



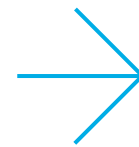
AgriFutures Australia

Annual Forum 2025

**Theme 2: Spatially
enabling the Australian
Hazelnut Industry**

AARSC

November 25



Theme 2: Spatially enabling the Australian Hazelnut Industry

Abbie Rankin – Spatial Analyst – AARSC, University of New England



Start with mapping the location and extent of tree crops...

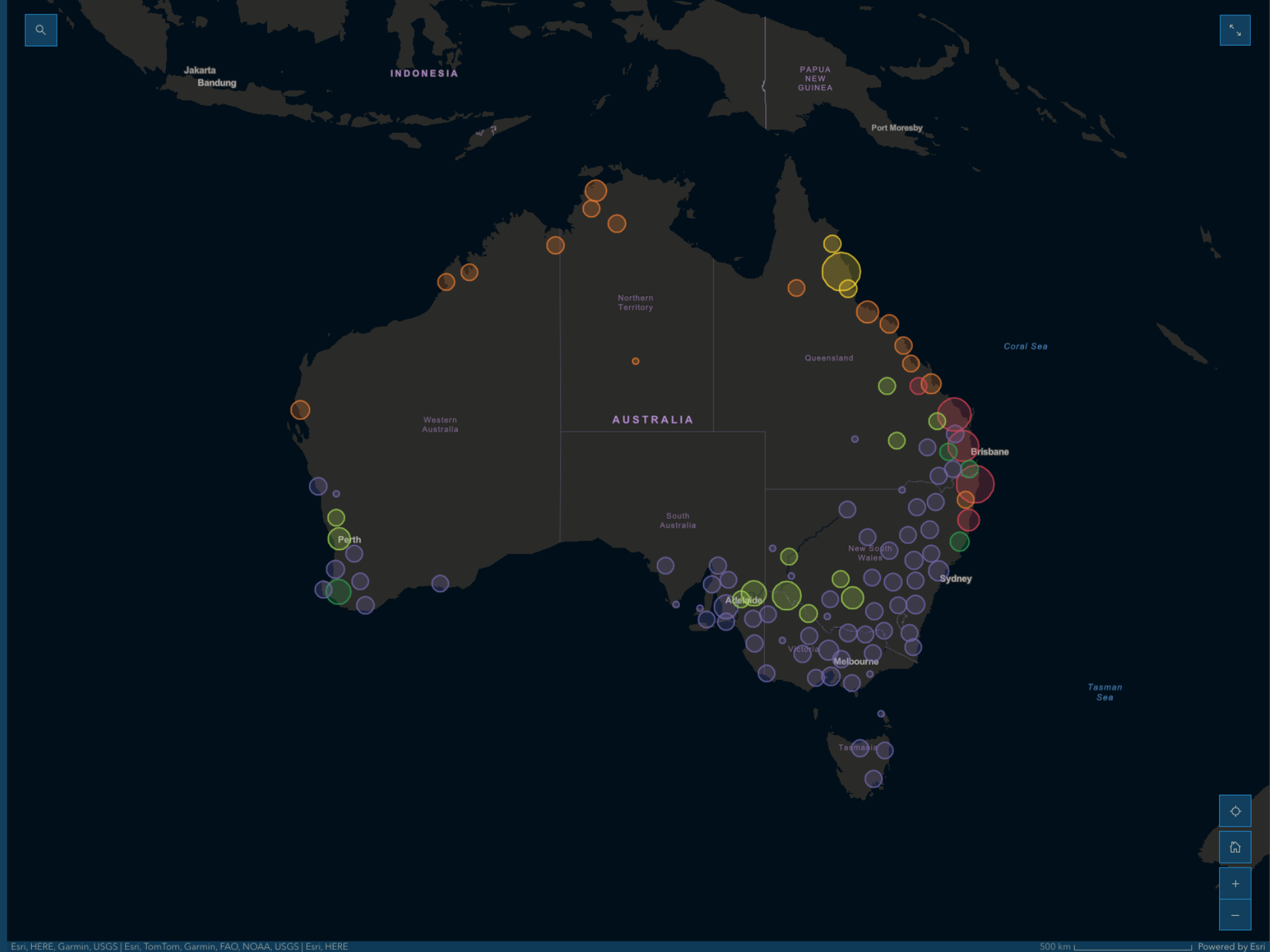
“
What does the ATCM show?”

Baseline location and extent of all commercial tree crops, including:

- Avocado
- Banana
- Citrus
- Macadamia
- Mango
- Olive
- Truffle

The map is [dynamic](#). It does not show [individual crops](#).

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The map informs decisions that solve problems – at national, regional and local scales. But first...



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Why do you need a map?

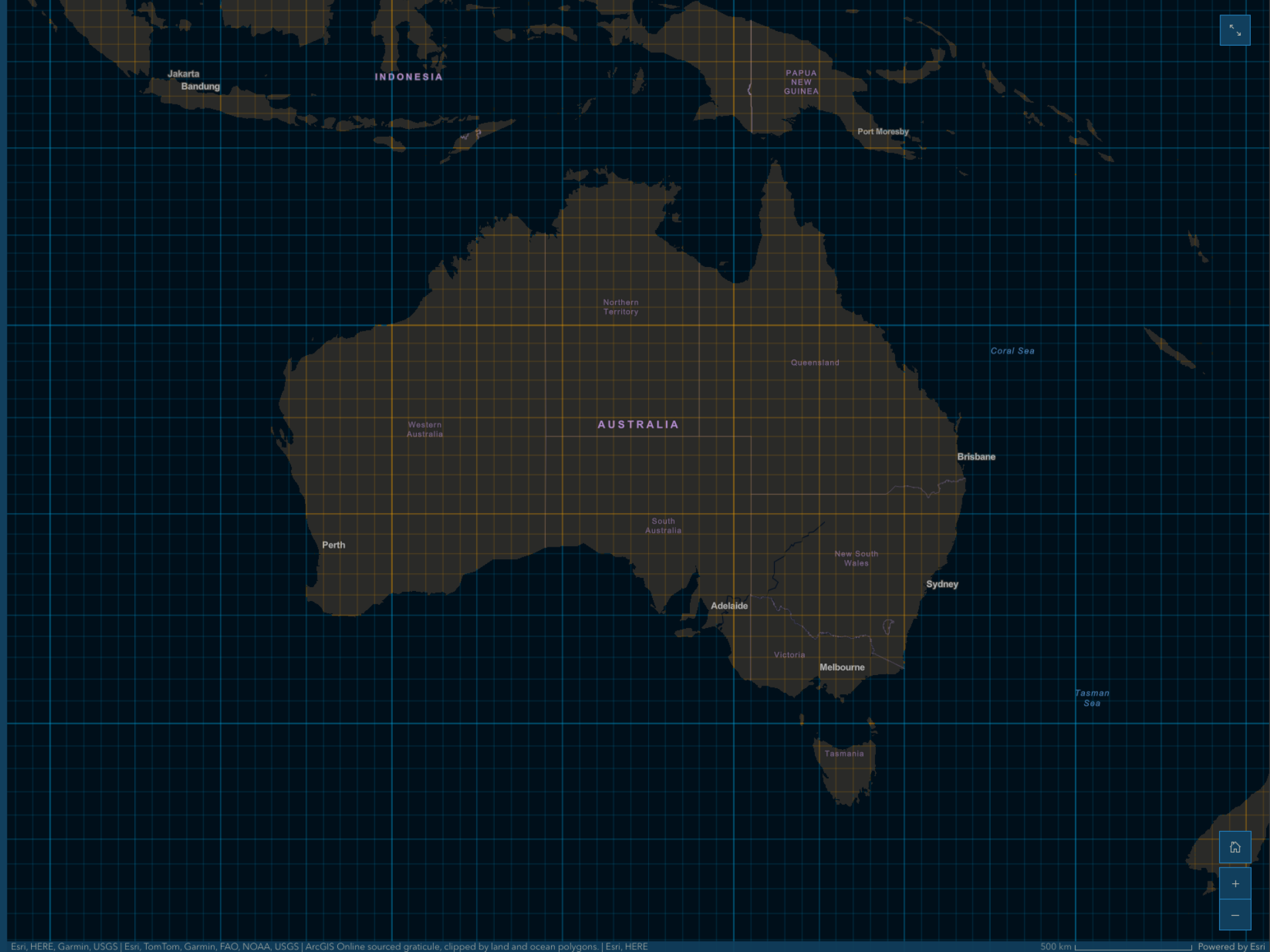
Industry know where you – their growers are, but what about your orchards?

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*How can industry effectively manage their crop without knowing **where** the orchards are?*

Making data-driven decisions requires a geographical approach...

⊕ [You need a map of Hazelnuts!](#)



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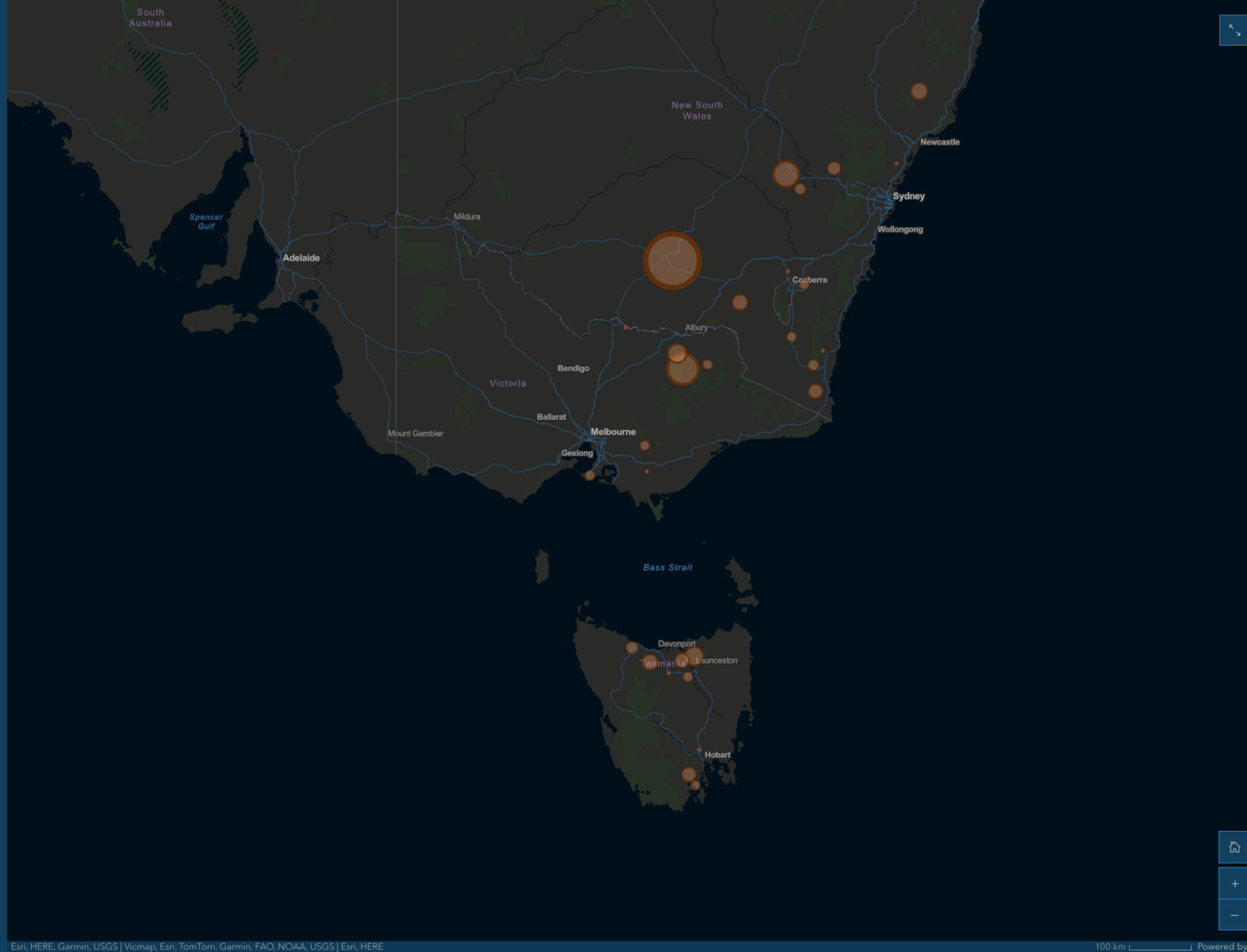
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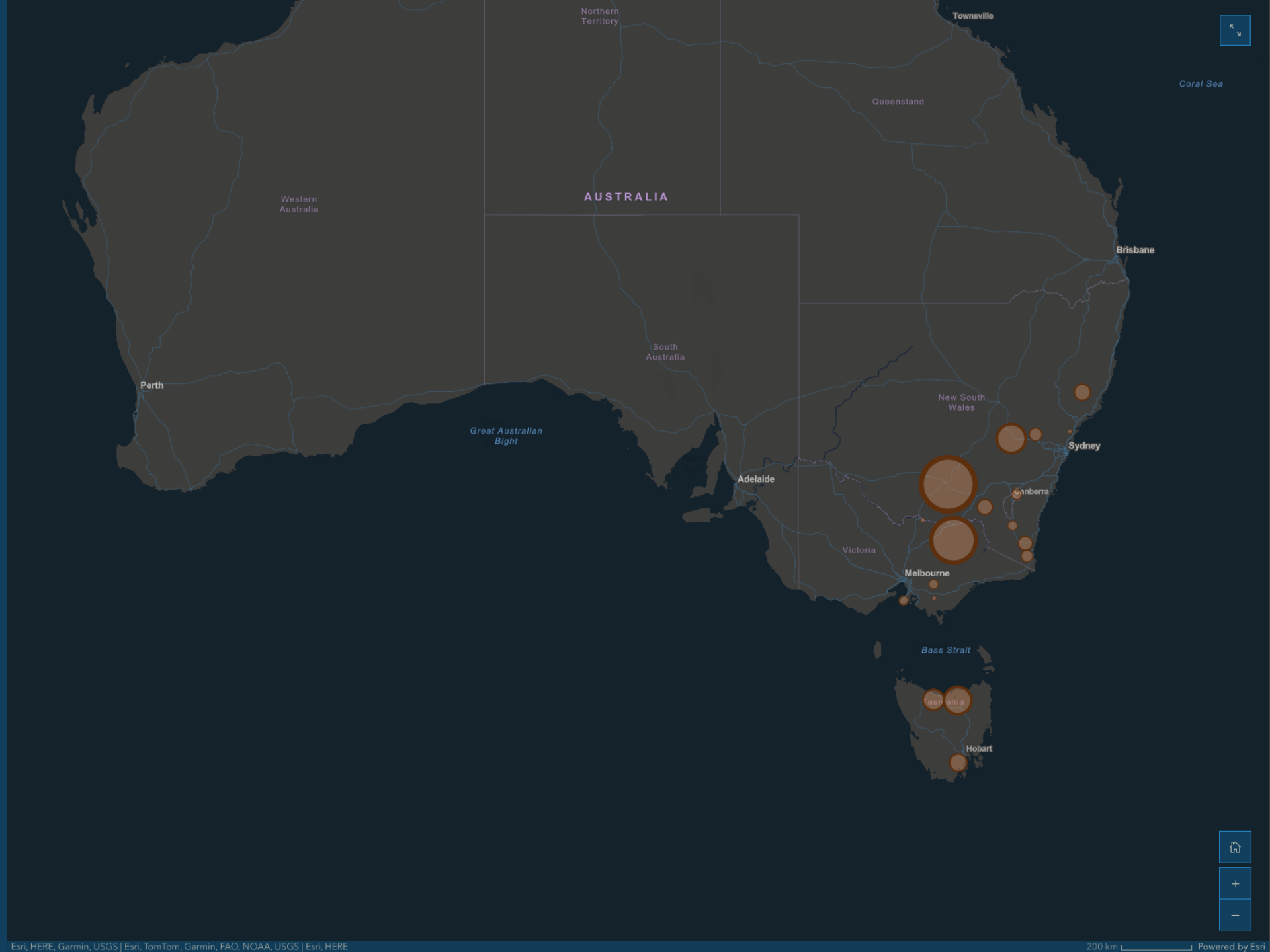
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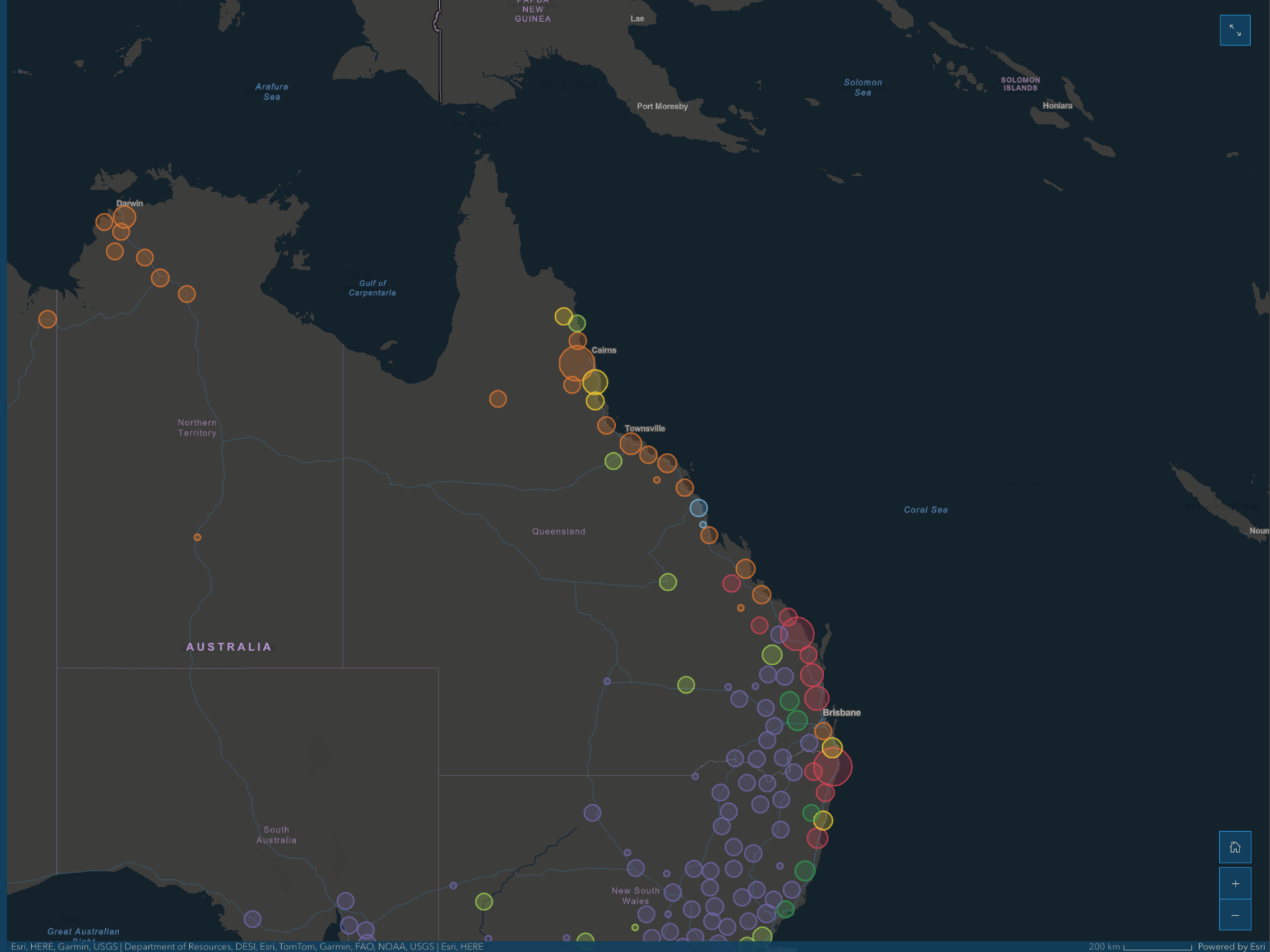
Applications...

