

**SEA SPURGE (*EUPHORBIA PARALIAS*) - A SERIOUS NEW
INVASIVE WEED FOUND IN NEW ZEALAND**

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Recently I discovered two small infestations of sea spurge (*Euphorbia paralias*) near the mouth of the Waihi Stream on the west coast of the North Island of New Zealand, whilst undertaking a contract for the Department of Conservation. Waihi Stream is north of Aotea Harbour, a small harbour between Kawhia Harbour and Raglan Harbour. Sea spurge is a serious invasive pest plant that has not previously been recorded as naturalised in New Zealand, but has long been expected to establish here. It is a serious threat to indigenous sand dune vegetation communities (including threatened plant species), and unvegetated fauna habitat, which is key habitat for several nationally threatened species.

Two small infestations were found: one comprising one plant with several fertile stems, just on the boundary of the Aotea Heads Scientific Reserve, and the other infestation c.100 m to the north, just north of the Reserve boundary. The total infestation comprised c.65 flowering plants and over 100 seedlings, covering c.10 × 8 m. A specimen has been lodged in the Auckland Museum Herbarium (AK198572), and photographs are attached, including photographs from Wilsons Promontory National Park in Australia..

Sea spurge is native to western and southern Europe, but is widely naturalised in the coastal districts of southern Australia, and has also recently naturalised on Lord Howe Island. It is a weed of coastal environments and offshore islands, and occurs on “free draining sandy soils on beaches, around estuaries, through dune fields, in coastal herbfields, grasslands, heaths and shrublands, and may also grow along rocky shorelines and in sand-filled cracks between rocks” (<http://keyserver.lucidcentral.org/weeds/data/03030800-0b07-490a-8d04-0605030c0f0...>).

Sea spurge is a long-lived perennial plant 20-70 cm tall that dies back after flowering. It flowers late spring to early winter, reaching reproductive maturity in its second year. The fruit opens explosively when mature and seeds travel a short distance from the plant. It has a tap root, and a toxic sap which irritates the skin and is harmful to the eyes.

Sea spurge seeds are buoyant in sea water and can disperse over long distances on ocean currents, which is probably how it arrived in New Zealand. Seeds only begin to reduce in viability after six years in sea water. Older plants can produce up to 5,000 seeds per year.

The infestation site is obviously a site where items floating in ocean currents wash ashore. Piles of driftwood were present, along with miscellaneous plastic items. Three other weed species were also present: yellow flag (*Iris pseudacorus*), dimorphotheca (*Osteospermum fruticosum*), and alligator weed (*Alternanthera philoxeroides*). This is probably the southern-most alligator weed population in New Zealand.

In Australia sea spurge usually initially colonises at the back of a beach, at the base of the foredune, and quickly develops dense infestations that stabilise the dunes. In Australia it also creates a different dune structure to that created by the indigenous plant species. In New Zealand, if allowed to establish, it is likely that it will also displace many of our indigenous species, including spinifex, pingao, *Carex pumila*, *Calystegia soldanella*, *Pimelea villosa*, and sand coprosma. In Australia, it decreases availability of beach-nesting sites for shore birds, and is likely to threaten birds with similar habitat requirements in New Zealand, such as NZ dotterel and terns.

The age of the New Zealand population is unknown, but the larger patch has been at the site for at least two years, and probably at least 3-4 years.

The three current priorities are:

- To determine whether this is the full extent of the New Zealand population;
- To eradicate the known infestation. Sea spurge control methods are well understood in Australia, and careful removal and destruction of the plants and seeds at the infestation site using biosecure methods is obviously a very high priority;
- To develop a strategy to deal with ongoing arrival of seed from Australia, to ensure that it does not establish on our coasts in the future.

Initial control of the two patches has been undertaken, including removal of seed heads, pulling-out of plants, and herbicide treatment of the foliage left on site. These sites will require long-term ongoing monitoring and control to ensure that regeneration from the seed bank is killed. A strategy for dealing with the ongoing arrival of propagules from Australia also needs to be developed, to ensure that this species does not establish in New Zealand. Several agencies (DOC, MAF, Waikato Regional Council) are working together to develop a strategy and ensure that appropriate action is instigated and maintained.

It is disappointing that sea spurge has arrived in New Zealand, but if this is the full extent of the New Zealand population, then appropriate, prompt and ongoing action will ensure that it is controlled and not allowed to become established.

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Plate 1: *Euphorbia paralias*: Single fertile plant about 50m from the main infestation (since removed). North of Aotea Harbour, West Coast, North Island, New Zealand. S.M. Beadel, April 2012.



Plate 2: *Euphorbia paralias*: flowers and seeds. North of Aotea Harbour, West Coast, North Island, New Zealand. S.M. Beadel, April 2012.



Plate 3: *Euphorbia paralias* north of Aotea Harbour, West Coast, North Island, New Zealand: largest patch comprising c.70 fertile plants and over 100 seedlings. Note the yellow flag infestation in the background. S.M. Beadel, April 2012.



Plate 4: *Euphorbia paralias* north of Aotea Harbour, West Coast, North Island, New Zealand: seedlings within the largest patch. S.M. Beadel, April 2012.



Plate 5: Extensive *Euphorbia paralias* infestation on the foredune at Wilsons Promontory, Victoria, Australia. S.M. Beadel, April 2012.



Plate 6: Extensive *Euphorbia paralias* infestation on rear dunes at Wilsons Promontory, Victoria, Australia. S.M. Beadel, April 2012.