GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: ***Cenchrus setaceus***

Cenchrus setaceus 简体中文 正體中文 **System:** Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Liliopsida	Cyperales	Poaceae

Common name yerba de fuente (English, Puerto Rico), fountaingrass (English)

Synonym *Pennisetum ruppelii* , Steud.
Phalaris setacea , Forsk.

Similar species

Summary *Cenchrus setaceus* (*Pennisetum setaceum*) was introduced to the United States as an ornamental grass. It reproduces high numbers of wind-dispersed seeds that have spread outside of planted areas. *C. setaceus* is a desert plant that is prevalent along roadsides, washes and canyons where the annual rainfall is less than 127cm. *C. setaceus* interferes with natural fire regimes and competes with native species for limited resources.

view this species on IUCN Red List

Species Description
Benton (1998) describes \"*Cenchrus setaceus* (*Pennisetum setaceum*) as an attractive perennial grass with a densely clumped growth form and erect stems that grow up to 1 metre high. The small flowers of *C. setaceus* are grouped in pink or purple, bristly, upright inflorescences 15-38cm inches long\" (inflorescences may also be cream coloured). Fruits are small, dry achenes adorned with long showy bristles.Leaf colouration depends on water availability; in Hawai'I leaves are typically green in winter and may be brown in summer.

Notes
Cenchrus setaceus is also referred to as *Pennisetum setaceum*

Lifecycle Stages
According to Devender (1997), "*Pennisetum setaceum* (*Cenchrus setaceus*) becomes facultativlely inactive with extended drought, freezing, or near-freezing temperatures."

Uses
According to Benton (1998), \"*Pennisetum setaceum* (*Cenchrus setaceus*) has been introduced to many parts of the world as an ornamental grass.\"

Habitat Description
According to Benton (1998), \"*Pennisetum setaceum* (*Cenchrus setaceus*) invades many types of natural areas, from bare lava flows to rangelands, in Hawaii. It has a wide elevational range but is limited to areas with a median annual rainfall of less than 127cm. In southern California, *C. setaceus* invades grasslands, deserts, canyons and roadsides.\" PESC (2002) writes that *C. setaceus* is commonly seen spreading along roadsides, washes, and canyons in Arizona.

Reproduction
The white to tan colour seed heads produce large numbers of wind-dispersed seeds (PESC, 2002) [seed set is usually quite low, typically less than 20% = less than 50 seeds per seed head; (Goergen, E., and C. C. Daehler. 2001). Seeds may remain viable in the soil for six years or longer (Benton, 1998). Seeds are produced apomitically. Agamospermy and vegetative propagation are collectively called apomixis. Agamospermy is asexual seed formation

General Impacts
Cenchrus setaceus (*Pennisetum setaceum*) requires full sun to grow vigourously; in dry and open environments fountain grass is a highly aggressive, fire-adapted colonizer that readily outcompetes native plants, it rapidly re-establishes after burning. Fountain grass raises fuel loads, which increases the intensity and spread of a fire, and result in severe damage to native, dry forest species adapted to less extreme fire regimes.\" PESC (2002) states that these fires create even more space for *C. setaceus* and other invasive species. \"*C. setaceus* reduce the space available for native species and compete with them for scarce water and nutrients.\" Benton goes on to say that \"*C. setaceus* is a poor pasture grass and a serious weed in many dry habitats.\"
In wet areas, however, it is outcompeted by other grasses.

Management Info
Preventative measures: Planting native species after removal of the invasive will help prevent re-establishment of *C. setaceus*. Monitoring the area for seedlings and removing them is a good practice as they are easy to pull up when young.
A Risk Assessment of *Cenchrus setaceus (Pennisetum setaceum)* for Hawai'I and other Pacific islands was prepared by Dr. Curtis Daehler (UH Botany) with funding from the Kaulunani Urban Forestry Program and US Forest Service. The alien plant screening system is derived from Pheloung *et al*. (1999) with minor modifications for use in Pacific islands (Daehler *et al.* 2004). The result is a score of 26 and a recommendation of: \"Likely to cause significant ecological or economic harm in Hawai'I and on other Pacific Islands as determined by a high WRA score, which is based on published sources describing species biology and behaviour in Hawai'I and/or other parts of the world.\"
Physical: According to Benton (1998), \"the long-lived seeds of fountain grass make its control extremely difficult. Small infestations may be managed by uprooting plants by hand and destroying the inflorescences in order to prevent seed dispersal. Removal by hand may need to be repeated several times per year.\" PESC (2002) suggests removing seed heads to slow its spread. \"Since it seeds several times a year, vigilance is required. The only way to prevent future seed production and to reduce the threat of wildfire is to remove all *C. setaceus*, pulling them up by hand or digging them out with a shovel or crowbar. Disposing of the entire plant after removal will eliminate seeds caught in the leaves at the base of the plant.\"
Chemical: Extensive infestations of fountain grass are probably best controlled with the help of herbicides, especially those with some systemic activity.

