

## Tamarix aphylla

tamarisk, farash

(L.) Karsten

Tamaricaceae

### LOCAL NAMES

Arabic (ubal,tarfa,athl,bigm,fareq); Bengali (raktajhav); English (athel tree,tamarisk,salt cedar,eshel,leafless tamarisk); German (Blattlose tamariske); Hindi (lal-jhav,erraerusaru,farash,asreli,kharlei,narbi,raktajhav); Somali (dur); Tamil (shivappu-atru-shavukku,kiri); Tigrigna (ubul,obel,ubel); Trade name (farash,tamarisk); Urdu (farash)

### BOTANIC DESCRIPTION

Tamarix aphylla is a fast growing, moderate sized evergreen tree, up to 18 m high with erect tapering trunk, 60-80 cm dbh with many stout spreading purplish brown and smooth branches. Twigs drooping, wiry or needle-like, up to 1.5 mm diameter, jointed, older twigs greenish-brown, hairless, mostly shedding. Bark light grey-brown or reddish-brown, rough, becoming thick and deeply furrowed into long narrow hard ridges. A deep and extensive root system, about 10 m vertically and 34 m horizontally.

Leaves bluish-green, alternate, reduced to tiny scales ensheathing wiry twigs and ending in points, hairless, often with epidermal salt glands each forming a joint along the twig.

Flowers many, nearly stalkless, tiny, whitish-pink, in racemes 3-6 mm long, 4-5 mm broad at end of twigs, drooping.

Fruit a small capsule, many, narrow, pointed, 5 mm long, splitting into 3 parts. Seeds many, 0.5 mm long, brown, each with tuft of whitish hairs 3 mm long.

The specific name means without leaves.

### BIOLOGY

The leaves and branchlets are shed during the cold season, the new shoots and leaves appear about May. The species is monoecious and the small pinkish flowers appear from May to July, and capsules ripen in the cold season. In some parts of India, the seeds ripen in the middle of July to middle November. Ripe capsules turn brown, gradually open up and the seed is blown away.



Flowers at LZ1  
Kahoolawe, Hawaii (Forest and Kim Starr)



Plant at Kekaha, Kauai, Hawaii (Forest and Kim Starr)



Flowers at LZ1 Kahoolawe, Hawaii (Forest and Kim Starr)

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## ECOLOGY

Popular habitats include sand dunes, canals, riverbanks, wadi beds, salty deserts, salt marshes and coastal plains. The tree is drought, heat, salt and frost tolerant.

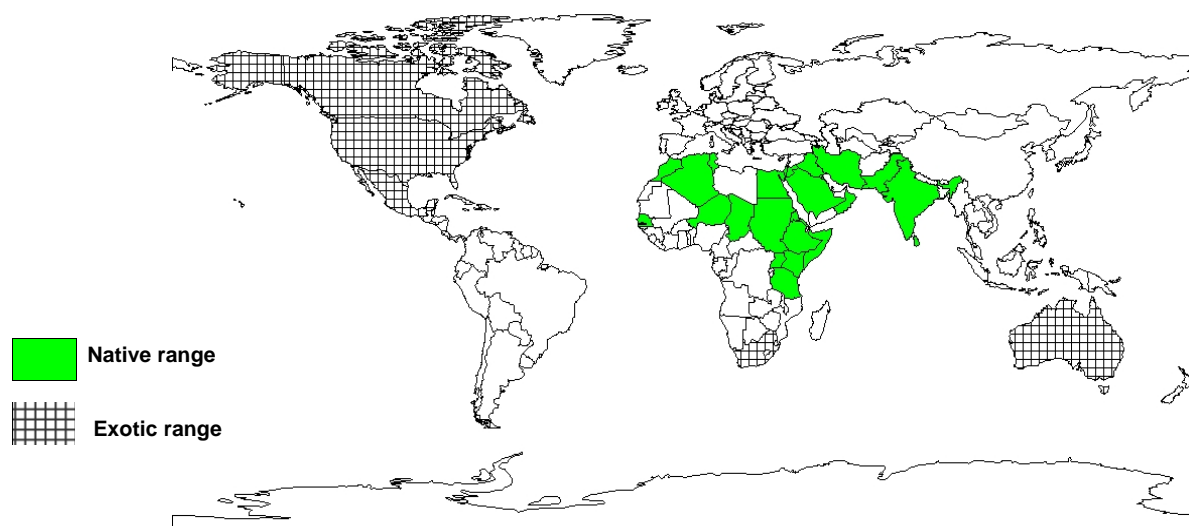
## BIOPHYSICAL LIMITS

Altitude: 0-1 200 m, Mean annual temperature: 10-50 deg. C, Mean annual rainfall: (100) 250-900 mm

Soil type: It thrives best on loam, though it is found also on stiff clays and sand. It has a remarkable capacity for growing on saline soil. It grows more vigorously on land subject to occasional inundation than on land which is never flooded.

