

New mapping tool to help safeguard protected cropping industries

Compiled by Helen Newman, Berry Industry Development Officer, WA with information provided by Hort Innovation

Australian horticulture growers are being urged to contribute to the creation of a high-tech mapping tool to improve biosecurity preparedness and natural disaster response efforts. The avocado, citrus, macadamia, mango, banana, and olive industries have adopted the mapping tool to help better understand industry extent, develop crop forecasts and production plans, and support decision making around labour, supply chains, and resource requirements.

The National Protected Cropping Map, an initiative being delivered through Hort Innovation and led by the University of New England's Applied Agricultural Remote Sensing Centre (AARSC), will capture the location of commercial polytunnels, shadehouses, glasshouses and permanent nets across Australia.

Hort Innovation Head of Research and Development Byron De Kock said no comprehensive national protected cropping map currently exists, and this new initiative will significantly help industries.

"Knowing where crops are located supports improved response to biosecurity incursions including the establishment of exclusion zones and the coordination of on-ground surveillance, and for quantifying the area of crops affected following a natural disaster."

The map – which is being developed with the support of Protected Cropping Australia, Future Food Systems CRC and Greater Sydney and North Coast Local Land Services – will also help growers with production planning.

Protected Cropping Australia Deputy Chair Matthew Plunkett said the industry body is excited about the national initiative.

“

Having an accurate measure of production by crop type, types of structures and growing systems utilised under protected cropping will greatly assist the development of our industry,” he said.

Identifying the location of specific farming systems also provides essential information around value-chains, traceability, transport and market accessibility.

University of New England project developer Professor Andrew Robson said a similar tool that was created by AARSC with Hort Innovation is already being used by many tree crop industries (Figure 1), providing a useful foundation for this Protected Cropping Area Map.

"This map is built via the integration of industry data, image analytics, ground validation and citizen science. It meets Australian mapping standards, is freely available and respects growers' privacy by not including any personal grower or crop information," he said.

"This exciting output and collaboration will again raise Australian horticulture as international leaders of the adoption of emerging technologies."

