

# Conifers in Cuba

by Karen A. Vagts

*Tropical conifers enrich the botanical diversity of this not-so-distant ecosystem*

The Caribbean island nation of Cuba lies a mere 110 miles (177 km) off the coast of Florida. Yet for the past 40-odd years, politics have made this country seem distant to most Americans. Diplomatic strains and the United States' government's ban on travel to, and trade with, Cuba has reduced opportunities for communication and information exchange. Recently, however, more Americans have been traveling to this fascinating neighbor and learning about its rich history and resources.<sup>1</sup>

In January 2003, I participated in a tour of Cuba organized by the Boston Architectural Center.<sup>2</sup> The purpose of the trip was to explore the architecture and historic preservation efforts in Havana, as well as in two smaller Colonial cities, Cienfuegos and Trinidad de Cuba, on the southern coast. As a gardener and Conifer Society member, however, I also kept an eye out for evidence of conifers in Cuba.

## Background on Cuba

Cuba is the largest island in the Greater Antilles with a land mass of approximately 42,800 square miles (110,900 sq. km), spread over a large main island (Isla Grande) as well as five archipelagos comprising thousands of tiny islands (*cayos*). Lying just below the Tropic of Cancer, with an average temperature of 77 °F (25 °C) and a humidity level of 80%, Cuba has a subtropical climate (warmer than USDA Planting Hardiness Zone 11).

There are two seasons: the dry season (November through April), which is the preferable time to visit,

and the rainy season (May through October). Mean rainfall is about 50 inches per year, although local amounts vary according to the terrain, and the island is vulnerable to severe flooding and hurricanes.

We observed much building decay, caused by heavy rain and humidity, damage that at present Cuba does not

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<sup>1</sup> As of this writing, the only way most American Citizens can travel legally to Cuba is under a specific license granted by the United States Department of Treasury Office of Foreign Assets. Many educational and religious groups offer licensed tours; a source for a comprehensive list of such programs is Marazul Charters Inc. ([www.marazulcharters.com](http://www.marazulcharters.com)).

<sup>2</sup> Founded in 1889, the Boston Architectural Center (BAC) offers the only degree-granting, concurrent Practice and Academic curriculum in architecture and interior design in the United States. It also offers a range of certificate programs and continuing education courses. The Cuba trip provided an opportunity for BAC students to participate in a joint field studies project with architecture students from the University of Havana.

have the financial resources to address.

Among the Caribbean countries, Cuba is noteworthy for its diverse landscape and unique natural life. By some estimates, approximately 50% of Cuba's 7,000 or more plant species are endemic; these provide shelter and food for indigenous species of birds, butterflies, and other fauna. The island's varied terrain includes beautiful beaches, coral reefs, savannahs, swamps, rainforests, plains, and mountains.

The ecology on the western end of the island bears many similarities to Florida and the Yucatan, while the eastern end resembles Haiti and the Dominican Republic. Cuba supports many protected ecosystem reserves, with flora and fauna precious enough that the United Nations Educational, Scientific and Cultural Organization (UNESCO) has declared six of them World Biosphere Reserves. For the architecture or history buff, there also are ample cultural sites to visit, ranging from the Spanish colonial fortresses to 19th-century mansions and plantations to hotels and

nightclubs built during the decades when Havana ranked as a favorite recreation spot for Americans.

Although tourism once again is becoming a major economic sector (as it was before Castro assumed power in 1959) and the Cuban government is attempting to diversify into areas like biotechnology, agriculture remains a primary focus of the Cuban economy. Sugar, tobacco, and their attendant products of rum and cigars are among their major exports. When the Soviet Union collapsed in the 1990s, Cuba lost a major trading partner and that, combined with the US embargo, requires that the government ration basics and that the Cubans be resourceful in production and just plain living. Nonetheless, despite these deprivations, the Cubans have made impressive gains in healthcare, education, and literacy.

### Cuban Flora

As a sub-tropical island, Cuba offers the ubiquitous palm trees (the tall Cuban Royal Palm, *Reistonea regia*, is the national tree), vivid-colored flowering vines, orchids, and bromeliads, among other tropical plants. In this climate, many of these plants function as year-round foundation plants in the same way that conifers and other evergreens are used in the colder zones of the United States.

Among the deciduous trees that grow in Cuba are rainforest species like ebony (*Diospyros*) and mahogany (*Swietenia mahagoni*). In some of the often decaying but nonetheless distinguished townhouses and other buildings we visited, we saw these woods used for millwork trim and furniture, perfect foils for



Karen A. Vaglis

the beautiful tiles and stained-glass half-moon windows that are common in traditional Cuban architecture.

The Jardín Botánico Soledad de Cienfuegos, one of several botanical gardens in Cuba, is a must-see for any plant lover traveling through the central southern area of Cuba.