- Area of production
 - [+ State](#)
 - [+ LGA](#)
- Biosecurity
 - [+ PSHB active in Perth](#)
- Natural disaster response
 - [+ Bushfires](#)
 - [+ Severe weather cells from the past year \(within BOM doppler coverage\)](#)



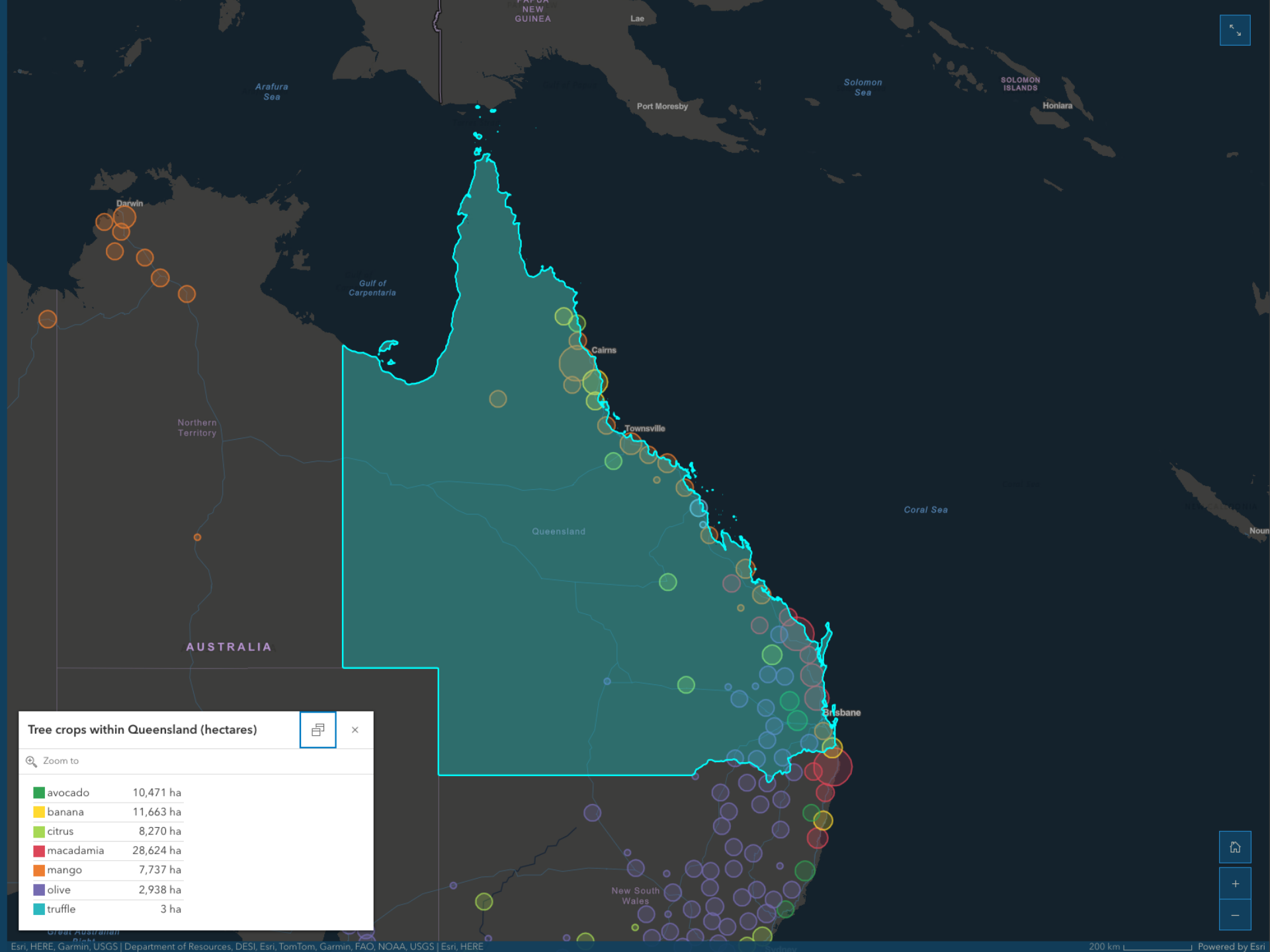
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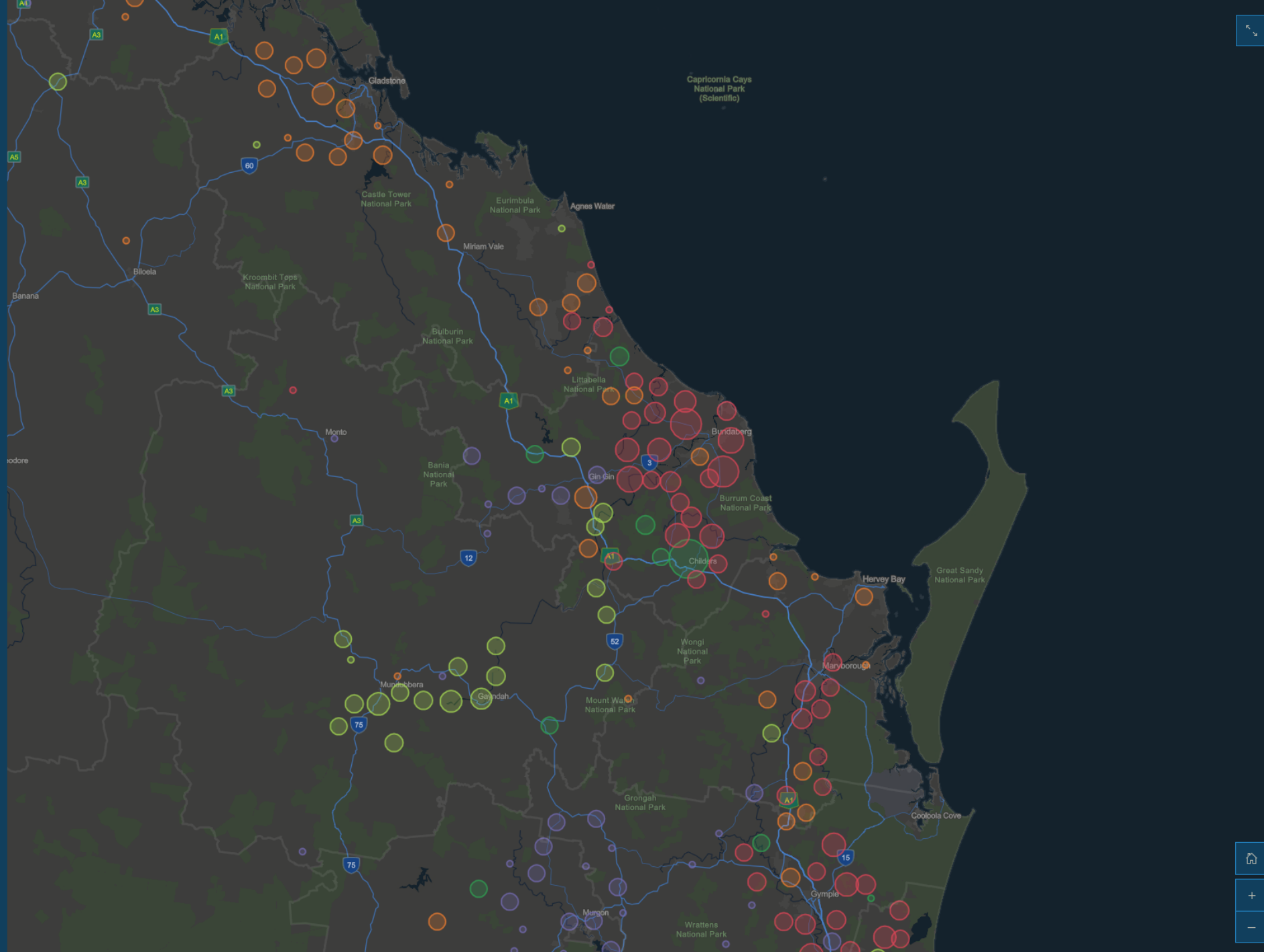
Tree crops within Queensland (hectares)

Zoom to

avocado	10,471 ha
banana	11,663 ha
citrus	8,270 ha
macadamia	28,624 ha
mango	7,737 ha
olive	2,938 ha
truffle	3 ha

