

Grids & Datums

BELIZE

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The Maya were still in Belize when Christopher Columbus traveled to the Gulf of Honduras during his fourth voyage in 1502. When Cortés passed through the southwestern corner of present-day Belize in 1525, there were settlements of Chol speaking Manche in that area. “Early in the seventeenth century, on the shores of the Bay of Campeche in southeastern Mexico and on the Yucatán Peninsula, English buccaneers began cutting logwood, which was used in the production of a dye needed by the woolen industry. According to legend, one of these buccaneers, Peter Wallace, called ‘Ballis’ by the Spanish, settled near and gave his name to the Belize River as early as 1638. English buccaneers began using the tortuous coastline of the area as a base from which to attack Spanish ships. Some of the buccaneers may have been refugees expelled by the Spanish in 1641-42 from settlements on islands off the coasts of Nicaragua and Honduras. Buccaneers stopped plundering Spanish logwood ships and started cutting their own wood in the 1650s and 1660s. Logwood extraction then became the main reason for the English settlement for more than a century. A 1667 treaty, in which the European powers agreed to

the colony and various town plans, general maps at 16 miles to the inch scale, and two geological maps that were produced by 1928. By the mid 1940s, 6,600 miles² had been topographically mapped, presumably all by planetable & alidade methods. The original datum established for Belize is the Sibun Gorge Datum of 1922 where the astronomical coordinates of the origin are: $\Phi_0 = 17^\circ 03' 40.471''S$, $\Lambda_0 = -88^\circ 37' 54.687''W$, and the ellipsoid of reference is the Clarke 1858 where: $a = 6,378,293.645$ m, $1/f = 294.26$. The Colony Coordinates used the datum origin for the Transverse Mercator projection with a scale factor at origin of unity, a False Northing = 445,474.83 ft, a False Easting of 217,259.26 ft, and the unit of measure is where 1 meter = 3.28086933 Jamaican feet. Another datum known to exist is called the Jesuit College Flagstaff, probably being the origin for a local hydrographic survey.

With aerial photography flown in 1969 and 1972, a series of 1:50,000 scale topographic maps were produced by the British Directorate of Overseas Surveys (DOS). The coordinate reference system currently used in Belize is the North American Datum of 1927,

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suppress piracy, encouraged the shift from buccaneering to cutting logwood and led to more permanent settlement. The 1670 Godolphin Treaty between Spain and England confirmed English possession of countries and islands in the Western Hemisphere that England already occupied” (*Library of Congress Country Studies, 2009*). Formerly British Honduras, Belize achieved independence as a parliamentary democracy from the United Kingdom in 1981.

Slightly smaller than Massachusetts, Belize is bordered by Guatemala (266 km) (*PE&RS, July 2008*), and Mexico (250 km). With a coastline of 386 km, the lowest point is the Caribbean Sea (0 m), and the highest point is Doyle’s Delight (1,160 m). Belize’s territorial sea is, “12 nautical miles in the north; 3 nautical miles in the south; note – from the mouth of the Sarstoon River to Ranguana Cay, Belize’s territorial sea is 3 nautical miles according to Belize’s *Maritime Areas Act, 1992*, the purpose of this limitation is to provide a framework for negotiating a definitive agreement on territorial differences with Guatemala” (*CIA World Factbook, 2009*).

The British Colonial Survey Committee authorized a survey of the colony in 1925. In 1926, work began on a contoured map series of

presumably introduced in the 1950s by the U.S. Army Map Service’s Inter-American Geodetic Survey. The commonly-used Ocotepaque Datum of 1948 for Honduras, Guatemala and Nicaragua is not known to have been used in Belize. The available 1:50,000 scale maps of Belize on the NAD27 are over-printed with the UTM Grid. According to *TR 8350.2*, the three-parameter datum shift for Central America including Belize **From NAD27 To WGS84** is: $\Delta X = 0$ m ± 8 m, $\Delta Y = +125$ m ± 3 m, $\Delta Z = +194$ m ± 5 m, and is based on a 19-point solution in 1987.



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