

## Habitat and landscape associations of sea spurge (*Euphorbia paralias* L.) invasion of coastal dunes across NSW

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**Summary** Containing the spread of new weed incursions is a key pillar of contemporary weed management and asset protection. The first step in containing a novel weed is to determine its range limits and habitat features associated with spread at the edges of its distribution. The aim of this study was to: (1) document the spatial extent of sea spurge invasion of coastal dunes across southern NSW and (2) determine whether its invasion is associated with particular habitat features of coastal dunes.

The presence or absence of sea spurge was recorded from 581 beaches between the Victorian-NSW border and Port Macquarie, using a combination of field surveys, interviews with local land managers, and inspection of herbarium specimens. Overall, sea spurge populations were detected at 64% of beaches, with the northernmost population detected near the

township of Forster. However, the likelihood of detecting sea spurge infestations declined exponentially with decreasing latitude, from >90% of beaches in Bega Valley Shire, to ~40% in Shoalhaven and Illawarra and ~7% of beaches northwards of Sydney. Principal components analysis revealed that invasion was not significantly associated with dune length, orientation or distance between adjacent dunes, indicating that all beaches are likely to share a similar risk of invasion. However, given the low rates of invasion north of Sydney, it is likely that containment and local eradication of sea spurge on the mid-north coast of NSW will be effective to arrest its spread further north in the long term.

**Keywords** Coastal dune, invasion front, new weed incursions, weed containment.