



Burma Reed

Neyraudia reynaudiana (Kunth) Keng ex A.S. Hitchc.
Grass family (Poaceae)

NATIVE RANGE

Southeast Asia and Indomalaya (Japan, southern China, Viet Nam, Laos, Cambodia, Thailand, Malaya, Myanmar (Burma), Bhutan, Nepal, and eastern India)

DESCRIPTION

Burma reed, also known as silk reed, cane grass, and false reed, is a tall, perennial, large-plumed grass that grows in clumps in sunny upland areas. Stems, including the flower stalks are from 3 to 15 feet in height, depending on soil and moisture conditions. The leaves are 8 to 10 inches long and hairless, except for a single line of horizontal hairs at the juncture of the upper and lower portions of the leaf. Stems are approximately 1/2 inch in width, are round, solid, and have nodes (stem-leaf junctures) every 3 to 5 inches along the stem. The flower plumes, which can be up to 3 feet long, are composed of many hundreds of tiny flowers and have a shimmery, silky appearance. Flowering occurs in April and October, each clump producing an average of forty stalks and twelve to twenty flowering plumes. Burma reed resembles several other tall grasses, including common reed (*Phragmites communis*), giant reed (*Arundo donax*), pampas grass (*Cortaderia selloana*) and sugar cane (*Saccharum officinarum*).



ECOLOGICAL THREAT

Burma reed damages native ecosystems by crowding and shading out understory plant species and by creating conditions for extremely hot and destructive wildfires. In southern Florida (Miami-Dade County), it is a serious threat to the globally imperiled pine rocklands community whose pine canopy was largely destroyed in 1992 by Hurricane Andrew. Burma reed is a highly combustible fuel source because of its overall plant mass, its large feathery flower plumes, and the dense, hay-like leaf litter it produces. This hay-like litter enhances the fire's movement along the ground, while the flower plumes carry the flames high into the air. With the aid of winds, these plumes often detach and fly through the air like torches, providing the potential for additional spread. Photographs of its ignition during a wildfire show flames leaping over 30 feet high, threatening nearby tree canopies.



DISTRIBUTION IN THE UNITED STATES

Burma reed is found throughout southern Florida in the counties of Miami-Dade, Broward, Palm Beach, Lee, and Collier, and the Florida Keys.

HABITAT IN THE UNITED STATES

In its native range, which is characterized by a warm, subtropical climate, Burma reed occurs in bogs, in open savannahs, on upland cliffs, and along forest and road edges, and thrives from sea level to altitudes of 6,500 feet. In the U.S., Burma reed initially colonizes the margins of roadways, fields, and forests, from which it can spread to undisturbed areas. The ability of Burma reed to survive at high altitudes in its native range indicates a tolerance to cold

and the potential for it to spread further north in the U.S.

BACKGROUND

Burma reed was first introduced into the United States in 1916 by the U.S. Department of Agriculture, possibly to investigate its potential as an ornamental plant. It was grown in a test garden in Coconut Grove, Florida, from which it escaped and spread. By 1990, it had become established in the wild as far as 30 miles from Coconut Grove and along disturbed edges throughout Miami-Dade County. Burma reed has no known economic value and, in Bhutan, is reported to be poisonous to buffalo.

BIOLOGY & SPREAD

Burma reed reproduces by seed and through underground stems called rhizomes. Burma reed plants flower twice each year, producing hundreds of thousands of tiny seeds that are dispersed by the wind. New clumps of Burma reed emerge from rhizomes that may be embedded in sand, soil, or rubble. Seeds and rhizomes are also transported inadvertently in limestone rock from infested quarries that is carried by train from Miami-Dade County, Florida to concrete manufacturers throughout the southeastern United States. This unintentional movement of Burma reed material allows it to invade new sites in Florida and adjacent states near limestone distribution centers.

MANAGEMENT OPTIONS

Restoration of sites infested with Burma reed requires a long term commitment to ensure effective control and to allow native vegetation to become established. Burma reed's deep roots make mechanical removal an extremely labor intensive and costly undertaking and causes extensive disturbance to the soil. A more effective management approach involves a combination of cutting or prescribed burning, followed by application of herbicides. After cutting, mowing or burning Burma reed plants down to the ground, a systemic herbicide like glyphosate, mixed with an acidic surfactant (trade name: Roundup Pro®) can be made to prevent new growth. Repeat treatment is likely to be necessary for a couple of years, until seed and rhizome stores are exhausted.