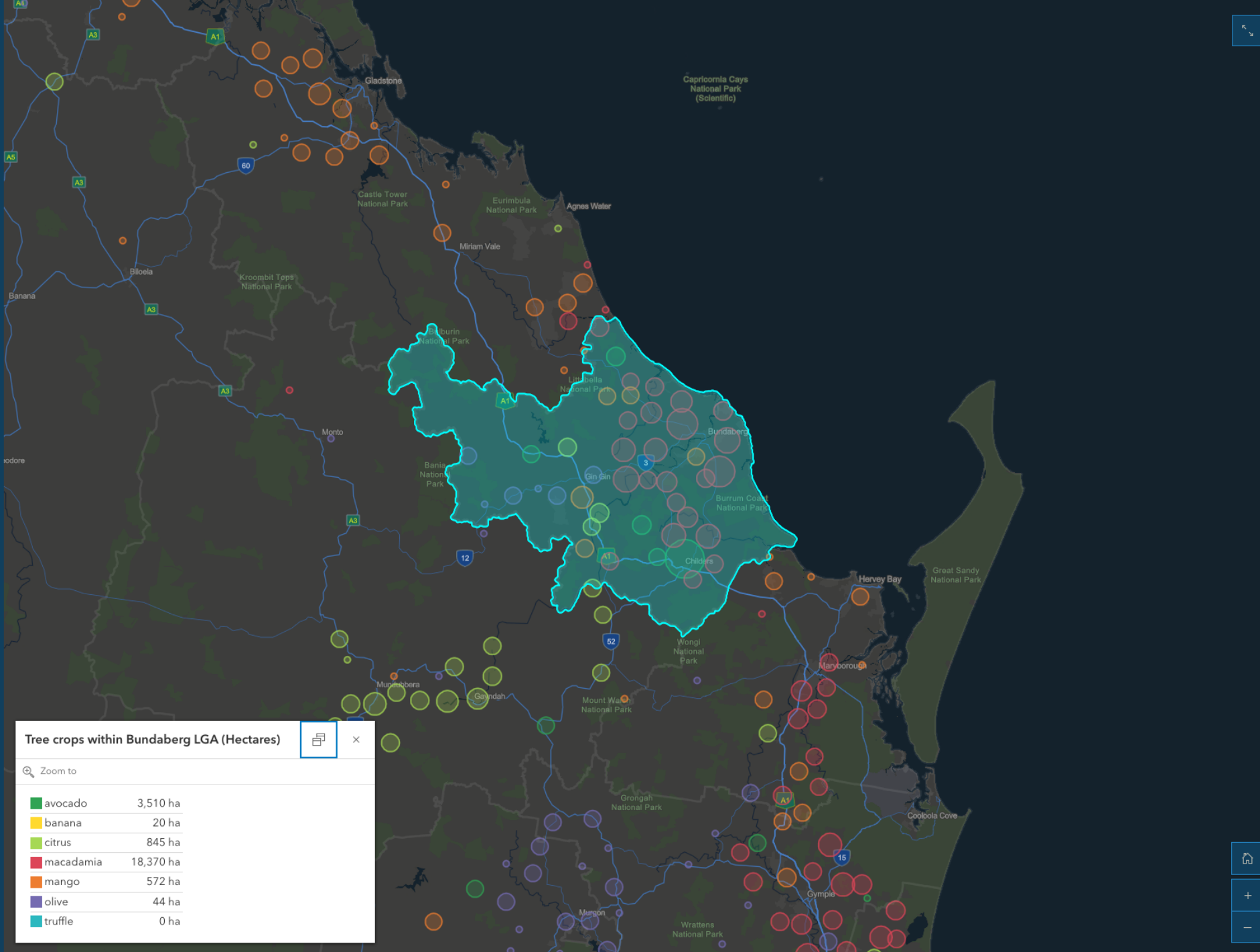
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Polyphagous Shot-Hole Borer Quarantine area

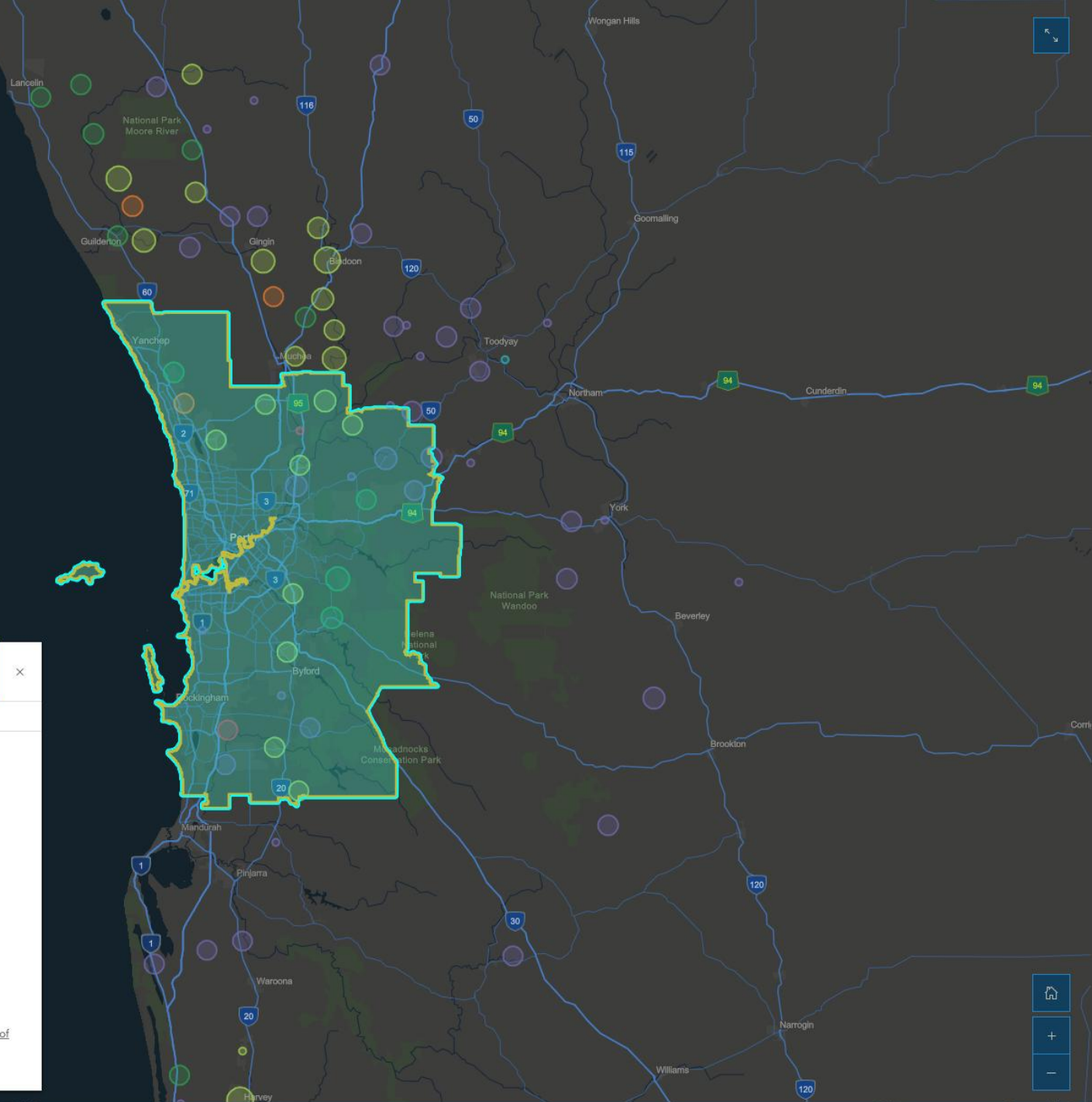
Zoom to

Total Tree Crops within the Quarantine Zone: 466 ha

Potential impact area of tree crops:

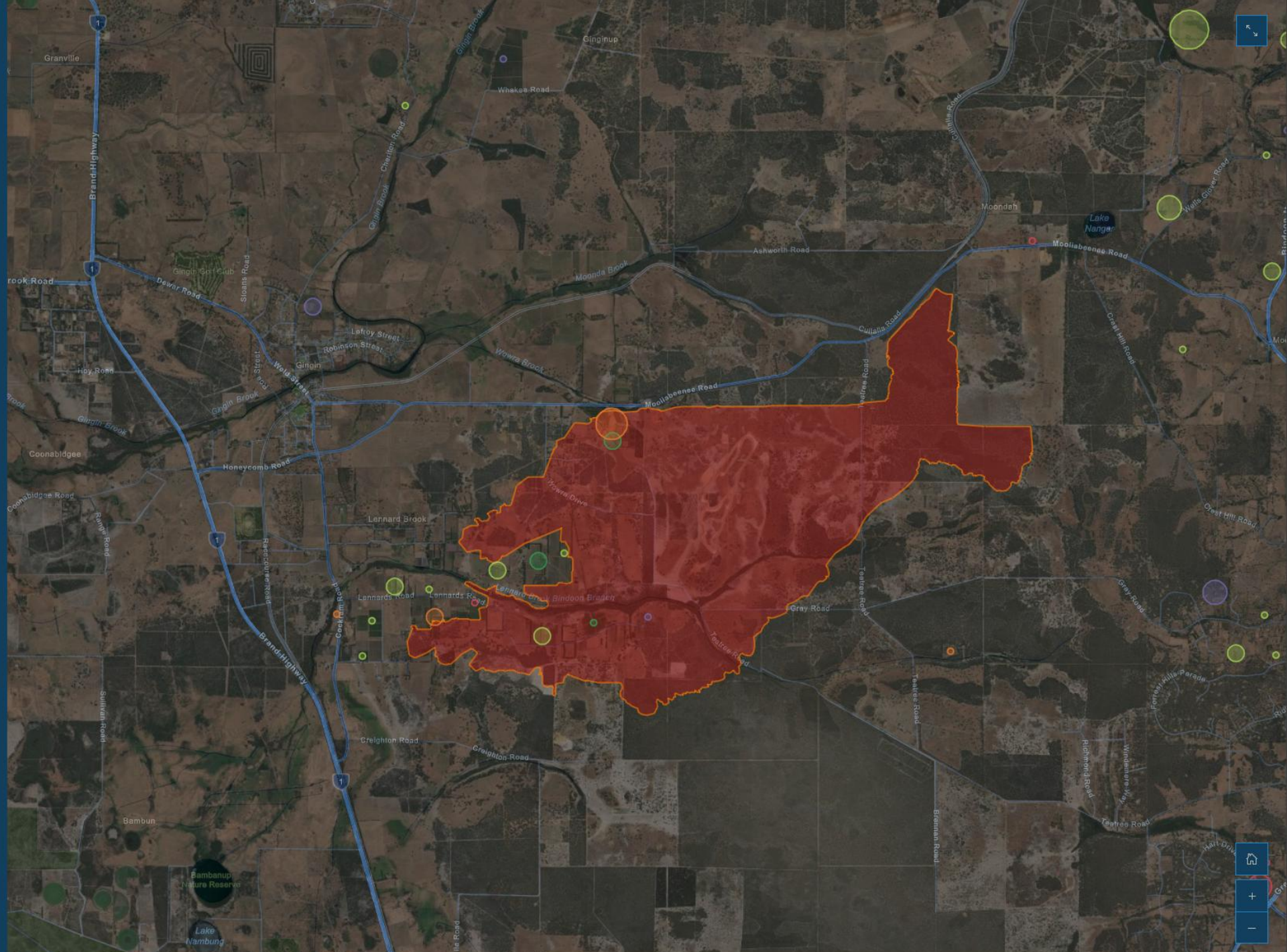
avocado	134 ha
banana	1 ha
citrus	115 ha
macadamia	32 ha
mango	17 ha
olive	165 ha
truffle	2 ha

PSHB extent mapping sourced from the Western Australian [Department of Primary Industries and Regional Development](#).



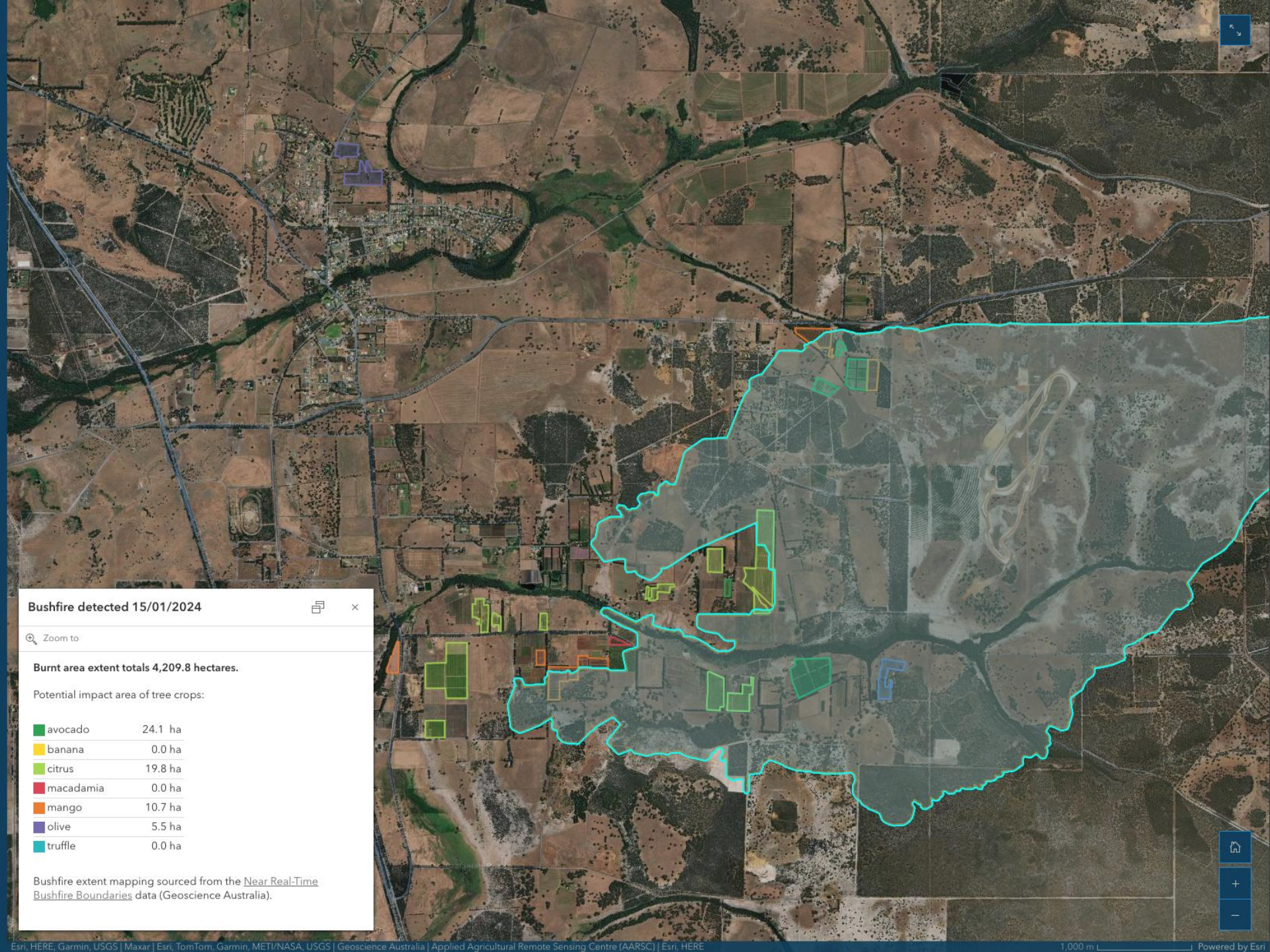
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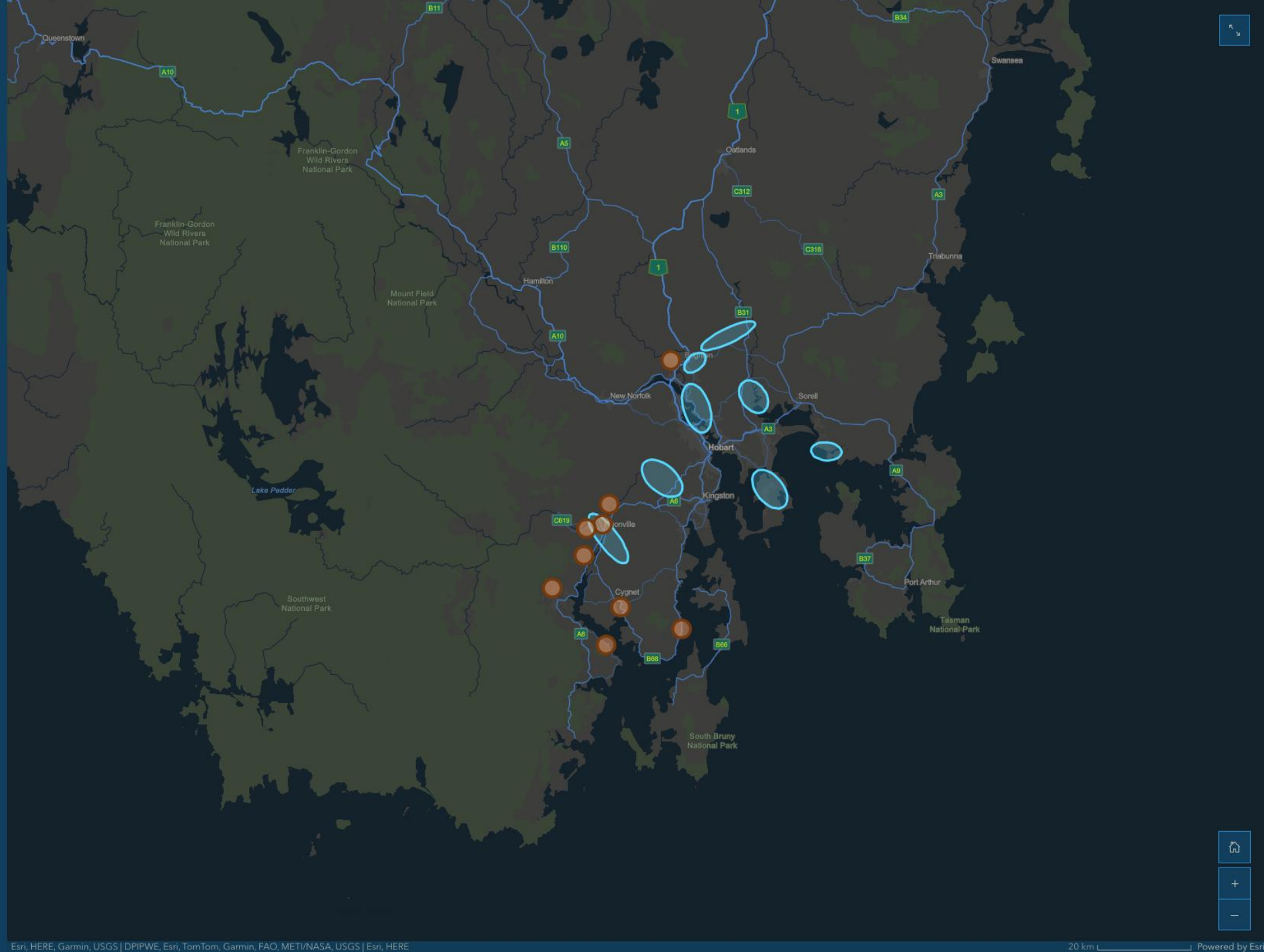
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AARSC are now drafting map for hazelnut...

