over 200 bird species in this park, the purple breasted parrot is currently threatened to extinction. Capybaras are often seen near the water and the little birds called tico ticos are also commonly found in the park.



The Botanical Garden of Curitiba

“Jardim Botânico Fanchette Rischbieter” This garden, which opened in 1991, is the major tourist attraction of the city due to the beauty in its construction.

The botanical garden houses part of the campus of the Federal University of Paraná. Is the unofficial symbol of the city. and of all the South Brazil.



Botanical Garden Flowers

Ilex

The country's
national flower.



Begonia

This is safe in small amounts but
potentially toxic in large
quantities due to the prevalence
of oxalic acid in the tissues



Brazilian Spider Flower



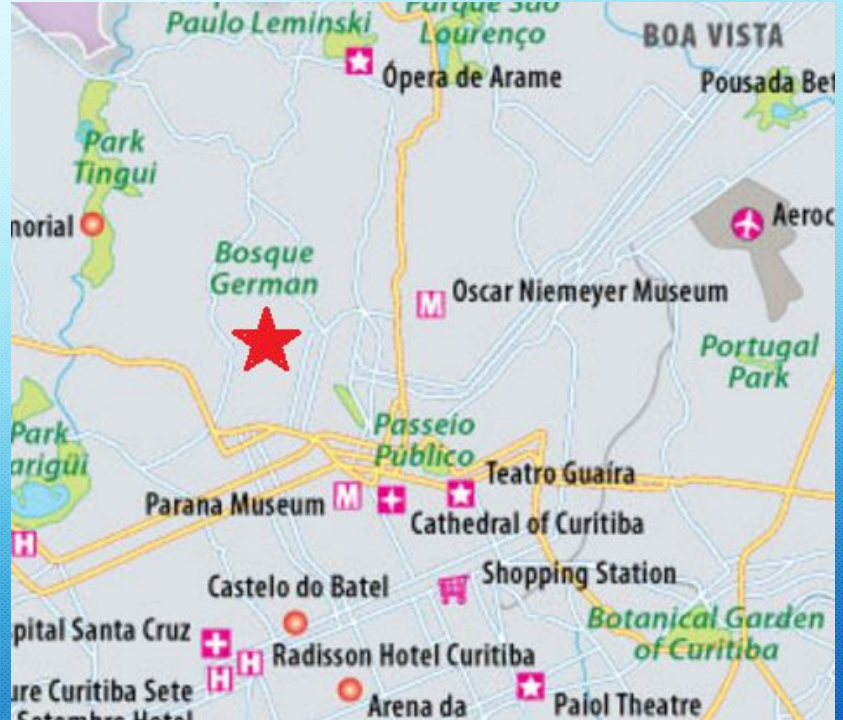
Bosque Gutierrez

This park opened in 1986, and is a total of 38,000 square meters. There is a natural spring surrounded by two small lakes which are the main attractions in the park.

This park helps preserve the natural environment around these bodies of water, as many different types of wildflowers bloom there every season.



Location



Bosque Gutierrez Flora and Fauna

Cinnamon is a common plant grown in this park, and much of the trees found are used in airplane manufacturing.

Aroeira tree



Sabia



Brazilian Opossum



Universidade Livre do Meio Ambiente

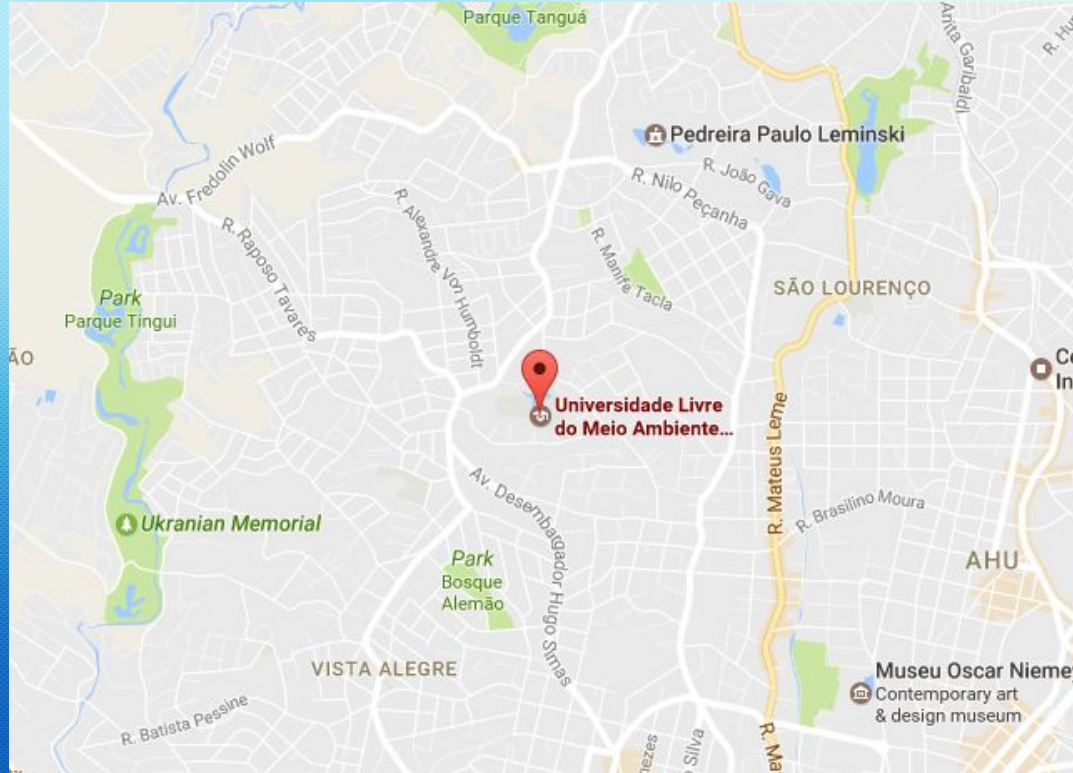
Started in 1992, the Free University of the Environment educates the general public about the preservation of the earth.

