

Australian Capital Territory

Pest Plants and Animals (Chinese Fairy Grass) Management Plan 2014 (No 1)

Notifiable Instrument NI2014—334

made under the

Pest Plants and Animals Act 2005, section 8 (Pest plant management plan)

1 Name of instrument

This instrument is the *Pest Plants and Animals (Chinese Fairy Grass) Management Plan 2014 (No 1)*.

2 Commencement

This instrument commences on the day after notification.

3 Pest plant management plan – Chinese Fairy Grass

The document at schedule 1 is the pest plant management plan for the management of Chinese Fairy Grass (*Miscanthus sinensis*).

Shane Rattenbury
Minister for Territory and Municipal Services

15 July 2014

Australian Capital Territory

Pest Plant Management Plan - Chinese Fairy Grass

(*Miscanthus sinensis*)

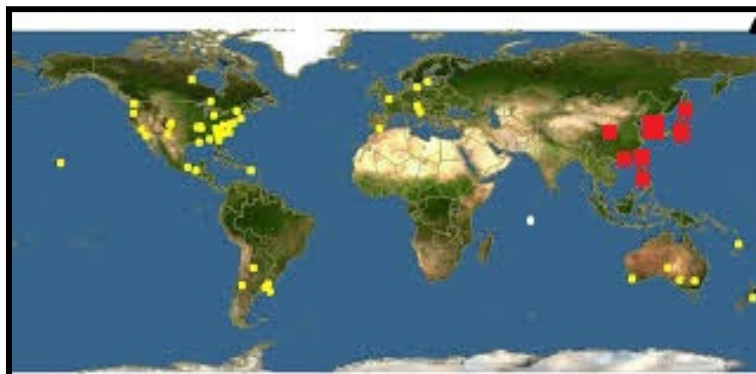
made under the *Pest Plants and Animals Act 2005*, Part 2, Section 8 (1)



Chinese Fairy Grass (Miscanthus sinensis) - Photo by ACT Parks and Conservation Service

**July 2014
Summary**

Chinese Fairy Grass (*Miscanthus sinensis*) is native to Asia. Its range extends from the subarctic Kuril Islands in Russia (with the islands of Habamai and Yuzhno-Sakhalinsk being the northern limit) to the main islands of Japan, the Korean Peninsula, eastern China, to the subtropics in Ryukyu (Japan) and Taiwan. Some references also indicate it comes as far south as the Philippines.



Map based on range of *Miscanthus sinensis* from <http://www.discoverlife.org/20/q>. The red squares highlight its natural distribution and the yellow squares are known areas of naturalisation.

Synonymous names for Chinese Fairy Grass include *Erianthus japonicus*, *Eulalia japonica*, *Miscanthus condensatus*, *Miscanthus flavidus*, *Miscanthus japonicas*, *Miscanthus kanehirae*, *Miscanthus purpurescens*, *M. sinensis* forma *glaber*, *Miscanthus sinensis* var. *gracillumus*, *Miscanthus sinensis* var. *variegatus*, *Miscanthus sinensis* var. *zebrinus*, *Miscanthus transmorrisonensis*, *Ripidium japonicum*, *Saccharum japonicum*, and *Xiphagrostis japonicas*.

Common names are many, the anglicised versions of the names including Japanese Silver Grass, Chinese Silver Grass, Chinese Grass, Chinese Sedge, Weeping Grass, Maiden Grass, Fairy Grass, Susuk, Eulalia, Porcupine Grass, Zebra Grass, Chinese Fairygrass, Japanese Pampas Grass, Plume Grass and Wild Sugar Cane.

There have also been numerous cultivar selections made and named, including 'Border Bandit', 'Cosmopolitan', 'Dronning Ingrid', 'Ferner Osten', 'Flamingo', 'Gewitterwolke', 'Ghana', 'Gold und Silber', 'Gracillimus', 'Grosse Fontäne', 'Kaskade', 'Kleine Fontäne', 'Kleine Silberspinne', 'Malepartus', 'Morning Light', 'Septemberrot', 'Silberfeder', 'Strictus', 'Undine', 'Variegatus', 'Zebrinus'. In cultivation, plants are often distributed under the cultivar name, excluding the botanical name *Miscanthus* altogether. Examples are 'Maiden Grass' 'Gracillimus', Dwarf Japanese Silver Grass 'Little Kitten', Purple Flame Grass 'Purpurescens', Silver Feather Grass 'Silberfeder' and Porcupine Grass 'Strictus'.

In natural situations in Japan, Chinese Fairy Grass occurs in subarctic, cool-temperate, and warm-temperate climates. It has been reported on sites with annual mean temperatures ranging from 6.5°C to 18.2°C and annual mean precipitation ranging from around 1,200mm to 3,670mm. It has been located at elevations of 400m to 1,800m.