Variations in tree crop type, age, cultivar and land management practice (e.g. row/tree spacing, hedging, netting) greatly influence the appearance of tree crops in imagery...

“

Is it a hazelnut orchard? Or is it another deciduous orchard?

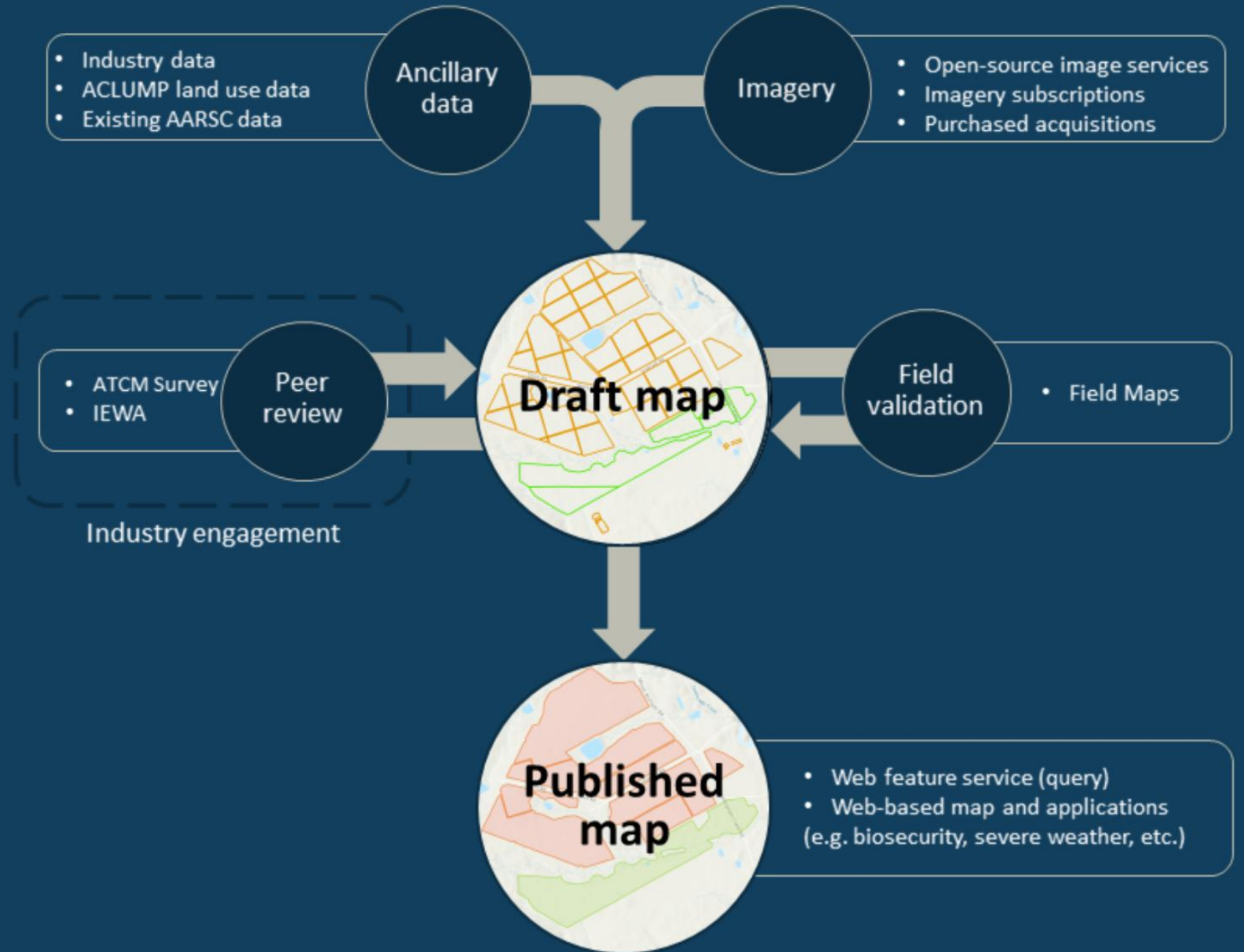


How do we do it?

“
To accurately classify tree crops we use multiple-sources of evidence to inform the map.”

Sources:

1. [Imagery](#)
2. Ancillary data
3. Field Validation
4. Peer review

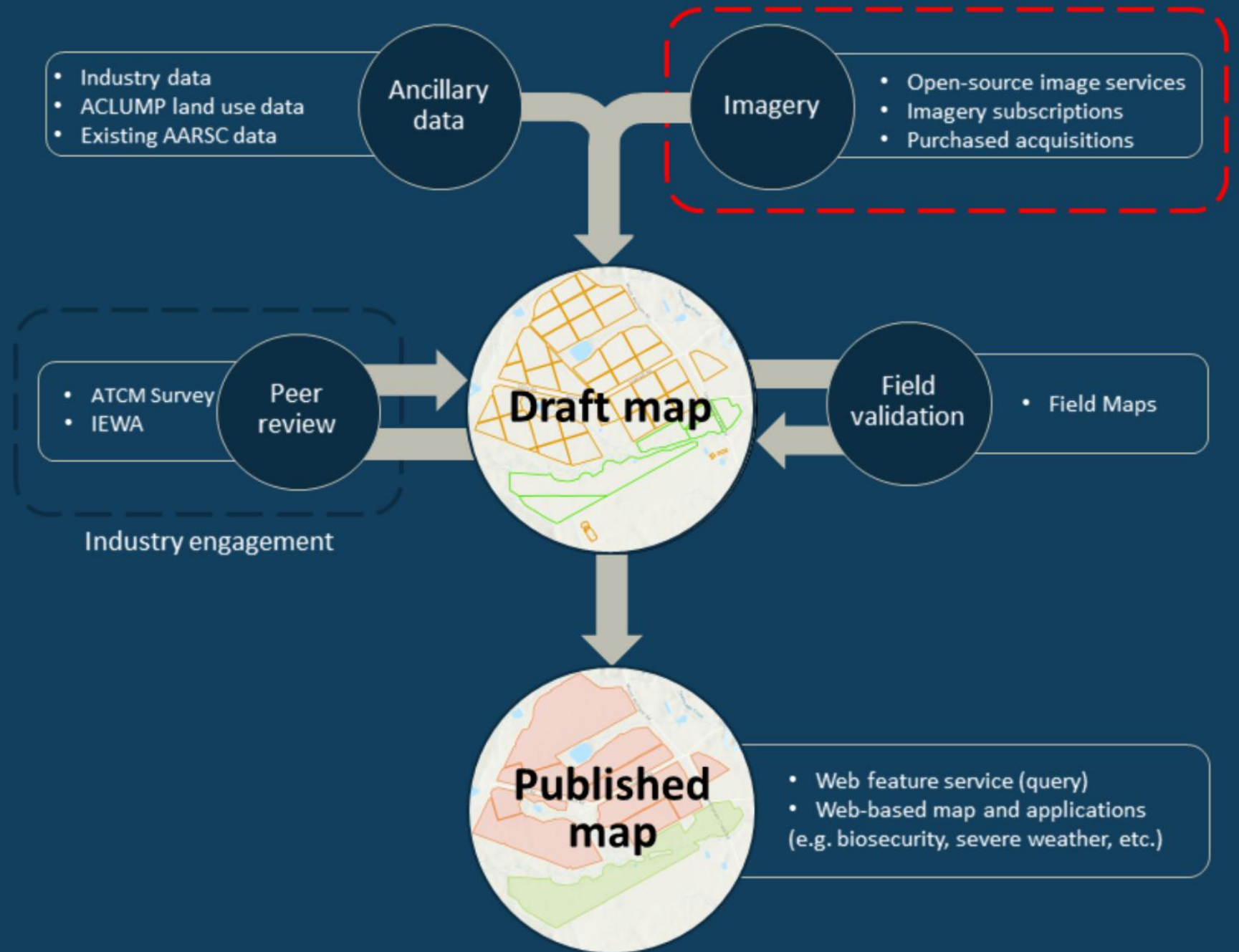


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Imagery

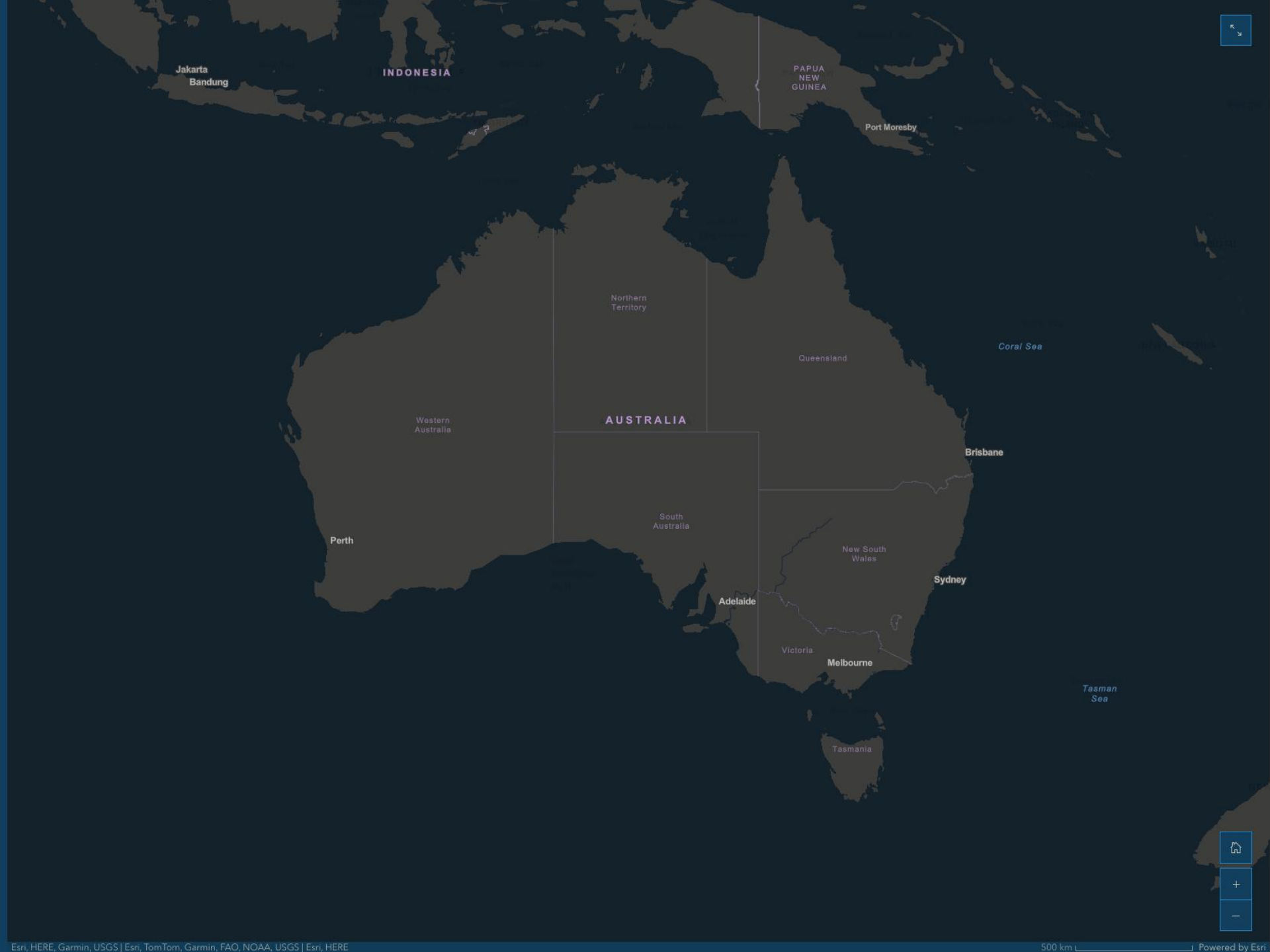
Publicly accessible (free) high-resolution imagery, including:

