

Rosa bracteata [简体中文](#) [正體中文](#)

System: Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Magnoliopsida	Rosales	Rosaceae

Common name

Synonym

Similar species

Summary

Rosa bracteata (Macartney rose) is an evergreen perennial shrub, native to Asia, that has been introduced to the United States as an ornamental and used for livestock containment, erosion control, enrichment and cross-breeding rose cultivars. Since its introduction, *Rosa bracteata* has become invasive throughout the southeastern United States, especially in Texas where it is estimated to inhabit more than 250,000ha. It forms dense thickets and dominates habitats resulting in the reduction of foraging capacity of pastures and grasslands it readily overtakes and the displacement of native species.



[view this species on IUCN Red List](#)

Species Description

Macartney rose (*Rosa bracteata*) is an evergreen, thorny shrub bearing alternate, pinnately compound obovate leaves with serrated margins. Leaflets are dark green, leathery, and 2.5-8cm long. Its flowers, white with five petals and many yellow anthers, occur in small clusters. The fruits are small hips about 1cm in diameter and may be green or yellow which ripen to red. It grows in climbing, arching, or trailing shrubs about that may merge into thickets 3.5 height and several meters in diameter. Stems are arching canes with frequent recurved or straight thorns. It commonly grows in large clumps that may form impenetrable mounds 6m high (Grace *et al.* 2001; Everitt *et al.* 2002; Amrine Jr., 2003; TexasInvasives, 2004)

Lifecycle Stages

Macartney rose (*Rosa bracteata*) is a perennial with flowers bloom spring, fruits develop late summer through winter (TexasInvasives, 2004).

Uses

Macartney rose (*Rosa bracteata*) is a popular ornamental, used as a hedge and livestock containment and erosion control. It also serves as a habitat and food source (hips) for wildlife (Everitt *et al.* 2002; Grace *et al.* 2001). *R. bracteata* is used in the hybridization of cultivars for its very dark, leathery, glossy, disease-resistant leaves and heat tolerant characteristics (Ueda, 2000).

Habitat Description

Macartney rose (*Rosa bracteata*) commonly occurs in shrublands, grasslands, and disturbed areas such as rangeland, right-of-ways, fence lines, drainage ditches, and river bottoms. It prefers clayey soil and warm climate (TexasInvasives, 2004; Ueda, 2000).



Reproduction

Sexual. Perennial. Hips readily consumed and seeds germinate from animal and bird feces (TexasInvasives, 2004).

Nutrition

Macartney rose (*Rosa bracteata*) produces a net photosynthetic rate of $18.7 \mu \text{ mol m}^{-2} \text{ s}^{-1}$ at saturation irradiances. Prefers higher light intensities and clayey soils (Ueda, 2000; TexasInvasive, 2004).

General Impacts

Macartney rose (*Rosa bracteata*) is aggressive invasive forming dense thickets that displace native plants. Macartney rose competes with the endangered white bladderpod (*Lesquerella pallida*) in Texas. Encroachment by non-native species especially Macartney rose and honeysuckle are cited as the current most serious threat to the diminishing populations of the white bladderpod (U.S. Fish and Wildlife Service, 1992). The Macartney rose also ruins grazing pastures. It has been introduced for livestock containment in many areas and its spread has become a problem. Vegetation unpalatable to grazing livestock, but hips are edible. Since it exhibits rapid succession and recovery, it commonly dominates pastures which have been overgrazed or burned. Macartney rose is able to regenerate from shoot bases, root buds, or from decumbent shoots and is quick to recover and spread after burnings. Its low mortality, efficient regrowth, and beneficial adaptation to fire render it a highly invasive weed (TexasInvasives, 2004; Grace *et al.* 2001; Everitt *et al.*, 2002).

Management Info

Preventative measures: Macartney rose (*Rosa bracteata*) is difficult to manage since it is a very tolerant and resilient species. Precautionary practices like using native species in livestock containment and gardening and taking care not to release or spread Macartney rose when hiking or traveling are important to managing its spread (TNC, 2008).

