

Our native plant invaders

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Graham Harris, a senior lecturer in the Natural Resources Centre at the Open Polytechnic, looks at some of our plants that have invaded the landscapes of other countries. Most New Zealanders are well aware of the damage that introduced invasive plants such as gorse, broom, old man's beard, blackberry and many others have done to New Zealand's landscape - leaving a legacy that costs the country millions of dollars annually. Few New Zealanders are likely to be aware that some of our native plants have created similar problems overseas.

While numerous species and cultivated varieties of our native plants have been exported overseas where their beauty and many unique features are appreciated, a few, finding an environment where their natural competitors are missing and the climate and habitat to their liking, have become invasive. They have dominated local plants and damaged ecosystems by growing faster and reproducing more quickly than in their natural environment. Some of these plants have been labelled with classifications such as "alien invasive weeds", "noxious weeds", and "exotic pest plants of concern".

To put this into perspective, however, while about 2000 exotic plants have become established in the wild in New Zealand and more than 200 of these are classed as weeds that are placing many of our native species under threat, only a few of our native plants have become invasive overseas and in only a handful of countries. California in the United States is one of the places where some of our plants have created problems. However, as one Californian authority noted - "In general, New Zealand plants behave

themselves in California - not like those from South Africa and Eurasia". A scientist from the University of California commented - "the majority of invasive weeds in California are from Eurasia and North Africa (about 65%) while relatively few (about 5%) are from Australia and New Zealand."

Other places where New Zealand plants have become invasive include, the islands of Hawaii, the south Atlantic islands of St. Helena, and Tristan da Cunha and the south-western tip of South Africa.

These are some New Zealand plants that have created problems:

- Karaka (*Corynocarpus laevigatus*) is a serious weed pest in Hawaii where it is described as "an aggressive coloniser that forms a dense shade which excludes other species, including some endangered native plants." The karaka was originally planted in the Hawaiian islands over 100 years ago. It was further spread for re-forestation purposes, by broadcasting seeds from aircraft over the interior of the island of Kaua'i in 1929. It is now present on four islands and there are major infestations on the islands of Koke'e and Kaua'i. Seeds are being further spread by birds and there are serious concerns that infestations will spread to other islands. Of particular concern is the threat that the karaka poses to the heau (*Exocarpus luteolus*), a member of the sandalwood family and one of Hawaii's most endangered plants. A programme to monitor and control the karaka has been initiated by Hawaiian authorities.
- Harakeke or New Zealand flax (*Phormium tenax*) was an important source of fibre for Maori and later

in European times formed the basis of a large fibre industry providing local and export markets with rope, fabric and other fibre products. At the turn of the century, New Zealand flax was planted in several countries to establish similar fibre industries. In the south Atlantic island of St. Helena - well known as the place where Napoleon died in exile in 1821, flax was planted widely to provide fibre for making British mail bags. The economy of the island became almost totally dependant on flax fibre until the industry collapsed in the 1960s. New Zealand flax has had a serious impact on the island's ecosystem, which includes a unique flora of 49 plants found nowhere else in the world. A paper published by the University of Hawaii noted: "Although the prehistoric flora of St. Helena is poorly known, one-third of the known endemic flora is extinct and no vestiges of former ecosystems remain. New Zealand flax is the most serious pest." A programme to eradicate flax from the island has been implemented. New Zealand flax is also an invasive weed on the south Atlantic islands of Tristan da Cunha where the British authorities have set up a programme to monitor its spread. In Hawaii, New Zealand flax was cultivated prior to 1871 and is now classed as an "alien invasive pest plant." On two islands it has formed dense thickets that exclude other plants.

