Gunnera tinctoria 简体中文 正體中文

System: Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Magnoliopsida	Haloragales	Gunneraceae

Common name giant rhubarb (English), Chilean gunnera (English), nalca (English), panque (English), Chilean rhubarb (English)

Synonym *Gunnera chilensis* , Lam.
Panke tinctoria , Molina (basionym)
Gunnera scabra , (Ruiz.&Pav.)

Similar species

Summary Gunnera tinctoria is a large herbaceous plant that forms dense colonies that shade out and suppress native vegetation. This species is a vigorous seeder, and birds facilitate its spread. Its ability to reproduce rhizomatically is yet another reason for its invasive nature. Intense effort is required to control this species.

view this species on IUCN Red List

Species Description
Law (2003) states that, \"*G. tinctoria* is a large, clump-forming, herbaceous plant that grows up to 2m in height. It has stout horizontal rhizomes, and massive umbrella-sized leaves on sturdy petioles. The leaves and their stems are covered in rubbery prickles. Tiny green flowers occur in early summer on conical spikes.\" The Taranaki Regional Council (2003) state that, \"*G. tinctoria* is a perennial with an exotic tropical appearance with spiny stems some 1.5 to 2m tall. The flower stems resemble elongated broccoli and number up to five per plant, standing up to 1m tall and rising from the base of the leaves (each seed head may contain in excess of 80,000 seeds). In severe winter conditions the plant dies down for the winter and grows new leaves in spring.\" Williams *et al.* (2005) describe *G. tinctoria* as follows, \"*G. tinctoria* is a summer-green herb, with short, stout, horizontal rhizomes which give rise to stout petioles up to 1000 (1500) 1mm × 45mm that are studded with short reddish prickles. The leaf lamina measures up to about 0.8m × 1.0m with 5-7 lobes. It is very coriaceous, and hairy beneath, especially on the veins. Massive over-wintering buds-up to 250mm long-accumulate on the rhizomes and they are covered in pinkish, pinnatisect scales that extend to the broad leaf midribs. The flowers are borne on panicles that are up to 1m long; usually three or four per plant. Individual flowers are densely packed, sessile, apetalous, with minute sepals, and only c. 1mm long. Style length is slightly less than the ovary. The drupes are reddish, oblong, and 1.5mm-2mm long. Each contains a single ovoid and flanged seed of 1.2mm × 1-1.5mm diameter, weighing 4mg. The hundreds of fruit are regularly arranged and densely packed on the infructescence.\"

Notes
Bergman and Osborne (2002) report that at the end of the nineteenth century it was found that *Gunnera tinctoria* forms a symbioses with nitrogen fixing Cyanobacteria inside its cells. The Cyanobacteria have been classified as belonging to the genus Nostoc. There is little evidence that the host (including *G. tinctoria*) can survive to maturity in the absence of the cyanobacterium, and all cultivated and naturally growing plants contain the cyanobiont, irrespective of nutrient availability.

Uses
Plants for a Future (2000) reports that young leaf stalks can be peeled and cooked as a vegetable or eaten raw. They are \"Acidic and refreshing\". *G. tinctoria* also has medicinal uses as an astringent. This species can also be used as to make a black dye is obtained from the root, and has been used as a roof covering Plants for a Future, 2000).
Williams *et al.* (2005) reports that, \"In Southern Chile (at latitudes of 36º-42ºS) *G. tinctoria* is a delicacy associated with Mapuche Indian customs. The young petioles are commonly sold by street vendors and eaten raw, along with salt and chilli to enhance the flavour (E. Villouta pers. comm. 2004).\"