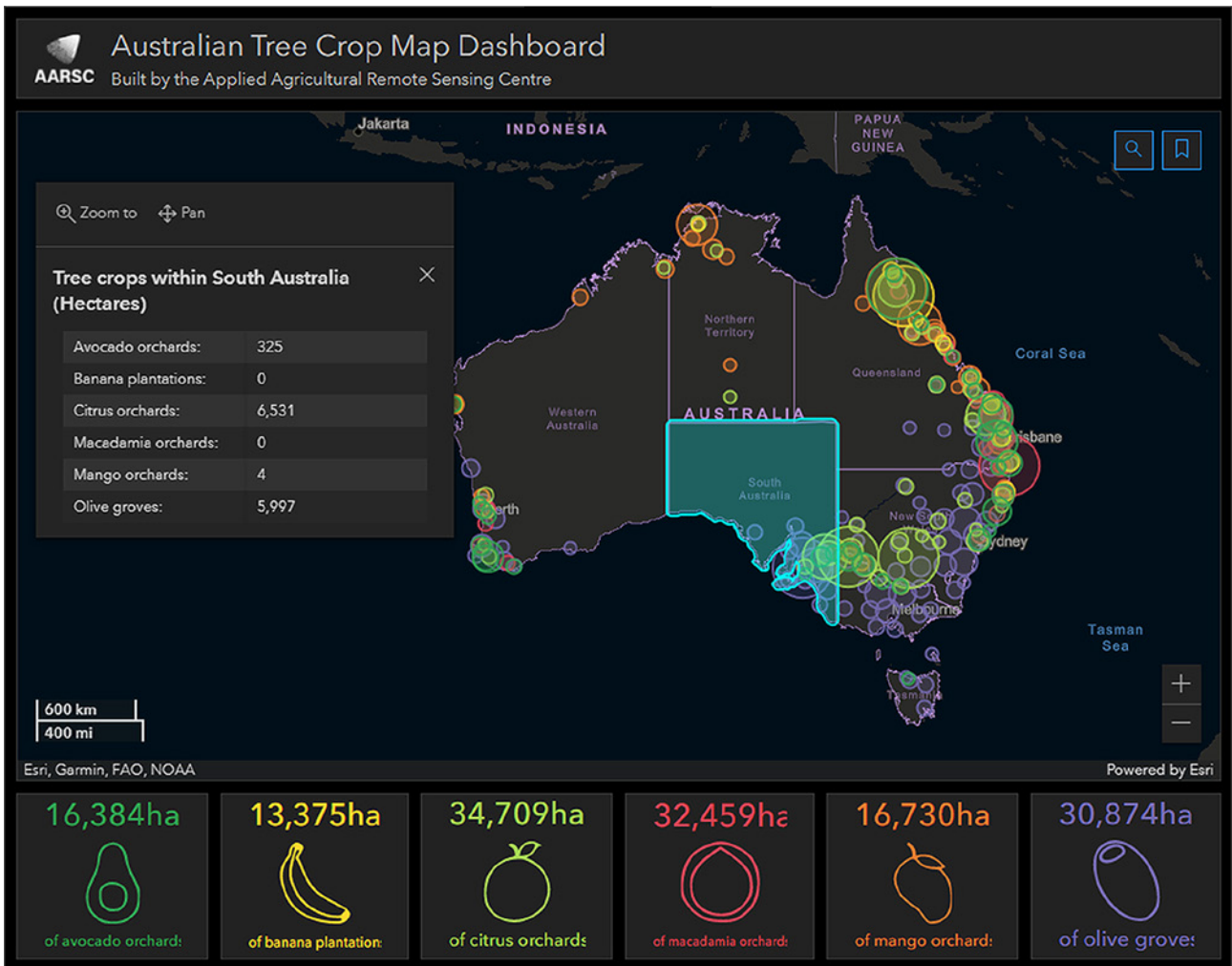


Figure 1. The Australian Tree Crop Map interactively summarises the extent of commercial horticulture tree crops in Australia. Participating industries are using the mapping tool to help better understand industry extent, develop crop forecasts and production plans, and support decision making around labour, supply chains, and resource requirements.



Figure 2. The Protected Cropping Survey takes about two minutes to complete, and you can do it on your mobile phone or computer. Photo credit: Georgia Pearlman, University of New England.

How to get involved

There are two ways you can contribute information to the mapping tool.

The first is an **online survey** that takes about two minutes to complete, and you can do it on your mobile phone or computer (Figure 2).

Follow these steps:

1. Open the survey bit.ly/PCS-Survey
2. Add the location of the protected crop using the map or by searching the address
3. Select system type (polytunnel, glasshouse, netting, shade, other)
4. List the crops grown under the structure (strawberries, blueberries, Rubus etc.)
5. There is also an option for adding additional comments and a photo
6. Click submit to complete your survey!

If you would like to add more detailed information you can use the Industry Engagement Web App on your computer which allows you to draw polygons around your structures and provide more detailed information using the **“Add a comment”** tool (Figure 3).

Access the Industry Engagement Web App at bit.ly/ABJ-IEWA



The contribution of growers and stakeholders is so valuable for building an accurate map, especially so for new crops which cannot be mapped using satellite imagery alone. All the feedback received is interpreted by the research team and then actioned in updating the map.

Professor Andrew Robson

Severe Weather App

The AARSC have developed other theme-based mapping applications that overlay cropping information. Their severe weather app overlays live and historic weather information with the location of commercial horticulture tree crops in Australia.

Growers and their industries can use this information to understand the potential impact of severe weather events to their tree crops. Potential impact areas are summarised in pop-ups for historic thunderstorm cells and tropical cyclones (Figure 4).

