Mapping horticulture tree crops in Australia

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Stuart Phinn (University of Queensland)
Andrew Robson (University of New England)
Robert Crossley (Agtrix)

Project objectives

Improve production, auditing, biosecurity and disaster recovery using the latest satellite systems, computing, analytics and robotics through two key innovation pathways:

1 - National audit measuring location and area of orchards:

- Grower demographics
- Yield forecasting
- Biosecurity
- Natural disaster recovery

2 - Decision support tools and on-ground sensor systems:

- Fruit yield and quality
- Harvest segregation
- Tree health
- Pest and disease outbreaks
- Product traceability (tree-to-plate)

Queensland Land Use Mapping Program

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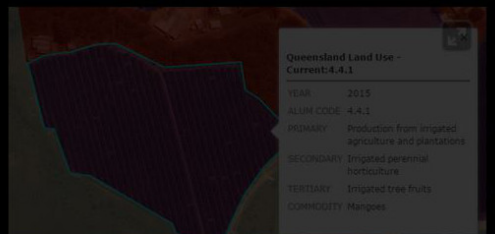
Queensland Land Use Mapping Program

For example:
Dimbulah
Horticulture
Land use map
Mango & pop-up



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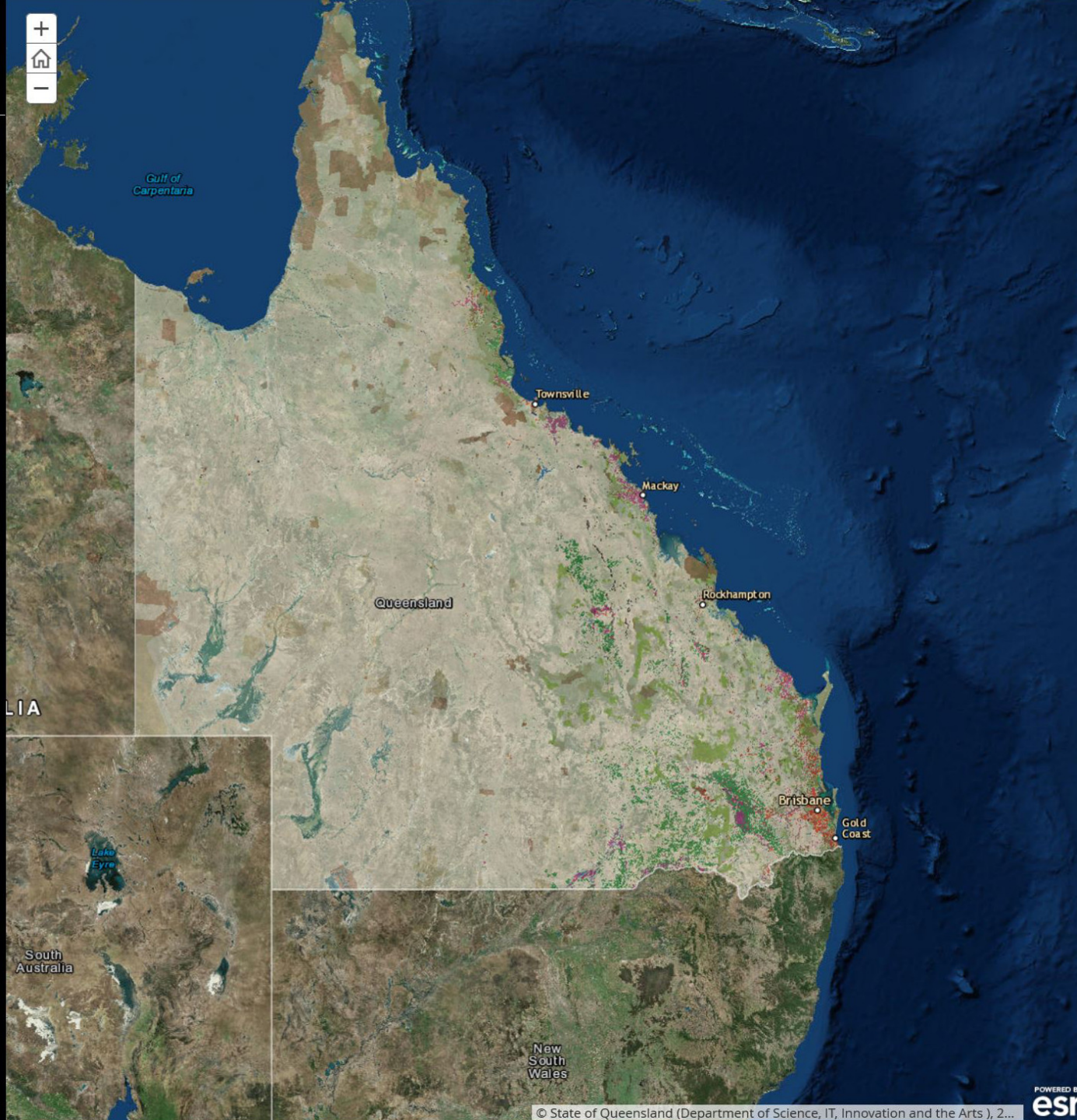
Mango orchard, Dimbulah.

