

### The coast:

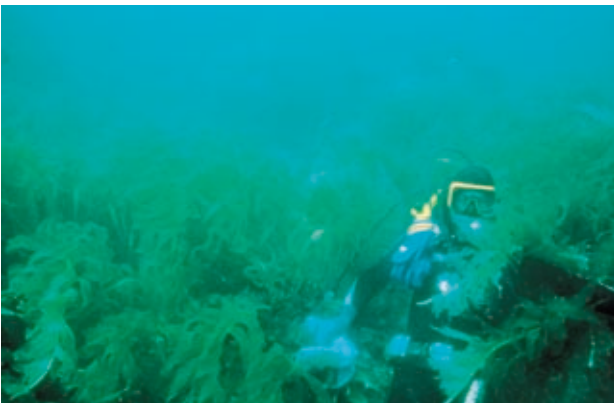
Weed invasions are especially threatening in coastal areas because these communities are already stressed and fragmented by human development. Marram, pampas, boneseed, boxthorn, maritime pine, introduced grasses and other weeds threaten native communities in coastal cliffs, dune slacks, ephemeral dune wetlands, dune shrublands, coastal forest and rocky foreshore. Some native coastal plants, such as pingao, shore spurge, sand daphne and sand bidibid, are in danger of extinction from the combined effects of weed invasions, human settlement and the clearing of coastal vegetation.



Marram grass (light green) invading the threatened native pingao (gold) in Tumbledown Bay in Banks Peninsula.  
*Dave Kelly*



Gunnera, with its large leaves, is a recent invader along these coastal cliffs in Taranaki.  
*John Barkla 1997*



Undaria (shown here in Tasmania, Australia), is also invading New Zealand's coastline.  
*M. Johnson.*

### The sea:

Twenty species of introduced seaweeds have been identified so far, although there have been no systematic surveys. To date, the most invasive by far is the large Japanese kelp *Undaria pinnatifida*. Since it was discovered in Wellington Harbour in 1987, *Undaria* has spread to the harbours of Lyttelton, Timaru, Oamaru, Picton, Porirua, Otago, Port Chalmers and Napier, and it is naturalising along the open coast. It grows in dense stands and can invade rocky shores from the low intertidal zone to waters up to five metres deep. A recently discovered

population in Big Glory Bay in Stewart Island could pose a threat to the unique coastal marine communities of Stewart Island, Fiordland and the subantarctic islands.

### Islands:

At least 111 islands have invasive weeds, including important wildlife refuges such as Mana, Kapiti, Little Barrier and the Poor Knights, and unique islands such as Raoul and Rangitoto.

Over 20 weed species are invading Rangitoto Island, which is internationally known for its succession from barren lava rock to forest cover.

Little Barrier Island is an important wildlife refuge and one of New Zealand's most valuable offshore islands. It is being invaded by climbing asparagus, which strangles trees and, if left, would be capable of invading and killing out the entire

understorey in most if not all of the island's lower forests. Other weeds, notably smilax and moth plant, have also reached Little Barrier in the past few years.



Climbing asparagus on Waiheke Island.  
*Susan Timmins*

# A vision for the future

*DoC's vision for all its activities is that New Zealand's natural and historic heritage is protected, people enjoy it and are involved in its conservation.*

The goal for this weed plan is that the integrity and sustainability of all natural areas that are important for natural heritage conservation, and the long-term survival of native species, are maintained or improved.

DoC's approach to managing invasive weeds is based on seven principles:

- Principle 1*** Managing invasive weeds is essential to protect the long-term survival of New Zealand's native species and natural communities.
- Principle 2*** The first and best line of defence for managing weed threats is at New Zealand's border.
- Principle 3*** Early management of potential invasive weed species minimises both the future control costs and the possible degradation and loss of New Zealand's natural heritage. This requires timely and accurate information.
- Principle 4*** Effectively managing weeds requires a precautionary approach. A shortage of knowledge or understanding about the potential for serious or irreversible impacts on indigenous species and communities should not be used as a reason to postpone adopting appropriate measures.
- Principle 5*** In New Zealand, land owners or managers have the primary responsibility for weeds on their own land and can make decisions on when and how to manage them.
- Principle 6*** Successfully managing weed threats in the long term requires the co-operation, expertise and sometimes co-ordinated action of central and local government, landowners, research agencies, Iwi and the general public.
- Principle 7*** DoC has a responsibility to ensure that all its activities are effective and efficient, and do not adversely affect the health and safety of staff, contractors and the public.

# Green aliens at the border

*Objective 1*  
To minimise the risk of introductions of new plant taxa that are potentially invasive, or new genetic stock likely to significantly increase the adverse impacts of established plants.

Preventing new invasive species entering New Zealand is a more effective strategy than controlling their impacts once they are here. Not all new plants will become invasive weeds, but the risks of them doing so need to be properly assessed. Increased risks can come from new genetic stock (that is, new sub-species, varieties, cultivars, hybrids, or genetically modified versions) of a plant species already established in New Zealand, as well as new plant species. New genetic stock may make a species more invasive, or allow it to spread more rapidly or invade a broader range of habitats.

Border control involves managing risks from legal, illegal and accidental introductions into New Zealand. The Biosecurity Act 1993 and Hazardous Substances and New Organisms Act 1996 (HSNO) provide the legal framework for managing these risks.

## WHAT IS DOC DOING?

DoC does not carry out any border control itself. Its main responsibilities are to provide advice to the Minister for Biosecurity, the Biosecurity Council, MAF, ERMA and MFish, on the risks to native plants and animals from new plant taxa or new genetic stock. DoC is also able to identify plants not yet in New Zealand that would pose a significant risk to native species or communities, and declare them as “unwanted organisms”; and to identify situations where introducing new genetic stock of species already present in New Zealand could significantly increase risks.

DoC will take seven factors into account when assessing the risks of a new plant:

1. the plant’s likely impacts based on its life form, growth habits, dispersal mechanisms, environmental limitations, and the niche it is likely to occupy in the wild;
2. the plant’s history of invasiveness in other countries;
3. whether the plant has close relatives that are known to be invasive;
4. whether there are particular native habitats vulnerable to invasion from that plant;
5. whether the plant is likely to hybridise with threatened native plant taxa;
6. the potential difficulty and cost of control should the plant become invasive; and
7. whether the invasiveness, impact, or difficulty of control of existing introduced plant species would be increased.

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