Physical: Mowing, bulldozing, chaining, and burning are all ineffective means of controlling *R. bracteata*, since it is a resilient plant that regrows quickly and is well adapted to fire. Mechanical control methods provide brief canopy reduction, increased foraging production, and facilitate livestock and machinery movement, but they are only short term means of control (Meyer & Bovey, 1984).

Chemical: *R. bracteata* is resistant to many herbicides. Relatively high concentrations of picloram and tebuthiuron granules, 4.5 kg/ha, are the best means of longterm control for *R. bracteata*. One Texas study tested seven different herbicides by spray and granule application. Only subsurface application of picloram at a 4.5 kg/ha rate and tebuthiuron at 2.2 and 4.5 kg/ha rates were effective. These treatments yielded a canopy reduction of 74-79% (Meyer & Bovey, 1979). Subsequent studies have shown several successive sprays of 2,4-D, single applications of picloram, picloram and 2,4-D, or picloram and 2,4,5-T to reduce Macartney rose canopy by 95% 2 to 4 months following treatment, but populations recovered subsequently. Only picloram and tebuthiuron at 4.5 kg/ha maintained control through subsequent years (Meyer & Bovey, 1984). Herbicides chlorsulfuron and metsulfuron were only marginally effective (killing 15-43%) on Macartney rose (Meyer & Bovey, 1990). Another method of treatment recommends: "Apply Escort at 1 ounce per acre in water (0.2 dry ounces in 3-gal. sprayer) with a surfactant to wet foliage in April to June (at or near the time of flowering). Or, apply Arsenal AC as a 1% solution in water (4 ounces in a 3-gal. sprayer) and a surfactant to thoroughly wet all leaves in August to October. A less effective treatment with no soil activity to damage surrounding plants requires repeated applications of a glyphosate herbicide as a 2% solution in water (8 ounces in a 3-gal. sprayer) with a surfactant to thoroughly wet all leaves in May to October. With all herbicides, spray foliage of climbing stems as high as possible. Cut-treat with a 10%-20% solution of a glyphosate herbicide (1-2 quarts in 3-gal. sprayer) in water with a surfactant (Miller, 2002)."

Integrated management: The combination of herbicide application before prescribed burnings at 2-3 year intervals was shown to accomplish control previously requiring annual herbicide treatment. Similar long term results were obtained by the application of 5-10% picloram granules following a burning (Scifres, 1980). Remote sensing using mean light reflectance of aerial photography was proved to be an effective way of identifying and quantifying Macartney rose populations. Its high near infrared reflectance provided for 100% identification accuracy (Everitt *et al.* 2002).



GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: *Rosa bracteata*

Principal source:

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

Review: Dr. Walter Lewis, Professor Emeritus, Department of Biology, Washington University in St. Louis

Publication date: 2010-06-04

ALIEN RANGE

[1] AUSTRALIA

[1] EUROPE

[1] LESSER ANTILLES

[14] UNITED STATES

[1] BERMUDA

[1] GREATER ANTILLES

[1] UNITED KINGDOM

[1] WEST INDIES

BIBLIOGRAPHY

32 references found for *Rosa bracteata*

Management information

Everitt, J. H. ; C. Yang, R. F. Wilson, M. A. Alaniz, M. R. Davis., 2002. Remote Sensing of Macartney Rose in the Texas Coastal Prairie. The Southwestern Naturalist, Vol. 47, No. 4 (Dec., 2002), pp. 566-575

Summary: An informative article on the use of remote sensing to identify Macartney rose.

Garoian, L; Conner, J.R; Scifres, C.J., 1984. Economic evaluation of fire-based improvement systems for Macartney rose. Journal of Range Management. Vol. 37, no. 2, pp. 111-115. 1984.

Summary: This study recommends combining herbicide treatment with burnings

[Grace, J.B., M.D. Smith, S.L. Grace, S.L. Collins, and T.J. Stohlgren. 2001. Interactions between fire and invasive plants in temperate grasslands of North America. Pages 40-65 in K.E.M. Galley and T.P. Wilson \(eds.\). Proceedings of the Invasive Species Workshop: the Role of Fire in the Control and Spread of Invasive Species. Fire Conference 2000: the First National Congress on Fire Ecology, Prevention, and Management. Miscellaneous Publication No. 11, Tall Timbers Research Station, Tallahassee, FL.](#)

Summary: This article discusses the use of fire as a management tool for invasive grasslands species.