Mapping bananas in North Queensland

Panama Disease Tropical Race 4



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Mapping bananas in North Queensland

Panama Disease Tropical Race 4

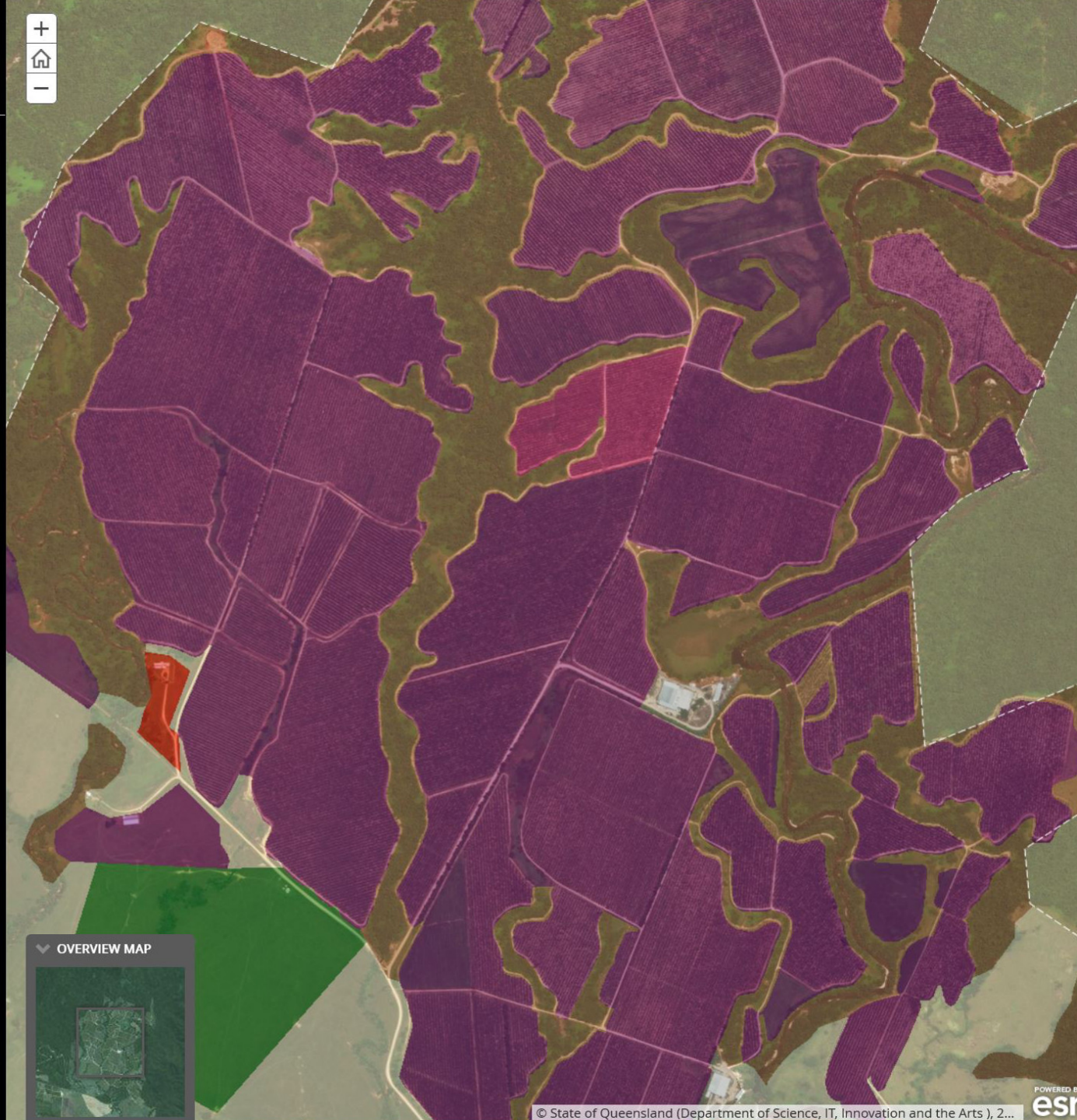
Mapping workflow: Industry data

- Geocoded by Agtrix
- Postal addresses not orchard location
- Snakker du engelsk?
- Some points do not land on orchards (e.g. roads)

Imagery interpretation

Image services (free and accessible)
Appearance (e.g. variety and region)
Management (e.g. hedging and pruning)
New crops

Get the 'Land use Survey' App



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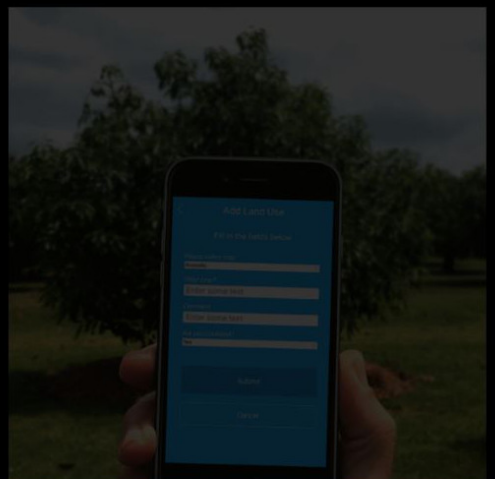