Habitat Description
Gunnera tinctoria has been found in meadows, bogs, gardens, woodlands, sunny edges, and dappled shade. While this species can invade and occupy a variety of habitat it requires moist soils in order to establish (Plants for a Future, 2000). Law (2003) reports *G. tinctoria* being found on coastal cliffs, riparian zones and wetland areas.
Williams *et al.* (2005) describes the soils which are favoured by *G. tinctoria* in New Zealand. The authors state that the most robust stands of the plant are found growing on colluvium or alluvium (colluvium or hillwash is the name for loose bodies of sediment that has been deposited or built up at the bottom of a low grade slope or against a barrier on that slope, as a result of rainwater or downhill creep by gravity. Alluvium is young sediment—freshly eroded rock particles that have come off the hillside and been carried by streams). *G. tinctoria* grows on substrates derived from a wide range of sedimentary rocks; in the western North Island where the plant is established, most soils also have a large component of volcanic material.
The authors further state that *G. tinctoria* tolerates salt spray and is found growing right up to the high tide mark in the coasrtal areas that it has invaded. The plant is seen to tolerate seasonally water logged wet soils and establishes less on excessively drained and drought-prone sandy or stony soil.

Reproduction
Law (2003) states that, \"A single *G. tinctoria* may produce 250,000 seeds in a year, with the seeds being spread by water and by birds. The extensive seed bank allows *G. tinctoria* to easily re-colonize after mature plants have been removed. This species can also reproduce rhizomatically from fragments.\" Once established, vegetative growth can be rapid with rhizomes increasing by ~15cm annually (Hickey and Osborne, 1999).

General Impacts
Law (2003) report that, \"*G. tinctoria* shades out rare and endangered indigenous flora and fauna. The huge leaves of each*G. tinctoria* mean it can impact on a disproportionately large number of the comparatively small, native herbs. Areas that have been cleared of mature *G. tinctoria* can become re-colonized with numerous seedlings from the original plants, and pieces of the rhizomes that break off will also re-grow. In areas with harsh winter frosts, *G. tinctoria* is deciduous or semi-deciduous. Once established, it is very invasive and forms dense colonies that shade-out or suppress desirable flora. These characteristics have contributed to it being a serious threat to indigenous biodiversity values in areas it has invaded\". Weedbusters (2003) report that *G. tinctoria* can block drains and streams; and obstruct access to natural and recreational areas.

Management Info
Preventative measures: If possible,remove and destroy all flower heads as soon as possible, as the germination rate of the seeds is very high.
Chemical: Best results with least bi-kill of desirable adjacent plants has been achieved by spraying with Grazon (triclopyr 600 EC) at 10 mls/litre plus a penetrant. Tordon Brushkiller (picloram & triclopyr)at 10 mls/litre plus a penetrant was also effective but was hard on nearby desirable plants (Taranaki Regional Council (TRC) and the *Gunnera tinctoria* specialist at the local Department of Conservation office at Stratford (DoC), New Zealand., pers.comm., June 2008).
Cultural: Law (2003) reports that in New Zealand, extensive outreach programs have been initiated to educate the public on the dangers of this invasive. Newspaper articles and public advertisements have been created. Coastal landowners have had personal visits from Rangers who inform the landowners and invite them to participate in government sponsored control trials. The author also states that, \"In cases where landowners are required to destroy *G. tinctoria* in a garden situation, a similarly striking, benign plant can be recommended as a replacement. In riparian situations, possible replacement plants include *Carex secta* or *toetoe*, depending on the scale of the site.\"

Principal source: Williams *et al.* 2005 Chilean rhubarb (*Gunnera tinctoria*): biology, ecology and conservation impacts in New Zealand
Taranaki Regional Council, 2003. Chilean rhubarb (*Gunnera tinctoria*)

Compiler: National Biological Information Infrastructure (NBII) & IUCN/SSC Invasive Species Specialist Group (ISSG) with support from the Terrestrial and Freshwater Biodiversity Information System (TFBIS) Programme (Copyright statement)

Review: Susan Timmins, Plant Ecologist (Weeds) Research, Development & Improvement. Department of Conservation, New Zealand

Pubblication date: 2005-12-15

ALIEN RANGE

[2] AUSTRALIA
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[1] NORTH AMERICA
[2] UNITED STATES
[1] FRANCE
[9] NEW ZEALAND
[2] PORTUGAL

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