CASE STUDY:
EMERALD FURROW BEE

Updated: February 2018

Case study of a neglected incursion

Species
Emerald furrow bee (Seladonia hotoni).

Origin
Africa.

Australian occurrence
NSW.

Potential environmental impacts
This bee ‘could have serious impacts due to its high relative abundance, long seasonal activity, and an apparent preference for introduced plants and declared noxious weeds in New South Wales’. Too little is known yet to predict its ecological impacts but bioclimatic models suggest it will thrive across much of Australia. Impacts could include competition with native fauna, transmission of parasites and pathogens, disruption of native plant pollination networks and exacerbation of weed problems.

Potential economic or social impacts
Likely costs include those due to increased weed spread.

Biosecurity issues
Summary
The emerald furrow bee was discovered by chance in riparian areas of the Hunter Valley, NSW, November 2004. Although a recent introduction (it hadn’t been observed in past surveys), it was well established, being the second most common bee trapped in some places. Apart from a few surveys in 2008-10 funded by philanthropy, this new introduction has been ignored. Little is known about the bee’s ecology, distribution and impacts. By the time impacts become clear it is typically too late to eradicate or contain invasive species.

Monitoring and research
This bee incursion exemplifies a catch 22 in environmental biosecurity. Governments are loath to fund management without evidence of serious impacts but by the time the impacts become clear it is typically too late to eradicate or contain invasive species. Furthermore, funding for research is extremely limited. Surveys to determine the distribution of this bee were done with philanthropic funding. The surveys included the involvement of citizen scientists, an increasingly viable option for some biosecurity work.

Changes needed
Incursion responses
• New incursions should automatically trigger precautionary risk assessments to determine the most appropriate response.
• Resources should be dedicated to developing the capacity of citizen scientists to conduct surveillance for new incursions.

Risk assessment and contingency planning
• Given that three new exotic bees established in Australia have been detected since 2000, risk assessments, pathway analysis and contingency planning should be conducted to reduce the risks of further bee incursions, including new variants of existing naturalised species.

References

Endnotes
1 The bee was initially identified as a Mediterranean species, Halictus smaragdulus (Gollan 2009, Batley et al. 2016).
2 Ashcroft et al. (2012).
3 Batley et al. (2016).
4 Gollan (2009).
5 Gollan (2009).
6 Ashcroft et al. (2012).