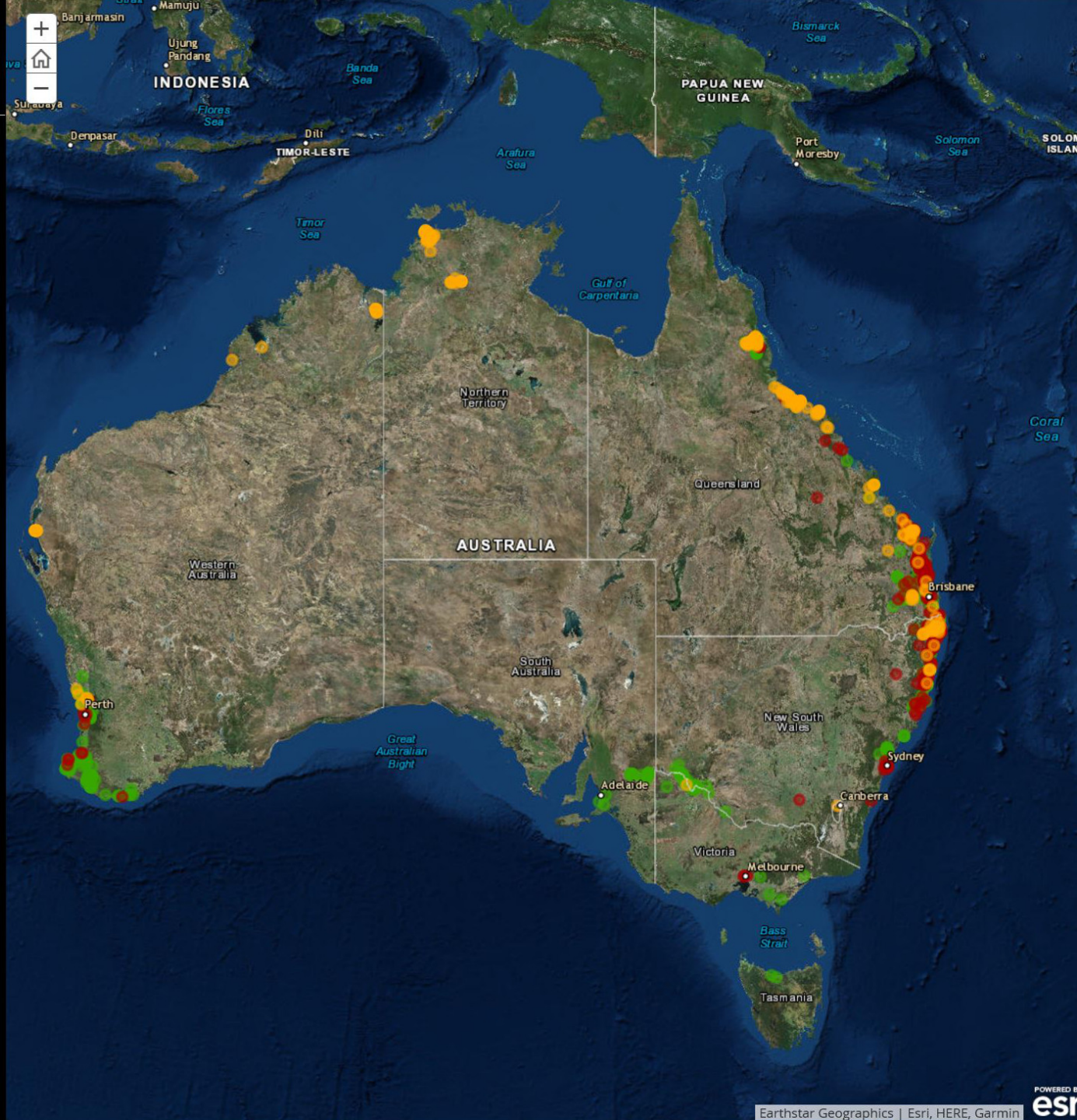

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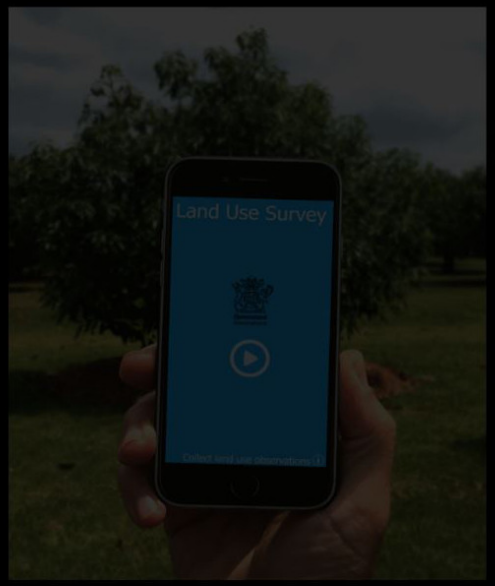

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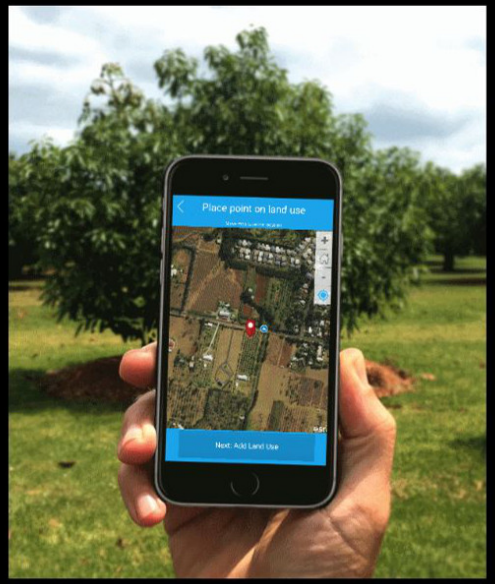

