Tradescantia fluminensis

**System:** Terrestrial

<table>
<thead>
<tr>
<th>Kingdom</th>
<th>Phylum</th>
<th>Class</th>
<th>Order</th>
<th>Family</th>
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</thead>
<tbody>
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<td>Plantae</td>
<td>Magnoliophyta</td>
<td>Liliopsida</td>
<td>Commelinales</td>
<td>Commelinaceae</td>
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</tbody>
</table>

**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, Tradescantia zebrina, Tradescantia crassula, Commelina, Callisia*

**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.

**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 indefinitely. 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).

\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).

\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).

\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:

Compiler: Dr Rachel Standish & IUCN/SSC Invasive Species Specialist Group (ISSG)

Review: Dr Rachel Standish

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**BIBLIOGRAPHY**

46 references found for *Tradescantia fluminensis*

**Management information**


CABI Crop Protection Compendium ? Invasive Plants

**Summary:** Database under construction


**Summary:** The IUCN Red List of Threatened Species provides taxonomic, conservation status and distribution information on taxa that have been globally evaluated using the IUCN Red List Categories and Criteria. This system is designed to determine the relative risk of extinction, and the main purpose of the IUCN Red List is to catalogue and highlight those taxa that are facing a higher risk of global extinction (i.e. those listed as Critically Endangered, Endangered and Vulnerable). The IUCN Red List also includes information on taxa that are categorized as Extinct or Extinct in the Wild; on taxa that cannot be evaluated because of insufficient information (i.e. are Data Deficient); and on taxa that are either close to meeting the threatened thresholds or that would be threatened were it not for an ongoing taxon-specific conservation programme (i.e. are Near Threatened).


**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.


**Summary:** Discusses impacts species has had on a Reserve in Australia. Examines chemical and physical control methods and how control has been reached.


Royal New Zealand Institute of Horticulture (RNZIH), 2005. *Wandering jew Tradescantia fluminensis*


Summary: Management of T. fluminensis which is similar to T. spathacea in that it also likes shade and will invade forest understorey, though T. fluminensis is not drought tolerant. They don’t look similar.


Swaziland’s Alien Plants Database., Undated. Tradescantia fluminensis

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


Summary: The New Zealand Plant Names Database provides access to information on plant taxa that occur in New Zealand. It currently includes the names for seed plants, mosses, liverworts, lichens and freshwater algae.


Summary: Taxonomy of Commelinaceae native to Brazil


Summary: Taxonomy, biochemistry


Summary: Species lists, distribution records.


ITIS (Integrated Taxonomic Information System), 2005. Online Database Tradescantia fluminensis

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.

Langeland, K.A. and Burks, K. C (Eds) 1998. Identification and Biology of Non-Native Plants in Florida’s Natural Areas, University of Florida, Tradescantia fluminensis

Summary: Information on plants that pose threats to natural resource areas in Florida.


Summary: Distribution record.


Summary: Includes Tradescantia fluminensis.