Available from: http://jfsp.nifc.gov/invasive%20publications/ttrs_22pr_04_40_65_c.pdf [Accessed 20 July 2007]

Meyer, Robert E., 1982. Brush Response to Spacing and Individual-Plant Herbicide Treatments. Weed Science, Vol. 30, No. 4. (Jul., 1982), pp. 378-384.

Summary: A test of herbicides on Macartney rose and other weeds.

Meyer, Robert E; Rodney W. Bovey., 1979. Control of Honey Mesquite (*Prosopis juliflora* var. *glandulosa*) and Macartney Rose (*Rosa bracteata*) with Soil-Applied Herbicides. Weed Science, Vol. 27, No. 3. (May, 1979), pp. 280-284.

Summary: This article tests several herbicide control methods on *Rosa bracteata* and finds soil applied herbicides work best.

Meyer, Robert E; Rodney W. Bovey., 1984. Weed Control and Herbicide Technology Response of Macartney Rose (*Rosa bracteata*) and Understory Vegetation to Herbicides. Weed Science, Vol. 32, No. 1. (Jan., 1984), pp. 63-67.

Summary: A study of herbicides on controlling Macartney rose with long term observations.

Meyer, Robert E., Rodney W. Bovey, 1988. Weed Control and Herbicide Technology Tebuthiuron Formulation and Placement Effects on Response of Woody Plants and Soil Residue Weed Science, Vol. 36, No. 3. (May, 1988), pp. 373-378.

Summary: This study tests herbicides on Macartney rose along with other weeds.

Meyer, Robert E., Rodney W. Bovey, 1990. Weed Control and Herbicide Technology Influence of Sulfonyleurea and Other Herbicides on Selected Woody and Herbaceous Species Weed Science, Vol. 38, No. 3. (May, 1990), pp. 249-255.

Summary: A study of herbicides on controlling Macartney rose and other invasives.

[Miller, James. H., 2002. The Bugwood Network. Exotic Pest Plants and Their Control](#)

Summary: Available from: <http://www.bugwood.org/weeds/forestexotics.html> [Accessed 11 February 2008]

[Scifres, C.J. 1980. Integration of prescribed burning with other practices in brush management systems. In Hanselka, C. Wayne \(Ed\)., 1980 Prescribed Range Burning in the Coastal Prairie and Eastern Rio Grande Plains of Texas. Proceedings of a Symposium held October 16, 1980 at Kingsville, Texas](#)

Summary: Burning as management technique

Available from:

http://texnat.tamu.edu.ezproxy.auckland.ac.nz/symposia/prescribed_burning_coastal_prairie_eastern_rio_grande_plains.pdf#page=70 [Accessed 12 February 2008]

[TexasInvasives.org., 2004. Plant Detail Page *Rosa bracteata* J.C. Wendl.](#)

Summary: Available from: http://www.texasinvasives.org/Invasives_Database/Results/Detail.asp?Symbol=ROBR [Accessed 11 February 2008]

[United States Forest Service. 2007. 2007 Volunteers working with invasives grants report form. Attwater Prairie Chicken National Wildlife Refuge.](#)

Summary: This management project targeted invasives threatening the grassland birds via reduction of foraging resources.



GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: *Rosa bracteata*

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

[Alabama Invasive Plant Council \(ALIPC\), undated. Alabama s 10 worst invasive weeds](#)

Summary: Brief information concerning Macartney rose in Alabama

Available from: <http://www.se-eppc.org/pubs/alabama.pdf> [Accessed 11 February 2008]

[Amrine Jr., J.W. 2003. Multiflora rose. Invasive Plants of the Eastern Invasive.org.](#)

Summary: A profile on the Multiflora rose with a common name of Macartney rose.

Available from: <http://www.invasive.org/eastern/biocontrol/22MultifloraRose.html> [Accessed 25 February 2008].