Located 11 miles (17 km) east of Cienfuegos, this garden was founded in 1899 by the American sugar magnate Edwin Farnsworth Atkins. Atkins' initial focus was on researching and developing better strains of sugar cane, but he eventually accumulated other plant species. Early on, he involved Harvard University, which eventually ran it as a tropical botanical research institute; since 1961, it has been run by the Cuban government's Instituto de Ecología y Sistemática.

The Jardín features over 2,000 plant species from all over the world – almost any plant that would grow naturally in a climate like Cuba's, including an amazing banyan tree consisting of a huge circular clump of trunks. In addition to allowing tourists to view its treasures, the Jardín continues a century-long tradition of welcoming botanical researchers from around the world.

A major challenge facing Cuba is deforestation. This has been a constant phenomenon since the Spanish settlers first arrived in the 1500s and cleared forests for plantations and for wood products, such as lumber and resin, but it has accelerated during the past two centuries; forests as a percentage of land

cover decreased from 90% in 1812 to 14% in 1959. It was aggravated when Cuba lost support from the Soviets during the 1990s, leaving the Cubans with limited fuel options; thus trees provide a major source of fuel. Forest fires and tourism development further aggravate

deforestation. Among the problems caused by aggressive deforestation are soil erosion, climatic changes, and loss of habitat for fauna. The Cubans are aware of the need to replenish their forests and have developed programs for refor-

estation and conservation. Until alternative sources of fuel are developed, however, Cuban forests remain at risk.

### **Cuban Conifers**

As is typical throughout most of the Caribbean, Cuba has only a small number of conifer species but those it has are very important. While Cuban conifers play a valuable role as the source of wood products and, in some areas, to prevent soil erosion, they are also important aesthetically. Combined with palms and other tropical plants, they provide a lovely framework along Cuba's roadways and enhance the colonial-era town squares and buildings we visited.

Although American and European naturalists have studied Cuban conifers since at least the early 19th century, the available information on them seems limited and the taxonomy confusing.<sup>3</sup> What is certain, however, is that Cuba does have indigenous species, which occur in the sub-climates that best suit them.

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The most important Cuban conifers are pines. Cuba's foremost western province, the Pinar del Rio ("pinewood of the river"), is named after a grove of pines near the river Guamá, and graceful pines dot the areas of central Cuba that we traveled through (between Havana on the north shore and Cienfuegos and Trinidad on the south shore). Pines play a vital role in producing important wood products, such as lumber and resins. They also grow rapidly on poor soils, which helps in reforestation.

Parallel to the dichotomy between the eastern and western parts of the Island, separate pine species occur in different sections of the island. In eastern Cuba (near the US Naval Station at Guantánamo), the species *Pinus occidentalis* (sometimes called *Pinus cubensis*) is found, mainly in "fresh forests" (*bosques frescos*) – tall, closed forests located in valleys. In the west, the major indigenous pines are *Pinus caribaea* Morelet var. *caribaea*, a variant on the Caribbean pine that also grows in the Bahamas and Central America (and is often confused with species of pine growing in Florida), and

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*Pinus tropicalis*.

Other conifers native to Cuba include two junipers, *Juniperus barbadensis* var. *lucayana* and *Juniperus saxicola*, as well as two species of podocarpus, *Podocarpus angustifolius* and *Podocarpus aristulatus*. And, while not typically classified as a conifer, the gymnosperm division Cycadophyta is represented by a unique Cuban cycad, *Micocycas calocoma*.

### Conclusion

Many of us on the BAC tour felt we'd

only seen the tip of the iceberg when it came to Cuba – not just geographically but in terms of understanding this fascinating, complex, and rather mysterious country. For a conifer fan like me, it provoked an interest in learning more about Caribbean conifers. Upon returning home, however, I found that information about them is difficult to obtain. Even the major databases, such as the Conifer Society's Conifer Database, offer limited information about these plants that are so valuable in Caribbean countries and worthy of documentation. Some of them are classified as endangered. Caribbean conifers warrant more

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<sup>3</sup> Many of the various names of, and references for, Cuban conifers include the names Grisebach and Morelet. These are two of the 19th-century naturalists who found Cuba a fascinating place to explore. The German August Grisebach (1814-1879), a pioneer in plant systematics at the University of Goettingen, recorded his observations in the classic work, *Flora of the British West Indian Islands* (1864). The Frenchman Pierre Arthur Morelet (1809-1892), discoverer of Morelet's Crocodile, described Cuba in his book, *Travels to Central America* (1871). These works formed the basis of much subsequent research on natural life in Central America and the Caribbean.

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investigation, and Conifer Society members might assist in this. Perhaps the Caribbean will be the focus of a future Conifer Society tour! ▲

*About the Author:* A graduate of the Boston Architectural Center, Karen A. Vagts is an Information Design and Delivery professional who, when not growing dwarf conifers in her tiny garden in Arlington Heights, Massachusetts, enjoys participating in architectural and nature tours around the world.

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The official Cuba Tourism Website is Cuba Travel (<http://www.cubatravel.cu/>).