- Google Earth
 - [July 2022](#)
 - [October 2023](#)
- Esri Basemaps
- Google Street-view:
 - [Victoria](#)



© Google Street-view (June 2023)

- [Tasmania](#)



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119 McConnells Ln

Porepunkah, Victoria

Google Street View

June 2023

Share



Google Maps



Image capture: June 2023 © 2025 Google Australia Terms Privacy Report a problem

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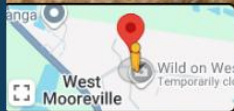
226 Poimena Rd

West Mooreville, Tasmania

Google Street View

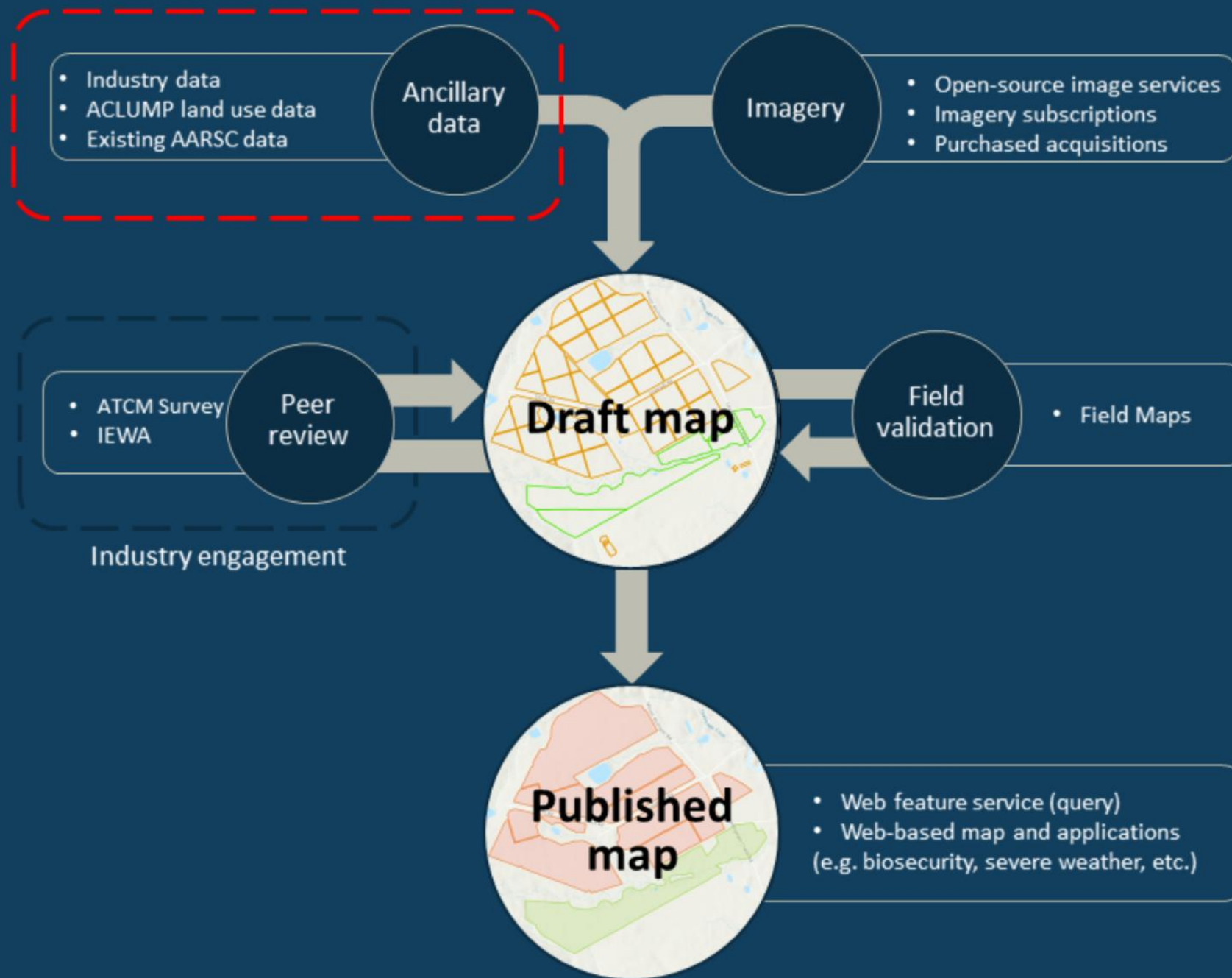
Mar 2025 See more dates

Share



Google Maps

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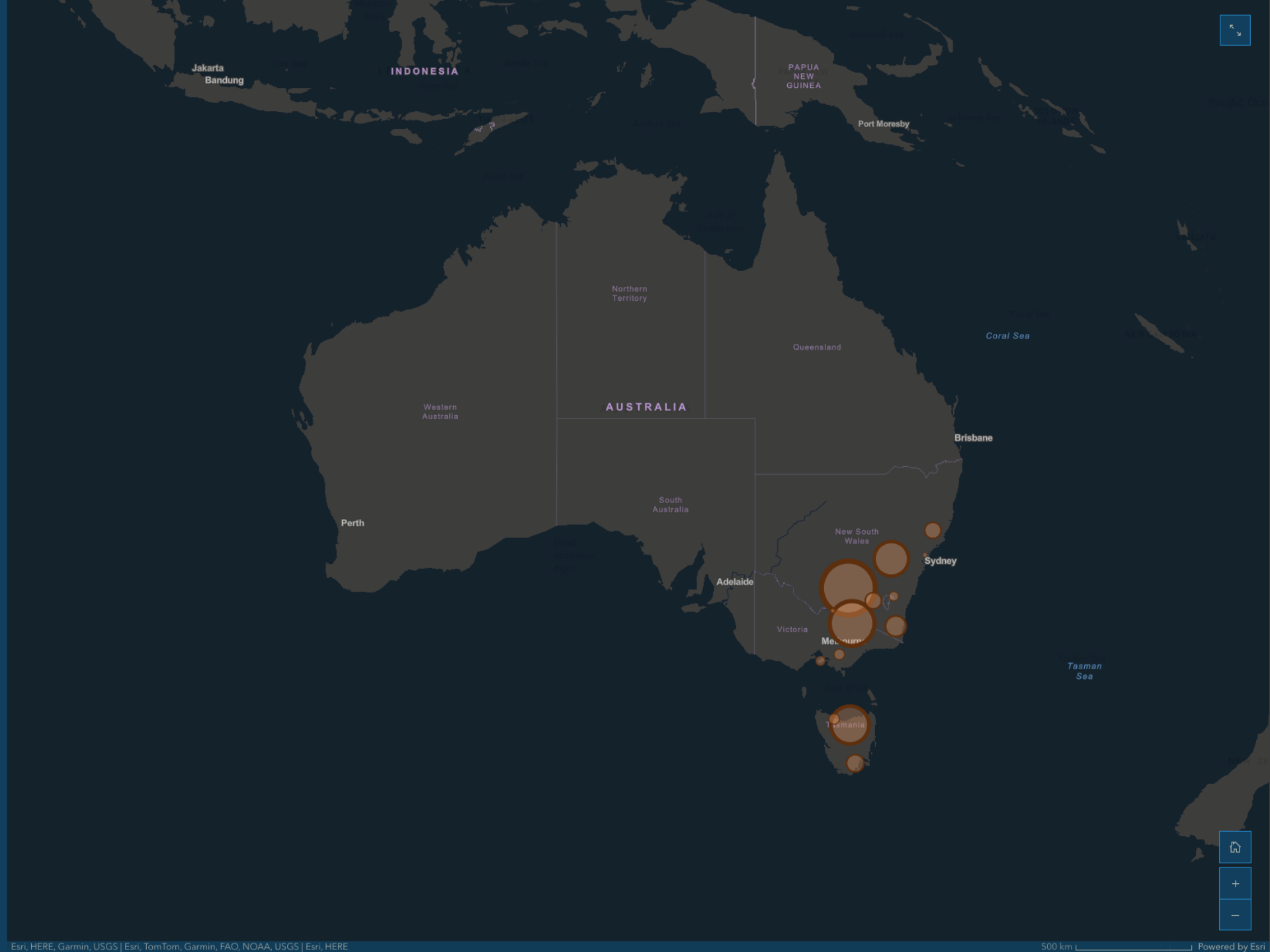
1. Imagery
2. **Ancillary data**
3. Field Validation
4. Peer review

Ancillary Data

Industry Data (HGA)

- Geocoded by AARSC..., included [61 locations](#); helps our interpretation of tree crop type!

[+ & Google Maps...](#)