Pathway
According to Devender *et al.* (1997), *P. setaceum* is a common landscape ornamental in southern Arizona.According to Benton (1998), seeds may be dispersed by livestock.According to Benton (1998), seeds may be dispersed by humans.According to Benton (1998), seeds may be dispersed by vehicles.

Principal source: *Fountain Grass*(Benton, 1998) and *Threats to Arizona's Native Species: Fountain grass (Pennisetum setaceum*(PESC, 2002)

Compiler: National Biological Information Infrastructure (NBII) & IUCN/SSC Invasive Species Specialist Group (ISSG)

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ALIEN RANGE

[1] BERMUDA
[1] FRENCH POLYNESIA
[1] GUAM
[2] PALAU
[2] SPAIN
[11] UNITED STATES
[1] FIJI
[1] GUADELOUPE
[1] NEW CALEDONIA
[1] PUERTO RICO
[1] SWAZILAND

BIBLIOGRAPHY

19 references found for **Cenchrus setaceus**

Managment information

Benton, N. 1998. *Fountain grass* Plant Conservation Alliance, Alien Plant Working Group [Online Database].
Summary: Contains information on description, native range, impacts, United States range, habitat, reproduction and dispersal methods, and control methods.
Available from: http://www.nps.gov/plants/alien/fact/pese1.htm [Accessed 3 November 2003].

Daehler, C.C; Denslow, J.S; Ansari, S and Huang-Chi, K., 2004. A Risk-Assessment System for Screening Out Invasive Pest Plants from Hawaii and Other Pacific Islands. Conservation Biology Volume 18 Issue 2 Page 360.
Summary: A study on the use of a screening system to assess proposed plant introductions to Hawaii or other Pacific Islands and to identify high-risk species used in horticulture and forestry which would greatly reduce future pest-plant problems and allow entry of most nonpests.

National Pest Plant Accord, 2001. Biosecurity New Zealand.
Summary: The National Pest Plant Accord is a cooperative agreement between regional councils and government departments with biosecurity responsibilities. Under the accord, regional councils will undertake surveillance to prevent the commercial sale and/or distribution of an agreed list of pest plants.
Available from: http://www.biosecurity.govt.nz/pests-diseases/plants/accord.htm [Accessed 11 August 2005]

New Zealand Plant Conservation Network, 2005. Unwanted Organisms. Factsheet *Pennisetum setaceum*

PESC (Pima Exotic Species Council) 2002. *Threats to Arizona s Native Species: Fountain grass (Pennisetum setaceum)* Sonoran Desert Conservation Plan, Arizona, United States. Available from: http://www.aznps.org/pdf_files/fountaingrass.pdf [Accessed 3 November 2003]
Summary: This page contains information on description, impacts, origin, use and alternative plants, control methods.

PIER (Pacific Island Ecosystems at Risk), 2002. *Pennisetum setaceum*
Summary: Ecology, synonyms, common names, distributions (Pacific as well as global), management and impact information.
Available from: http://www.hear.org/pier/species/pennisetum_setaceum.htm [Accessed 5 February 2003].

Royal New Zealand Institute of Horticulture (RNZIH), 2005. African fountain grass *Pennisetum setaceum*
Summary: Available from: http://www.rnzih.org.nz/pages/nppa_041.pdf [Accessed 1 October 2005]

Swaziland s Alien Plants Database., Undated. *Pennisetum setaceum*
Summary: A database of Swaziland s alien plant species.

Varnham, K. 2006. Non-native species in UK Overseas Territories: a review. JNCC Report 372. Peterborough: United Kingdom.
Summary: This database compiles information on alien species from British Overseas Territories.
Available from: http://www.jncc.gov.uk/page-3660 [Accessed 10 November 2009]

General information

Centre des ressources biologiques. Plantes tropicales. INRA-CIRAD. 2007.
Summary: Available from: http://collections.antilles.inra.fr/ [Accessed 31 March 2008]

