CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA

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ABUNDANCE, DISTRIBUTION AND CONSERVATION STATUS OF *GUAIACUM SANCTUM* L. IN MEXICO

Sampling localities

Based on *Guaiacum sanctum*, several routes were established in order to access locations with the highest probability of finding populations. These routs were chosen on the basis of recent botanical collects, information from experts, the presence of protected areas and reserves, and accessibility along dirt roads. Based on these results, the first search for *G. sanctum* was conducted within the Yucatan Peninsula. As a result, 14 sites were located in Campeche.

Rapid population assessments of *G. sanctum* at the Yucatan Peninsula

Five rapid population assessments of *G. sanctum* and of the associated arboreal vegetation were carried out at different localities.

Table 1 shows the species' population densities for four size categories at the five study localities. From this information, two important aspects can be highlighted:

1. the total density of the population, including trees with DBH (diameter at breast height) higher than 10 cm, is remarkably elevated, specially at three of the five sites;

2. all the populations presented an abundant number of seedlings and of small trees, which indicates a high regeneration potential.

The maximum size of the guayacan trees varied at each site depending on the soil depth. For example, in one of the sites the maximum DBH was 12 cm and the soil depth only 3 cm, while in another area the maximum DBH was 48.1 cm. and the soil depth 8 cm.

The vegetation type where these populations were found, is tropical sub-deciduous forest with a maximum canopy height of 25 m. In these forests, 30 to 65 tree species with DBH $\geq$ 5 cm in 1000 m^2 were found. Guayacan was the dominant or co-dominant tree species in the surveyed localities, representing between the 4% and the 30% of all the trees registered per site. The forests where *G. sanctum* grows usually occur in karstic hills and flat areas that do not flood.

Table 1. Densities per hectare of: a) seedlings (>50 cm tall), b) young trees (51 –150 cm tall), c) trees with DBH of 1-10 cm, d) trees with DBH higher than 10.1, (in parenthesis the maximum DBH is indicated), at each of the surveyed localities in the Yucatan Peninsula.

	Locality				
	Locality 1	Locality 2	Locality 3	Locality 4	Locality 5
a)	12080	8590	9730	1430	3354
b)	770	710	3440	600	455
c)	670	190	1430	460	195
d)	250 (29.3)	280 (34.1)	300 (48.1)	20 (12.0)	13 (26.9)

Interviews of local people in the surveyed areas

Questionnaires of the local people were applied at each locality, and a total of 42 interviews were conducted.

The interviewed indicated the sites where guayacan can be found and where it is more and less abundant. They also provided information about past exploitation activities that have occurred at these sites. At one of the sites, guayacan is currently being exploited by a forestry company. According to the interviewed, the exploitation is being conducted "irrationally" and the forest is being destroyed because trees with a DBH of 5 cm. are being extracted with only a few left standing. The informants indicated that, at another site, around 600-700 trees are being extracted per month (22 per day), these being the tallest trees (60-80 cm of DBH), which are rather scarce (around 6 per ha). People also reported that at these sites there is no local authority controlling the extractions, however, PROFEPA, which is the federal authority in charge of law enforcement, is present in the region.

At locations where guayacan trees are small, people reported that they do not use them except for firewood. In several sites, the guayacan does not have value as wood, and it is only used to make toys and other handcrafts.

As a general finding, the interviews revealed that for all the localities the management of guayacan forests does not include the use of fire and that after exploitation these areas are not used for cattle ranching.

Activities in process

The botanic material that was collected during the rapid assessments is currently being processed for taxonomic identification. Soil samples are also being processed to obtain chemical and physical analyses. The data are being prepared following the specifications requested by CONABIO (CITES Mexican Scientific Authority). The second field trip will be carried out in January 2004 to conduct more rapid assessments in four states. Finally, the experimental design and the permanent observation plots are still being developed, and they will be the foundation for further detailed studies of *Guaiacum sanctum*'s population dynamics.

Preliminary conclusions

According to the information obtained to this point, we can conclude that *G. sanctum* is widely distributed in the Yucatan Peninsula. However, it has a discontinuous distribution occurring in tropical sub-deciduous forests, both in hills and plains, which are not subject to periodic floods, especially in the state of Campeche. According to Martinez and Galindo (2002, Bol. Soc. Bot. Mex. 71:7-32), this type of forest is widely distributed in one of the regions in Campeche. If this is true, we can assert that *Guaiacum sanctum* has a high abundance in this region. In these sites, the density can be of more than 200 trees with DBH $\geq$ 10 cm. per ha. According to the information gathered from the locals that are in charge of the management of the trees, those with DBH $\geq$ 5 cm. are potentially subject to exploitation. There is also reliable information indicating that there are abundant populations of *Guaiacum sanctum* in one of the Biosphere Reserves and surrounding Ejidos. This information will be confirmed during the next field trips that will be conducted in January and February 2004.

Finally, it seems that the more important risks that the guayacan populations face are:

1. change in land use, from tropical deciduous forests to agriculture or cattle ranching systems; and

2. destructive tree extraction practices that are currently in place.