GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: ***Ficus rubiginosa***

Ficus rubiginosa 简体中文 正體中文

System: Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Magnoliopsida	Urticales	Moraceae

Common name

little leaf fig (English), rusty fig (English), rusty-leaved fig (English), Port Jackson fig (English)

Synonym

Ficus australis , Willd., Sp. Pl. 4: 1138 (1806)
Mastosuke rubiginosa , (Desf. ex Vent.) Raf., Sylva Tellur. 59 (1838)
Urostigma rubiginosum , (Desf. ex Vent.) Gasp. Nov. Gen. Fic. 7 (1884)
Urostigma leichhardtii , Miq. J. Bot. Neerl. 1: 235 (1861);
Ficus leichhardtii , (Miq.) Miq., Ann. Mus. Bot. Lugduno-Batavum 3: 268 (1867);
Ficus platypoda , var. *leichhardtii* (Miq.) R.F.J. Hend., Austrobaileya 4: 119 (1993).
Ficus leichhardtii , var. *angustata* Miq., Ann. Mus. Bot. Lugduno-Batavum 3: 268 (1867);
Ficus platypoda , var. *angustata* (Miq.) Corner, Gard. Bull. Singapore 21: 27 (1965).
Ficus platypoda , var. *mollis* Benth., Fl. Austral. 6: 170 (1873).
Ficus platypoda , var. *subacuminata* Benth., Fl. Austral. 6: 170 (1873).
Ficus platypoda , var. *petiolaris* Benth., Fl. Austral. 6: 170 (1873);
Ficus obliqua , var. *petiolaris* (Benth.) Corner, Gard. Bull. Singapore 17: 402 (1960).
Ficus rubiginosa , var. *lucida* Maiden, Forest Fl. New South Wales 1: 10 (1902).
Ficus rubiginosa , var. *variegata* Guilf., Austral. Pl. 178 (1911).
Ficus macrophylla , var. *pubescens* F.M. Bailey, Queensland Agric. J. 26: 316 (1911).
Ficus baileyana , Domin, Biblioth. Bot. 89: 12 (1921).
Ficus shirleyana , Domin, Biblioth. Bot. 89: 12 (1921).

Similar species

Ficus macrophylla, Ficus obliqua, Ficus watkinsiana

Summary

Ficus rubiginosa is potentially a broad, spreading, evergreen tree that is native to eastern Australia. It usually establishes as a hemiepiphyte or lithophyte, developing into a large strangler or rock-breaker on favourable sites, or remaining a small epiphytic or lithophytic shrub on very harsh sites. Ficus rubiginosa has been introduced to various locations throughout the Australia/Pacific region, North America and Europe as an ornamental tree that is tolerant of many climates and its hardiness in urban environments. Ficus rubiginosa has no effective population controls outside Australia. It regularly produces large crops of fruit and can become invasive and adversely affect native plant communities and urban ornamental trees if its symbiont pollinator wasp, Pleistodontes imperialis is also introduced. Further, its powerful root system can seriously damage urban infrastructure in the absence of adequate weed control measures.

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Species Description
For detailed description of this species, please read our *species description* pdf file.

Notes
Dixon *et al.* (2001) recognised two forms of *Ficus rubiginosa*: *Ficus rubiginosa* f. *rubiginosa* has leaves which are variously hairy, while *Ficus rubiginosa* f. *glabrescens* has glabrous leaves. *Ficus rubiginosa* f. *glabrescens* seems confined to Queensland, while *Ficus rubiginosa* f. *rubiginosa* is found in both New South Wales and Queensland (Dixon *et al.* 2001) and appears to be the form establishing outside the species' historical range.

Lifecycle Stages
Verkerke (1989, p. 612) defines the fig or syconium as: "...an infolded receptacle apically closed off by numerous bracts. These bracts tightly close off the entrance or ostiole. Internally the fig wall is covered in small unisexual florets. The fig (syconium) acts as both flower and fruit but the true fruit are the achenes or drupes formed by the florets." *Ficus rubiginosa* has monoeceous syconia (Dixon *et al.* 2001) pollinated by *Pleistodontes imperialis* (Wiebes, 1994). Frugivorous, flying vertebrates are the chief dispersal vectors (McPherson 1999, 2004).
When establishing as a hemiepiphyte *F. rubiginosa* usually remains rather inconspicuous until its roots reach mineral soil. Dependant on the nutrient and moisture status of the soil it may at this stage go on to develop into a large tree that envelops it phorophyte in strangler roots and overshades it. On drier sites with poor soils though, *F. rubiginosa* may remain a small to moderately sized semi-epiphyte in the long term, inflicting little or no damage on its phorophyte (McPherson 2004).
Many mature, healthy specimens of *F. rubiginosa* dating from the 19th Century can be found in Queensland's historical parks and gardens (McPherson, 1999, 2004), indicating at least reasonable longevity for individuals of the species.