In the United States, Chinese Fairy Grass occurs primarily in disturbed and altered sites such as cultivated fields, vacant lots, yards, gardens, irrigation ditches, along roadsides and railroad tracks, and near old home sites and cemeteries. However, it has also been recorded in natural situations on the fringe of deciduous woodlands, coniferous forests, forest clearings, and in grasslands.

Invasive species guides from the USA state that Chinese Fairy Grass grows in full sun but is also shade tolerant. In Australia Chinese Fairy Grass is known from semi-shade and open sunny locations.

The above information indicates the adaptability of this species and the likelihood of many suitable environments for its establishment in the ACT.

Scope

This Pest Plant Management Plan applies to all urban and rural land in the ACT.

Legal status of Chinese Fairy Grass (*Miscanthus sinensis*)

Other than in the ACT no State or Territory has yet formally listed this species, though it is already a recognised environmental weed in NSW and on the Victorian “alert weed” listing. In the ACT this species is a notifiable pest plant (i.e. a pest plant whose presence must be notified), a prohibited pest plant (i.e. a pest plant whose propagation and supply is prohibited) and a plant which must be suppressed.

Identification

Chinese Fairy Grass is a hardy, rhizomatous, clumping perennial grass that grows in a dense, bushy and upright or arching tussock to 3 metres tall.

The numerous, densely packed arching leaves are about 2 cm wide by 1-2 metres long, with a sharp, curved and tapered tip. They have whitish midrib on top of the leaf which is raised on the lower surface. The leaf edges are rough and slightly rolled under.

The flower stems are upright and unbranched to 2-3 metres tall, and somewhat flattened. The flower spikes are large and feathery, silver to pink in colour. The main flowering season is late summer and autumn, and the pollen is allergenic.

Large numbers of fluffy seeds, each with a fine twisted awn, are produced in autumn. Some sources claim that the cultivated varieties do not produce viable seed, but others state that the claim should be regarded with suspicion, especially as seed is a known source of spread.

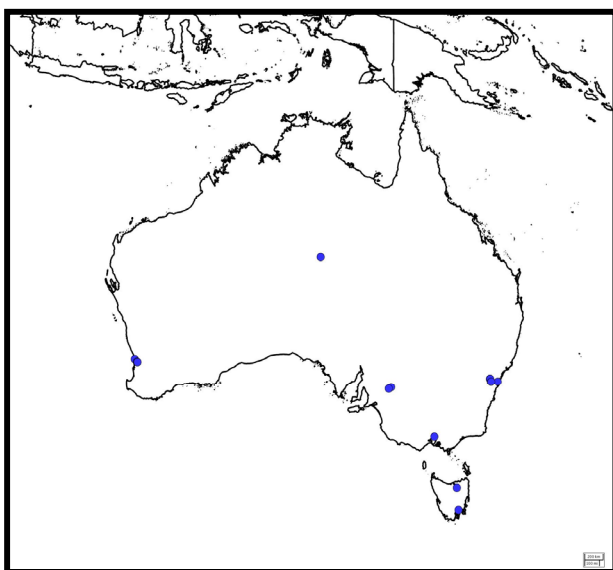
Most of the above features are illustrated in the photo on the front cover.

Current & Potential Distribution in Australia

The species grows in subarctic, cool-temperate, warm-temperate to subtropical climates and tolerates most soil types except waterlogged areas, and is highly drought tolerant once established. In Australia it thrives on disturbed areas, bushland edges, cleared areas within bushland, easements, railway lines and roadsides.

The introduction and spread of Chinese Fairy Grass has been through planting as an ornamental followed by the species becoming naturalized as a garden escape. The species was cultivated in the Royal Botanic Garden in Sydney by 1899, with specimens collected in the New South Wales Central Tablelands (Blue Mts.) from 1931. It is now listed as an invasive species in the Blue Mountains.

Current Distribution in Australia



Map based on Australian Virtual Herbarium

http://avh.ala.org.au/occurrences/search?taxa=Miscanthus+sinensis#tab_mapView

The above map illustrates recorded occurrences of Chinese Fairy Grass in Australia. The occurrences marked in the Northern Territory, Victoria and Tasmania are collections from cultivated sources in nurseries, botanic gardens and domestic gardens.