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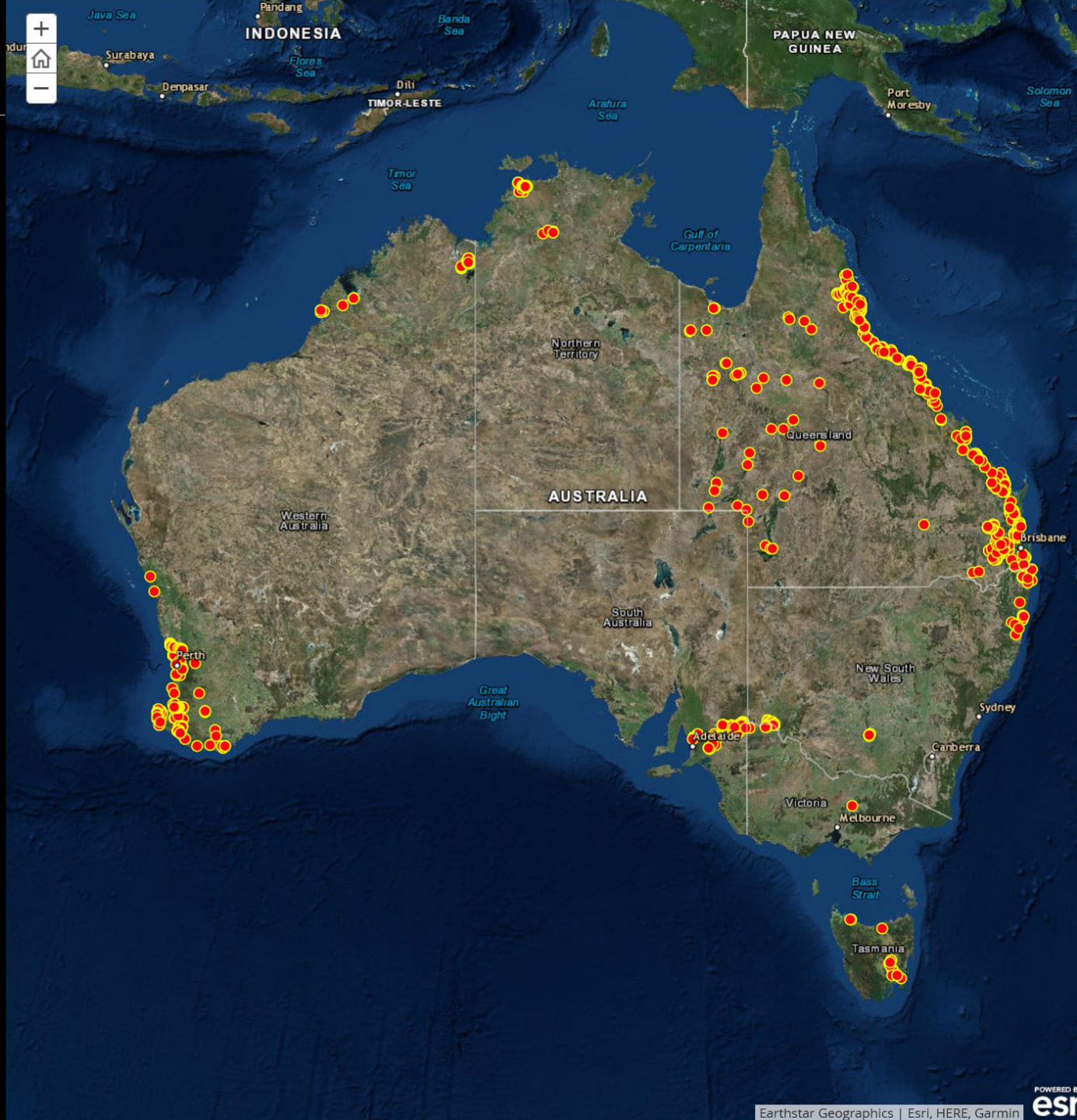
Field data (ground truth) adds certainty

Picture: The Frosty Mango north of Townsville, Queensland

Mapping Program



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Mapping Program —Geodatabase Replication

Multi-user geodatabase replication and versioning

Locate, map and classify

Interpretation process:

1. Imagery
2. **Industry data** (points)
3. **Field observations and photos**
4. **Polygons and classify** (note: Scale / MMU)
5. **Final mapping**

Picture: Mapping example animation

Industry Engagement Web Map

Peer review of draft mapping

TC Debbie - Tree crop impacts

Map live on March 30th, critical to inform impacts, response and recovery.