Current weather layers:

when weather events are active, near-real time data from the Bureau of Meteorology can be shown, including:

- Thunderstorms
- Hazardous winds
- Rain (radar)
- Severe weather warnings

Recorded thunderstorm cells:

when severe thunderstorm cells are detected they are recorded and updated in this app daily. Cells can be viewed by toggling on/off using the filter for events that occurred: yesterday, last week or this year. Clicking within a cell will present the area of potential impact to tree crops, in a pop-up.

Recorded tropical cyclone events:

the fix position, track, threat area and wind area are recorded and updated in this app every three hours. Events can be viewed individually by selecting the event name from the drop-down list. Clicking within the wind area polygon will present the area of potential impact to tree crops, in a pop-up.

“This information offers significant benefit to the industry by allowing re-estimates of production and, at the farm level, growers can use these outputs to support insurance claims. It’s a practical example of how the AARSC, in collaboration with industry, is using satellite imagery, industry engagement and field validation to support Australia’s multibillion dollar tree crop industries. With many of our most lucrative tree crops concentrated in small geographical regions, the impact of a single severe weather event can be significant.” says AARSC founder and director Professor Andrew Robson.

Access the Severe Weather App at bit.ly/ATCM-SWA

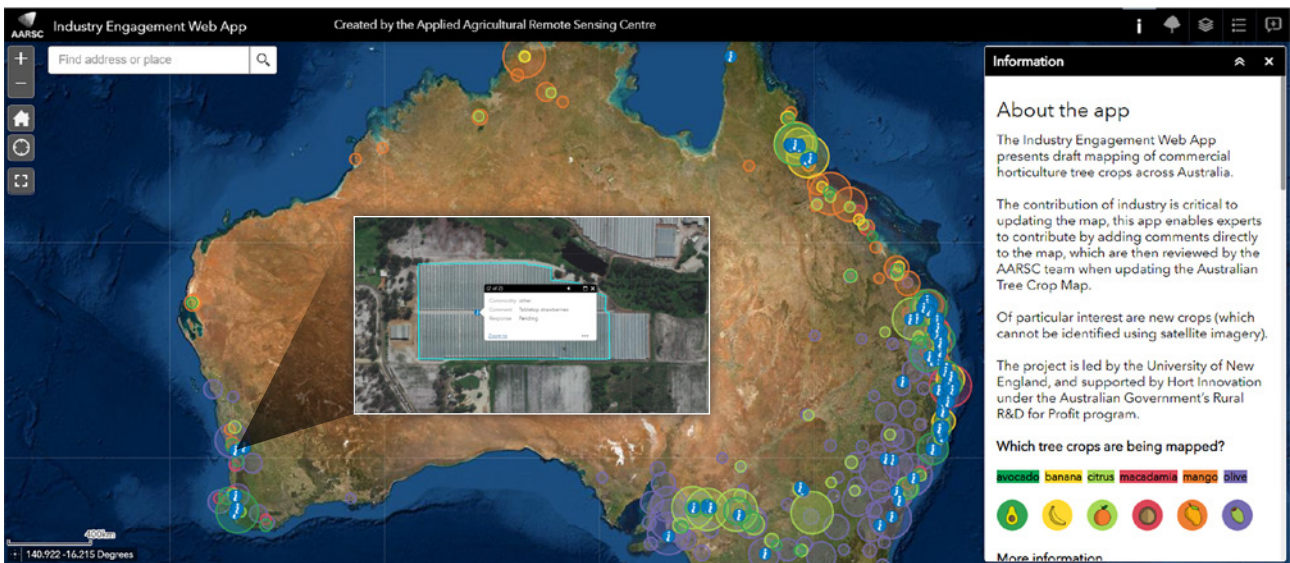


Figure 3. More detailed crop information can be entered using the AARSC Industry Engagement Web App.

