

Don't let them sit idly by: the role of systematic biologists in tackling invasive plants

John R. Clarkson

Australian Tropical Herbarium, James Cook University, Cairns Campus, McGregor Road, Smithfield, Qld 4878, Australia
(galaji@bigpond.com)

Summary Invasive plants can have major impacts on the systems they invade by altering composition, structure and function. Some form dense mono-specific stands that can displace native organisms across vast areas with flow-on effects on food webs. Some alter fire regimes through effects on fuel characteristics, sometimes inducing a positive feedback loop in which the invasive species is advantaged. Hybridisation between introduced and native species can produce plants which are potentially more invasive than the introduced parent. Although pre-border biosecurity has been significantly improved in Australia in recent years, many potentially invasive species are still being permitted entry into the country because of an imperfect knowledge of their taxonomy. However, invaders need not necessarily be of extra-Australian origin. The deliberate movement of some

Australian species beyond their native range can have repercussions for local genetic diversity. Any of these impacts can have profound effects on biodiversity and adversely affect the organisms that systematic biologists study. However, systematic biologists have the tools and the expertise to address these issues and to help weed scientists more effectively tackle the problem of invasive plants. Traditionally this has involved the production of keys and other aids to identification and the maintenance of herbaria and museums that house comparative material essential to confirm identifications. These collections can also yield valuable information on distribution and rate of spread of invasive organisms. However, the genetic and molecular techniques that have recently become standard tools of trade for modern systematics can yield insights that would otherwise be missed.