

## SHORT COMMUNICATION

# First record of the top invasive plant *Leycesteria formosa* (Caprifoliaceae) in Terceira Island, Azores

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*Leycesteria formosa* Wallich in Roxb. (Caprifoliaceae) is considered as one of the top 100 invasive species in Macaronesia, due to the extensive infestations presently reported for São Miguel Island, where it is invading Pico da Vara/Tronqueira Special Protection Area, and Lagoa do Fogo Nature Reserve (Silva et al. 2008). It is found invading marginal areas like the margin of *Cryptomeria japonica* stands, but also the native forest and other types of vegetation, not only in sheltered locations (ravines and water courses) but also at highly exposed sites, (i.e. Monte Escuro). Recorded habitats include *Calluna* scrubland, *Laurus* forest, *Ilex* forest, *Juniperus* forest, pasture margins, water stream banks, ravines, roadsides, *Cryptomeria* production forest, and *Pittosporum* exotic woodland.

It is a nanophanerophyte with a green and hollow stem, 2-3 m high. The leaves are ovate up to 24 cm long and 9 cm wide. The red-purple bracts which surround the small flowers in the terminal inflorescence are a conspicuous distinguishing feature. The fruit is a large, shining, black brownish to purple berry, 7-10 mm in diameter. Sexual reproduction originates hundreds to thousands of seeds/plant/year and sexual maturation probably occurs after 2-3 years

(Silva, pers. obs.). It is native to India, SW China (Temperate Himalaya) and was introduced into Australia, New Zealand the British Isles and California (Barker et al. 2005; Owen 1996; Clement & Foster 1994; USDA, NRCS 2009). It was an intentional introduction cultivated as ornamental in gardens and roadsides (Silva et al. 2008).

The first record for the Azores is from 1894 (Trelease 1897). Up to now, this species was only given for São Miguel Island. However, during a recent working visit to Terceira Island in the context of projects PROBIO and VERONICA, we sampled sixteen different sites in Terceira Island, including two stations located at native vegetation stands, one near Algar do Carvão and the other at Caldeira Guilherme Moniz. At the later site (UTM: 26 S 0482332 - 42844168, 537 m a.s.l.) we found three individuals of *L. formosa*, two of which were about one meter tall and setting flowers (Fig. 1), and a larger specimen, about two meters tall, already setting flowers and fruits. The invaded area was at the margin of a forest stand dominated by *Laurus azorica* and *Erica azorica*, but including many other indigenous species, namely *Vaccinium cylindraceum*, *Ilex perado* ssp. *azorica*, *Hypericum foliosum*, *Lysimachia azorica*,



Fig. 1. Photo of an individual of *Leycesteria formosa* recently detected invading native vegetation in Terceira Island, Azores. The plant was found at Caldeira Guilherme Moniz, close to the trail, in a forest stand dominated by *Laurus azorica* and *Erica azorica*.

*Dryopteris azorica*, *D. crispifolia*, *D. aemula* and *D. affinis*. It is, however, possible that further *Leycesteria* plants occur at that site, since it is covered by dense native scrubland and forest. Considering the invasive potential demonstrated by *L. formosa* in São Miguel Island (Fig. 2), it is possible to predict that in the future, if no eradication measures are to be taken, this species will invade the natural stands at Caldeira Guilherme Moniz and in time other natural areas in Terceira Island (Fig. 2). Dispersal of this species occurs by way of endozoochory and hydrochory. Rapid spread is possible due to the considerable ability of *L. formosa* to grow vegetatively and also to its prolific production of berries, which are very attractive to birds (Ramos 1994; Commonwealth of Australia 2008), leading to efficient seed dispersal. Water runoff associated with heavy rains might also contribute

to spread the fruits and the seeds. Stems or dislodged stem pieces which may be spread by slashing, by the dumping of garden waste and during manual removal can form roots on contact with moist soil (Commonwealth of Australia 2008).

We thus outline the urgency for local environmental authorities as well as the Secretary of Environment from the Azorean Government to take all the necessary actions leading to the eradication of this potential invader. Early detection and eradication will allow to save resources and to avoid larger impacts to the local biodiversity. The environmental services staff working in the field should be informed about this situation in order to report any other invasion foci that might be present in the island.