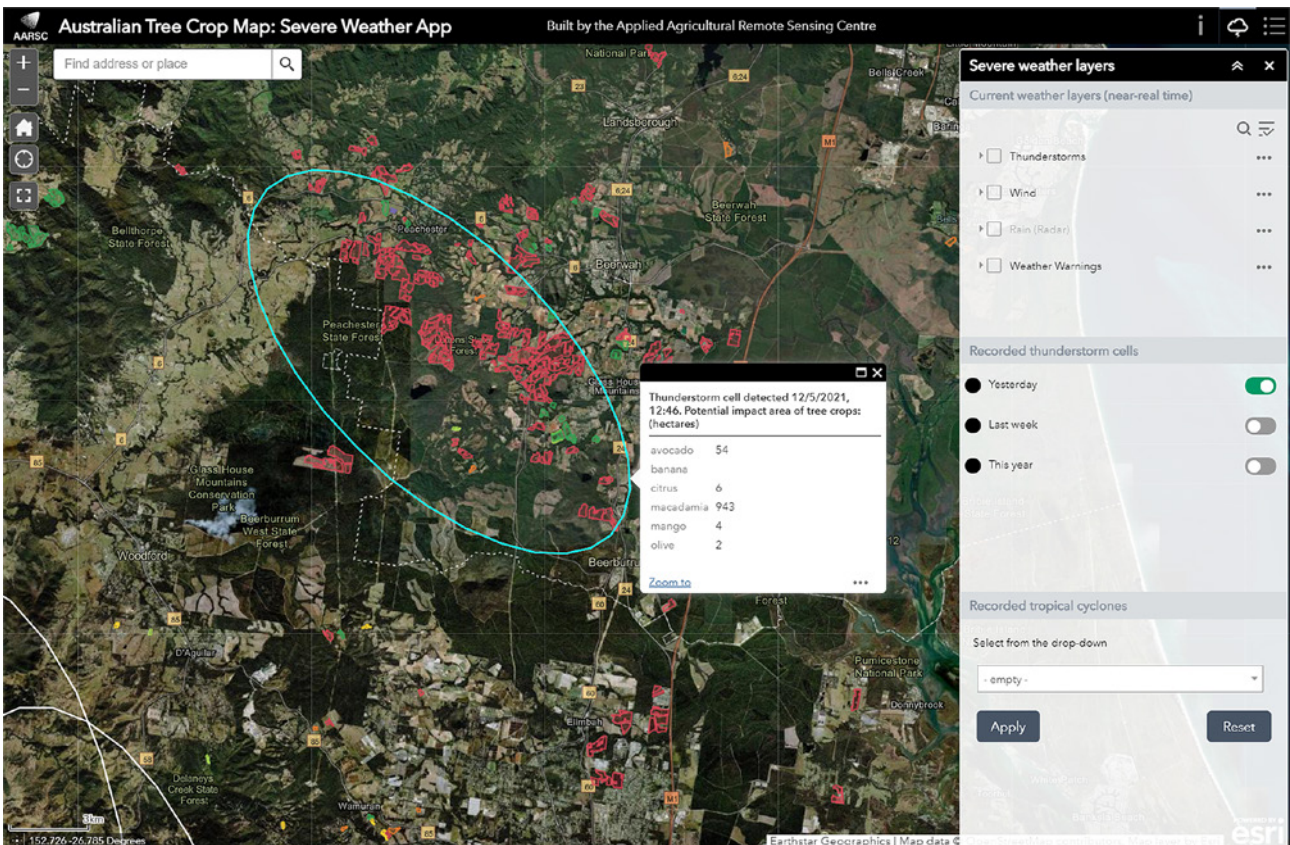


Figure 4. The AARSC severe weather app overlays live & historic weather information with the location of commercial horticulture tree crops in Australia.

All the maps developed by the AARSC can be accessed on the University of New England website at www.une.edu.au/webapps

For more information contact: Craig Shephard, University of New England | Email: cshepha2@une.edu.au

