CLIMATE OF THE BAHAMAS

The Bahamas, an archipelago of several inhabited islands and hundreds of cays, is oriented northwest to southwest between latitudes 20.9 and 27.4 degrees north and longitude 72.5 and 79.3 degrees west, approximately. A little more than half the islands lie north of the Tropic of Cancer which passes through Exuma and northern Long Island.

The single most important climatic agent affecting the Bahamas is the refreshing trade wind flow generated by the quasi-permanent Bermuda Azores anticyclone, a large area of high atmospheric pressure which covers a great part of the subtropical North Atlantic Ocean. A statistical analysis of winds at Nassau Airport, shows that the trade winds blow mainly from the east and southeast during the months May to September (which includes summer), and mainly from the northeast and east in the remaining months, the average speed being 8 knots. There are of course marked departures in particular cases, for example, the brisk Nor'wester, following a cold front in winter and the destructive winds in the occasional tropical cyclone in summer.

The trade winds are relatively dry and yield fair-weather cumulus clouds with long periods of bright sunshine, broken from time to time by weather systems moving in from elsewhere or developing locally.

CLIMATIC REGIMES

A) The Summer Regime

During the summer months temperature reach 32 degrees Celsius (90 degrees Fahrenheit) by day and afternoon showers or thunderstorms occur for up to an hour, but may be widespread and more prolonged when developing weather systems are affecting the islands. These systems include migratory areas of persistent rain, tropical waves and tropical cyclones.

The latter may be tropical storms with winds up to 63 knots (73 miles per hour), or hurricanes with stronger winds. Although the Bahamas lies in the path of these cyclones, deaths caused thereby have been rare. An effective warning system is provided by geostationary weather satellite and hurricane-hunter aircraft, operated by the United States National Weather Service which offers information and guidance to the national meteorology authorities in the hurricane-prone tropical region. The official tropical cyclone season is from June through November, but on the basis of effects in the Bahamas it is taken as the period mid-July through October. The months of highest frequency of cyclone effects or of approaches to within 100 miles of the Bahamas are August, September, and October.

In centrally situated New Providence, winter temperatures seldom fall much below 60^{o} F and usually reach about 75^{o} F in the afternoon (the lowest recorded temperature was 41.4^{o} F on January 20, 1981). In summer, temperatures usually fall to 78^{o} F or less at night, and seldom rise above 90^{o} F during the day. Winter temperatures are lower in more northerly islands than in New Providence, and about five degrees higher than in the south. In summer, temperatures tend to be similar all over the

Bahamas. Winds are predominantly easterly throughout the year, but there has been a tendency to become northeasterly from October to April and south easterly from May to September.

The wet season, which occurs in summer, lasts from late May to October, with August being the wettest month with 9.28 inches (235.46 millimeters) of rainfall on the average.

B) The Winter Regime

From about late October through April into early May the trade winds flow from the east and northeast is interrupted by cold fronts which move south and southeast over North America into the Bahamas, followed by cold polar air and strong northwesterly breezes. In winter months, periods of a day or two of north and northeast winds of about 25 knots may occur. Winds gradually slacken as they shift through northeast, and return to east, their normal direction, over a varying period of up to four days.

Temperatures fall soon after frontal passage, sometimes going as low as the upper forties Fahrenheit, but gradually warm up as the wind returns to its normal easterly direction. These cold fronts from the leading edge of bursts of polar air from the continent and are the main winter feature. Fortunately, this cold air modified as it traverses the warm Gulf Stream and ambient Bahamian waters, which save the Bahamas from the full frigid blast of the North America winter.

Although cold fronts can yield much rain, they pass through these islands once, every five days and therefore the rainfall in winter is scant; the dry season is from November to April. January the driest month for New Providence has an average of 1.86 inches (47.24mm) of rain.

The average annual rainfall varies from about 60 inches (15.24mm) per year at Abaco in the northwest to less than half this amount at Inagua in the southeast.

Sunshine records for New Providence for the 30 year period 1971 to 2000 shows the greatest average daily sunshine, 9.3 hours, occurs in April: the least, 6.0 hours per day, in December. On the average, in all months there is at least 7 hours of sunshine per day.

The climate of the Bahamas may be summed up as tropical marine, wet and dry with winter incursions of modified polar air from North American continent.

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