CONABIO. 2008. Sistema de informaci&#65533;n sobre especies invasoras en M&#65533;xico. Especies invasoras - Plantas. Comisi&#65533;n Nacional para el Conocimiento y Uso de la Biodiversidad. Fecha de acceso.
Summary: English:
The species list sheet for the Mexican information system on invasive species currently provides information related to Scientific names, family, group and common names, as well as habitat, status of invasion in Mexico, pathways of introduction and links to other specialised websites. Some of the higher risk species already have a direct link to the alert page. It is important to notice that these lists are constantly being updated, please refer to the main page (http://www.conabio.gob.mx/invasoras/index.php/Portada), under the section Novedades for information on updates.
Invasive species - Plants is available from: http://www.conabio.gob.mx/invasoras/index.php/Especies_invasoras_-_Plantas [Accessed 30 July 2008]
Spanish:
La lista de especies del Sistema de informaci&#65533;n sobre especies invasoras de m&#65533;xico cuenta actualmente con informaci&#65533;n aceca de nombre cient&#65533;fico, familia, grupo y nombre com&#65533;n, as&#65533; como h&#65533;bitat, estado de la invasi&#65533;n en M&#65533;xico, rutas de introducci&#65533;n y ligas a otros sitios especializados. Algunas de las especies de mayor riesgo ya tienen una liga directa a la p&#65533;gina de alertas. Es importante resaltar que estas listas se encuentran en constante proceso de actualizaci&#65533;n, por favor consulte la portada (http://www.conabio.gob.mx/invasoras/index.php/Portada), en la secci&#65533;n novedades, para conocer los cambios.
Especies invasoras - Plantas is available from: http://www.conabio.gob.mx/invasoras/index.php/Especies_invasoras_-_Plantas [Accessed 30 July 2008]

Devender, T.; Felger, R.; and M., A. 1997. *Exotic Plants in the Sonoran Desert Region, Arizona and Sonora* California Exotic Pest Plant Council, California, United States. Available from: http://ucce.ucdavis.edu/freeform/ceppc/documents/1997_Symposium_Proceedings1948.PDF [Accessed 3 November 2003]
Summary: This page contains information on distribution, spread, and impacts.
Florence J., Chevillotte H., Ollier C. & Meyer J.-Y. 2007. *Pennisetum setaceum* Base de donn&#65533;es botaniques Nadeaud de l Herbier de la Polyn&#65533;sie fran&#65533;aise (PAP).
Summary: Available from: http://www.herbier-tahiti.pf/Selection_Taxonomie.php?id_tax=5644 [Accessed 10 April 2008]
Fournet, J. 2002. Flore illustr&#65533;e des phan&#65533;rogames de guadeloupe et de Martinique. CIRAD-Gondwana editions.
Gargominy, O., Bouchet, P., Pascal, M., Jaffre, T. and Tourneu, J. C. 1996. Consequences des introductions d'especes animals et vegetales sur la biodiversite en Nouvelle-Caledonie. Rev. Ecol. (Terre Vie) 51: 375-401.
Summary: Consequences to the biodiversity of New Caledonia of the introduction of plant and animal species.
ITIS (Integrated Taxonomic Information System), 2005. Online Database *Pennisetum setaceum*
Summary: An online database that provides taxonomic information, common names, synonyms and geographical jurisdiction of a species. In addition links are provided to retrieve biological records and collection information from the Global Biodiversity Information Facility (GBIF) Data Portal and bioscience articles from BioOne journals.
Available from: http://www.cbif.gc.ca/pls/itisca/taxastep?king=every&p_action=containing&taxa=Pennisetum+setaceum&p_format=&p_ifx=plglt&p_lang= [Accessed March 2005]
MacKee, H.S. 1994. Catalogue des plantes introduites et cultiv&#65533;es en Nouvelle-Cal&#65533;donie, 2nd edn. MNHN, Paris.
Summary: Cet ouvrage liste 1412 taxons (esp&#65533;ces, sous esp&#65533;ces et vari&#65533;t&#65533;s) introduits en Nouvelle-Cal&#65533;donie. L auteur pr&#65533;cise dans la majorit&#65533; des cas si l esp&#65533;ce est cultiv&#65533;e ou naturalis&#65533;e.
Meyer, Jean-Yves & Loope, Lloyd & Sheppard, A. & Munzinger, Jérôme & Jaffré, Tanguy. (2006). Les plantes envahissantes et potentiellement envahissantes dans l'archipel néo-calédonien : première évaluation et recommandantions de gestion.
Space, J.C., B.M. Waterhouse, J.E. Miles, J. Tiobech and K. Rengulbai. 2003. Report to the Republic of Palau on invasive plant species of environmental concern. USDA Forest Service, Honolulu. 179 pp.
Summary: Distribution.