Facilitator: Bruce Webber, CSIRO Health & Biosecurity (bruce.webber@csiro.au | @DrBruceWebber)

Goal: to promote discussion and information sharing around key steps in the image acquisition, processing and interpretation pipeline for weed surveys using drones.

Structure: Outside the invited speaker presentation, each component of the workshop will involve a facilitated discussion to explore experiences (both positive and negative) against each of the points noted. Relevant additional points will be worked in as appropriate.

09:00: Introductions

- Acknowledgement of country
- Individual introductions

09:15: Invited speaker

> *An overview of the National Weed Remote Sensing Community of Practice*
> Hillary Cherry, Invasive Species Unit, NSW National Parks and Wildlife Service

09:45: To drone or not to drone

- Question framing (presence, abundance)
- Alternative platforms / techniques (suitability, efficiency)
- In-house versus outsourcing (cost, equipment, training, licencing)
- Intellectual property considerations

10:00: Data capture hardware

- RPAS platforms (DJI vs others, single provider vs multi-provider custom builds)
- Sensor types and outputs
- Resolution (GSD, point cloud density)

10:30: Morning tea

11:00: Mission management

- Mission planning software
- Light environment
- Topography and vegetation structure
- Wildlife
- Weather (heat, wind)

11:20: Image processing

- Data storage
- Spatial corrections (real time vs post hoc)
- To stitch or not to stitch
- Aligning multiple layers
- Image processing software

11:40: Image analysis

- Model algorithms
- Model training requirements (positive, negative)

- Adequately capturing variability (seasonality, light, location, region)
- Model transferability
- Pipeline transferability

12:00: Development wish list

- Identifying shared limitations
- How do we advance an open-source future?

12:20: Closing remarks & future directions

- Identifying collaborative opportunities
- Agreed actions

12:30: Workshop close