This park is about 32,000 square meters, with the headquarters for the university located in the middle of the park.

The park is a dense forest with a deep lake and a quarry that used to be available for patrons to swim in.



Location



Universidade Livre do Meio Ambiente Wildlife

The university has a few different species of bird and fish inside their grounds. Trees such as the embu and lantana help form the observatory at the university.



Cambuí Park

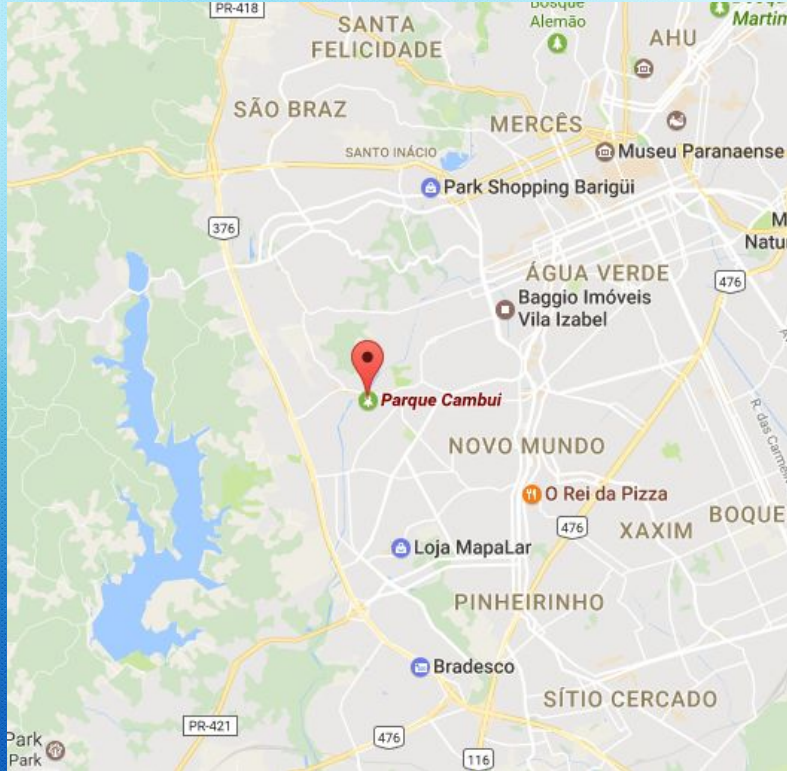
Its name comes from the cambui tree, which is a native tree to Brazil and grows very much in this area.

This park is one of the newest additions in the restoration of Curitiba.

It is the 18th largest park in Curitiba, and has many recreational activities outside of its natural beauty.



Location



Cambuí Park Trees and Flowers

The cambui tree is also known as the rainforest plum, as it grows beautiful fruit during its bloom.

Red Poppies



Brazilian Pine Nut Tree



Cambuui Fruit



Barreirinha Park

Open to the public in 1972, this park is revered as one of the most beautiful in Brazil. It has over 275,000 square meters of land.



Location



Barreirinha Park Natural Species

Cinnamon, Yerba Mate trees, and Brazilian peppers grow naturally in this area.

Yerba Mate tree



Cinnamon tree



Non-green parks

A park without vegetation of any kind, public areas such as museums and theaters are often referred to as parks.

Pictured (from top to bottom):

Opera de Arame

Old City Hall

Museum Oscar Niemeyer



A lush, green forest scene. On the left, a waterfall cascades over a dark, mossy rock face. A stone path leads from the bottom right towards the center of the frame, disappearing into the dense woods. The trees are tall and thin, with sunlight filtering through the canopy, creating dappled light on the forest floor. The overall atmosphere is serene and natural.