## DOCUMENTED SPECIES DISTRIBUTION

- Native: Algeria, Bahrain, Chad, Egypt, Eritrea, Ethiopia, India, Iran, Iraq, Israel, Jordan, Kenya, Kuwait, Libyan Arab Jamahiriya, Morocco, Niger, Oman, Pakistan, Saudi Arabia, Senegal, Somalia, Sri Lanka, Sudan, Syrian Arab Republic, Tanzania, Tunisia, Uganda, Yemen, Republic of
- Exotic: Australia, Canada, Mexico, South Africa, US



The map above shows countries where the species has been planted. It does neither suggest that the species can be planted in every ecological zone within that country, nor that the species can not be planted in other countries than those depicted. Since some tree species are invasive, you need to follow biosafety procedures that apply to your planting site.

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### PRODUCTS

**Fodder:** Tender branches and leaves provide high value forage, particularly during the dry period. However, a high salt content necessitates additional watering of livestock.

**Apiculture:** Honey is dark brown with a minty aroma.

**Fuel:** Burns reasonably well though slow to catch fire. Used for firewood and charcoal (calorific value, 4835 kcal/kg). Leaf litter and small branches burn poorly, perhaps because of their high salt content. It gives an offensive odour if burnt green.

**Fibre:** The wood chips easily with little dust being produced. Chips are of good quality and colour, suitable for manufacture of particleboard. Twigs are used for basket making.

**Timber:** Wood, close-grained, light-coloured, fibrous, fairly hard, heavy (specific gravity 0.6-0.7.5) strong, density of about 700 kg/m<sup>3</sup>, high shock resistance, splits readily when first cut and polishes well. Useful for making ploughs, wheels, carts, construction, tool handles, brush-backs, ornaments, carpentry, furniture, turnery and fruit boxes.

**Tannin or dyestuff:** Galls, mainly from flowers are used for tanning leather. The bark is also a rich source of tannin and mordant for dyeing.

**Medicine:** Flower galls are used as an astringent and gargle, bark for treating eczema and other skin diseases.

**Other products:** The tribe of Tuaregs in Niger sweeten the water with branches which carry manna.

### SERVICES

**Erosion control:** The species is highly valued for stabilizing sand dunes due to its fast growth, deep and extensive root system and ability to resist burial by shifting sand.

**Shade or shelter:** An important tree for shade. Very useful for obtaining temporary shelter as quickly as possible, which can be removed once the adjacent longer-term shelterbelt has attained sufficient size.

**Soil improver:** The tree sheds leaves and twigs abundantly forming a compact litter that improves water holding capacity of the sand. However, it is reported to have a high water output through transpiration.

**Ornamental:** Quite an attractive ornamental tree. The thin branches and blue-green leaves give a feather-like appearance and drooping clusters of delicately coloured inflorescence are attractive, used to screen farm buildings and for street planting.

**Other services:** Tamarisk is used as a plant indicator for soil type in agricultural surveys. Salt drip from the leaves kill all ground vegetation beneath the tree and litter from it is too salinized to burn thus strips of the species can be grown to stop wild fires and also hold the spread of fires along highways or railway lines caused by sparks or cigarettes.

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### **TREE MANAGEMENT**

Weeding is necessary to facilitate proper growth at the early stages of establishment but eventually its litter suppresses the weeds. Young seedlings should be protected from grazing. Drastic thinning is done when the plants have attained over two years of growth to (30) 37-50 plants/ha. Pruning is necessary to prevent development into a shrub with many weak main stems which are subject to splitting and breaking off at ground level. Wood can be exploited for fuel in the fourth year after planting. Coppices readily and shoots after heavy lopping which is rare in arid zone species. The species has extensive surface roots which makes it unpopular for intercropping due to excessive competition for water and nutrients with crops. Also older trees have a tendency of blowing over in high wind.

### **GERMPLASM MANAGEMENT**

The viability of the recalcitrant seed in open storage is very low, perhaps not more than 1 week, each day of storage diminishes the germinative capacity and therefore success could only be achieved with the immediate sowing. Based on seed size and ecology, the species may show orthodox seed storage behavior. There are 100 000-286 000 seeds/kg.

### **PESTS AND DISEASES**

The genus is attacked by over 125 insects and mites. The species is attacked by *Amblypalpis oliverella*, the tamarisk spindle gall moth (Lepidoptera, Gelechiidae), a gall-former which develops in the branches of the tree. *Octinotis brevicornis*, *Ornativalva* spp. and *Lepidogma orbitalis* feed on the foliage.

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### **FURTHER READNG**

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### **SUGGESTED CITATION**

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