GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: ***Tradescantia fluminensis***

Tradescantia fluminensis 简体中文 正體中文 **System:** Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Liliopsida	Commelinales	Commelinaceae

Common name wandering creeper (English, USA), nohakata karakusa (Japanese, Japan), Vandrande Jude (German, Germany), white flowered wandering Jew (English, USA), small-leaf spiderwort (English, USA), wandering Jew (English, International), wandering Willie (English, New Zealand), spiderwort (English, Russia)

Synonym *Tradescantia albiflora* , (Kunth)

Similar species *Dichorisandra spp., Tradescantia zebrina, Tradescantia crassula, , Callisia spp.*

Summary Tradescantia fluminensis is endemic to the tropical rainforests of south east Brazil and has naturalised in New Zealand, south-eastern Australia, Portugal, Italy, Russia, Japan and the south-eastern USA. T. fluminensis is a persistent invasive weed of natural areas where it carpets the ground and prevents native regeneration. It alters litter decomposition, nutrient cycling and the successional trajectory of New Zealand lowland podocarp-broadleaf forests and probably native vegetation elsewhere. T. fluminensis propagates and spreads easily from fragments.

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Species Description

Tradescantia fluminensis has broadly ovate to oblong-lanceolate leaves arranged alternately on thin (2–3mm diameter) weakly ascending (or pendant) leafy shoots up to 60cm tall that grade into leafless stems with roots at the nodes. Glabrous leaves are 1.5–12 x 1–3.5cm, variable, with acute to acuminate tips, dark green or flushed purple beneath and/ or variegated off-white or cream. High biomass mats comprise interlaced vertical leafy shoots on horizontal leafless stems held to the substrate by abundant fine roots that also form at aerial nodes within the mat.

Lifecycle Stages

High biomass swards can persist indefinately. Can resprout from fragments 1cm in length (Kelly & Skipworth, 1984).

Uses

Tradescantia fluminensis is widely grown and valued as an easy-care houseplant. It was first introduced to New Zealand by a farmer to stabilise a steep bank (Kelly & Skipworth, 1984).

Habitat Description

In its native range, *Tradescantia fluminensis* occurs in rainforest and other damp, humid and shaded places including roadsides and gardens (Barreto, 1997). Outside its native range, it also occurs in damp, humid and shaded places such as gardens, parks, banks, stream-sides and forest remnants (but not large tracts of forest). *T. fluminensis* is shade tolerant but frost intolerant (Bannister, 1986).

Reproduction
Vegetatively from fragments. Can produce seed from bisexual flowers (Faden and Hunt, 1991; Langeland and Burks, 2003). Reproduction in Australia and New Zealand, and probably other areas of naturalisation, is wholly vegetative; vectors that facilitate spread, in approximate order of importance are humans, streams, cattle and road machinery.

Nutrition
Tradescantia fluminensis requires at least 15 mg/ L of sulphur for maximum growth (Handreck, 1986). The physiology of *T. fluminensis* enables rapid response to the availability of two key resources — light and nitrogen (Maule *et al*., 1995). It can persist in the deep shade (down to 1.4 % of full light; Adamson *et al.* 1991). Damp fertile soils support dense swards of *T. fluminensis* (Ogle and Lovelock, 1989; Standish *et al.* 2001) whereas growth is sparse on rocky substrates (Barreto, 1997; Smale and Gardner, 1999).

General Impacts
Tradescantia fluminensis does not appear to be a significant weed of crops (CABI, 2004). It is considered a significant environmental weed for its impacts to native biodiversity. *T. fluminensis* is a 'symptomatic invader' in the sense that it requires disturbance (i.e., increased light, increased soil nitrogen) for establishment.

Management Info
Preventative measures: Plant cuttings should not be dumped anywhere as this is a frequent source of new weed infestations. The origin of new top soil or fill should be checked as physical transportation of plant segments in soil is a major method of spread. One approach is tree planting to enhance canopy cover and so reduce light availability to *T. fluminensis* (Standish *et al*., 2001; Standish, 2002a). There is experimental evidence to show that shading (artificial) causes a reduction in *T. fluminensis* biomass (Standish, 2002a). In addition, ‘armouring’ the edge of forest remnants has been mooted as a potential means to reduce disturbance and improve canopy cover (P. Williams, pers. comm., 2001). Such an approach might involve planting a buffer zone around the forest remnant, or at least about the edges exposed to prevailing winds (to reduce tree-fall).
\r\nPhysical: Hand weeding and rolling the weed up like a carpet are considered suitable for removal of small infestations (Porteous, 1993; C. Buddenhagen, pers. comm., 2001), if care is taken to remove every last piece. In heavily infested forest remnants, gaps left by removal of *T. fluminensis* are likely to be filled by other invasive species (Standish, 2002a).
\r\nChemical: Chemical control by herbicides is considered a practical means of controlling large infestations of *T. fluminensis* (McCluggage, 1998). However, re-spraying is often necessary (Standish, 2002a). Furthermore, one of the most widely used herbicides (active ingredient triclopyr) could have detrimental effects on wildlife (Standish *et al.* 2002b).
\r\nBiological: Cattle and chickens eat *T. fluminensis* (Timmins & Mackenzie 1995; pers. obs.) but damage other forest plants and the soil in the process. *T. fluminensis* has been identified as a good candidate for biological control in New Zealand because it is widespread, and the risk of non-target effects are minimal to non-existent (Standish, 2001) and a research programme is underway (S. Fowler, pers. comm., 2003). Reducing both the weed’s biomass and re-invasion of other weeds are the biggest challenges for a biocontrol programme to overcome (Standish, 2001). The gradual reduction of *T. fluminensis* that is likely to occur with biological control may reduce the chance of invasion by other weeds.
Integrated management: A combination of chemical and manual removal methods has been used with success in New Zealand, but has required repeated efforts to ensure continued control (Anon, 1995). The key to successful control of *T. fluminensis* is to reduce light availability by improving canopy cover that also reduces invasion by other weeds (Standish *et al.* 2001; Standish, 2002a). This might be achieved by integrating biological control and tree planting to improve canopy cover.

Pathway
Commonest of all houseplants (Mabberley, 1997).

Principal source:

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ALIEN RANGE

[1] ARGENTINA
[1] BERMUDA
[1] JAPAN
[4] NEW ZEALAND
[1] PUERTO RICO
[1] SAINT LUCIA
[1] SWAZILAND
[2] AUSTRALIA
[1] ITALY
[1] KENYA
[1] PORTUGAL
[1] RUSSIAN FEDERATION
[1] SOUTH AFRICA
[9] UNITED STATES

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