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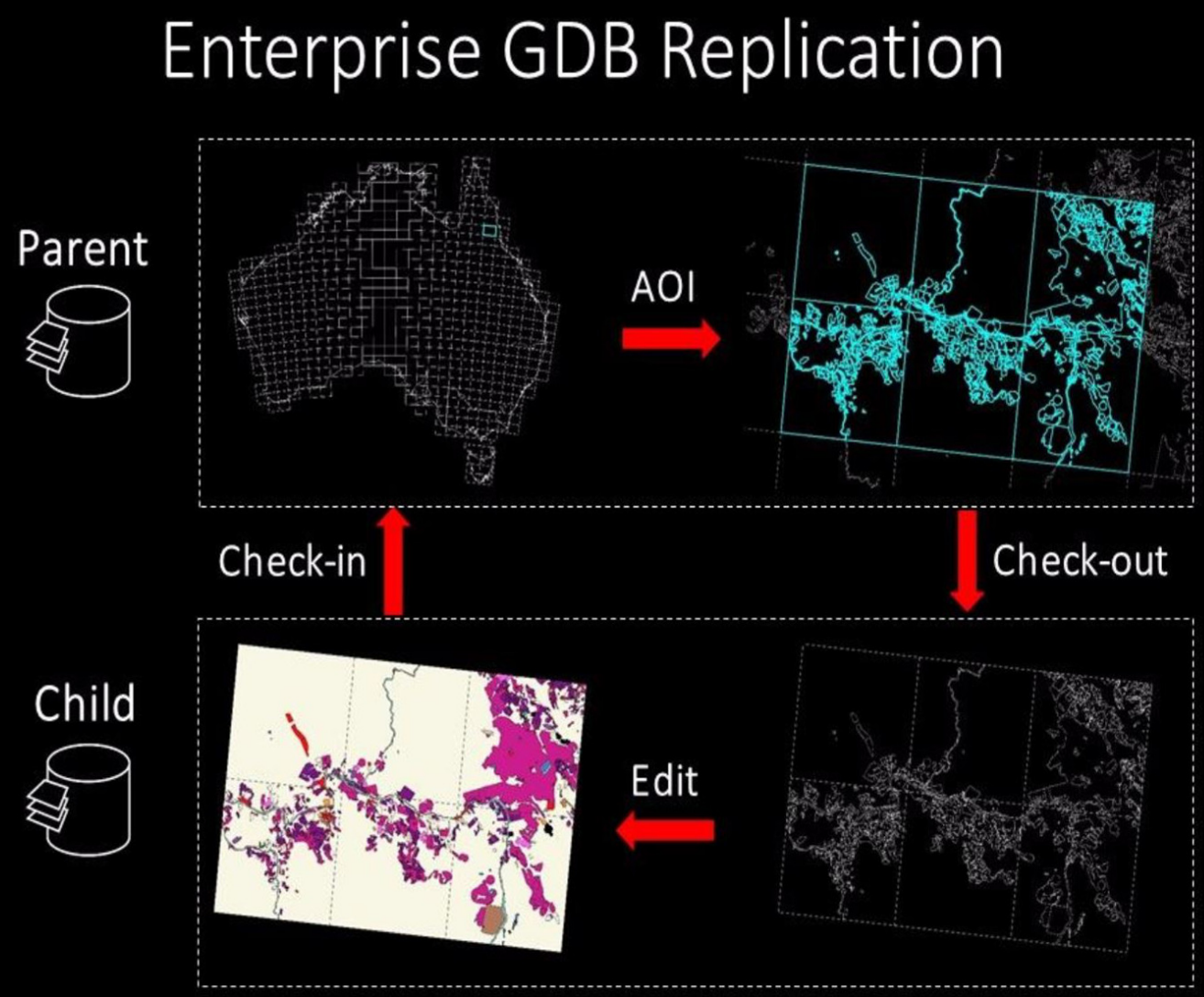