NSW occurrences

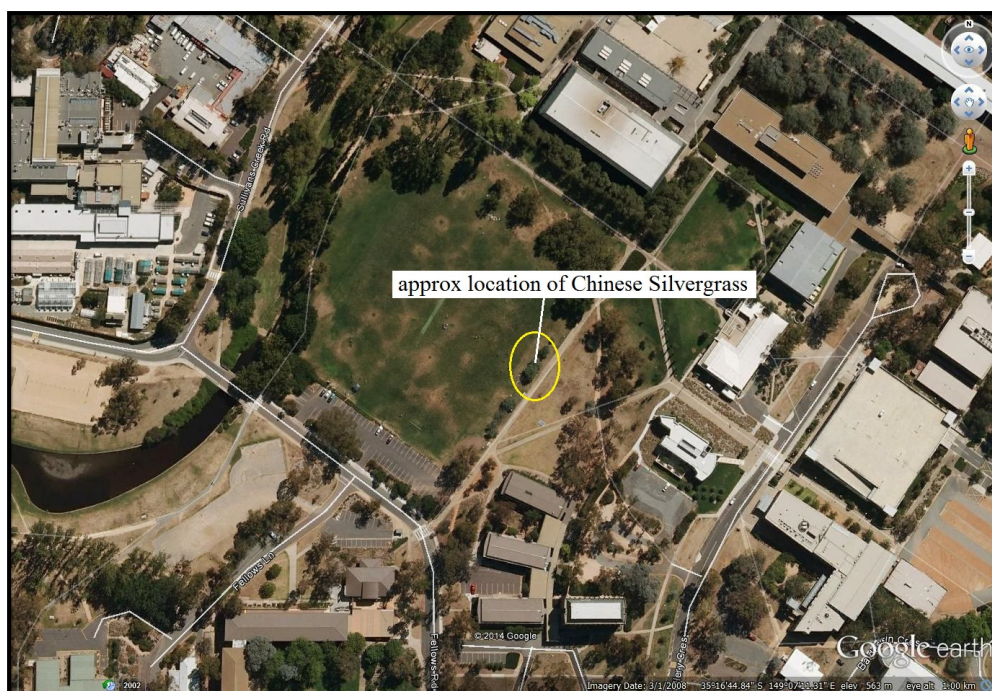
Chinese Fairy Grass is well established in the Blue Mountains (Woodford, Mt. Wilson and Hazelbrook) on the New South Wales Central Tablelands. It is believed to have the potential to colonise areas throughout this general region. There is also a naturalised occurrence in Wahroonga in Sydney. Chinese Fairy Grass is regarded as an environmental weed in New South Wales.

Victoria occurrences

While not known to be naturalised in Victoria, it is believed to be potentially very invasive in this state and has been listed as a priority environmental weed in one Natural Resource Management Region (Glenelg/Hopkins Catchment). It is included in the list of "weed alert" species in Victoria.

Current & potential distribution in the ACT

Chinese Fairy Grass is currently only known from one planting in the Australian National University near Fellows Oval. It is likely there are other isolated plantings in suburban gardens.



A weed risk assessment was undertaken on the species in 2014 and returned a verdict of being feasible to control at this stage and that eradication is the desirable outcome.

Given the environments in which it has naturalised in Australia and overseas, it is highly probable that the species would find many suitable areas for establishment in the ACT.

Means of Spread

Chinese Fairy Grass spreads vegetatively by rhizomes (enlargement of the tussock) and also by seed.

Seed spread

Some references indicate that very little reproduction occurs from seed, while others state that the stated lack of seed viability should be treated with caution. One invasive species manual from the SE United States indicated that some of the cultivar selections are assumed to be mostly sterile.

The seeds of *Miscanthus* are carried by wind, aided by the ring of hairs below the spikelet, but seeds can also travel on vehicles, shoes, clothing, water (streams), possibly wildlife or stock and in transported soil. Examination of soil seed banks in Japan have found that seed densities may vary depending on the plant community and season though 80% of the seeds collected from the soil seed bank were viable.

Vegetative spread

Chinese Fairy Grass regenerates from rhizomes and by tillering. This means it can spread through the dumping of garden waste. The rhizomes can also regenerate if the above-ground part of the plant is killed (e.g. by fire).

Preferred Habitats

The preferred habitats appear to be primarily disturbed areas such as roadsides, forest edges, clearings and other disturbed areas, though there are records in the United States where the species has been located in natural areas (woodlands and grasslands). In Australia it has naturalised in Jarrah woodland and sandy heath in Western Australia and in moist irrigated areas in South

Australia. The Blue Mountains infestations are primarily on disturbed sites and in near-bushland sites.

The Potential Threat

Impact on agriculture

Chinese Fairy Grass would be able to establish in areas of disturbed pasture, but can be managed in these situations under normal weed control programs for such areas.

Impact on native ecosystems

Chinese Fairy Grass primarily invades disturbed sites but is invasive in natural situations in some areas of the United States, Europe and Australia and may displace native grasses if it establishes. For the ACT it has been assessed as being a moderate threat to native species and ecological communities.