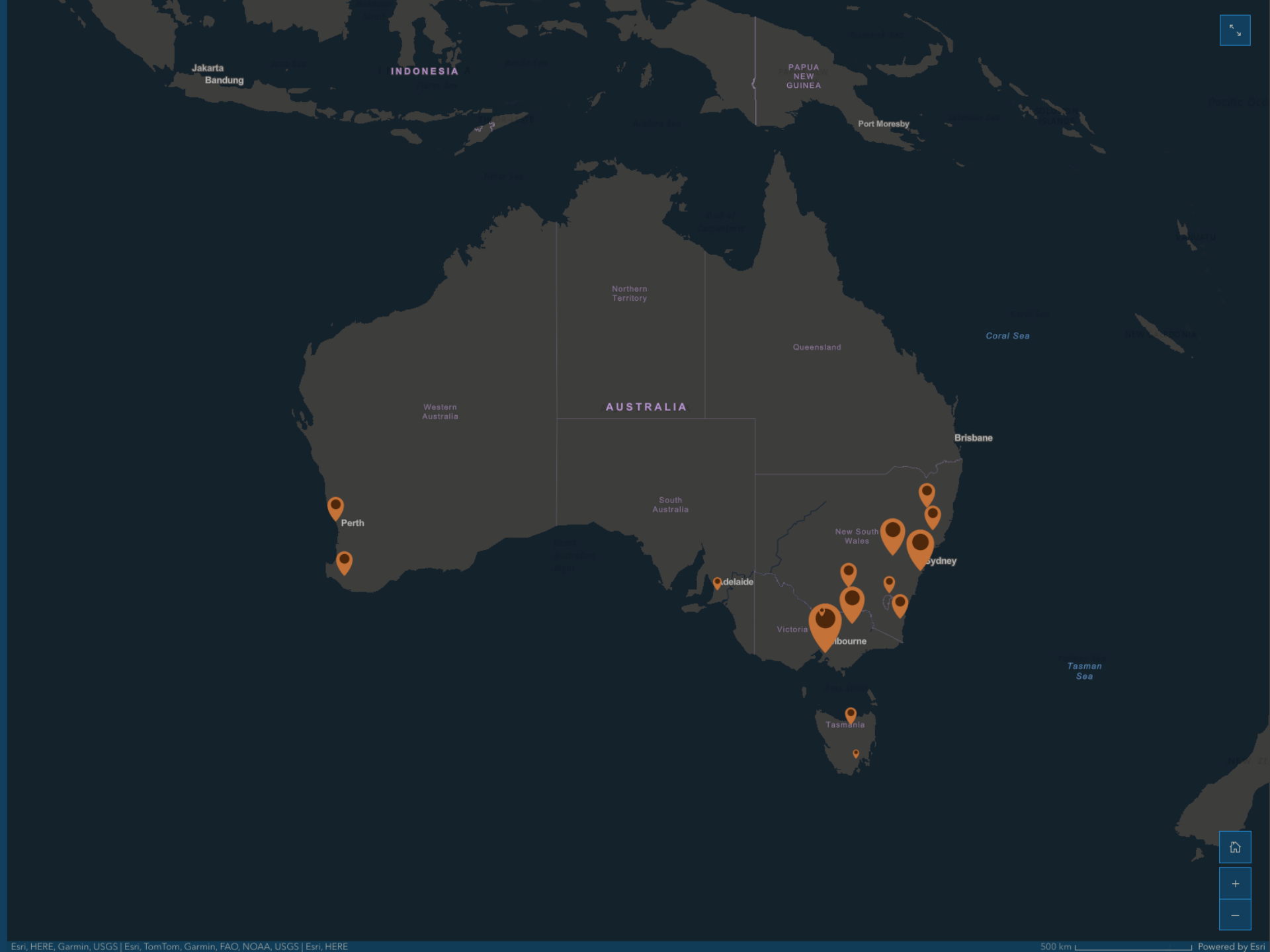


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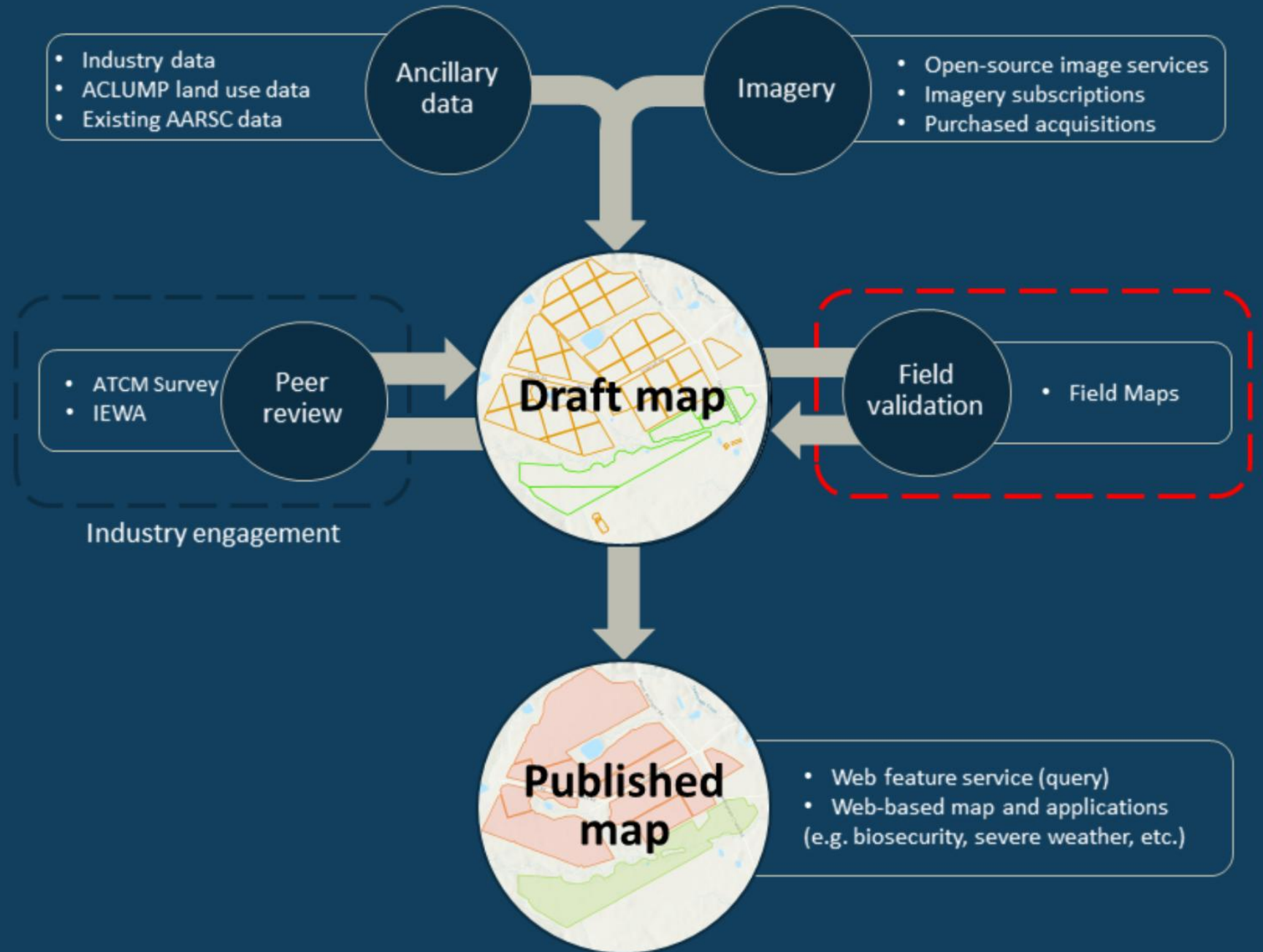
The image shows a Google Maps interface with an aerial view of a rural landscape. A river, the Ovens River, flows through the center. To the left, there are large green agricultural fields, likely nut orchards. A sidebar for 'Ovens River Nuts' is open on the left side of the map. The sidebar includes a photo of nut products, the business name 'Ovens River Nuts', and the description 'Agricultural product wholesaler'. It also lists contact information: '106 Toniazzo Ln, Myrtleford VIC 3737', 'facebook.com', and '(03) 5752 1515'. The location is marked with a red pin on the map. Other map features include street names like 'Great Alpine Rd' and 'Toniazzo Ln', and various landmarks like 'Myrtleford Mosaic Trail' and 'Ovens River Trail parkrun'.

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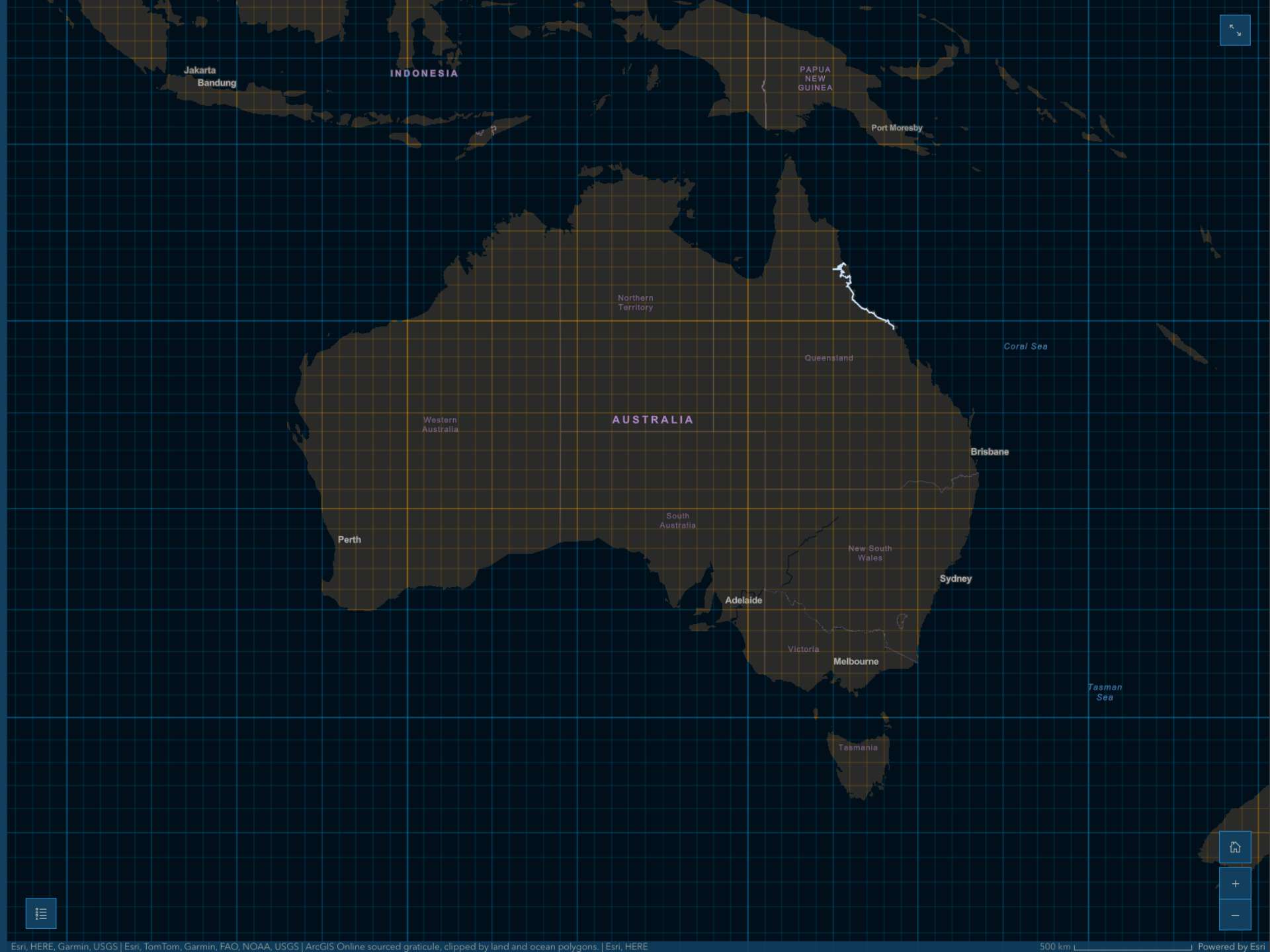
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Field validation

Targets areas of known [uncertainty](#) & [new plantings](#)...

[Wet Tropics](#) was validated in April—including the Tablelands and south to Proserpine.



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Field_Tracks

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Field_Tracks

Navigation icons: Home, Zoom In (+), Zoom Out (-)

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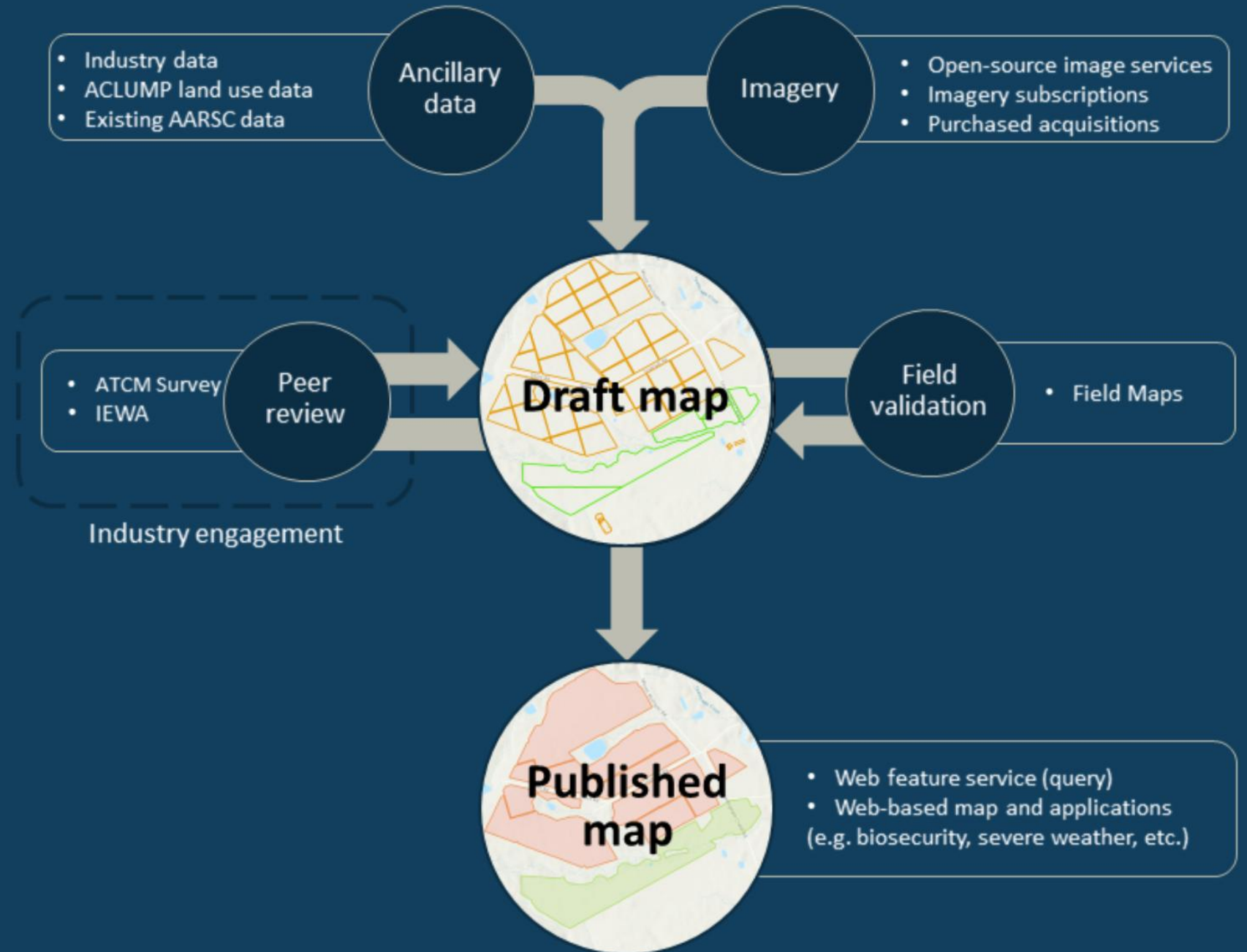
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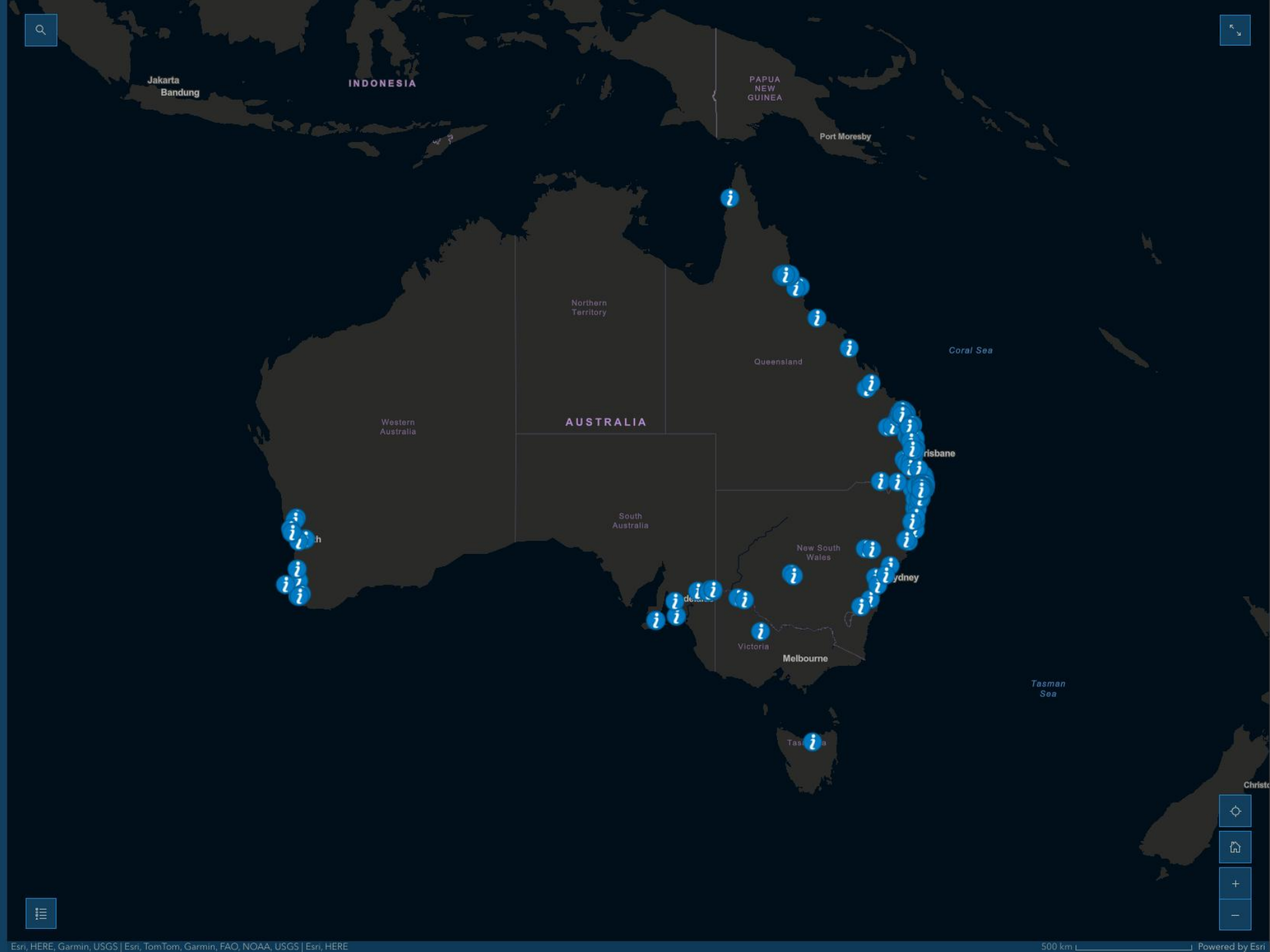


Industry Engagement

Peer review is critical for R&D and spatial is no different...

Using location-based tools developed by AARSC, anyone can review the map!

We've received \oplus 100's of observations for a range of commodities!