- Pohutukawa (*Metrosideros excelsa*) has been planted as an ornamental in the Western Cape province of South Africa for many years and large mature trees can be seen in the gardens of Cape Town and other towns of the



So beautiful in its New Zealand environment, pohutukawa (*Metrosideros excelsa*) can be a pest away from home.

province where it is known locally as the New Zealand bottlebrush. In recent years the pohutukawa along with many other introduced invasive plants has begun to invade sections of the nearby fynbos, a delicate ecosystem of 71,000 square kilometres, renowned for its huge range of native plant species. The fine seed of the pohutukawa, which is produced in vast quantities, is spread by wind and some areas in the fynbos provide ideal conditions for germination and growth of the plant. The dense masses of seedlings that are developing and becoming established indicate the likelihood that impenetrable stands of trees that suppress native flora will develop. While no official programme to control the

pohutukawa has been initiated as yet, concerned locals have already begun to remove the plants.

- Ngaio (*Myoporum laetum*) is regarded as a serious invasive weed in southern California's coastal areas and it has also spread south into the Baja California peninsula in Mexico. In California it is described as - "a most invasive wildland pest plant" and it is listed on the California noxious weeds list. It forms dense single species thickets that expand each year and out-compete other plants. Birds spread the seeds, greatly enlarging the affected areas. Programmes to control the plant in California are underway.
- Manuka (*Leptospermum scoparium*) and kanuka (*Kunzea ericoides*) were first planted in Hawaii about 70 years ago and

- they have now infested several islands where they form thickets that crowd out and suppress other plants. While they are classed as an "alien invasive pest plant" they have provided some benefits by stabilising ridge tops that have eroded following grazing by goats.
- Ti kouka or New Zealand cabbage tree (*Cordyline australis*) has infested Salt Point State Park in Northern California where its growth is encouraged by the cool foggy coastal conditions. It is listed by the California Exotic Pest Plant Council as a -"wildland weed of secondary importance." The council is keeping the plants under close observation because of the potential for the seeds to be distributed more widely by birds.
- Kokihi or New Zealand Spinach (*Tetragonia tetragonioides*) is a

listed noxious weed in several states in the USA. As the plant is also found in Asia, Australia and parts of the South Pacific, New Zealand is not necessarily the source of the initial introduction.

- Piripiri or bidibid (*Acaena*) is an invasive weed in California and several other states in the US and is listed as a noxious weed. In California it has become naturalised in coastal areas and the California Department of Agriculture has plans to eradicate it.
- Taupata (*Coprosma repens*) is listed as an exotic weed in California although at present it is not thought to be a threat to wildland habitats. Taupata is also considered to be a problem in some coastal areas in Australia although it is not officially classified there as being an invasive weed.
- New Zealand sedges *Carex buchananii*, *C. comans*, *C. flagellifera* and *C. testaceae* were extensively planted on roadsides

in Tasmania for soil binding and beautification. They were also sold widely throughout Australia as ornamentals. However, because they spread rapidly and became invasive, they were proclaimed serious weeds in 1989.

- Houhere or lacebark (*Hoheria populnea*), which is considered to be a potentially invasive weed in California, became troublesome in the Strybing Arboretum in San Francisco. Most of the mature trees were removed and the seedlings are being kept under control. Californian authorities noted that - "fortunately the plant is not available in the landscape trade and has not been widely planted."
- Poroporo (*Solanum laciniatum*) and karo (*Pittosporum crassifolium*) are considered to be "weeds in cultivation" in California. They are being kept under observation to ensure they do not escape into the wild.

All of these plants, with the exception of *Acaena* and *Tetragonia*, were introduced intentionally to the places where they have become invasive, either as ornamentals or for commercial purposes. Those that have escaped into the wild have reproduced rapidly, spread their seeds widely and formed thickets that have excluded nearly all other plants. In the process they have damaged natural areas, altered ecosystems and displaced local native species. However, our native plants have only played a small part in the global problem of invasive species - an issue that has been identified by the World Conservation Union as a key global environmental issue for the 21st century.



Cabbage tree (*Cordyline australis*) invading redwood forest margins at Salt Point State Park in northern California, where it is a "wildland weed". The seeds are spread by birds.