Uses
Gilman and Watson (1993) state that *F. rubiginosa* is one of the hardiest of the rubber trees, and makes an attractive specimen tree, especially when only a few major branches are allowed to develop creating a more open form. It is well-suited as a shade or street tree and should require little maintenance once initial pruning creates a good structural habit (Gilman and Watson, 1993). The authors also list certain instances in which *F. rubiginosa* has been used for: \"Hedges; It is suitable for growing indoors; in large parking lot islands; wide tree lawns, medium-sized parking lot islands; recommended for buffer strips around parking lots or for median strip plantings in the highway; screen; shade tree; specimen; residential street tree; tree has been successfully grown in urban areas where air pollution, poor drainage, compacted soil, and/or drought are common.\" In rural Queensland and New South Wales *F. rubiginosa*, along with other *Ficus* spp. was commonly retained as a shade tree for livestock when closed-forests were cleared by pastoralists (Williams 1979). Ease of propagation also allowed it to be widely planted for this purpose.

Habitat Description
Ficus rubiginosa has very broad habitat and climate tolerance.
PIER (2005) reports that *Ficus rubiginosa* can subsist in moist forests and in open areas. In New Zealand it has been found occupying rock walls, rocky outcrops and even other tree trunks. McPherson (1999, 2004) found *F. rubiginosa* established with equal facility as a hemiepiphyte or lithophyte in urban areas of Queensland, Australia. In eastern Australia, *F. rubiginosa* occurs in climates ranging from tropical to warm temperate, and from the well watered coast inland to areas bordering on semi-arid (Dixon *et al.* 2001).

Reproduction
McPherson (1999) states that, \"Fig flowers are pollinated by small, symbiont, agaoinid wasps. Successful biological invasion by a *Ficus* species thus involves co-invasion by its symbiont pollinator. *Ficus* spp. are unable to reproduce without their species-specific pollinator wasps. Should these wasps disperse to an area where their symbiont fig has been planted, the fig may begin to invade that area. Towns and cities may act as centers of establishment for *Ficus* spp. from outside the area.\"
A female fig wasp enters a syconium (fig) and galls the short styled female flowers while pollinating the long styled female flowers. Wingless male fig wasps emerge first from the galls, inseminate the females and then bore exit tunnels out of the fig for the winged females. Females emerge, collect pollen from the male flowers and fly off in search of syconia whose female flowers are receptive. In order to support a population of its pollinator, individuals of a *Ficus* spp. must flower asynchronously. A population must exceed a critical minimum size to ensure that at any time of the year at least some plants have overlap of emmission and reception of fig wasps. Without this temporal overlap the short-lived pollinator wasps will go locally extinct (McPherson 1999, 2004).

Nutrition
F. rubiginosa can tolerate extremes of soil fertility. As a hemi-epiphyte or lithophyte, *F. rubiginosa* must be able to germinate and initially grow in low nutrient, arid conditions. If its roots reach better soils it transforms into a large, free standing tree, thriving on high fertility soils. Gilman and Watson (1993) state that, \"*F. rubiginosa* is easily grown in full sun or partial shade, and will thrive on a variety of well-drained soils. Once it is established, it can withstand periods of drought and -1 degrees C. for a short time.\" McPherson (2004) though, noted *F. rubiginosa* invasion of remant *Melaleuca* forests on seasonally waterlogged soils following medium term exclusion of fire in several Queensland urban areas.

General Impacts
In suitable climates, *Ficus rubiginosa* readily establishes on trees and infrastructure in urban areas, and on trees and rocky areas in rural areas. It can invade forests in any successional phase and regardless of disturbance. Its aseasonal, heavy cropping can substantially affect the behaviour and number of frugivores in areas where it occurrs.
In New Zealand, *F. rubiginosa* lacks natural enemies, and is noted as being avoided by possums when browsing (Gardner and Early, 1996). Gilman and Watson (1993) report that the fruit does not attract wildlife on the USA mainland, but in Hawaii though, Starr *et al.* (2003) report that a variety of birds consume the fruit and disperse the seeds. These characteristics along with this species ability to quickly reach large sizes raise concerns that *F. rubiginosa* could invade forest habitats and affect native plant communities in Australasia-Pacific regions (Gardner and Early, 1996; PIER, 2005). Further, urban areas within and outside the species natural range can be invaded from ornamental plantings, resulting in damage or destruction of urban trees and infrastructure (McPherson 1999, 2004).

Management Info
The Environment Bay of Plenty (UNDATED) states that, \"Vigilance is required to stop this species establishing in the wild where the right habitat is available. Treat new infestations immediately.\"
Physical: The Environment Bay of Plenty (UNDATED) suggests pulling seedlings and cutting down larger trees .
Chemical: The Environment Bay of Plenty (UNDATED) states that after felling *F. rubiginosa* trees, holes should be drilled into the trunk. These holes should be downward sloping and not more than 50mm apart around the trunk. After creating the holes the stumps should be poisoned by pouring stump paint herbicide mixes into the hole. Unless the stump is poisoned the tree will quickly resprout.
Cultural: In regions where the species is grown ornamentally, it is most important to exclude the pollinator wasp, *Pleistodontes imperialis*, if it is yet to establish. If areas have their own indigenous *Ficus* spp., a program of replacing ornamental *F. rubiginosa* with endemic *Ficus* might be considered.