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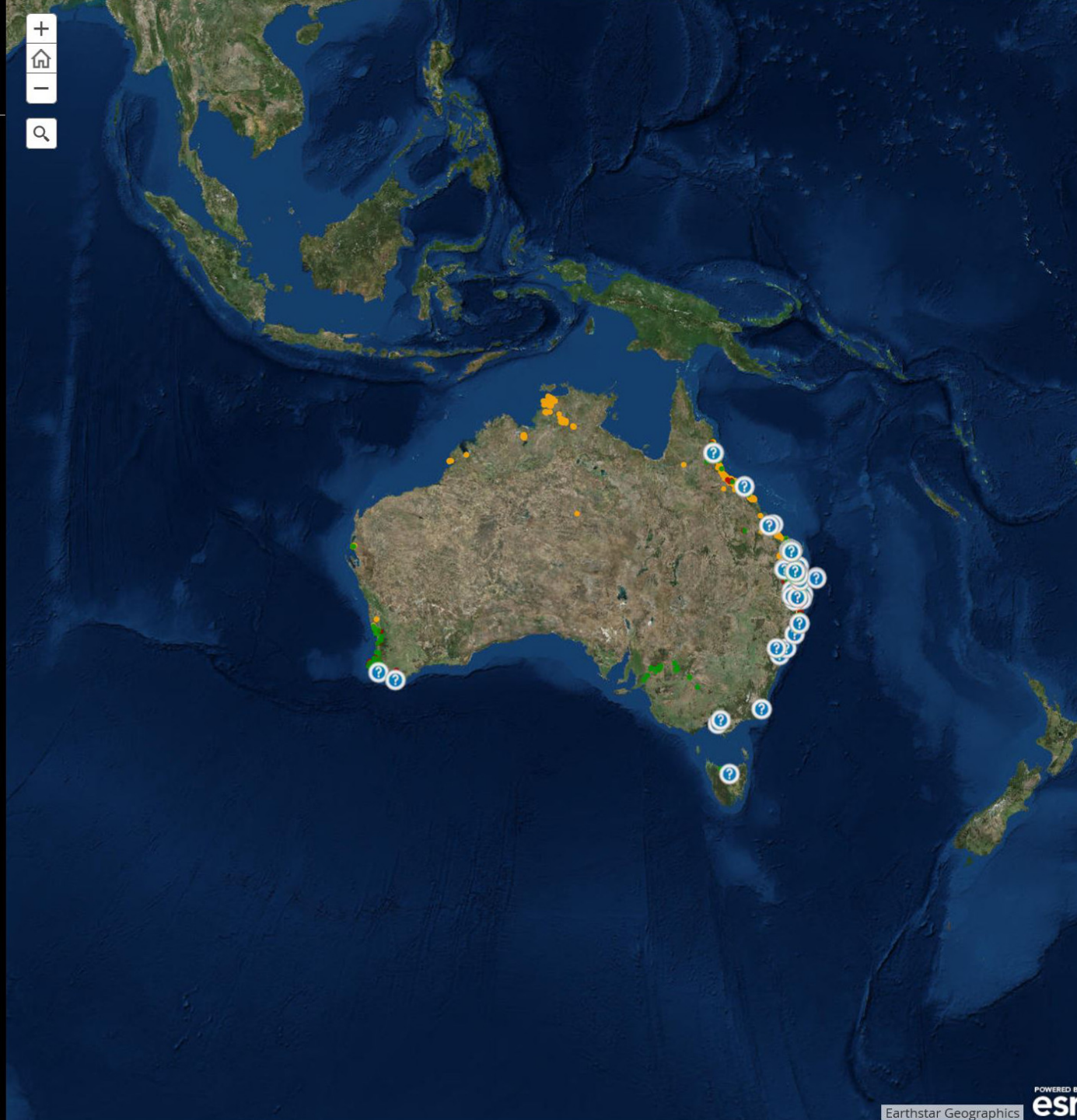