[DAISIE \(Delivering Alien Invasive Species Inventories for Europe\) 2009. Handbook of Alien Species in Europe. Invading Nature ♦ Springer Series in Invasion Ecology, Vol. 3. Spring Science + Business Media B.V.](#)

Summary: Biological invasions by alien (non-native) species are widely recognized as a significant component of human-caused global environmental change and the second most important cause of biodiversity decline. Alien species threaten many European ecosystems and have serious environmental, economic and health impacts. The DAISIE (Delivering Alien Invasive Species Inventories for Europe) project has now brought together all available information on alien species in Europe (terrestrial, aquatic and marine) and from all taxa (fungi, plants, animals). Thus for the first time, an overview and assessment of biological invasions in the Pan-European region is finally possible.

The Handbook of Alien Species in Europe summarises the major findings of this groundbreaking research and addresses the invasion trends, pathways, and both economic as well as ecological impact for eight major taxonomic groups. Approximately 11,000 alien species recorded in Europe are listed, and fact sheets for 100 of the most invasive alien species are included, each with a distribution map and colour illustration.

The book is complemented by a regularly updated internet database providing free additional information. With its highly interdisciplinary approach, DAISIE and its Handbook will be the basis for future scientific investigations as well as management and control of alien invasive species in Europe.

Preview available from:

http://books.google.co.nz/books?id=_g-syyoXw2gC&pg=PA193&lpg=PA193&dq=europe+rosa+bracteata&source=bl&ots=XwrfKKQJwa&sig=pOQzowvD1OjQpMIVfu0C7xdyj00&hl=en&ei=pj4ITozxB4HBccDL9cUO&sa=X&oi=book_result&ct=result&resnum=5&ved=0CCMQ6AEwBA#v=onepage&q=Rosa%20bracteata&f=false [Accessed 4 June, 2010]

[Dang, Bachlien; Jianxin Lin and Yuanjian Deng, 2003. Chemical Analysis and Toxicity Study of Macartney Rose. Department of Chemistry, Texas Southern University, Houston, TX](#)

Summary: Available from: http://www.texasacademyofscience.org/2003_tas_program.pdf [Accessed 25 February 2008].

[Early Detection and Distribution Mapping System \(EDDMaps\), 2008. Distribution Map: Macartney rose. Rosa bracteata J.C. Wendl.](#)

Summary: Detailed US distribution information.

Available from: <http://www.eddmaps.org/distribution/subdist.cfm?sub=4606> [Accessed 11 February 2008]

[Early Detection and Distribution Mapping System \(EDDMaps\), 2008. Species Information: Macartney rose. Rosa bracteata J.C. Wendl.](#)

Summary: Available from: <http://www.eddmaps.org/species/subject.cfm?sub=4606> [Accessed 11 February 2008]

[ITIS \(Integrated Taxonomic Information System\), 2008. Online Database Rosa bracteata J.C. Wendl.](#)

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.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=24817 [Accessed 12 February 2008]

[NatureServe, 2008. Rosa bracteata - J.C. Wendl. Macartney s Rose NatureServe Explorer: An online encyclopedia of life \[web application\]. Version 7.0. NatureServe, Arlington, Virginia.](#)

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Summary: Available from: http://serc.si.edu/labs/marine_invasions/news/CHINESE_MITTEN_CRAB_UPDATE_APR21_09.pdf

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GLOBAL INVASIVE SPECIES DATABASE

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Summary: Distribution information

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U.S. Fish and Wildlife Service. 1992. White Bladderpod (*Lesquerella pallida*) Recovery Plan. USD1 Fish and Wildlife Service, Albuquerque, New Mexico. 22 pp.

Summary: Effects of Macartney rose on White Bladderpod (*Lesquerella pallida*) in Texas

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Williams, M. C., 1980. Purposefully Introduced Plants That Have Become Noxious or Poisonous Weeds. Weed Science, Vol. 28, No. 3. (May, 1980), pp. 300-305.

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Summary: The national list identifies 1036 naturalised garden plant species and taxa that are actual or potential environmental and agricultural weeds. Available from: <http://wwf.org.au/publications/ListInvasivePlants/>