GEOGRAPHY

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Fig 1. Cuba geographical location/Britannica

GEOGRAPHICAL LOCATION

Cuba (or Republica de Cuba) is the largest country by land area in the Caribbean. Cuba is situated just south of the Tropic of Cancer at the intersection of the Atlantic Ocean (north and east), the Gulf of Mexico (west), and the Caribbean Sea (south) [Fig1]. Haiti, the nearest neighbouring country, is 48 miles (77 km) to the east, across the Windward Passage; Jamaica is 87 miles (140 km) to the south: the Bahamas archipelago extends to within 50 miles (80 km) of the northern coast: and the United States is about 90 miles (150 km) to the north across the Straits of Florida [1].

CONFIGURATION

The country comprises an archipelago of about 1,600 islands and cays [2]. The islands form an important segment of the Antilles (or West Indies) island chain, which encloses the Caribbean Sea. The island of Cuba itself is the largest of the Antilles chain and constitutes one of the four islands of the Greater Antilles. In general, the island is long and narrow—1,250 km long and 191 km at its widest and 31 km at its narrowest point. Cuba is divided in 4 main archipelagoes (Fig2): Los Colorados, to the northwest; Sabana and Camagüey, both in the



north-central coast; the Jardines de la Reina ("Queen's Gardens"), near the southcoast; and Canarreos, near the southwest coast. Juventud Island (Isla de la Juventud; "Isle of Youth"). It is the second largest of the Cuban islands, covering 2,200 square km.

LANDSCAPE

Groups of mountains and hills cover about one-fourth of the island of Cuba[3]. The most rugged range is the Sierra Maestra, located in the southeast of the island (Fig3), with its highest point, Pico Turquino at 1,974m. Other mountain ranges are the Escambray Mountains in the center of the island, and the Cordillera de Guaniguanico in the far west that comprises the Sierra de los Órganos and the Sierra del Rosario. The rest of the terrain consists of rolling plains with rugged





GEOLOGIC EVOLUTION

Cuba is the largest island in the Greater Antilles, and its geology records three important episodes [1]: (1) the Jurassic breakup of North and South America(Pangea) and associated magmatic evolution [Fig4] (subsequently forming the Cordillera de Guaniguanico); (2) the magmatic and metamorphic evolution of The Greater Antilles Arc, that began to form ~135 m.y. ago, after the breakup of Pangea, along the leading edge of CARIB [in red, Fig4]; (3) the Paleogene collision and transfer of the North-West Caribbean plate (and Cuba, called CARIB) to the North American plate [NOAM]. The result of this latest tectonic activity was the formation of the Sierra Maestra on the East. The geology of Cuba has thus a history of volcanism, tectonic action, sea level transgressions and regressions, metamorphism, and sedimentary deposition(Fig5).



Fig 4. Tectonic map of the Carribean/ Iturralde-Vincent (2011).



Fig 5. Tectonic map of Cuba/ Iturralde-Vincent (2011).



COASTS AND WATERS

Cuba's approximately 5,745 km of irregular, picturesque coastline are characterized by many bays [Fig6], sandy beaches, mangrove swamps, coral reefs, and rugged cliffs[6]. Cuba has negligible inland water area, as cuban lakes are small and more properly classified as freshwater or saltwater lagoons. The largest natural water surface is Laguna de Leche ("Lagoon of Milk") at 67.2 km2 (Fig7), while the man-made Zaza Reservoir (or *Embalse* in spanish), at 113.5 km2, is the largest inland water surface by area in the country.

RIVERS

The Cauto River or Río Cauto is the longest river of Cuba, as well as the longest river in the Caribbean. Located in southeast Cuba (Fig7), it is one of two navigable rivers in Cuba, with the other being the Sagua la Grande River.



Fig 6. Geographical features of Cuba : Gulfs and bays



Fig 7. Cuba's rivers and Embalse (reservoir)

GEOGRAPHY FLORA, FAUNA & PROTECTED AREAS

BIODIVERSITY

Cuba is one of the most biodiverse regions in the Caribbean. One can over 6000 plant species there and about half of them are unique to the region⁷. Attributed to the government's environmental and conservation policies, it has been named the country with the most sustainable development in 2006 and 2016 by the World Wildlife Foundation⁸. It boasts the Caribbean's largest maingrove forest and one third of the region's coral reefs, with currently over 200 marine areas under protection⁹.

