

ELEMENT STEWARDSHIP ABSTRACT  
for

*Neyraudia reynaudiana*

Silk Reed

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The Nature Conservancy  
Element Stewardship Abstract  
For *Neyraudia reynaudiana*

## I. IDENTIFIERS

Common Name: SILK REED

Global Rank: G?

### General Description:

*Neyraudia reynaudiana* is a large caespitose perennial "plume grass", 0.8 to 3.8 m high.

### Diagnostic Characteristics:

*Neyraudia* is easily identified as the only large "plume grass" with a distinct horizontal line of hairs on the otherwise hairless outer surface of the leaf blade/sheath juncture (look especially at green younger leaves). *Erianthus giganteus* might be confused with *Neyraudia* because it is densely hairy in a small area around the juncture of the blade and sheath but there is not distinct line and it has paired, single flowered spikelets with much longer awns (cf. 1 cm).

## II. STEWARDSHIP SUMMARY

This invasion is still in a stage in which I believe that it can be controlled with a comprehensive eradication program which would primarily include removal of the biggest and oldest core populations in Dade Co., especially in the southern suburbs, and a concerted control effort in other areas.

## III. NATURAL HISTORY

### Range:

The native range of *N. reynaudiana* is Asian extending from Japan across China, Malaya and Burma to eastern India (Bor 1960). In Florida it is now documented only for Dade (including Virginia Key and Key Biscayne) and Collier counties, but it has escaped and apparently persisted for some time as far north as Sebring (Highlands Co: Deam #63942, US) and was cultivated in the Florida Botanical Garden there ( now part of Highlands Hammock State Park). It is ubiquitous in south Miami (it is documented from the Deering Estate (Guala in press) and is probably in every park in Dade Co.) and has spread from an introduction at the USDA Plant Introduction Station in Coconut Grove in the early 1920's across the Everglades although it is not common away from the main roads and is quite uncommon in the northern part of the park system (it is known from Seminole and Royal Palm State Park but not Corkscrew Swamp).

### Habitat:

It is remarkably tolerant with respect to edaphic and light regimes although it seems to prefer open, high light, areas. It has often been collected in marshy areas, possibly even of

brackish water (H. Moldenke #432, US), and it is very common in upland situations and is becoming increasingly common in dry pinelands. The only thing that most of the localities seem to have in common is some disturbance. This is especially true in drier situations and the disturbance can be anything from bulldozing to fire. This range of habitats is comparable to that in its native range (Lazarides 1980).

#### Ecology:

As stated above, disturbance probably plays a major role in its introduction into an area, however, once it invades an area and establishes a population it seems to be able to colonize more marginal and also undisturbed habitats. Although it is known only from the southern counties in Florida, it has been cultivated as far north as Savannah, Georgia and a rhizome segment transplanted to Gainesville in March of 1989 grew rapidly and set fruit even after several light frosts and 1 hard one. In the severe Christmas freeze of 1989 the above ground parts died but the plants are vigorously resprouting (Feb. 1990) and will be monitored for recovery. The specific origin of our ecotype is unknown but I have seen healthy specimens of this species from the eastern Himalayas (2000 m) and other regions of China that are quite prone to hard freezes. It occurred as a waif in San Francisco in 1861 but is not now present in the US outside of Florida.

#### Reproduction:

The extensive and robust rhizome system allows it to survive cutting and heavy disturbance. George Gann-Matzen has seen extirpated populations reappear even after two years but he cannot confirm that this was due to a residual seed bank.

The size of the plants of this species seems to give an indication of the age of the population. Young plants (<2yrs) are often app. 1 m high while older, well established populations almost always have many of the individuals reaching 2.5 m or more.

#### Impacts:

This species presents a clear threat to native ecosystems in southern Florida including those preserved in several county, state and national parks. It is already a serious problem in Dade county and will no doubt become one in Collier and Monroe counties in the near future.

## IV. CONDITION

## V. MANAGEMENT/MONITORING

#### Management Requirements:

A comprehensive management plan for this species in the southern three counties of Florida. A high priority should go to testing alternative herbicides and eradication methods. Further work should also be done on determining seed production, viability and longevity.

George Gann-Matzen of ECOHORIZONS, INC. reports that a 90% kill rate can be achieved by cutting culms with a steel bladed weed eater, allowing resprouting to 6-8 inches and applying ROUNDUP. He recommends that remaining plants be removed by hand and that the site be monitored for at least two years. He also suggests that the cut culms be removed in pineland situations so as not to add nutrients to the soil and hence, make a more suitable environment for other exotics. Robert Doreen (Everglades National Park, Resource Management) has not found the method described above to be adequate and is going to begin experimenting with other herbicides soon. Terry and Barbara Glancy (private land owners in Homestead) report that by applying ROUNDUP at 1% with a surfactant (IMPROVE or the cheaper brand FRIGAT) at 1%, without cutting the culms, a 100% kill rate can be achieved. He recommends removing the flower heads if they are present though. This is the best method described so far but more research is needed. It would seem that a wick application of ROUNDUP might be reasonable course of action especially in areas in which small native herbs are still persisting within the population. Cutting or mowing alone clearly does not work. Fire alone doesn't work (I have seen burned stalks resprout) and may even compound the problem by introducing disturbance. Mechanical removal may work if done by hand but bulldozing may also compound the problem due to the ability of the grass to resprout from rhizome segments.

#### Management Programs:

No comprehensive programs directed specifically at this species are in effect.

#### Monitoring Requirements:

A comprehensive survey of the extent of populations especially in Collier and Dade counties should be conducted.

Sites should be monitored for at least two years after removal of this species.

## VI. RESEARCH

## VII. ADDITIONAL TOPICS

## VIII. INFORMATION SOURCES

#### Bibliography:

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## IX. DOCUMENT PREPARATION & MAINTENANCE

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