Palestine Biodiversity

Palestine has a global influence, which greatly exceeds its small size. It's a tiny piece of land whose coexisting religious and political diversity is echoed in the remarkable range of ecological variation.

Palestine's geographical position has been both its blessing and its curse. located at the meeting point between Eurasia and Africa. Especially in the eastern southern corner of the Mediterranean Sea, creates unique geography and ecosystems which encountered endemic plants that do not exist in other places in the world and makes the introduced plants coexist strongly. Plants and animals of three continents have interacted and spread throughout history. Consequently, this contribution to the rich diversity of Palestine flora and fauna has long captured the interest of ecologist and scientist alike.

Palestine is located to the east of the Mediterranean Sea between 29 and 33 North latitude 35 and 39 longitude. Palestine (here refers to the West Bank and Gaza Stripe) the two territories border Israel from almost all direction except that the West Bank borders on the east and Gaza Stripe borders Egypt to the south and the Mediterranean Sea on the west. The total land area of Palestine is estimated at 5.16 million dunums of which 1.66 millions dunums are under cultivation (1.5 million of dunums in the west bank and 0.16 million in Gaza strip.)

Physical Characteristics of Palestinian Land

The topography

Based on the topography and climate variation, The Palestinian Territories could be divided into five distinctive regions.

The Jordan Valley Region

The Jordan Valley extends along the Western Bank at the Jordan River from the village of Bardal in the north to the northern tip of the Dead Sea in the south. It is approximately 70 Km long with a total area of about 400,000 dunums. Elevation ranges from 200 – 300 m below sea level to approximately 100 m above sea level in the north and 200 m in the south. The climate is semi-tropical characterized by hot summers and warm winters. Annual rainfall rang from 20 mm in the northern parts of the valley to 100 mm in the south.

The soil are sandy and calcareous. The region grows off-season vegetables and semi-tropical fruit trees including bananas and citrus. Natural plants are mainly *Ziziphus spina_christi, Acacia raddiana, Acacia birtilis, Tamarix galica, and Atriplex halimus*

The Eastern Slopes Region

The Eastern Slopes extend along the eastern side of the West Bank, east of jenin in the north to eastern hills of webron district in the south. The total area is approximately 1.5 million dunums. Elevation ranges from 800 m above sealevel to approximately 150 m below sea level. The climate is semi-dry with low annual rainfall varying 200-400. Dominant soil are the grey calcareous steppe soils and alluvial soil in valleys and plains. This area is used mainly for grazing of sheep and goats. Natural plans include some trees and shrubs, among these are *Ceratonia siliqua, pestacialentiscus and remnant of Pestacia (in the northern parts) and Sarcopoterium spinosum, Thymus capitatus Artemisia herba alba, Ononis natrix,Ballota undulate, Hordeum bulbosum,Poa bulbosa and Capparis ssp*

The Central Highlands Region:

This is the largest region in the West Bank with an approximate area of 3.5 million dunums. Its length is 120 Km including the area from Jenin in the north to Hebron in the South. It is mountainous with some areas exceeding an elevation of 1000 m above sea level. It has a good average of annual rainfall ranging from 400 mm in the Southern foothills to about 700mm in the mountainous areas. Soils in the valleys between the hills and mountains are alluvial soils, in the mountains the dominant soils are Terra-Rosa soils, and Rendzina soils on the eastern and southern slopes. Natural plants include Aleppo Pine forest and Maquis, Evergreen Oak forest, Carob-Lentisk Maquis, Garique and Batha. Unfortunately all these forests were destroyed and only scattered trees are found. Only a few areas survived this destruction.

The vast majority of the cultivated area in the highlands is rainfed. Of the total agricultural area, olives and grapes predominate, and with almonds and fruit trees occupying 60% of the area. Winter cereals, grain legumes etc., are cultivated on 35% of the area. Vegetables are the main crops in the remaining 5% of the area, a portion of which is irrigated (half from artesian wells and the other half is from springs).

The Semi-Coastal Region:

The Semi-Coastal region is an extension of the Palestinian Mediterranean Coastal region. It is limited to the northwestern part of the West Bank and comprises parts of Jenin and Tulkarem districts. This region is about 60 Km long and about 1-3 km wide with an area of about 400,000 dunums. Elevation varies between 100-300 meters above sea level. The average annual rainfall is about 600 mm. Much of the soils are alluvial heavy terra-rosa. Natural plants are mainly remnants of *Quercus calliprinos* and *Pistacia palaestina*. Plus some shrubs e.g. *Sarcopoterium spinosum* and *Thymus capitata*.

Over half of the cultivated area is irrigated or receives supplementary irrigation, growing citrus, other fruit trees, potatoes, cauliflower, cucumbers, squash, tomatoes and other vegetables. The rain-fed area grows fruit trees, but mainly rain-fed wheat, barley and grain legumes.

