



## Hāpu‘u (Hawaiian Tree Fern)

*Cibotium glaucum* (Sm.) Hook. and Arnott  
Synonym: *Cibotium splendens* (Gaud.) Krajina  
Common name: hāpu‘u, hāpu‘u pulu, Hawaiian tree fern

### Habitat

Hāpu‘u is native to most of the Hawaiian islands. It is one of more than 800 species of tree ferns, descendants of prehistoric vegetation found worldwide in semi-wet to wet forests from sea level to over 5000 ft elevation.

Hāpu‘u was once common in wetter areas of all the major Hawaiian islands. Until recently, large numbers of Hawaiian tree ferns were harvested for orchid media and landscape use. Over-exploitation has reduced hāpu‘u stands drastically.

Presently all tree ferns are considered threatened species, because so many of them are found only in the rapidly diminishing rainforests of the world. It is illegal to ship tree ferns or tree fern products internationally. This does not, however, protect tree ferns within a country from destruction.

The last remaining large stands of native hāpu‘u are found on the island of Hawai‘i. Their numbers are being rapidly reduced by clearing and development, except in protected areas such as Hawai‘i Volcanoes National Park and Kīpahulu forest reserve in Haleakalā National Park.

### Characteristics

Hāpu‘u pulu grows to 15–20 feet tall and has a 15-foot spread. It is the most common tree fern in Hawaii and is a landscaping favorite, creating a tropical appearance and feeling with its lacy, arching, fresh, apple-green colored leaves. It is *very* slow growing. The average rate of growth of young hāpu‘u ferns is about 3½ inches per



year. The rate of growth slows as the plant gets older.

Hāpu‘u is a fern and does not produce flowers. The spores (“seeds”) are produced by fruiting bodies on the underside of the leaves.

Hāpu‘u fronds (“leaves”) have an intricately divided, tripinnate form and are 3–9 ft long. The fronds emerge from a stout, fibrous, dark brown base (“trunk”). The growing point, stalks, and young unfurled fronds of hāpu‘u pulu are covered with a silky, red-brown, wool-like fiber called *pulu*, which was used in ancient times for dressing wounds and embalming and for stuffing pillows and mattresses.

The fronds of hāpu‘u i‘i, another native Hawaiian tree fern, have a thick growth of stiff, dark hair on the petioles. Hāpu‘u i‘i is slightly larger than hāpu‘u pulu and its frond stems are more leathery. Otherwise, the two species of hāpu‘u are nearly identical in appearance.

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**Landscape uses**

Tree ferns are excellent small “trees” and are especially pleasing as specimen plants to create a soft-textured, tropical effect in landscapes and gardens. Hāpu‘u i‘i seldom survives transplanting and is rarely used in landscapes.

Unfortunately, the Hawaiian tree fern is becoming scarce. It should only be planted where garden conditions are ideal. Trunks cut and planted in less-than-ideal locations live for a while but gradually decline and die. Do not collect tree ferns from the forest without proper authorization. Whenever possible, use only plants propagated by nurseries.

Australian and Asian tree ferns are available from many commercial plant nurseries. These species are invasive and grow more rapidly than Hawaiian tree ferns, so they have the potential to be devastating to hāpu‘u in native habitats. These alien species have become popular because of their “improved” horticultural characteristics, but from the point of view of safeguarding native Hawaiian ecosystems, their use should not be encouraged, and the native Hawaiian species should be used preferentially.

**Culture**

Hāpu‘u is relatively easy to grow under suitable conditions, and it is reasonably tolerant of a variety of conditions. It grows best in well drained, slightly acid soils and partial shade, but it tolerates full sun in cloudy, upland areas or in well maintained landscapes. In hot, sunny lowlands, the plant needs protection from the sun and drying winds. Tree ferns benefit from a steady supply of water and occasional light applications of a complete fertilizer containing slow-release nitrogen. Old and injured fronds should be pruned. Tree ferns seldom branch. Termites and mites may cause some minor problems.

**Propagation**

The side shoots at the base of the plant can be removed to produce new plants. Hāpu‘u can also be started from spores.

**Acknowledgment**

The original version of this document was written by David Hensley, Rhonda Stibbe, Norman Bezona, and Fred Rauch.