

General Geographic Aspects of Guatemala

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General Geographic Aspects of Guatemala

Guatemala, with an area of 42,364 square miles, is the third largest of the Central American republics although its population of approximately 3,000,000 is greater than that of any other Central American state. Its economy is agricultural, the great bulk of the population being concerned with the production of maize, by far the major crop, and a great variety of other food crops. Important export products include coffee, bananas, chicle, abacá, and lumber.

The topography of Guatemala is determined largely by east-west geologic formations which continue into the neighboring countries. Within Guatemala, these formations divide the country into four major divisions: the Northern Lowland, the Caribbean Lowlands, the Highlands, and the Pacific Lowland. The divisions readily can be distinguished since the terrain, climate, vegetation, population distribution, and economy of each differ in many important characteristics.

The Northern Lowland

Terrain and Climate

The Northern Lowland, encompassing approximately one-third of Guatemala, lies in the Department of El Petén and is largely an undulating plateau between 500 and 700 feet above sea level. Surface drainage is poor and is provided chiefly by intermittent streams that flow during the rainy season, i.e., from April to January. After heavy rains, the many lakes and swamps fill rapidly and spread over the surface. The total annual rainfall averages approximately 80 inches.

Vegetation

Almost the entire Northern Lowland is covered by a dense, ever-green forest except for a few stretches of savanna, and small areas of pine in the slightly higher and drier Pochún region near the border of British Honduras. This forest provides the basis for the region's chief economic activities -- chicle gathering and mahogany lumbering -- although scattered patches of shifting agriculture are located within the forest area.

Principal Economic Activities

It has been noted in reliable studies that the Petén area could produce about 20 million board feet of mahogany and other cabinet wood annually on a sustained-yield basis. The economic outlook for the chicle industry, on the other hand, is not nearly so favorable. The output of chicle, best known as a base for chewing gum, has been reduced by destructive practices and, more importantly, several natural and synthetic substitutes have emerged which have materially cut into the chicle market.

Population Density

Remains still exist in this area of the once relatively populous Mayan civilization, but the ancient buildings have crumbled and are covered with matted jungle. Now the region is only thinly settled -- less than one person per square kilometer. Flores, situated on an island in Lake Petén Itzá, has fewer than 3,000 inhabitants but it is by far the largest settlement in the department.

Transportation

The Northern Lowland is virtually inaccessible due to the absence of roads and navigable rivers, and cross-country travel would be extremely difficult even in the short dry season. Most of the mahogany sawlogs are exported, via the Usumacinta River and its branches, through Mexico to the Gulf of Mexico. Chicle is taken out mainly by air from the town of Flores on Lake Petén Itzá.

The Caribbean Lowlands

Terrain

The Northern Lowland of Petén connects, to the southeast, with the Caribbean Lowlands in the Departments of Alta Verapaz and Izabal. These lowlands extend inland from the Gulf of Honduras and include three valleys: in the north, on the border of British Honduras, is the valley of the Río Sarstún; in the middle is the swampy lowland in which the Río Polochic and Lake Izabal lie; and near the border of Honduras is the largest lowland, the valley of the Río Motagua. Separating the valleys are low mountain ranges that form eastward extensions of the Guatemalan Highlands.

Vegetation and Climate

Vegetation in the Caribbean Lowlands is similar to that of the Northern Lowland -- predominately broad-leaved evergreen forests with interspersed grassy areas. The climate, too, is similar except that the rainfall is more plentiful and averages more than 100 inches per year. The "dry" or rather less wet season is very short, lasting only from March through May, and even in these months daily rains are not uncommon. May and June normally are the warmest months of the year with average temperatures in the lower 80's; November and December, with temperatures averaging approximately 70°, are the coolest months.

A small area in the middle part of the Motagua valley, in the departments of Zacapa and El Progreso, has some of the characteristics of a desert in that it is so dry that only xerophytic plants can survive. Similar conditions, to any significant extent, are found nowhere else in Guatemala.

Principal Economic Activities

Mahogany lumbering and chicle gathering are the chief forest industries, and near the rivers there is limited subsistence farming. The extensive banana plantations of the United Fruit Company are located in the lower Motagua valley. The latter are now partly replaced by abaca, oil palm, and rubber plantings because of the spread of banana diseases. The products of the United Fruit Company are shipped out of the country through Puerto Barrios, a thriving port complete with the special loading devices used in the transportation of bananas, and the only deep-water port in Guatemala where vessels can tie up alongside a pier.

