Laurels - Space invaders

Ines Stäger

sonnhalde@xtra.co.nz

The Parliamentary Commissioner for the Environment, Simon Upton, published a report in November 2021 entitled “Space invaders: a review of how New Zealand manages weeds that threaten native ecosystems”. Changing climatic conditions are likely to exacerbate the number of exotic plants that will naturalise and therefore threaten native ecosystems. The report made several recommendations and urged that “more needed to be done to protect our native taonga from these silent invaders”.

One group of these silent invaders is very prominent in Geraldine’s Talbot Forest Scenic Reserve, in Significant Natural Areas, and in other native ecosystems in the vicinity. This group, with the species listed in order of density of seedlings observed, is comprised of Portuguese laurel (*Prunus lusitanica*), bay laurel (*Laurus nobilis*) and cherry laurel (*Prunus laurocerasus*) (Figure 1).

Widely available in garden centres and other plant outlets, Portuguese laurel is a very popular evergreen ornamental shrub, used in hedging or as standards. It shows good

Figure 1. Three space invaders: *Above* Portuguese laurel (*Prunus lusitanica*), *top right* bay laurel (*Laurus nobilis*) and *bottom right* cherry laurel (*Prunus laurocerasus*).

resistance to pests and diseases, tolerates full sun or part shade, and is easily grown in moderately fertile, moist, well-drained soils. It even thrives on poor, shallow, chalky soils and can cope with heat, sun, wind, and drought. It has a shallow root system. Stems, leaves, and seeds are toxic; they contain cyanide. Toxicity is particularly high when a plant is wilting.

Talbot Forest Working Group in Geraldine is constantly on the lookout for plant pests in the area. Volunteers remove weed species on a regular basis, particularly woody weeds. The group raises awareness of potential problem plants in the district in the hope to reduce the impact of pest plants or "Space Invaders". As an example, the group has prepared a brochure identifying some of these plants and is currently collaborating with Timaru District Council's Parks Unit to eliminate pest plants from public places in and around Geraldine. A contractor for TDC has removed woody weed plants in the Geraldine cemetery and will be removing pest plants in nearby parks and public areas in the near future.

This control work is aimed at protecting Talbot Forest Scenic Reserve – the largest area of un-logged podocarp-hardwood forest on the downlands of South Canterbury. It covers approximately 26 ha at the western edge of Geraldine. The core of the reserve was first gazetted in 1886. It is administered by the Department of Conservation. Additionally, there are several Significant Natural Areas on the Geraldine Downs listed in the TDC plan, along with numerous other areas of native remnant vegetation.

Being so close to an urban area, the Talbot Forest Scenic Reserve, Significant Natural Areas and native remnants are vulnerable to being infested by seeds of garden plants dispersed by wind, birds or other animals, and humans. Considerable volunteer hours as well as DOC staff and contractor resources are invested into removing unwanted woody plants from TFSR. Landowners with SNAs and remnant native areas are also challenged by weed infestations.

The Talbot Forest Working Group team that is targeting exotic trees and shrubs in TFSR came across a mini forest of Portuguese laurel (*Prunus lusitanica*), as well as a concentration of several hundreds of small seedlings nearby and less densely through other parts of the forest. A further small stand is in the Waihi River, a little over 1 km away from Talbot Forest. Birds, particularly kereru, love the fruit and disperse the seeds freely. As I understand it, this evergreen plant, belonging to the Prunus family, is one of the most propagated exotic evergreen garden plants in the country, with between 20-30,000 plants being propagated in Canterbury annually.

Environment Canterbury has recently collated a long list of potentially invasive species that have been suggested to have negative impacts on the Waitaha/Canterbury region now or in the future because of climate change. The three laurel plants listed above are included in this ECan "Canterbury potentially invasive species list". However, at this point and time they have generally not been declared as pest plants or as unwanted organisms.

Environment Canterbury is responsible only for the management of declared pests in the Canterbury Regional Pest Management Plan as described under their status. All other known and potentially invasive species are not managed by Environment Canterbury. Species included in the list are a mixture of declared pests, species covered by the National Pest Plant Accord, unwanted organisms, and species suggested from government agencies, crown research institutes, universities, industry and community groups, and the public.

Most of the species listed are yet to undergo management assessment by Environment Canterbury.

During the time I was working in Switzerland, I remember that these evergreen laurels were susceptible to frosting. Interestingly enough, based on my observations and confirmed by available research data, cherry laurel has naturalised in Swiss forests over the last two decades. The use of any herbicides in Swiss forests and public areas is banned, therefore the removal of cherry laurel and the equally invasive Japanese knotweed is a huge challenge for everybody.

Portuguese laurel is locally naturalised in temperate zones such as northern France, Great Britain, Western Canada to name a few locations. It is considered invasive in western Washington and Oregon. It is invasive at least here in our region and should be banned from being propagated and sold.

Understanding the role of plant nursery biota in promoting fungal disease

Georgia Steel

Plants do not exist in isolation, rather they can be thought of as members of a complex community of organisms, including viruses, bacteria, archaea, fungi, oomycetes, protozoans, insects, and animals (Guerrero et al. 2013). All these groups participate in a myriad of biological interactions both above- and belowground (Hassani et al. 2018). Fungi and oomycetes are the most important groups of organisms to plants with respect to their potential to affect plant health (Vincent et al. 2020). Mycorrhizal fungi are essential for plant health, so much so that plants would never have colonised a terrestrial environment without their symbionts; while other fungi and oomycetes are pathogenic, and can cause severe disease, threatening food security, economic productivity, and biodiversity (Ristaino et al. 2021). To effectively monitor the risk of pathogen spillover, it is important to increase our understanding of diversity of fungi in different environments through methods such as culturing, DNA identification, and morphological identification.

Biosecurity at Aotearoa New Zealand's border is stringent to prevent incursions of unwanted organisms on imported foods, live plants, and animals (Biosecurity Act 1993). However, domestic biosecurity (environmental pathogen surveillance) is lacking for fungi and oomycetes, many of which were unknowingly introduced prior to the implementation of biosecurity legislation. In addition, we have only just begun to grasp global fungal diversity through the development of molecular methods (Blackwell 2011, Wu et al. 2019). Together, lack of domestic biosecurity surveillance, unknown introductions, and a poor