The Effects of the Parks

Social Factors



Parks provide a great social atmosphere and safe feeling in a city.

Many of Curitiba's parks have athletic fields, workout stations and other facilities that encourage people to live a healthy, active lifestyle.

Parks with benches and Gazebos provide spaces for people to meet up and have picnics, meetings and plan other activities.

Some parks have more specific areas for other recreational uses such as barbeques, BMX biking, and plane/kite flying.

Providing space for recreational activities can greatly decrease the amount of drug use among teenagers by keeping them active instead of bored.

Economic Factors

Repairs to damaged buildings after intense flooding were once a significant cost to Curitiba. The parks decrease damage to streets, buildings and transportation sources by absorbing excess water.

Constructing the parks costs much less than building walls between the rivers and the city, and also allows the rivers to flow naturally on their original paths.

Building parks increased the market value of the land that was originally constantly flooded.

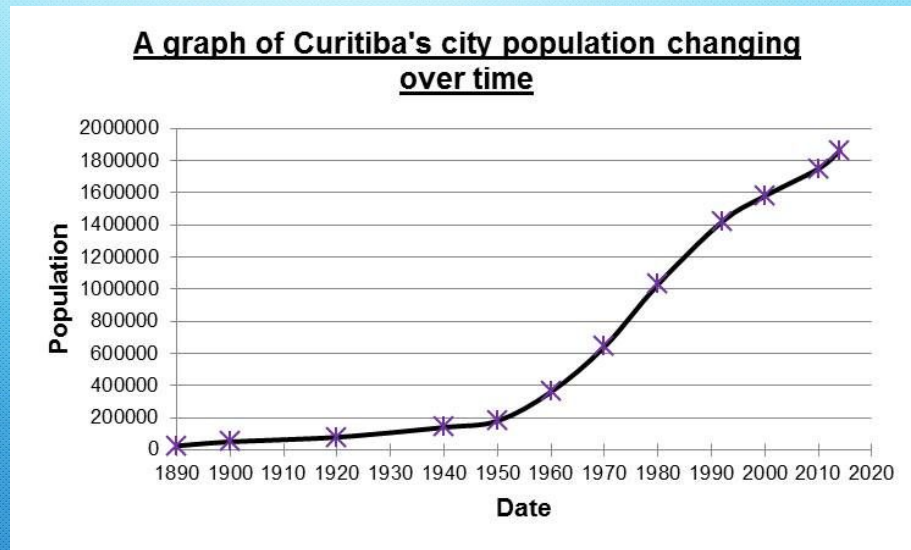




Future?

Future and population growth

<http://www.coolgeography.co.uk/A-level/AQA/Year%2013/World%20Cities/Sustainability/Curitiba.htm>



Future

As the population of Curitiba continues to grow, more transportation will be necessary. A proposed subway system would be a beneficial addition to the city as it would allow more public transport without taking away green space.

Overall this city has a lot of green space and parks that help to create a positive city environment.



References

Climate-Data.org. (2015, September). Retrieved December 26, 2016, from <https://en.climate-data.org/location/2010/>

The Development of Brazil's City of the Future. (2011). Retrieved December 26, 2016, from <http://www.pbs.org/frontlineworld/fellows/brazil1203/master-plan.html>

Mikesh, N. (n.d.). Curitiba, Brazil. Retrieved December 26, 2016, from https://depts.washington.edu/open2100/Resources/1_OpenSpaceSystems/Open_Space_Systems/Curitiba%20Case%20Study.pdf

Mountain Association for Community Economic Development (MACED): Hart Environmental Data

Rees, William E. and Roseland, Mark. 1991. Sustainable Communities: Planning for the 21st Century. Plan Canada. 31: 3. 15.

United Nations Educational, Scientific, and Cultural Organization. 2014. www.curitiba.pr.gov.br/idioma/ingles

References continued

Welle, B. (2009). A green city: parks in Curitiba. Center for City Park Excellence.

<https://cityparksblog.org/2009/10/13/a-green-city-parks-in-curitiba-brazil/>

<https://www.youtube.com/watch?v=hRD3l3rIMpo&feature=fvw> (15 min video about urban planning)

<https://www.youtube.com/watch?v=r4sumpEqnLY> (20 min video about sustainability in the city)

https://www.youtube.com/watch?v=TeBRWrYeb_g (6 min video about the parks in general)

http://www.braziltravelbuddy.com/Curitiba/park/Barigui_Park

http://www.braziltravelbuddy.com/Curitiba/park/Bosque_Gutierrez

http://www.braziltravelbuddy.com/Curitiba/park/Universidade_Livre_do_Meio_Ambiente

http://www.braziltravelbuddy.com/Curitiba/park/Barreirinha_Park