NOTE: Burning of Burma reed vegetation requires a special permit and should not be undertaken without training, preparation and assistance. Because Burma reed is an extremely flammable plant, fires may quickly get out of hand.

A successful burn of Burma reed reduces the plant's massive stalks to ash, eliminating the cost of vegetation removal. Conveniently, because Burma reed is the first plant to resprout following a fire, it can be sprayed freely with little concern about non-target kills. It should be noted that burning, by itself, whether through prescribed or natural wildfires, may enhance the growth and spread of Burma reed if not followed up with chemical or mechanical control.

In areas where Burma reed is dispersed among desirable native vegetation, individual plants can be cut at the base using a steel blade (e.g., Weed Whacker) and the remaining portions sprayed with Roundup Pro® to prevent new growth. Resprouts should be treated with a second herbicide application to the new growth. This method requires highly qualified applicators who can target the herbicide to avoid damage to native plants, and may not be cost effective for extensive infestations.

USE PESTICIDES WISELY: Always read the entire pesticide label carefully, follow all mixing and application instructions and wear all recommended personal protective gear and clothing. Contact your state department of agriculture for any additional pesticide use requirements, restrictions or recommendations.

NOTICE: mention of pesticide products on this page does not constitute endorsement of any material.

CONTACT

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SUGGESTED ALTERNATIVE PLANTS

Several native grasses and other plants are available that can be substituted for Burma reed, including Fakahatchee grass (*Tripsacum dactyloides*), switch grass (*Panicum virgatum*), and Muhly grass (*Muhlenbergia capillaris*). In the pine

rocklands, the following grasses are recommended: bluestem (*Schizachrium rhizomatum*); wire bluestem (*Schizachyrium gracile*); wiregrass (*Aristida stricta*); Florida mock gamagrass (*Tripsacum floridanum*). In coastal uplands or disturbed sites, areas could be enhanced with pinewoods finger grass (*Eustachys petraea*).

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PHOTOGRAPHS

Joe Maguire, Miami Dade County Natural Areas Management; photograph of fire by S. Demetropoulos; other photographs courtesy of Palm Beach County Department of Environmental Resources Management.

REFERENCES

Bor, N.L. 1960. The Grasses of Burma, Ceylon, India and Pakistan. Pergamon Press, New York, 767 pp.

Gordon, D.R. and K.P. Thomas. 1997. Florida's invasion by non-indigenous plants: history, screening, and regulation. In Simberloff, D., D.C. Schmitz, and T.C. Brown (eds.), Strangers in Paradise: Impact and Management of Nonindigenous Species in Florida. Island Press, Washington, DC. 467 pp.

Guala, Jr., G.F. 1990. Element Stewardship Abstract for *Neyraudia reynaudiana*. The Nature Conservancy, Arlington, VA. 5 pp.

Hammer, R.L. 1998. Wildland Weeds. Summer 1998. Vol. 1, No. 3, p. 9.

Langeland, K.A. and K. Craddock Burks, Eds. 1998. Invasive Non-native Plants of Florida's Natural Areas. University of Florida Institute of Food and Agricultural Sciences and Florida Exotic Pest Plant Council.

Lazarides, M. 1980. The Tropical Grasses of Southeast Asia. J. Cramer, Vaduz. 225 pp.

Maguire J. 1993. Status of Burma reed in Dade County pine rocklands. Florida Exotic Pest Plant Council Newsletter

Noltie, H.J. 1998. Flora of Bhutan. Volume 3. Publisher Royal Botanic Garden Publications, Edinburgh (scheduled for publication in 1999)

Schmitz, D.C., D. Simberloff, R.H. Hofstetter, W. Haller, and D. Sutton. 1997. The ecological impacts of nonindigenous plants. In Simberloff, D., D.C. Schmitz, and T.C. Brown (eds.), Strangers in Paradise: Impact and Management of Nonindigenous Species in Florida. Island Press, Washington, DC. 467 pp.

The Nature Conservancy. *Neyraudia reynaudiana*: Element Stewardship Abstract. In: Wildland Weeds Management & Research Program, Weeds on the Web.