Pathway

Principal source: Gilman and Watson, 1993. *Ficus rubiginosa*\n
PIER, 2005. *Ficus rubiginosa* Desf. ex Vent., Moraceae.\n
Dixon *et al.* 2001. Figuring out the figs: the *Ficus obliqua - Ficus rubiginosa* complex (Moraceae: *Urostigma* sect. *Malvanthera*
EBOP, UNDATED. Port Jackson fig
McPherson, 1999. Studies in Urban Ecology: Strangler Figs in the Urban Parklands of Brisbane, Queensland, Australia\"

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ALIEN RANGE

[1] COOK ISLANDS
[6] NEW ZEALAND
[6] UNITED STATES
[1] MARSHALL ISLANDS
[3] SPAIN
[1] UNITED STATES MINOR OUTLYING ISLANDS

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Managment information

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Summary: Regulation banning import of *F. rubiginosa* seed from New Zealand.

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General information

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Summary: The Australian banyan-type fig trees *Ficus macrophylla* and *F. rubiginosa* are commonly cultivated in northern New Zealand. Both have now acquired their pollinating wasps, apparently by long distance dispersal. *Pleistodontes imperialis*, the wasp specific to *F. rubiginosa*, arrived within the last 20 years or so, and naturalised plants are found near parent trees. The wasp specific to *F. macrophylla*, *P. froggatti*, is newly recorded here for New Zealand, and naturalisation of this fig too seems inevitable. The size and vigour of both figs and their lack of natural enemies (notably an immunity to possum browsing) indicate that they may be able to invade forest and other native plant communities.
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Summary: The study of the ecology of cities is in its infancy. This study therefore sought to explore an element of urban ecology. It investigated the establishment dynamics of strangler figs and constraints on their development in urban parklands of Brisbane, Queensland, Australia. Of 3580 trees and palms in study parks approximately 5% supported at least one *Ficus* spp. Six *Ficus* species occur epiphytically in older parkland. Four are Brisbane natives: *F. macrophylla*, *F. obliqua*, *F. platypoda* and *F. virens*, and two are from elsewhere in Australia, *F. benjamina* and *F. rubiginosa*. A lack of pollinator wasps in the Brisbane area is preventing exotic and other native *Ficus* spp. from reproducing. Though predominantly open communities, the percentage of phorophytes (support trees) in the study parks is similar to that associated with natural, closed communities. *Ficus* become established in structural areas that accumulate humic soil, such as trunk and branch axes on trees, and behind marcescent leaf bases of palms. Plants with few humus pockets support few *Ficus* species. Environmental factors such as atmospheric quality, canopy shade, bark texture, and whether or not a park is sprinkled, seem not to be consequential to *Ficus* establishment. Significantly greater numbers of *Ficus* occur on deciduous trees and on the western sides of palms with marcescent leaf bases.*F. obliqua* var. *petiolaris* is now regarded as *F. rubiginosa* f. *glabrescens*.*F. platypoda* from this study is now regarded as *F. rubiginosa* f. *glabrescens*.*F. rubiginosa* f. *rubiginosa*, refered to as *F. rubiginosa* in this study, is not found naturally in the Brisbane area but *F. rubiginosa* f. *glabrescens* is endemic.
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McPherson, J.R., 2004. The Ecology of *Ficus* Hemi-epiphytes in Queensland Urban Parks. PhD Thesis, James Cook University
Summary: *Ficus rubiginosa* has a major presence in the urban parks of south east Queensland, a moderate presence in the urban parks of east central Queensland and a minor presence in the urban parks of north east Queensland. The species is naturalised in the urban parks of coastal New South Wales. All these regions are part of its historical range, though it seems to have been always rare in the wet tropics. It has expanded its range to some irrigated urban parks of Victoria. In South Australian urban parks the species is pollinated but no seedlings are yet recorded.

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Summary: There are no *Ficus* species native to Hawai i. About 39,000 *Ficus rubiginosa* trees were planted in the state of Hawai i during the 1920 s and 1930 s as a forestry tree. On Maui, *F. rubiginosa* were planted in plantations along the Hana Hwy from Ha iku to Hana and in Fleming Arboretum on West Maui. The pollinator wasp for *F. rubiginosa*, *Pleistondontes imperialis* Saunders, was introduced to Hawai i in 1922 to facilitate the spread of this tree species. As a result, *F. rubiginosa* is reproducing sexually in Hawai i today. It was first reported in 1995 as naturalized on O ahu. It was then later reported as naturalized on both West and East Maui in 1999. It invades both disturbed and native ecosystems. *F. rubiginosa* is capable of germinating as an epiphyte in native host trees, such as koa (*Acacia koa*) and ohia (*Metrosideros polymorpha*), sending down aerial roots, and eventually destroying the host tree. Control of this species is difficult due to epiphytic growth in usually steep and wet terrain.
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