Transportation

Although there are no all-weather roads in the Caribbean Lowlands, the United Fruit Company has built railroads throughout its plantations, and the International Railways of Central America follows the Motagua valley from Puerto Barrios to the central highlands of the country.

Population Density

Both the Northern and Caribbean Lowlands are sparsely populated and, although they represent some 46 percent of the total area of Guatemala, they support only 3 percent of the total population. The population density in the Caribbean Lowlands is approximately 9 persons per square kilometer. Puerto Barrios, with 16,000 people, is the largest town in the area, although there are other fair-sized communities in the Motagua valley, particularly in the vicinity of the banana plantations.

The Highlands

Terrain

The Highlands comprise about 47 percent of the total area of Guatemala, support about 90 percent of the total population, and cover most of the southern and western portions of the country. Elevations of over 10,000 feet are common in the southwestern highlands and in the Cuchumatanes Mountains of the northwest; a few peaks exceed 13,000 feet. Among the volcanic cones which dominate the southwestern highlands are several basins of irregular shape, in one of which is the magnificent Lake Atitlan. It is in these basins, which are from 5,000 to 8,000 feet above sea level, that the greatest concentrations of population exist.

From the prominent south-facing edge of the highlands short, torrential streams descend to the Pacific, but the greater part of the highland is drained to the Caribbean. The headwaters of the Caribbean drainage have cut steep canyons into the easily eroded volcanic soils.

North and east of the volcanic zone, the streams have cut their valleys closer to sea level, and exposed the underlying geological structures forming a maze of steep ridges, sharp divides, and deep valley lowlands. Some of the ridges extend all the way to the margins of the Caribbean.

The terrain of the southeastern highlands -- toward the El Salvador border -- is lower in elevation and less rugged than the western or northwestern highlands. This area, one of forests and scattered subsistence farming, also is less densely populated than the other highland areas.

Vegetation

The vegetation cover of the highlands exhibits the two basic characteristics of mountain geography: a general zoning by altitude, and an intricacy of detail that makes the vertical zones in some places difficult to identify. Generally, as one ascends to higher altitudes, the thick "tropical" forests of the lowlands and the piedmont give way to oak, cypress, and pine. Above 10,000 feet pine grows only in patches and there are wide areas of high altitude grassland.

Climate

Although the rainfall averages approximately 50 inches per year in the vicinity of Guatemala City, and the temperatures generally average in the 60's, there are great differences within short distances. Slopes oriented in various directions toward the winds and the sun have notably contrasted climates. In part of the same valley, one slope may be rainy, another relatively dry; or one slope may receive the sun's rays at such an angle that the heating effect is very great, whereas another slope nearby may receive little direct heat from the sun. Generally, however, there is a decrease of temperature with increasing altitude.

Population Density

Most of the areas of productive land within the highlands are small and scattered, but where they exist they frequently support a large population, varying from a few hundred to more than 30,000 people. In some, the farmers live in the villages and go out to work the surrounding fields. In other districts, the people live in family units on the land they are cultivating.

In the southwestern highlands, particularly, it is not uncommon to find that each small community is isolated by thousand-foot canyons from the neighboring settlement so that trade between the two would require the descent and ascent of very steep trails passable only for

people on foot or for mules. Each community has its own distinctive customs, its own unique dress. Instead of a few areas of compact settlement, therefore, there is a complex pattern of isolated communities.

Principal Economic Activities

Agriculture in the highlands is carried on for the most part by small farmers who raise maize, beans, wheat, and other food crops for the domestic market. Much of the poorer and fallow land is given over to grazing, and in the high, cold regions above 9,500 feet the land is used for little else, though meager subsistence agriculture based on potato-growing occasionally is encountered.

Coffee is Guatemala's most important commercial crop. With few exceptions in recent decades, coffee has been the leading earner of foreign exchange, and coffee, as an industry, employs the largest number of people. In total land area it ranks only behind maize, which is the leading food staple of the Guatemalan people. Most of Guatemala's coffee is produced in the piedmont and lower highland slopes that parallel the Pacific coast where the rather precise requirements for this sensitive plant are fulfilled. In this zone between 5,000 and 1,500 feet, volcanic soils are well drained and highly productive, the temperatures average in the 60's and 70's, and the almost 200 inches of annual rainfall are concentrated in one season -- all favorable conditions for the production of top-quality coffee. Coffee also is an important crop on the eastern side of the highlands in the Cobán region, and, in fact, some coffee is produced in 20 of Guatemala's 22 departments.

