**Ficus rubiginosa**

**System:** Terrestrial

<table>
<thead>
<tr>
<th>Kingdom</th>
<th>Phylum</th>
<th>Class</th>
<th>Order</th>
<th>Family</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plantae</td>
<td>Magnoliophyta</td>
<td>Magnoliopsida</td>
<td>Urticales</td>
<td>Moraceae</td>
</tr>
</tbody>
</table>

**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 platypoda*, var. *petiolaris* Benth., Fl. Austral. 6: 170 (1873);

**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 ornament 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.
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 monoecious 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 emission 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 remnant 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 occurs.

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*


EBOP, UNDATED. Port Jackson fig


**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: Dr John Robert McPherson, School of Tropical Biology, James Cook University, Townsville, Australia.

Publication date: 2005-12-12

ALIEN RANGE

| [6] UNITED STATES | [1] UNITED STATES MINOR OUTLYING ISLANDS |

BIBLIOGRAPHY

26 references found for *Ficus rubiginosa*

Management information

Environment Bay of Plenty. Undated. Port Jackson fig. Environment Bay of Plenty Regional Council, NZ.

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


Summary: A detailed account of the history of *Ficus rubiginosa* in Hawai i, and in particular the island of Maui.


Summary: Eradication case study in *Turning the tide: the eradication of invasive species*.

General information


Summary: Notes on natural history of *Ficus* spp. with a photograp of a *F. rubiginosa* established on the trunk of a *Phoenix* sp. in California. States that California’s climate prevents invasiveness by hemiepiphytic *Ficus*.


Summary: A revision of the taxon, with two subspecies reduced to forms.


Summary: Taxonomic changes for *F. rubiginosa* with two forms recognised.


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.


Notes on Ficus rubiginosa Rusty Fig. USDA-Forest Service: Fact Sheet ST-257, November 1993.

Summary: Notes on Ficus rubiginosa in mainland USA. Available from: http://hort.ifas.ufl.edu/trees/FICRUBA.pdf [Accessed 3 March 2005]


Herbari Virtual. Arbres del Campus (No Date). Ficus rubiginosa Desf. Ex Vent. Laboratori de Bot?nica, Dep. de Biologia, Universitat de les Illes Balears. 07071 Palma de Mallorca. (Spain)

Summary: A brief description of the species and its locations in the campus of the Universitat de les Illes Balears, Palma de Mallorca. (Spain)


Global Biodiversity Information Facility (GBIF) Data Portal and bioscience articles from BioOne journals.


Collections of Pleistodontes imperialis listed for Australia and Spain.


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 referred as F. rubiginosa f. glabrescens. F. platypoda from this study is now regarded as F. rubiginosa f. glabrescens. F. rubiginosa f. rubiginosa, referred to as F. rubiginosa in this study, is not found naturally in the Brisbane area but F. rubiginosa f. glabrescens is endemic.


**Summary:** *Ficus rubiginosa* has a major presence in the urban parks of southeast 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.


**Summary:** There are no *Ficus* species native to Hawaii. About 39,000 *Ficus rubiginosa* trees were planted in the state of Hawaii during the 1920s and 1930s as a forestry tree. On Maui, *F. rubiginosa* were planted in plantations along the Hana Hwy from Hiku to Hana and in Fleming Arboretum on West Maui. The pollinator wasp for *F. rubiginosa*, *Pleistodontes imperialis* Saunders, was introduced to Hawaii in 1922 to facilitate the spread of this tree species. As a result, *F. rubiginosa* is reproducing sexually in Hawaii today. It was first reported in 1995 as naturalized on Oahu. 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.


**Summary:** *Ficus rubiginosa* reported as possibly established or persistent.


**Summary:** Available from: <http://plants.usda.gov/java/nameSearch?mode=Scientific+Name&keywordquery=Ficus+rubiginosa> [Accessed 3 March 2006].


**Summary:** A description of the anatomy of the *Ficus* spp. syconium.


**Summary:** Taxonomic descriptions of Indo-Australian Agaoninae and the *Ficus* spp. with which they are symbionts.


**Summary:** A photographic flora of Queensland plants.