PROTECTED AREAS

Nearly a quarter of Cuba's land area is protected, including six UNESCO Bioshpere Reserves and two natural UNESCO World Heritage Sites: the National Parks Desembarco del Granma and Alejandro de Humboldt. Most of those areas are found in rural areas



Fig. 8 Land covers & use / Cuba land use and conservation



Fig. 9 Coral reefs with watersheds / Cuba land use and conservation

GEOGRAPHY FLORA, FAUNA & PROTECTED AREAS



Fig. 10 Protected areas / Cuba land use and conservation

of low population density¹⁰. LAND SPECIES

One of the most important species found on Cuba are Mangroves, tropical trees, which are a key habitat for biodiversity but are under threat worldwide¹¹. They cover roughly 5% of the country's land area and make up 11% of its forests. A similar amount of land is covered by flooded grasslands, which are an important habitat for many species, including manatees and crocodiles. The largest wetland in the region is the Zapata swamp, which is home to half of the country's 346 bird species, including 17 endemic ones. One of its endemic inhabitants is the Bee Hummingbird (Melissuga Helenae), which weighs 1.6 grams and is considered the smallest bird in the world¹². Another species is the Cuban Crocodile (Crocodylus rhombifer). It is a small and relatively unknown endangered crocodile. Furthermore, 150 of 900 plant species found in the Zapata swamp are also endemic¹³.

MARINE LIFE

Cuba's healthiest coral reefs mainly lie in the Southeast of the country, distanced from urban areas, where pollution poses a threat. Economically important fisheries have been in decline in recent years, with 20& of them fully exploited, 74% overexploited and 5% collapsed. The population of the spiny lobster (Panulirus argus), the most commercially fished palinurid in American waters, has been declining since the 1980s. Among invasive species posing a threat to Cuba's marine biodiversity are the Lionfish (Pterois volitans/miles) and the African walking catfish (Claria gariepinus)¹⁴.

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ADMINISTRATIVE STRUCTURES, CITIES & LANDMARKS

ADMINISTRATIVE STRUCTURES

Cuba is a unitary republic. It is divided into 15 provinces (provincias) and one special municipality of the Isla of de la Juventud (municipio especial). The former are further subdivided into municipalities (municipios), of which there are 168 in total. The number of administrative territories has been changing from initially 3 in 1827, to 6 in 1878, 14 and one special municipality in 1976 and finally to the current

number in 2010¹⁵.

The most populous and smallest province is Havana (La Habana), which had 2,106,146 inhabitants in 2012 and is simultaneously the country's capital city¹⁶.

HAVANA

Havana is Cuba's largest city, major port and leading commercial center. It hosts the Cuban government, most national institutions and diplomatic





Fig. 12 Old Havana / Kriangkrai Thitimakorn, Getty Images

GEOGRAPHY

ADMINISTRATIVE STRUCTURES, CITIES & LANDMARKS



offices¹⁷. Havana is located on La Habana Bay, on the north coast along the Straits of Florida. It lies on low hills. which rise mainly to the east and west of the bay canal. On the west, the Almendares River flows through the city and into the Straights of Florida¹⁸. Havana is divided into 15 municipalities, most notably Old Havana, Plaza de la Revolución and Centro Habana. Old Havana is the city's traditional and historic center, with its buildings dating back to the 16th century¹⁹. It was declared as Cuba's first UNESCO World Heritage Site in 1982²⁰. Since the 1980s large parts of the district have been renovated as an attempt to appreciate the past and boost tourism²¹. Along the coast to the west runs the iconic promenade Malecón, a vibrant social meeting point of the city. Passing through the municipalities Centro Habana and Plaza de la Revolución it leads to Vedado, Havana's more recent business and cultural center within the latter municipality.²²

OTHER CITIES AND LANDMARKS

Santiago de Cuba is Cuba's second largest city with 453,485 inhabitants²³. Its importance in the Spanish-American wars has been recognized by the addition of the San Pedro de la Roca Castle to the UNESCO World Heritage List²⁴. Another site to have been inscribed is the historic center of Camagüey, the country's third largest city (303,764²⁵), due to its irregular urban layout and traditional construction techniques brought by Spanish colonizers²⁶. The rest include:

