

# Urban plant biosecurity: Understanding the opportunities to better safeguard primary industries

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Exotic plant pest transmission pathways are often closely associated with the movement of people or products, with major Ports of Entry being, in turn, being associated with high density residential urban areas and arterials, which can lead directly to production zones. However, plant biosecurity activities in urban environments throw up a variety of challenges that can complicate awareness, surveillance and response efforts.

## Why do urban areas represent a challenging environment for plant biosecurity engagement and response?

In comparison to rural areas, land is extremely fragmented, there are more boundary lines, a greater number of land managers per set area, a greater variety of skills, knowledge, attitudes and values, diversity of culture and language, and at least at a high level (without taking into account special interest groups), there is less social capital and cohesion at a community level.

## A changing urban context may support a movement towards improving urban plant health (and biosecurity)...

In looking at major cities in Australia (particularly Sydney and Melbourne) we can also foresee some significant challenges on the plant health front. Using Melbourne as an example, the population is forecast to grow significantly over the next three decades, but the Melbourne food bowl will drop in production capacity by more than 20%. This is largely due to climate change and predicted expansion of the Urban Growth Boundary.

However, it is not all doom and gloom. From a plant biosecurity perspective, we can find the opportunity in this changing context. As they become more apparent, those key challenges may in fact support a movement towards improved plant knowledge and stewardship. This is a movement in motivation and knowledge that may be used as a vehicle to strengthen biosecurity arrangements, if the context is understood.

## Capturing the changing context for better biosecurity

The concepts of 'urban greening' and 'urban rewilding' are becoming increasingly normalised in high-density urban areas, such as Australia's capital cities. As an example, in most major cities in Australia, until more recently, urban agriculture has been a fairly novel activity. However, the past five years has seen an upsurge of urban agriculture activities in major cities, with the SUSTAIN Gardening in the Pandemic survey (9000 respondents) identifying that during 2020 over 60% of respondents had spent more time than previously gardening and, in particular, growing food.

In our recent urban biosecurity study, we identified 231 urban (176) and peri-urban (55) gardens across 28 metropolitan council areas of Greater Melbourne. We mapped these gardens against key peri-urban production areas, including berry growing regions. Importantly, we identified significant scope for collaboration between community gardeners and primary producers for the purpose of exotic pest surveillance and the setting up of sentinel sites. In addition, we identified key risk areas near Ports of Entry and distribution centres that host a high number of community garden groups with strong, informal communication networks.



**Strawberry farm in peri-urban environment, Yarra Valley, Victoria.** Photo credit: Angela Atkinson, VSIDC

## **But, would people who live in high density areas even spare a thought for plant biosecurity? Yes, they certainly would.**

A growing disconnection between urban residents and primary production industries would certainly increase the challenge of maintaining good plant biosecurity in cities. However, does a ‘disconnection’ really exist between city residents and biosecurity? This is an important question, as exotic pest detection in high density urban environments is a crucial risk mitigator of subsequent pest establishment in adjacent, high value peri-urban production zones.

In a survey dataset of 456 urban and rural residents across Victoria we actually found that the likelihood of reporting a suspect exotic pest did not significantly differ based on current residential location (rural or urban) and setting of upbringing (rural or urban), with the majority of survey respondents indicating they were likely or highly likely to report a suspect exotic pest.

We also found that there is high alignment between rural and urban residents in relation to motivations that would drive reporting. For example, across all ‘high likelihood’ exotic pest reporters, key motivators were moral duty, environmental protection, agricultural protection, and general awareness of risk.

A lack of knowledge and confidence among potential reporters is potentially a major limiting factor in improving plant health outcomes in urban and rural environments. This barrier is unlikely to be appropriately addressed through traditional biosecurity outreach approaches that place an emphasis on providing direct ‘top-down’ information about priority pests. Rather, a more holistic process of building community social capital (strengthening informal networks) and empowering individuals and groups to become more familiar with their seasonal garden ecology will likely support longer-term positive outcomes.

## **Understanding the opportunity, and taking a long-term engagement outlook**

Major cities, such as Melbourne, are surrounded by high-value peri-urban agricultural food bowls that stand to significantly benefit from plant health protection activities undertaken in adjacent urban environments. To give you an example of the production capability of the Melbourne food bowl, 40% of the Australia’s strawberries are grown on the fringe of Melbourne (one priority exotic pest that has the potential to significantly impact on strawberry is the spotted winged drosophila (*Drosophila suzukii*), a pest that has a high likelihood of establishing in urban areas before spreading further afield to production regions).

Urban and peri-urban regions cannot be understated as critical zones for maintaining plant biosecurity engagement and plant health stewardship activities. Fortunately for primary industries that are commonly found in peri-urban areas next to high density Australian cities, this study demonstrated that significant good-will exists among city residents to report exotic pest species.

When engaging with urban residents during an incursion usually awareness is raised through a major push of communication in a campaign approach. This is not to say that there is an issue in taking such an approach, but the question is, what are the pre-emptive engagement activities that may be employed now to strengthen plant health awareness and practices in urban communities?



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The full report can be found at [www.apbsf.org.au/apbsf-projects](http://www.apbsf.org.au/apbsf-projects)