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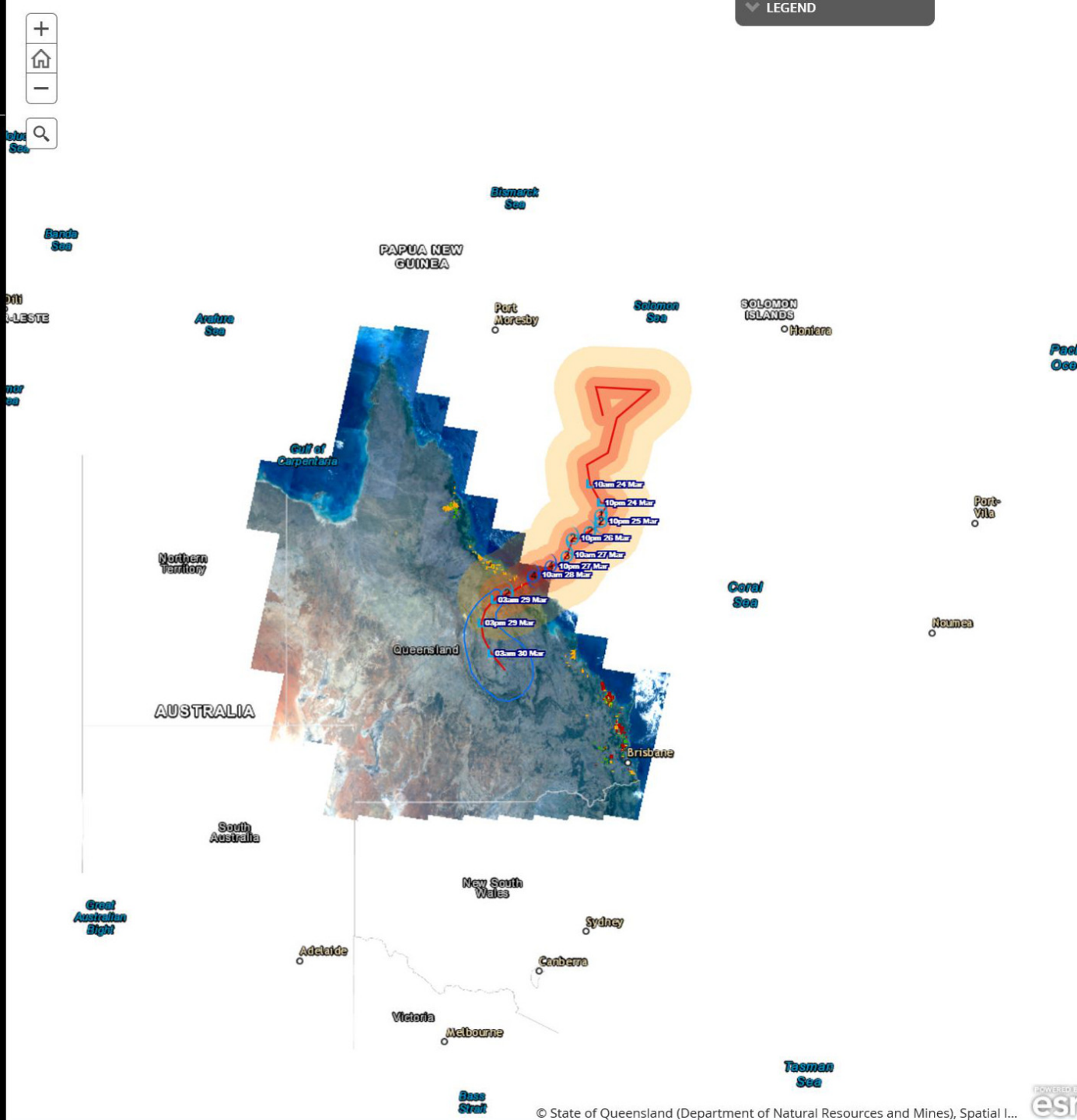

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