- Trinidad and the Valley de los Ingenios as built testimony to 18 & 19th century sugar industry²⁷

- Viñales Valley for its untouched landscape showcasing traditional agriculture methods, architecture, crafts & music²⁸

- First Coffee Plantations in the South-East of Cuba

- Urban Historic Centre of Cienfuegos²⁹





Fig. 14 Urbanization percentage (top), Fig. 15 Population density (bottom) / based on "Censo de Población y Viviendas Cuba 2012"

HISTORY OF URBANIZATION

A slow trend towards urbanization in Cuba started during the Spanish colonization in the 16th century and the concentration of shops and manufacturing around colonial vilas. The process has accelerated in times of the independence wars (1868-1898) and due to forced reconcentration of the population by the Spanish government (1896-1897)³⁰. Hence big cities emerged and became attractive centers to the Cuban population, especially the capital Havana, where 37.2% of the population lived in 1907³¹.

RECENT TRENDS

In the last century, Cuba has seen an accelerated trend of people moving to urban areas. Since 1907, the level of urbanization of the population changed from 43.9% to 76.8% in 2012. This is an almost tenfold increase, from 899,667 to 8,197,846, with an annual growth rate of 15.6%. During the last century, the number of urban settlements exceeding 1000 inhabitants rose from 127 to 895³².

STATISTICS BY PROVINCE

The most urbanized province is La Habana (100%), Matanzas (83,3%) and Isla de la Juventud (82,6%). The least urbanized municipalities are Granma (61,3%), Guantánamo (63,7%) and Pinar del Río (64,3%). 10

GEOPGRAPHY SOURCES

1. https://www.britannica.com. Cuba : Land and relief

2. https://www.britannica.com. Cuba : Land and relief

3.http://hdl.handle.net/2445/122345.The geology of Cuba: A brief overview and synthesis, lturralde-Vinent, M.García-Casco, A.Rojas Agramonte, oct-2016, Dipósit Digital de la Universitat de Barcelona, Geological Society of America

4. Menéndez, Leda; Guzmán, José Manuel; Capote, René Tomas; González, Armando Vicente; Rodríguez, Lázaro (March 2005). "Variabilidad de los bosques de manglares del archipiélago Sabana- Camagüey: Implicaciones para su gestión". Mapping Interactivo: Revista Internacional de Ciencias de la Tierra. 100. ISSN 1131-9100

 https://www.researchgate.net/ Cuban land use and conservation, from rainforests to coral reefs. DOI: 10.5343/ bms.2017.1026, January 2018, Bulletin of Marine Science -Miami-94(2),DOI: 10.5343/bms.2017.1026 p. 5

6.https://www.researchgate.net/ Cuban land use and conservation, from rainforests to coral reefs. DOI: 10.5343/ bms.2017.1026, January 2018, Bulletin of Marine Science -Miami-94(2),DOI: 10.5343/bms.2017.1026 p. 5

7. https://www.nature.org/content/dam/tnc/nature/en/documents/Caribbean-Cuba-Fact-Sheet.pdf p. 1

 https://www.cubabusinessreport.com/the-success-and-https://www.cubabusinessreport.com/the-sucba/#:-:text=ln%202006%20and%20again%20in,as%20measures%2006%20this%20success. [retrieved 01.12.2020]

9. https://www.nature.org/content/dam/tnc/nature/en/documents/Caribbean-Cuba-Fact-Sheet.pdf p. 3

10. https://www.researchgate.net/ Cuban land use and conservation, from rainforests to coral reefs. DOI: 10.5343/ bms.2017.1026, January 2018, Bulletin of Marine Science -Miami- 94(2),DOI: 10.5343/bms.2017.1026 p. 9-1

11. https://www.conservation.org/stories/11-facts-you-need-to-know-about-mangroves (retrieved 01.12.2020)

12. https://sites.psu.edu/birdsofcuba/birds-of-cuba/bee-hummingbird/ (retrieved 01.12.2020)

13. https://www.researchgate.net/ Cuban land use and conservation, from rainforests to coral reefs., p. 7-8

14. Ibid. p. 12

15. http://www.statoids.com/ucu.html, (retrieved 24.11.2020)

