

## Horsetail casuarina

*Casuarina equisetifolia* L. ex J. R. & G. Forst.

Casuarina family (Casuarinaceae)

Post-Cook introduction

Horsetail casuarina is the species most commonly planted in Hawaii and in other tropical and subtropical regions around the world, where it has become naturalized. A rapidly growing medium to large tree becoming 50–100 ft (15–30 m) tall and 1–1½ ft (0.3–0.5 m) in trunk diameter, with thin crown of drooping twigs. The bark is light gray brown, smoothish on small trunks, becoming rough, thick, furrowed and shaggy, and splitting into thin strips and flakes exposing a reddish brown layer. Inner bark is reddish and bitter or astringent. The wiry drooping twigs mostly 9–15 inches (23–38 cm) long, are dark green, becoming paler, with 6–8 long fine lines or ridges ending in scale leaves, shedding gradually like pine needles. A few main twigs, gray and finely hairy, become rough and stout and develop into brownish branches.

Scale leaves less than 1/32 inch (1 mm) long, 6–8 in a ring (whorled) at joints or nodes 1/4–3/8 inch (6–10 mm) apart. Leaves on main twigs in rings as close as 1/8 inch (3 mm), to 1/8 inch (3 mm) long and curved back.

Flower clusters inconspicuous, light brown, male and female on same tree (monoecious). Male flower clusters (like spikes or catkins) terminal, narrowly cylindrical, 3/8–3/4 inch (10–19 mm) long and as much as 1/8 inch (3 mm) across stamens, minute and crowded in rings among grayish scales, consisting of one protruding brownish stamen less than 1/8 inch (3 mm) long with two minute brown sepal scales at base. Female flower clusters are short-stalked lateral balls (heads) less than 1/8 inch (3 mm) in diameter or 5/16 inch (8 mm) across spreading styles, consisting of pistil 3/16 inch (5 mm) long including small ovary and long threadlike dark red style.

The multiple fruit is a light brown hard warty ball 1/2–3/4 inch (13–19 mm) in diameter, often longer than broad and slightly cylindrical, composed of points less than 1/8 inch (3 mm) long and broad, each from a flower. An individual fruit splits open in two parts at maturity to release one winged light brown seed (nutlet) 1/4 inch (6 mm) long.

The sapwood is pinkish to light brown, the heartwood dark brown. The fine-textured wood is very hard, heavy (sp. gr. 0.81), and very susceptible to attack by dry-wood termites. Tests of the wood have been made

in Puerto Rico. It is strong, tough, difficult to saw, but cracks and splits, and is not durable in the ground. Rate of air-seasoning is moderate, and amount of degrade is considerable. Machining characteristics are as follows: planing and turning are fair; and shaping, boring, mortising, sanding, and resistance to screw splitting are good. In Hawaii, the wood is used only as fuel. Elsewhere, the wood is used in the round. Uses include fenceposts and poles, beams (not underground), oxcart tongues, and charcoal. The bark has been employed in tanning, in medicine, and in the extraction of a red or blue-black dye. In southern Florida, the fruits have been made into novelties and Christmas decorations. Often propagated by cuttings for street, park, ornamental, and windbreak plantings, it can also be trimmed into hedges. It is used for reforestation because of its rapid growth and adaptability to degraded sites.

This tree grows rapidly, reportedly as much as 80 ft (24 m) in height in 10 years, and adapts to sandy seacoasts, where it becomes naturalized. It is very salt tolerant.

Common and naturalized along sandy coasts of Hawaii and up to more than 3000 ft (914 m). It is used as windbreaks, such as along the Kohala Mountain Road, Hawaii; at Waimanalo, Oahu; and Hanalei, Kauai, near the pier. More than 70,000 trees were planted on the Forest Reserves and many others on private lands. The species was successfully established on severely eroded Kahoolawe where it was to be a windbreak for other tree species. However, goats broke through a fence and ate all the trees. The same system was used in the 1890's to plant the extremely windy Nuuanu Valley near the Pali.

