Oak Woods of Puebla

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Oak forests were highly respected in ancient times. The forest was, for ancient Mexicans, a place of wind, cold, fear and tears, where wild beasts, snakes and tarantulas lived. It was said that everything can get in but nothing can get out. There were big trees whose wood was used in the construction of houses, furniture and instruments, but man had to go into it only protected with a stone axe.

The Ahuatl or oak was considered as a shade tree and good for lumber. Another oak was known as the Teocuathuitl, the “divine or old tree”, perhaps because the “huictlis” were made with this kind of wood to plant the divine corn. The Huictli was the most important tool for indigenous cultures because it was used in all stages of corn cultivation, as well as a planting stick with its fire-hardened tip, it served as a shovel, hoe and dustpan (Aguilera, 1985).

Upon arrival, the conquistadores brought ancient knowledge about European oaks. They had perfected the production of various high quality wood products used for construction. The American oaks represented a big challenge for them because they showed dense, hard and very resistant wood. Many oaks ended their long life as beams, wagon wheels, railway sleepers, constructions, firewood, coal and various other products. Another important factor in the loss of forests was the founding of cities in temperate zones, such as Mexico, Veracruz and Puebla. These cities were built where the weather is mild and there were large tracts of pine-oak forest.

What happened to the oak woods in Puebla? Puebla is ranked fifth place in oak diversity in Mexico with 50 species. In pre-hispanic times the impact was not very drastic but later, with the arrival of the Spaniards, the destruction increased up to the point of leaving the great plains without trees and unable to recover. It has recently been estimated that there are 325.5 square kilometers of oak woods in Puebla state, 90% less than in 1981 when 3,390 square kilometers were registered (Benitez 2009).

This essay examines some cases of the loss of the oak woods to urban areas, excessive exploitation and because of ignorance of the ecological value of oaks.

La Calera, or the Villa Galaxy residential area, is one of the last oak forests in Puebla city whose existence is threatened by housing projects in the urban zone. Also Flor del Bosque park and the Amozoc mountains are some of the last oak forests in the city of Puebla. (Mejía, 2009)

It was possible to exploit this forest legally, as according to environmental impact studies the area is categorized with low biodiversity (Tajonar, 2009). However, according to surveys in La Calera forest, there are 7 oak species (6 trees and 1 shrub): Quercus sebifera Trel., Quercus mexicana Bonpl., Quercus acutifolia Née, Quercus liebmannii Oerst. ex Trel., Quercus laeta Liebm., Quercus
obtusata Bonpl., Quercus castanea Née. Another study found 75 species of birds in this forest of which 3 species are subject to special protection, according to NOM-059-SEMARNAT-2001. These are the migratory Cooper’s hawk (Accipiter cooperii) and the native Pileated flycatcher (Xenotriccus mexicanus) and Brown-backed solitaire (Myadestes occidentalis).

There are other species present, that although not listed in the Official Mexican Standard are very significant - Melanerpes formicivorus (Acorn woodpecker) Resident; Picoides scalaris (Ladder-backed woodpecker) Resident; Campylorhynchus jocosus (Boucard’s wren) Resident; Thryomanes bewickii (Bewick’s wren) Resident (Pineda, Mendoza and Jimenez, 2009).

Another case is the Valsequillo Valley, a dry valley adjacent to La Calera and part of the Tenzo mountain range. This valley contains the Manuel Avila Camacho dam built in 1940. The valley was once surrounded by oak woods but the building of the dam saw the beginning of their destruction, now reduced to a few small populations.

In this area there are at least 12 oak species (2 shrubs and 10 trees) which are currently isolated patches in large areas. Quercus acutifolia, Q. mexicana, Q. castanea, Q. glauoides M. Martens & Galeotti, Q. glabrescens Benth., Q. liebmannii, Q. magnoliifolia Née, Q. obtusata, Q. laeta, Q. microphylla Née, Q. sebifera, Q. grahamii Benth.. There are 12 orchid species (1 epiphyte and 14 terrestrial), 9 bromeliad species (7 Tillandsia spp. and 2 Hechtia spp.), 8 Agavaceae (1 Polianthes, 2 Manfreda, 2 Yucca, 4 Agave) and several native species of small mammals including Bassariscus astutus, (civet or Ring-tailed cat), Mustela sp. (weasel) and the opossum.

Several other important areas are being affected by the subdivision of

Q. glauoides by the resevoir at Valsequillo.
land. The construction of the Captain Carlos Camacho Espiritu Boulevard was proposed 5 years ago. A two-lane highway became four and brought with it the sale of land without a land-use study. The same site contains several examples of hundred-year-old trees, such as the Ahuacoxtle (*Quercus glaucoideae*), which is estimated at 300 years old (Photo 1) and a Chavarro (*Quercus laeta*), which may be in danger of ending its days as fuel (Files Botanical Garden “Louise Wardle de Camacho”).

Another affected area is La Malinche (belonging both to Puebla and Tlaxcala), where oak and pine forests covered the mountains. These forests have been degraded by 90% on the Puebla side of the mountain. This year it was estimated that about 1800 hectares of the 2000 that belong to the municipality have been totally cleared. Illegal logging has been the most acute problem in this area, and although there have been many reforestation projects there is little seedling survival due to underground fires made by the loggers. It is estimated that at least 200 hectares are lost per year. This area is very important because La Malinche is considered a source of water for Puebla City (Newspaper Milenio-Puebla, 2009).

The final example is the locality called Puerto del Aire, adjacent to Veracruz state. In this part of the state of Puebla, it is not possible to estimate the future of oaks. There are two types, the actual oak forest and oak-pine forest and a xeric shrubland dominated by *Quercus sebifera* (a shrub) and *Quercus greggii* (A.DC.) Trel. (a shrub or tree). There are 3 species of *Sedum* and one *Echeveria*, legumes, agaves and even epiphytic orchids. The oaks here form a complex of very dense thickets. These landscapes are being threatened by pine plantations and cattle grazing, so it is almost impossible to find recent shoots or seedlings and most are mature trees.

There are several strategies, all them with a common goal, to spread the importance and appreciation of oaks and the vital role they play within ecosystems. Actions are being taken to defend the last remaining relics of oak woodland in the city of Puebla, such as a project by the State Ecology Council to expand the zone of the Tehuacan-Cuicatlán biosphere to include Puerto del Aire. Two important *ex situ* oak collections exist in Puebla, the Botanical Garden of the Benemerita University of Puebla and the Louise Wardle Camacho Botanical Garden.

It is clear that competition for space and population growth is affecting these species, however different organizations, both governmental and non-governmental, are giving a major boost to oak conservation to avoid their extinction from the areas formerly occupied.

Bibliography


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