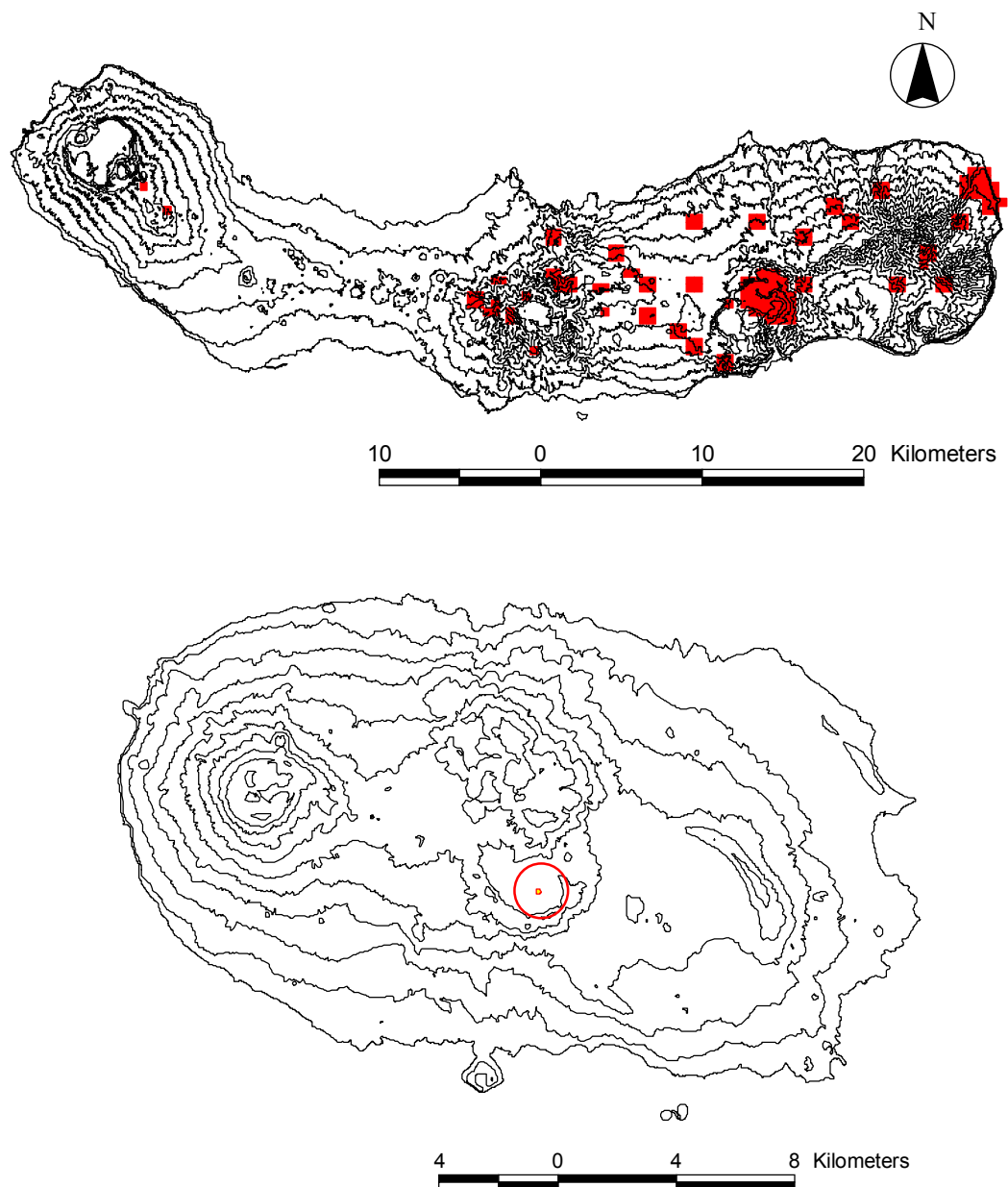


Fig. 2. The know distribution of *Leycesteria formosa* in the Azores Archipelago. Above, distribution in São Miguel Island (data present in the ATLANTIS Tierra database, available from [www.azoresbiportal.angra.uac.pt](http://www.azoresbiportal.angra.uac.pt)). Below, location of new record for Terceira Island at Caldeira Guilherme Moniz in 28 July 2009.

We hope that this example serves to illustrate the importance of early detection and eradication in an archipelago where invasive species can easily

be transported among islands. A monitoring program should be implemented in order to detect early infestations at sensible areas.

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