### **Special areas**

Waimea Arboretum, Kalopa

### **Champion**

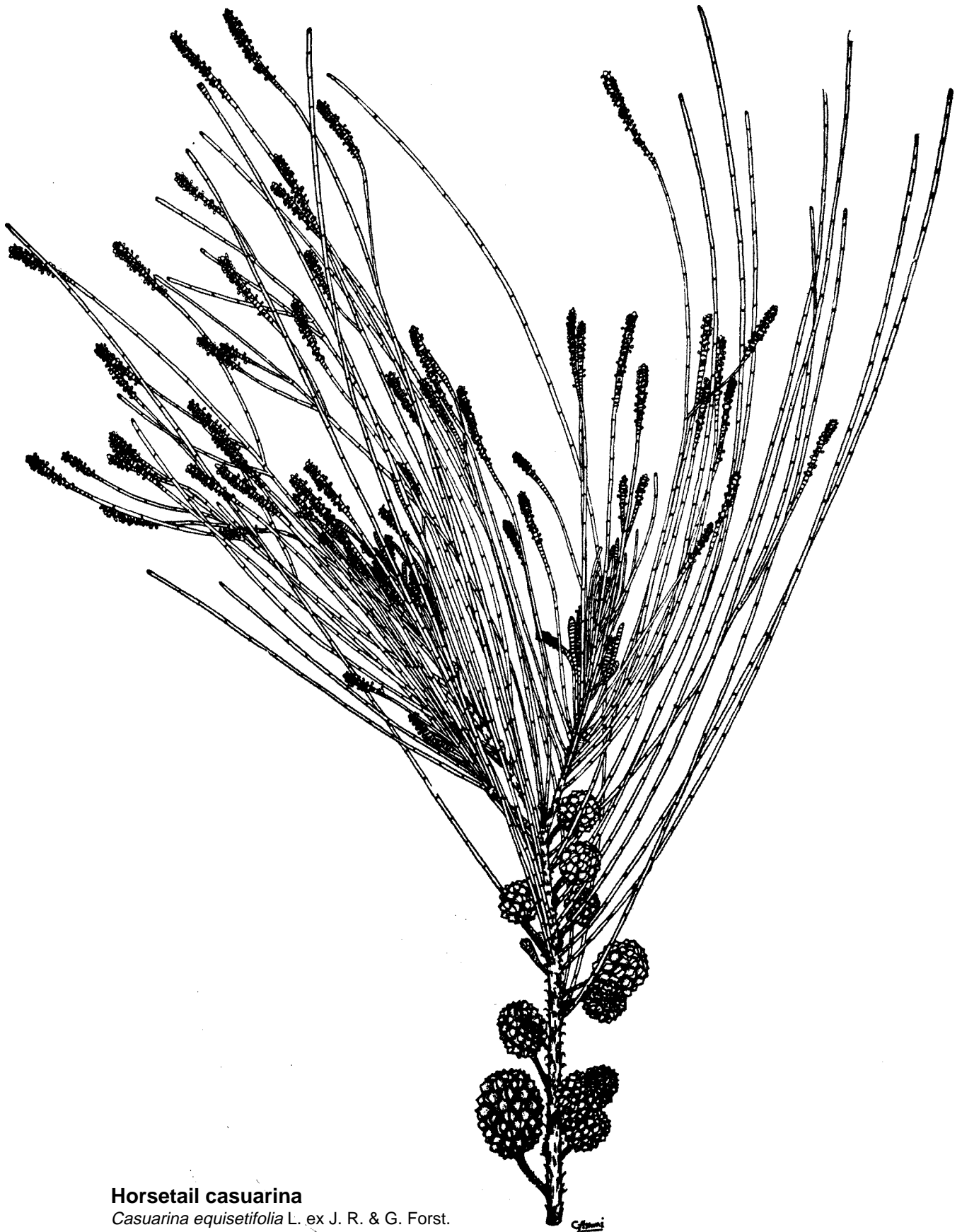
Height 89 ft (27.2 m), c.b.h. 17.3 ft (5.3 m), spread 56 ft (17.1 m). Olowalu, Maui (1968).

### **Range**

Native of tropical Asia and Australasia but planted and naturalized in various tropical and subtropical regions. Planted and naturalized in southern Florida and Puerto Rico and Virgin Islands.

### **Other common names**

“shortleaf ironwood”, “common ironwood” (Hawaii); “Australian-pine”, beefwood, she-oak, toa; pino australiano, pino de Australia (Puerto Rico, Spanish).



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Twig with male flowers and fruits,  $\frac{2}{3}$  X (Degener).