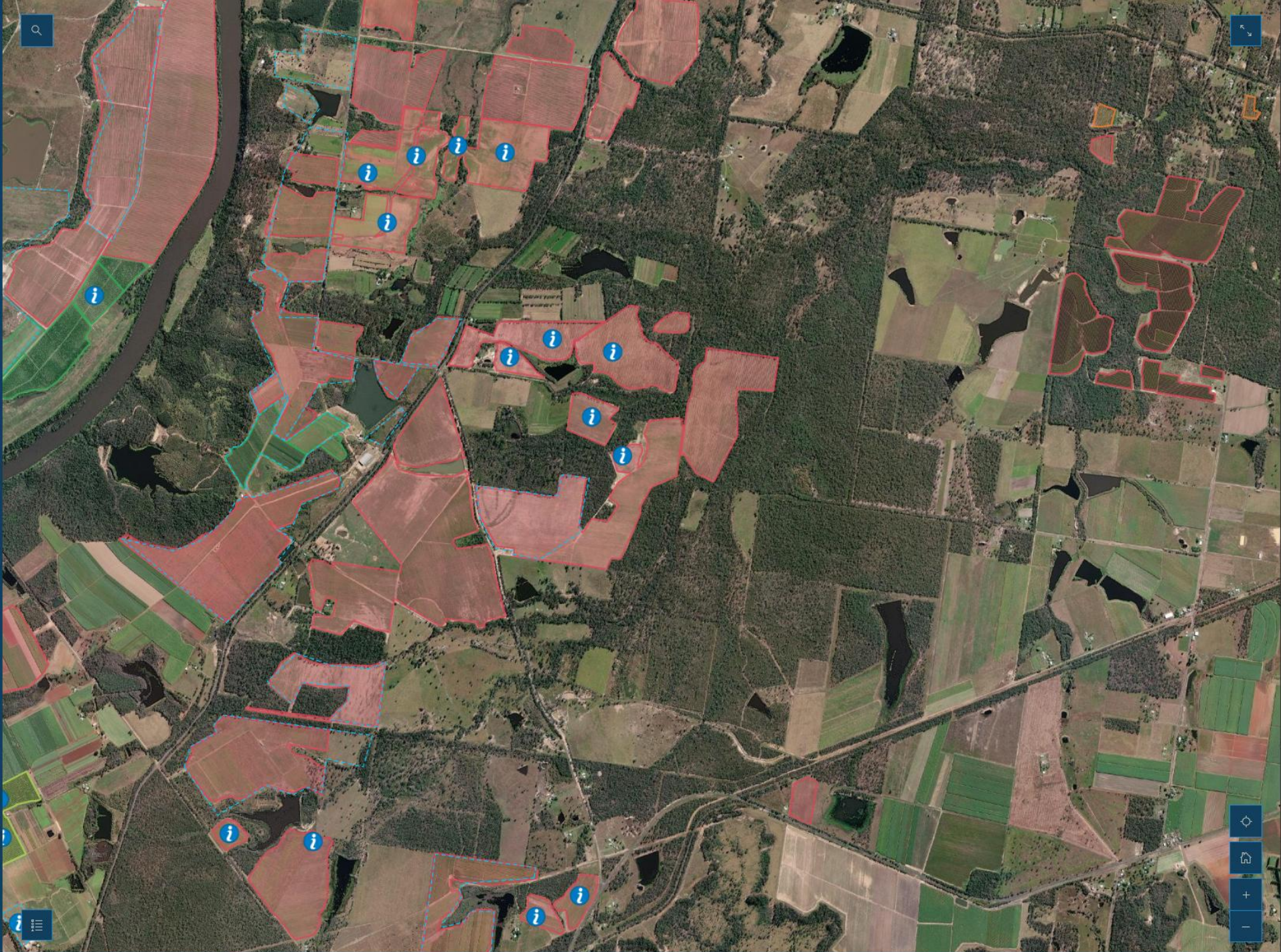


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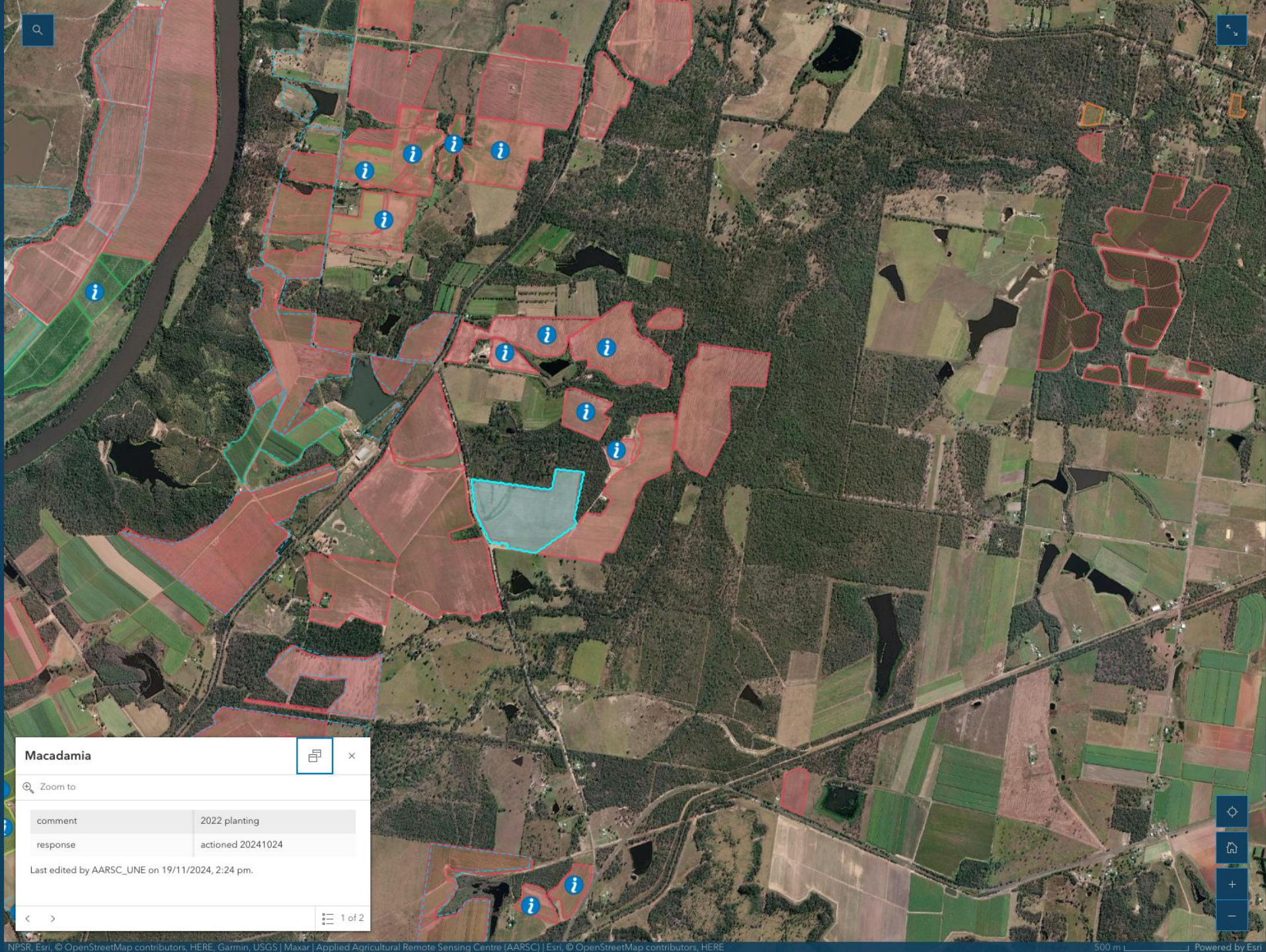


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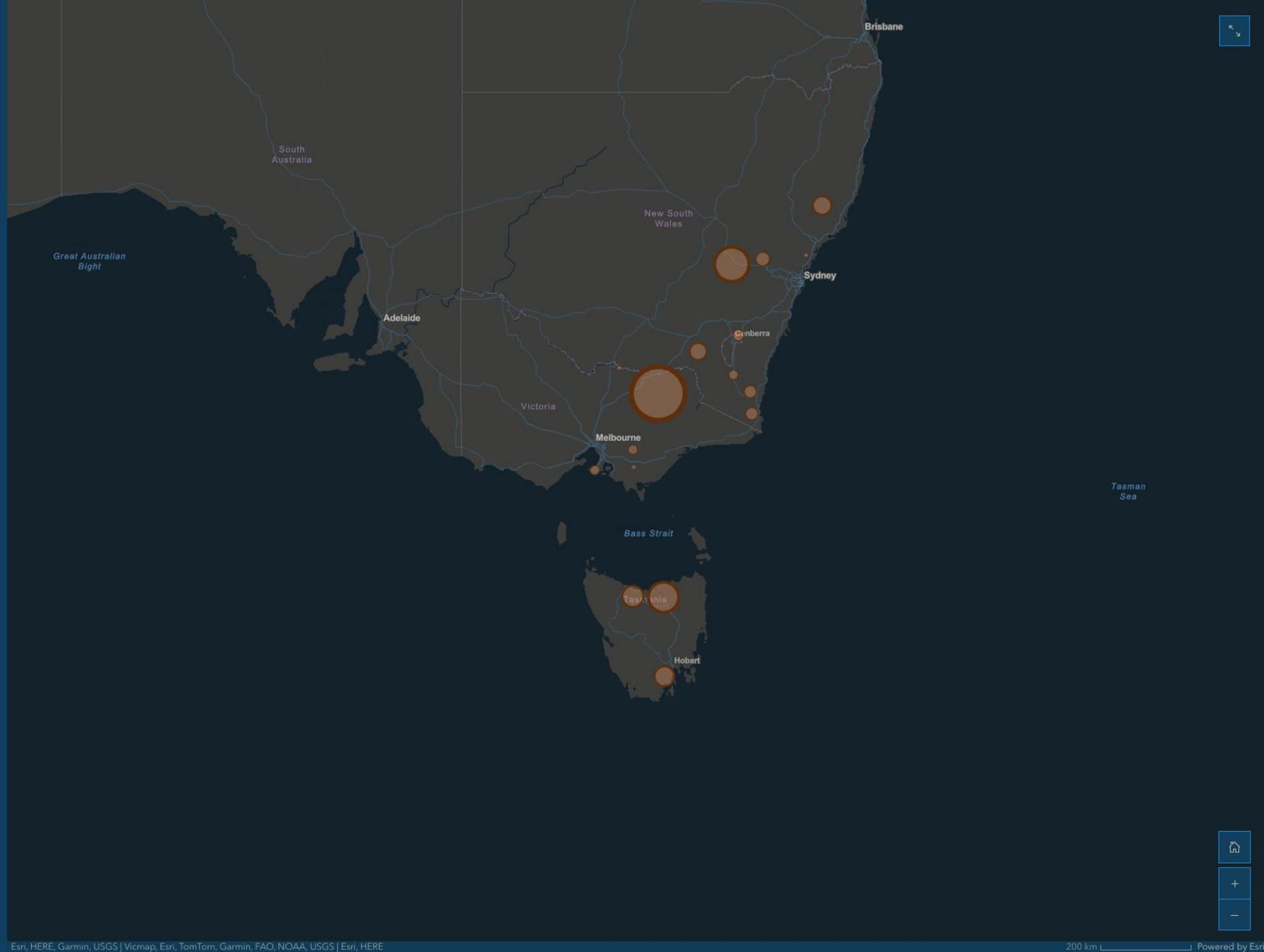
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Draft Map of Hazelnuts

What has already been mapped?

- 237 ha ⊕ [intact](#) Hazelnuts
- 2,075 ha Hazelnuts ⊕ [removed](#) (Ferrero)
- 39% of orchards mapped are ⊕ [Uncertain...](#)