 "Censo de Población y Viviendas Cuba 2012", Oficina Nacional de Estadística e Información (ONEI), República de Cuba, 01.2014, p. 106

17. https://www.presidencia.gob.cu/es/presidencia/sede/ (re-trieved 24.11.2020)

18. https://www.britannica.com/place/Havana (retrieved 24.11.2020)

19. Ibid.

20. https://whc.unesco.org/en/list/204 (retrieved 24.11.2020)

21. https://www.britannica.com/place/Havana (retrieved 24.11.2020)

- 22. https://d-cuba.com/la-habana (retrieved 24.11.2020)
- 23. "Censo de Población y Viviendas Cuba 2012", p. 111
- 24. https://whc.unesco.org/en/list/841 (retrieved 01.12.2020)
- 25. "Censo de Población y Viviendas Cuba 2012", p. 109
- 26. https://whc.unesco.org/en/list/1270 (retrieved 01.12.2020)

27. https://whc.unesco.org/en/list/840/ (retrieved 01.12.2020)

28. https://whc.unesco.org/en/list/460 (retrieved 01.12.2020)

29. https://whc.unesco.org/en/list/1202 (retrieved 01.12.2020)

30. https://havanatimes.org/features/cuba-is-definitely-a-highly-urban-country/ (retrieved 01.12.2020)

 "Asentamientos humanos concentrados de mil y más habitantes. Censos de 1907 - 2012", Oficina Nacional de Estadística e Información (ONEI), Centro de Estudios de Población y Desarrollo (CEPDE), República de Cuba, 09.2018, p. 5-9 32. Ibid. p. 5-9 Fig1.Graphic by the students. Based on : Map of Cuba. Publisher :Encyclopædia Britannica (2020). Retrieved from : https://www. britannica.com/place/Cuba

Fig2.Graphic by the students. Based on : Map of Cuba. Publisher :Encyclopædia Britannica (2020). Retrieved from : https://www. britannica.com/place/Cuba

Fig3.Graphic by the student. Based on : Cuba shaded relief (n.d.). Map of cuba. Retrieved from https://legacy.lib.utexas.edu Fig4. Tectonic map of the northern Caribbean region. Retrieved from : http://hdl.handle.net/2445/122345.The geology of Cuba: A brief overview and synthesis, Iturralde-Vinent, M.García-Casco, A.Rojas Agramonte, oct-2016, Dipòsit Digital de la Universitat de Barcelona, Geological Society of America

Fig5. http://hdl.handle.net/2445/122345. The geology of Cuba: A brief overview and synthesis, Iturralde-Vinent, M.García-Casco, A.Rojas Agramonte, oct-2016, Dipósit Digital de la Universitat de Barcelona, Geological Society of America

Fig6. Geographical features of Cuba : coastal areas, rios and bays. Retrieved from https://www.researchgate.net/ Cuban land use and conservation, from rainforests to coral reefs. DOI: 10.5343/bms.2017.1026, January 2018, Bulletin of Marine Science - Miami- 94(2),DOI: 10.5343/bms.2017.1026

Fig7. Rivers in Cuba. Retrieved from http://jafausoncuba.weebly.com/geography-and-environment.html

Fig. 8 Land covers & use, https://www.researchgate.net/ Cuban land use and conservation, from rainforests to coral reefs. DOI: 10.5343/bms.2017.1026, January 2018, Bulletin of Marine

Science -Miami- 94(2),DDI: 10.5343/bms.2017.1026 p. 3 Fig. 9 Coral reefs with watersheds, ttps://www.researchgate.

reefs., p. 6

Fig. 10 Protected areas, ttps://www.researchgate.net/ Cuban land use and conservation, from rainforests to coral reefs., p. 9 Fig. 11 Map of Cuba with provinces and main cities, based on https://www.hicuba.com/mapas-lf/provincias.php (retrieved 01.12.2020)

Fig. 12 Old Havana, Kriangkrai Thitimakorn, Getty Images

Fig. 13 Traditional agriculture methods in the Viñales Valley / Ron van Oers © UNESCO

Fig. 14 Urbanization percentage, based on "Censo de Población y Viviendas Cuba 2012", Oficina Nacional de Estadística e Información (ONEI), República de Cuba, 01.2014, p. 85 Fig. 15 Population density, based on "Censo de Población y Viviendas Cuba 2012" p. 85