Coastal Region (Gaza Strip)

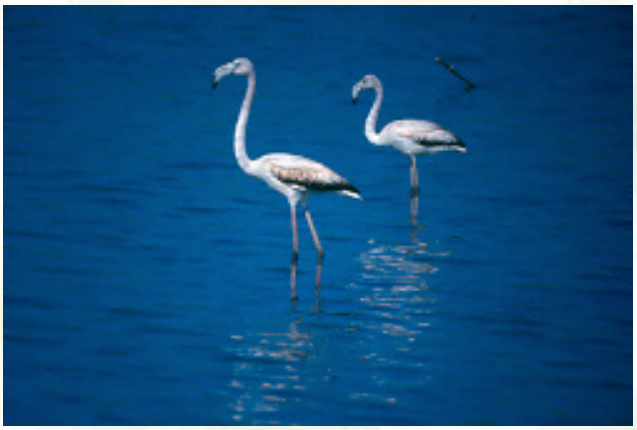
The area of this strip is small, it is only 365,000 dunums or 365 Km square. There are different types of soil; Sand dunes and concentrated in the coastal belt in the western part of the territory. A considerable area of such soil has been reclaimed for cultivation of citrus and vegetables. Loessial sandy to Loess soil is mostly present in the eastern part. The soil is deep and used for fruit and vegetable cultivation. Alluvial soils of the wadis form a limited area in the northeastern part. This is a productive area used mainly for fruit, field crops and the cultivation of vegetables. The average annual rainfall is estimated at 300 mm, the lowest amount falling in the southern region where it averages 150 mm/year. The total amount of rainwater in Gaza is estimated at about 125 million cubic meters.

It is important to note that for the entire West Bank and Gaza approximately 75% of rainfall is lost to evapotranspiration with the remaining water infiltrating into the soil, recharging the groundwater reservoir or appearing as runoff in rivers and streams, most of them are ephemeral

Some Acacia spp, Artemisia monosperma, and Retama raetam near the seashore and scattered trees of Ziziphus spina christi and Z. lotus inland represent natural plants.

Of the total area of 360,000 dunums, Palestinian farmers cultivate 170,000. Sixty percent of this is irrigated, half under citrus and the other half under vegetables and other fruit trees. Of the non-irrigated, 40% to 50% grow olives, grapes and almonds; about 35% is under field crops; 15% grow rain-fed vegetables.

It is estimated that Israel has expropriated about 100,000 dunums, half being suitable for agriculture. Most of the rest of the Gaza Strip appear not suitable for farming, mostly due to the large built up area.



The Climate in Palestine

West Bank

The geographical location of the West Bank between the 31°21` and 32°33` latitude and between 34°52` and 35°32` longitude, makes the area highly influenced by the Mediterranean climate. The Mediterranean climate is characterized by a long, hot, dry summer and short, cool, rainy winter. Rainfall is limited to the winter and spring months. It usually starts in the middle of October and continues up to the end of April. Snow and hail, although uncommon, may occur anywhere in the area especially to the west of and over the highlands (Rofe & Raffety, 1965).

Climate within the relatively small area of the West Bank is affected by the diverse in topography and altitude. Accordingly, the West Bank is divided into four main climatic regions as described before: the Jordan Valley, the Eastern Slopes, the Central Highlands and the Western Slopes foothill region.

The mountainous areas in the West Bank that stretch from north to south, serve as a barrier to the passage of moist air coming from the western direction. The western air is always wet as it is coming from the Mediterranean Sea. The marine influence passes deep into Tulkarm and Jenin districts. It also reaches the western edges of Nablus, Ramallah Jerusalem, Bethlehem and Hebron districts. It does not pass deep into these districts due to the presence of high lands that counter the wind. In the southern area of the West Bank, the marine influence decreases as the Mediterranean shore bends to the southwest, thus increasing the distance between the sea and the West Bank.

In the north, there are no hills to block the sea winds, the marine influence passes easily across the open lands of Marj Ben Amer Plain and reaches to the Jordan Valley. This explains the increased quantity of rain in the northern Jordan Valley despite the fact that most of it is below sea level. The lower Jordan Valley has a different transitional climate, between dry steppe and the extreme desert conditions of the Dead Sea region.

The climate of the West Bank, especially in the south, is influenced by the vast nearby deserts, Negev and Arabian deserts. Especially during the spring and early summer, desert storms move through with hot winds full of sand and dust *(khamaseen)*. These storms increase the temperature and decrease the humidity.

The climate of Palestine as a whole and the West Bank in particular, is of the Mediterranean type, marked by a mild, rain winter and a prolonged dry and hot summer. The annual amount of rainfall decreases from north to south. Temperatures, on the other hand, increase from north to south. In a west to east direction, annual rainfall and mean temperatures undergo similar but less regular changes. Also, there is a gradual decrease in the annual, monthly, and diurnal averages of relative humidity from north to south and from west to east throughout the whole area.