Phoenix theophrasti Greuter

PALMAE Vulnerable

Status

Vulnerable. Although presently known to occur in at least ten localities, and at four of them in sizeable stands, the species is at risk because of the attraction it exerts on visitors and because of its being linked to coastal habitats easily affected by tourist development (see Platakis 1975).

Description

A sizeable palm tree, with one to several main trunks up to 10 m tall (including the foliage) and surrounded by dense clumps of shorter shoots arising as suckers at the base. Each trunk is crowned by a bunch of 3-5 m long, pinnate leaves forming a spherical crown. The larger (middle) pinnae may reach a length of 40 cm and are linear, folded lengthwise in the middle, and pungent-tipped; toward the base of the leaf the pinnae are transformed into stout, sharp spines that border the whole length of the petioles. The male and female inflorescences, formed on different trees, are enclosed among the spiny leaf bases; they are upright panicles with bright orange branches. The male panicles are narrow and closely sheathed by spathes; the female are wider, spreading, densely beset with flowers which develop into yellowish-brown then blackish, fibrous, inedible small dates, c. 1.5 cm long and 1 cm wide, each with a largish, ellipsoidal stone.

Distribution

Kriti and SW Anatolia (Datça peninsula). It was already known from Kriti in classical times, then again reported in the 16th century, but until recently it was thought to be a naturalized offspring of cultivated date palms (Greuter 1967, 1968). To the classical localities at Gazi near Iraklio (now much degraded) and at Vai near Sitia, several more have been added lately (Barclay 1968, 1974), and no less than nine are mapped in Turland et al. (1993). The large, scattered stand on the Datça peninsula (Boydak 1983, 1985, Boydak & Yaka 1983) brings the total number of known populations to ten.

The hypothesis that the Cretan date palm is a Tertiary relict species with a much wider former distribution was recently proved correct by the finding of fossil specimens (leaves and also one of the diagnostically important fruit stones) on the island of Thira (Santorini) in the Kiklades, where 37,000 years ago (according to radiocarbon dating) this species was growing together with a second palm, *Chamaerops humilis*, now extinct in Greece in the wild (Friedrich 1980).

Habitat and ecology

Phoenix theophrasti is confined to sheltered, frost-free habitats close to the coast, and depends on constant unlimited water supply (a perennially high groundwater table) and on permeable, non water-logged soil. It thrives on the sandy bottom of estuarine floodplains and in small valleys with permanent or seasonally dry rivers. A detailed habitat description of the site at Vai is given by Mavrommatis (1973).

Conservation measures taken

The largest known Greek population at Vai has been declared an "aesthetic forest preserve" in the late 1970s, and its core area was effectively protected by fencing in spring 1983 (Leon 1983). The preserve area covers 20 ha.

Conservation measures proposed

Protection and effective fencing should be considered as a matter of urgency for at least the second largest Greek stand of the species, in a gorge below the monastery of Preveli, a site

which is under heavy threat due to tourist pressure. The area is said to be monastic property, but the monk community has little, if any, means available to secure the survival of the population. The full genetic diversity of the species should be preserved through appropriate measures of in situ or ex situ conservation of all known populations, including the most degraded one near Iraklio, with emphasis on the third sizeable Greek stand, at Agios Nikitas near Tsoutsouros (Barclay 1974).

Biology and potential value

Close relatives of *Phoenix theophrasti* are the cultivated date palm, *Phoenix dactylifera*, not known with certainty in the wild, which differs by having large, fleshy and edible fruits borne on pendulous panicles that are not enclosed among the leaf bases, and *P. canariensis* from the Canary Islands, which also has inedible fruits, and differs by its single, taller, non-suckering, more robust stems. *P. theophrasti* is the closest surviving wild relative of the cultivated date palm, one of the main food and timber resources of the dry areas of the Old World tropics. It obviously has high breeding potential, e.g. as a source of pest resistance genes. Easy crossability of *Phoenix* species should facilitate any such breeding programme.

As an ornamental tree *Phoenix theophrasti* shows great promise. It readily germinates from seed, and while not frost-hardy it is just as cold-tolerant as the widespread park and roadside tree, *P. canariensis*. It is also of great scientific value as the last descendant of palms known to have been widespread in Central Europe in mid-Tertiary times.

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