

QUERCUS INSIGNIS MARTENS & GALEOTTI: DISTRIBUTION AND CONSERVATION

Maricela Rodríguez-Coombes^{1,2}, Allen Coombes³ and Horacio Morales¹
¹Puebla University (BUAP), Mexico. ²Plants and Environment Laboratory,
Biodiversity and Ecology Department, University of Southampton, U.K.
³The Sir Harold Hillier Gardens, Hants, U.K.

INTRODUCTION

Quercus insignis is a remarkable oak from tropical regions of southern Mexico and Central America. In Mexico it is found only in the cloud forests of the Gulf and Pacific slopes, particularly in the states of Veracruz and Jalisco. *Quercus insignis* was the second species studied in the Mexican Oaks Conservation Project, funded by Fauna and Flora International (FFI) as part of their Global Trees Campaign.

The project was carried out jointly by staff from the Herbarium and Botanic Garden of the University of Puebla in Mexico and the Sir Harold Hillier Gardens in the U.K., with the collaboration of Xalapa Botanic Garden, Veracruz, and The Institute of Botany in Guadalajara, Jalisco.

In its native habitat, *Quercus insignis* is a large tree with distinctive and very large acorns, making it easily recognizable.

Plant and animal diversity is very important. A single tree can support more than 70 different species of epiphytes, including orchids, bromeliads, and ferns.

METHODOLOGY

The methodology included herbarium and field work, as well as GIS mapping. Information about the distribution of the species was obtained from the National Herbarium at the National University in Mexico, the Institute of Botany at the University of Guadalajara, and the Ecology Institute in Xalapa, Veracruz.

Field work was assisted by local researchers from the herbaria of the Institute of Botany in Guadalajara and Xalapa. GIS mapping was used to determine additional potential localities.

Several field trips were made in the States of Jalisco, Veracruz, Puebla and Oaxaca to visit all the possible locations and determine the current distribution. During these trips local people were informed about the objectives of the project and a good working relationship was established with them.

RESULTS

Ethnobotany

The distinctive acorns make this species well known by local people who collect the acorns for making ornaments. The timber is also used locally in house building, as it is very tolerant of moist ground and lasts for many years.



Fig 1. *Quercus insignis* in Huatusco, Veracruz

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Fig 2. Local girl in Huatusco, Veracruz with *Q. insignis* acorns.

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Conservation

Quercus insignis is threatened in parts of its range by the widespread cultivation of coffee. Regeneration is occurring in some areas, but heavy grazing means that young seedlings can be destroyed by cattle. Seed was collected from several localities and sown in Puebla, Xalapa, and at the Sir Harold Hillier Gardens. The young plants growing in Mexico will be planted in their native habitat.

Distribution

Using satellite images and field data, a very accurate distribution map was prepared of the Huatusco region, from where this species was described. Using GIS it was possible to show the distribution of this species for all Mexico, showing it to be very rare. In the two main centres of distribution, Veracruz and Jalisco, the populations show small morphological differences.

CONCLUSIONS

This study showed the lack of information on the habitat and distribution of *Q. insignis*, one of the most spectacular trees in Mexico. Based on our observations this species needs a warm, humid climate. These conditions are also ideal for coffee and in the area where *Q. insignis* is native, much deforestation has occurred to provide land for coffee plantations. The findings achieved through this project allow us to propose this species as Endangered in Mexico according to the IUCN criteria.

As future work, we are proposing population studies in the regions of distribution, in order to know more about the genetic diversity of this species. Also, more exploration work is needed in the Mexican states of Guerrero and Michoacan, although the populations there, if they exist, are likely to be very small.

Finally, more work is needed with the local communities for replanting and we see the production of educational material to be an invaluable conservation tool.

Collaborators

M. en C. Maite Lascrain, Jardin Botanico,
Francisco Xavier Clavijero, Xalapa, Ver., Mexico

Dr. Jorge Perez de la Rosa, Herbarium, Instituto de
Botanico, Universidad de Guadalajara, Jal., Mexico

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