Sources of labor consist primarily of Indians from the Highlands, some of whom have become permanent residents of the coffee fincas, while others, perhaps a third of the labor force, are migrant workers who return to their highland villages at the end of the October-to-December harvest season.

Sugarcane is grown and processed almost entirely in plantations along the piedmont, many of them low altitude coffee fincas, where cane is planted in stream bottoms between coffee-covered ridges. The shores of Lake Atitlán (approximately 5,000 feet in elevation) are about on the upper limits of sugarcane growth. The cutting and grinding season lasts from January to May.

Transportation

The transportation network in the Highlands is fairly extensive, but it has been accurately described as an overextended, poorly located network of low-caliber, narrow roads. The road beds are fairly stable in the higher parts of the Highland area, however at lower elevations the volcanic ash-sand soils tend to erode rapidly

when disturbed and subjected to scour action by heavy rains. Such rains are particularly damaging along the steep, Pacific-facing piedmont where landslides are common.

On the other hand, the Highland soils drain rapidly. Moreover, they ordinarily can be worked easily by road machinery or even by hand. The low clay content reduces the formation of mud. Also, the local road crews are quite effective except for major catastrophes, and even then alternate routes usually are available.

It should be noted that most of Guatemala's highways are highways in name only. With the exception of the Inter American Highway and a few kilometers of good pavement in the vicinity of Guatemala City, there is no first-class highway in the Republic. Even National Route Number 3, leading from Guatemala City to San José on the south coast, is second-grade.

The Inter American Highway is being built to a heavy-duty paving specification and, though not yet paved throughout its length, can be considered as "all-weather" from the Talisman bridge on the Mexican border to the El Salvador border. The majority of highways, however, are narrow, one-lane roads of sharp curves and steep grades, and are poorly graded and surfaced. Most appear to have been developed from farm-to-market roads or from pack trails of earlier days leading from farm to farm or from town to town.

The International Railways of Central America crosses the Highlands through Guatemala City on its route from Puerto Barrios on the Caribbean coast to San José on the Pacific. From Santa Maria, approximately 20 miles north of San José, the railroad traverses the lower piedmont paralleling the Pacific to Ayutla on the Mexican border. Branches connect the main line with the Pacific ports of Champerico and Ocos, and with the inland towns of San Felipe and San Antonio on the south slopes of the mountains near Mazatenango.

The Pacific Lowland

Terrain

The Pacific Lowland occupies a narrow coastal plain, 320 feet or less above sea level and 10 to 25 miles wide, between the southern border of the highlands and the Pacific. This plain constitutes about 7 percent of the total area of the country, and supports about 7 percent of the total population.

Climate

The rainfall in the Pacific Lowland averages over 80 inches per year except at the northwestern and southeastern extremities of the plain and immediately adjacent to the coast. Here the 40 inches of

rain that fall annually are inadequate for the production of bananas and sugarcane, but will support quick-maturing subsistence crops.

Vegetation

Back of the sandbar, on the immediate shore, there is a variable belt of wet lagoons filled with mangrove. The greater part of the coastal plain is covered with savanna, crossed by ribbons of forest along the many streams which descend from the highlands. Toward the interior, the plain rises gradually toward the base of the mountains through a belt of gently-sloping foothills. The foothills and the lower slopes of the highlands are covered with a thick forest. This forested area is potentially one of the most productive areas in the entire country.

Principal Economic Activities

Except for the extensive United Fruit Company banana plantations near Tequisate, the Pacific Lowland is relatively underdeveloped agriculturally. It was from the United Fruit holdings in this area that the Government of Guatemala in March 1953 expropriated more than 200,000 acres of land under the Agrarian Reform Program.

Transportation

The Pacific coast is straight, entirely without natural harbors. San José and Champerico are the only two Guatemalan ports now operating on the Pacific Coast. At neither of them can ships tie up alongside the pier. Surf conditions and the unprotected nature of the coastline requires anchorage of ships offshore, to be loaded and unloaded by the use of lighters. Both ports have rail connections with the interior.

The only all-weather roads in the Pacific Lowland are from Escuintla to San José and from Escuintla to Chiquimulilla. Trafficability of the other roads in the area is poor in both the rainy and the dry season.

Possibilities of Undetected Travel

Undetected travel throughout much of Guatemala would be extremely difficult due to the population distribution and the lack of continuous forest cover. The dispersed rural settlement consists of a combination of small villages and scattered houses on individual farmsteads. Both subsistence and commercial agricultural activities continue throughout the year and there is practically continuous movement of people from farm to farm or farm to market.