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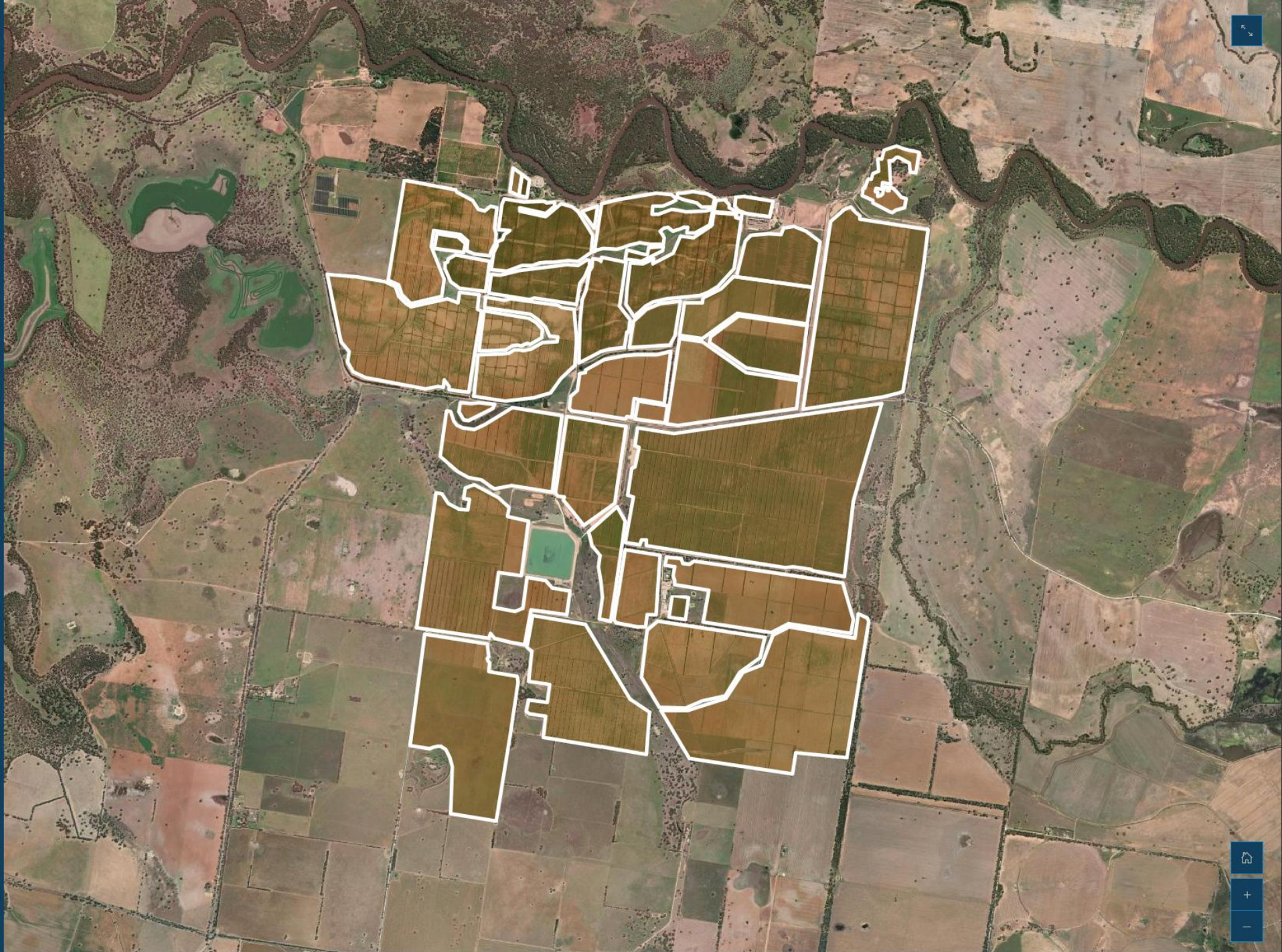
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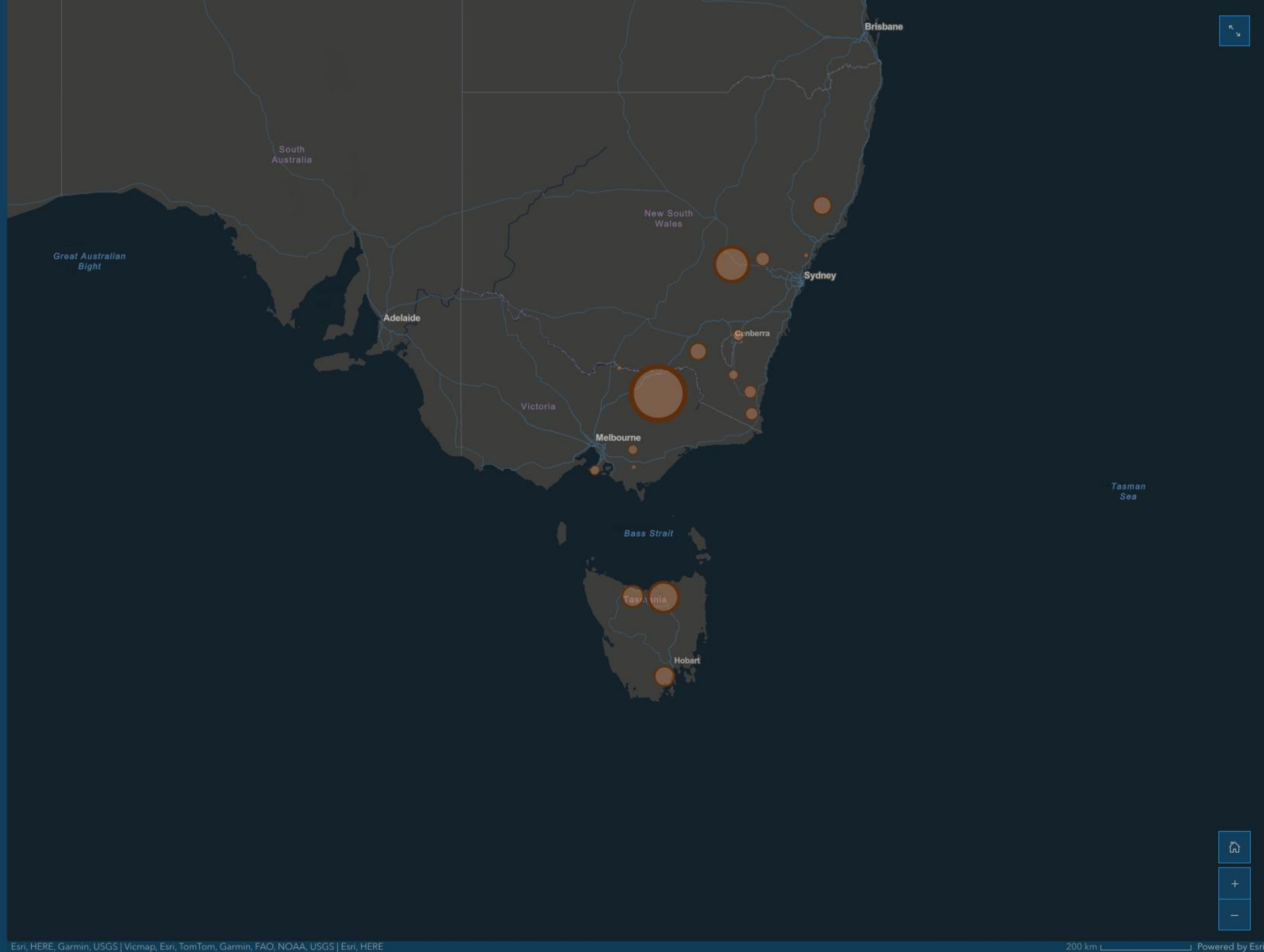
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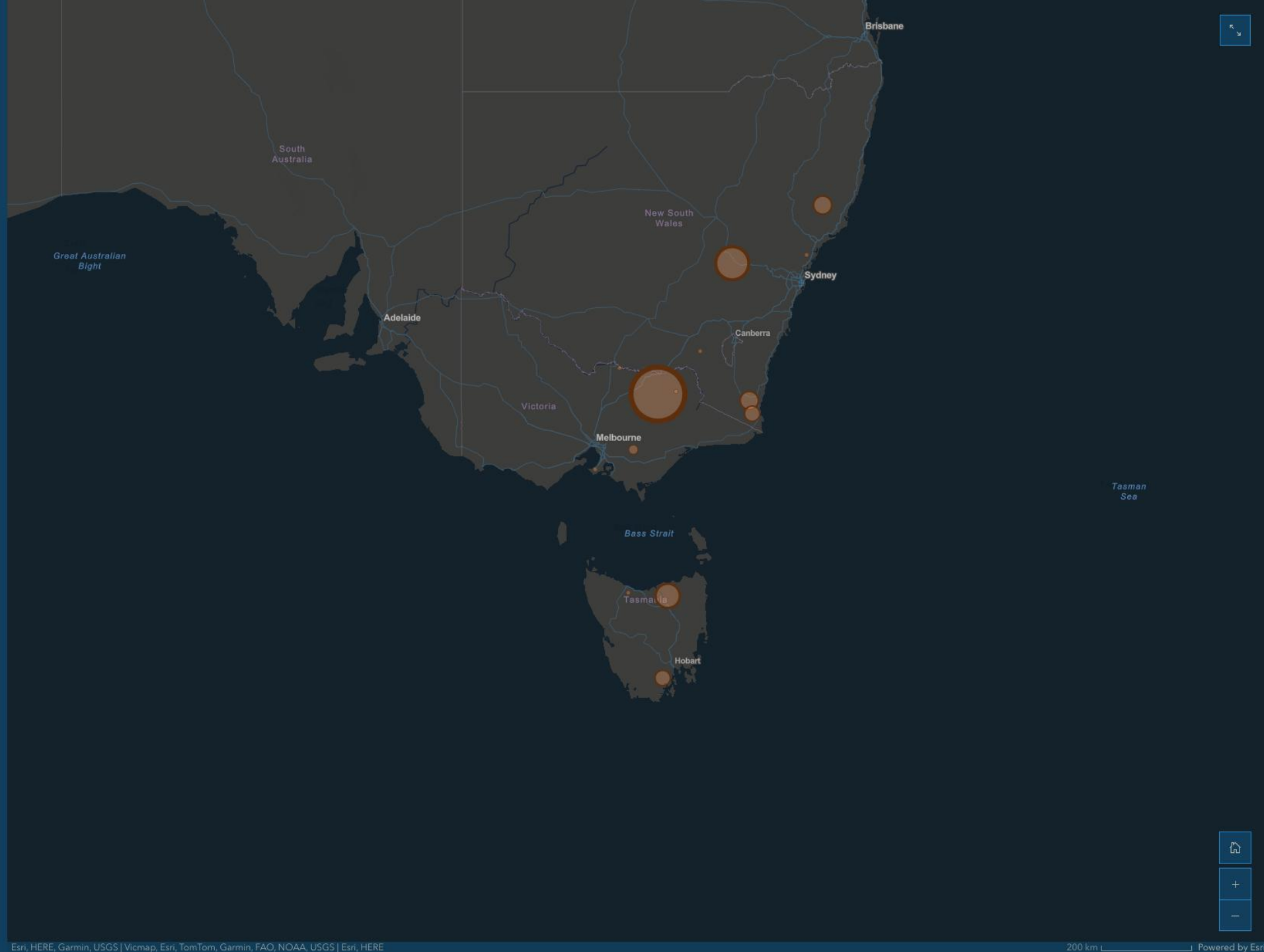
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ATCM Survey

We need your help!

“Your contribution is essential for mapping new plantings which cannot be mapped with satellite imagery alone!”

Australian Tree Crop Map Survey

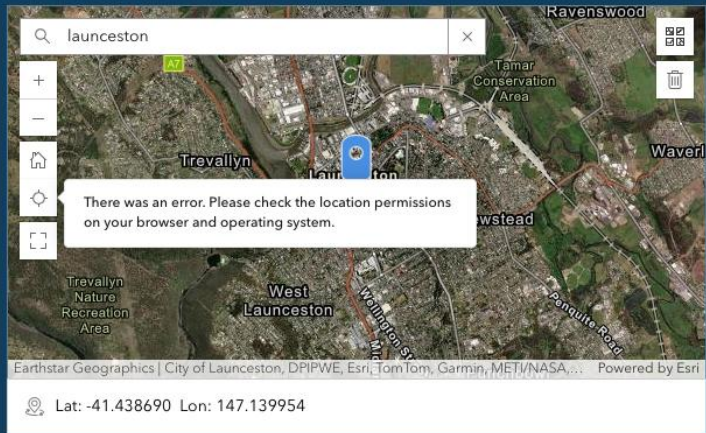


The information collected through this survey is interpreted by researchers at the University of New England's Applied Agricultural Remote Sensing Centre (AARSC) to inform the update of the Australian Tree Crop Map (ATCM). This initiative is led by AARSC with support from Hort Innovation and industry partners. No private or commercial information is collected or presented. For more information visit une.edu.au/webapps.



Add location*

Click on the map and select the cross-hair button to quickly 'find my location' or search for an address. Place the pin on the crop location by clicking the map and confirm by selecting either the ✓ button or the back arrow (<) to continue the survey.



Select tree crop*

If your crop is not listed, select 'other' and describe it.

- avocado
- banana
- cherry
- citrus

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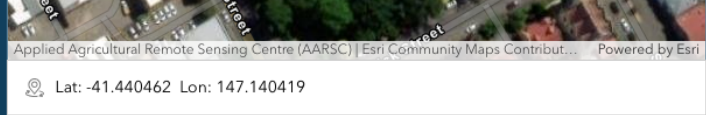
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- avocado
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- cherry
- citrus
- dried fruit
- hazelnut
- lychee
- macadamia
- mango
- olive
- summerfruit
- truffle
- other

Add comment *Optional*
e.g. variety or year planted

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- summerfruit
- truffle
- other

Add comment *Optional*

e.g. variety or year planted

Planted 2023

Add photo *Optional*

e.g. photo of tree or map of orchard/block layout

Drop image here or select image



Submit



What's coming...

AARSC update the Australian Tree Crop Map twice-per-year (May & November).

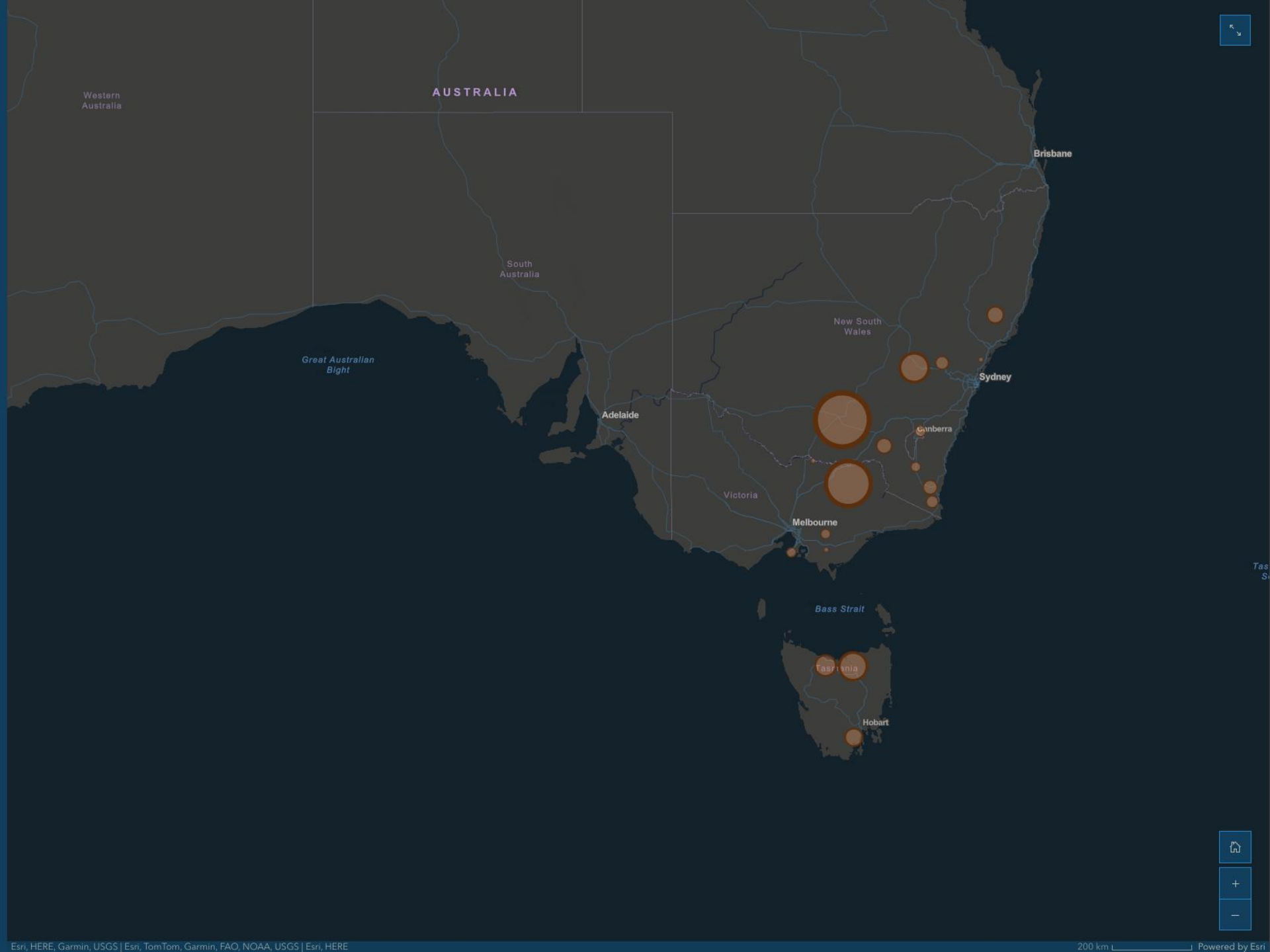
“

Hazelnut could have a Draft Map by November.... pending feedback we receive!

Visit the UNE Web Applications Gallery:



www.une.edu.au/webapps



Visit the UNE Web Applications Gallery:



www.une.edu.au/webapps



Thank you!