Chinese Fairy Grass establishes dense thickets and extensive infestations that prevent the growth and germination of other plants. Whilst there have been no specific studies of the impact of Chinese Fairy Grass on invaded habitats, in the Blue Mountains of New South Wales the dense thickets and extensive infestations prevent the growth and germination of other plants.

The species produces large quantities of biomass, is highly flammable and can increase the risk of fire in areas that it has invaded. Chinese Fairy Grass is generally top-killed by fire but can regenerate from rhizomes after fire. Seed rapidly colonises disturbed or open areas and can invade large areas of bushland after fire.

Impact in urban areas

When planted in urban areas it could become a significant source of infestations spreading into reserves and other natural areas in our region if the species remains available in horticulture.

Control Methods

Chinese Fairy Grass can be managed by preventative actions, cultural/mechanical options and herbicide.

Prevention

The current advice for the Blue Mountains of NSW is that the species not be planted in gardens.

As a declared pest plant in the ACT its importation and propagation is prohibited.

Cultural/Mechanical


Where infestations are light or consist of small numbers of individual plants, Chinese Fairy Grass may be hand-pulled or dug out. All roots must be removed or pieces of rhizome will re-sprout. Removal before flowering or at least removal of flowers before seed fall is practical on a small scale. Follow up will be required for re-sprouting rhizomes or seedling germination.

In areas where feasible to do so, repeated mowing/slashing as short as possible throughout the growing period over 2-3 seasons will eventually kill Chinese Fairy Grass. Follow-up would still be required for seedling germination. Mowing may spread seed or vegetative propagules into new areas, so care must be taken with cleaning when moving machinery to non-infested areas.

Fire should only be used in conjunction with a follow-up herbicide application as fire increases its growth, vigour and seed production. Seed also germinates profusely after fire in the open spaces that are created.

Chemical

Extensive infestations of Chinese Silvergrass are best treated by spraying. Cut back or burn the plants to the ground in late winter or early spring, before new growth starts. Spray the new growth with 1 litre of glyphosate in 100 litres of water in late spring or when there are numerous leaves 30cm or more in length. In situations where it is not practical to remove the previous season's growth it is better to allow more foliage to develop and spray in summer. Repeat this process in autumn if necessary. Continued spot treatments may be necessary if rhizomes re-sprout.

ZEBRA GRASS <i>Miscanthus sinensis</i>		NOT DECLARED															
	GERMINATION																
	FLOWERING																
	SEED DROP																
	HERBICIDE																
	OTHER CONTROL																

Extracted from NSW Dept. Primary Industry Weed Control Calendar 2008

Pest Plant Management Requirements in the ACT

This Pest Plant Management Plan, prepared under the *Pest Plant and Animals Act 2005* (PPAA), has regard to both the potential threat and practicality of control of any new incursions of Chinese Fairy Grass in the ACT.

In the ACT new incursions of the species must be destroyed. The site and surrounds of where incursions of this species have been controlled must then be monitored for at least 2-3 years in case of any re-emergence from either seed or rhizome.

Legislation and Offences

The following activities are an offence under the *Pest Plants and Animals Act 2005*:

- Supply propagation or cultivation of Chinese Fairy Grass in the ACT; and
- importation of Chinese Fairy plants, seeds or materials contaminated with plants or seeds into the ACT.

The *Pest Plant & Animals Act 2005* describes what an offence is and what is reckless in the case of Notifiable and Prohibited pest plant species:

Importation of Fireweed

- an offence is committed if a person imports a prohibited pest plant or a thing contaminated by a prohibited pest plant or whether the thing imported is likely to result in a spread of a prohibited pest plant (Section 10A, Clause 1 b, c and d).

Reckless supply of prohibited pest plant

- an offence is committed if a person supplies a thing contaminated by a prohibited pest plant (Clause 12 b ii).
- an offence is committed if a person is reckless about whether the thing supplied is

contaminated by a prohibited pest plant (Clause 12 c ii).

- an offence is committed if a person is reckless about whether the supply results or is likely to result in the spread of prohibited pest plants of that kind (Clause 12 d).

Reckless use of vehicle or machinery

- an offence is committed if a person uses a vehicle on which is a thing contaminated by a prohibited pest plant (Clause 13 b).
- an offence is committed if a person is reckless by using a vehicle on which is a thing that is contaminated by a prohibited pest plant (Clause 13 c).
- an offence is committed if a person is reckless about whether the use of the vehicle would result or would be likely to result in the spread of a prohibited pest plant of that kind (Clause 13 d).

Complete suppression or destruction of Chinese Fairy Grass infestations is required by this Plan (Part 2, Section 8 of the Act).

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