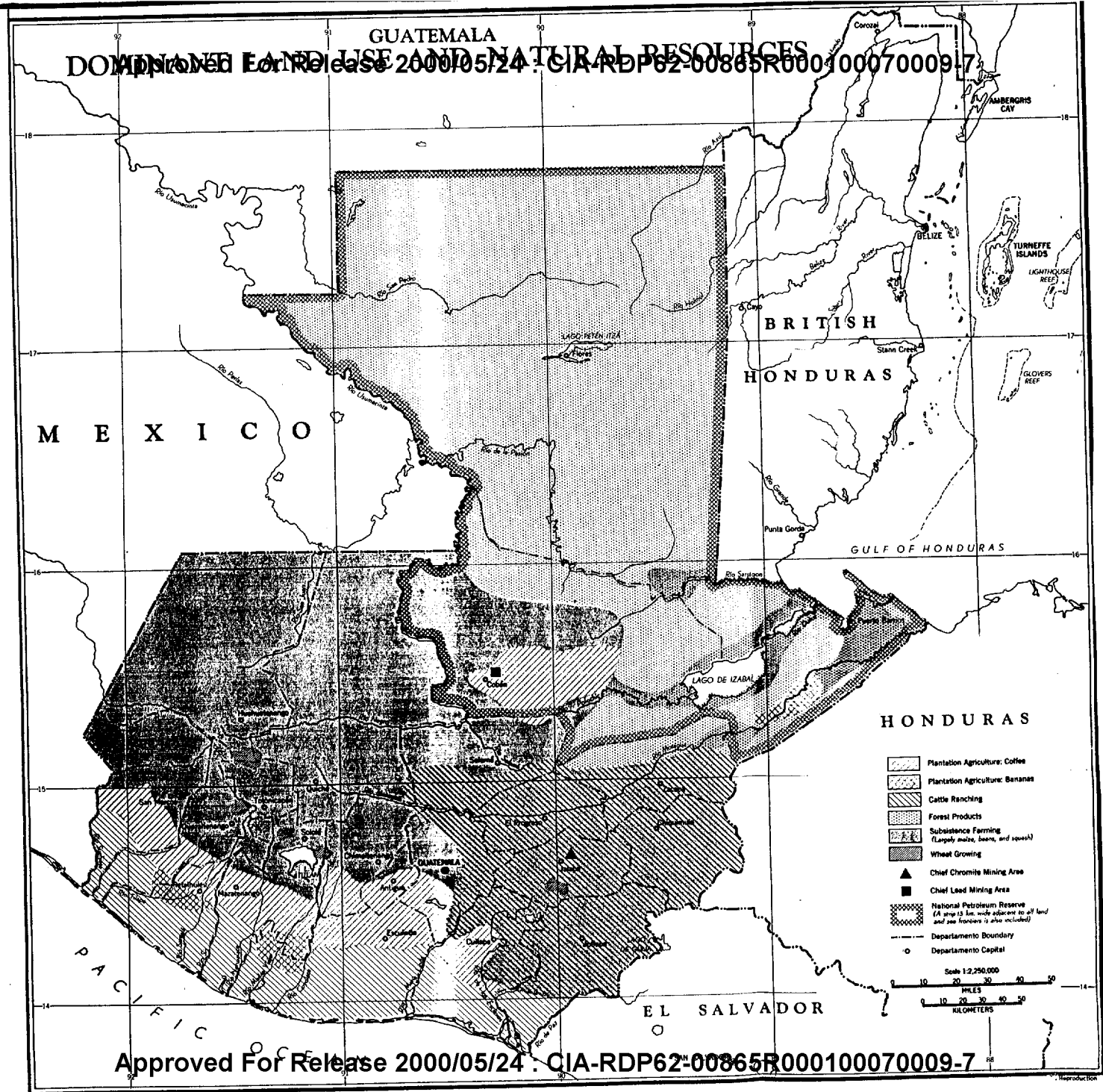
The intensive farming pattern throughout the populated area has left only scattered patches of natural vegetative cover. Some of the steepest slopes and most isolated areas have been cleared and now support crops of maize and other subsistence foods. The only remaining

belts of forest are in the unsettled parts of the lowland, above 10,000 feet where the pine forests are interspersed with grassland areas, and in the extensive coffee areas where shade trees have been introduced.

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