


# Weed Mapping in the Field

*a practical approach*



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# Overview

- Why map?
- Data concepts
- Core attributes
- Which method for which weed?
- Use the data
- Quality assurance
- Field data sheets and practical recording

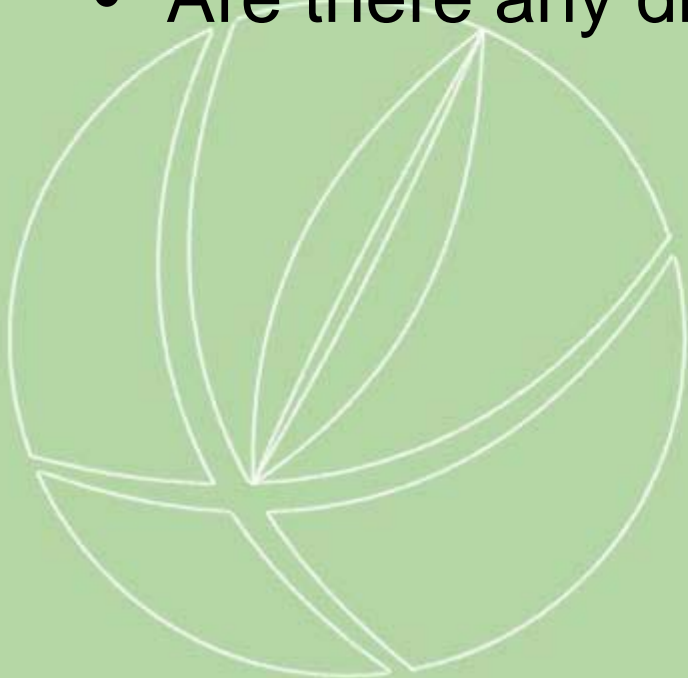


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# Why Map Weeds?

- What are the advantages?
- How will the maps help me/the organisation?
- Who will use them?
- Are there any disadvantages?



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# Plan the Job!!!!!!

- Purpose
- Degree of detail required
- Consult stakeholders
- Consult GIS operator
- Plan the work – how detailed etc.
- Assemble resources – human, identification tools, GPS, safety etc.
- Provide feedback



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# Maps are Based on Data

- Mapping data is not dependent on specific GIS systems as data is portable. E.g. SQL, Access, Excel databases
- Database
  - Metadata describes all encompassing background, methodology, custodianship etc.
  - Records describe each instance
  - Fields are parts of records records



# Core Attributes

- Pages 9 and 31
- 15 attributes,
  - 7 surveillance (national scale)
  - 8 investigative with 2 optional (on-ground, local-scale)
- Add extra fields as required
- Keep it simple



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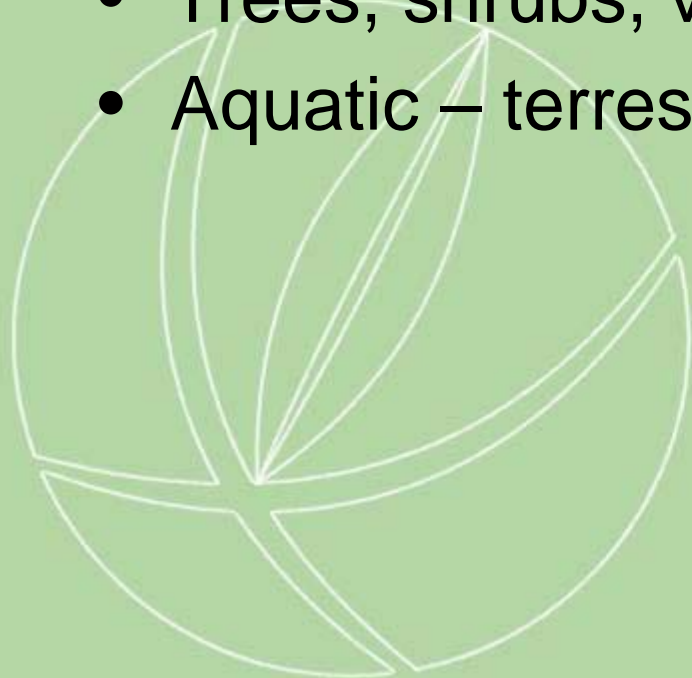
# Which Methods for Which Weed?



johnthorp

National Weeds Management Facilitator

- Page 11
- Frequency 1 – 5 years or after major events
- 20 WONS are examples
- Trees, shrubs, vines, herbs, grasses
- Aquatic – terrestrial or both



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# Preparation

- Data sheets, pre-printed wherever possible
- Prepare GPS and or palm computer (if necessary)
- Aerial photographs
- Maps
- Define the site
  - Species
  - Boundaries
  - Methodology
- Prepare and print forms, maps etc.
- Assign roles

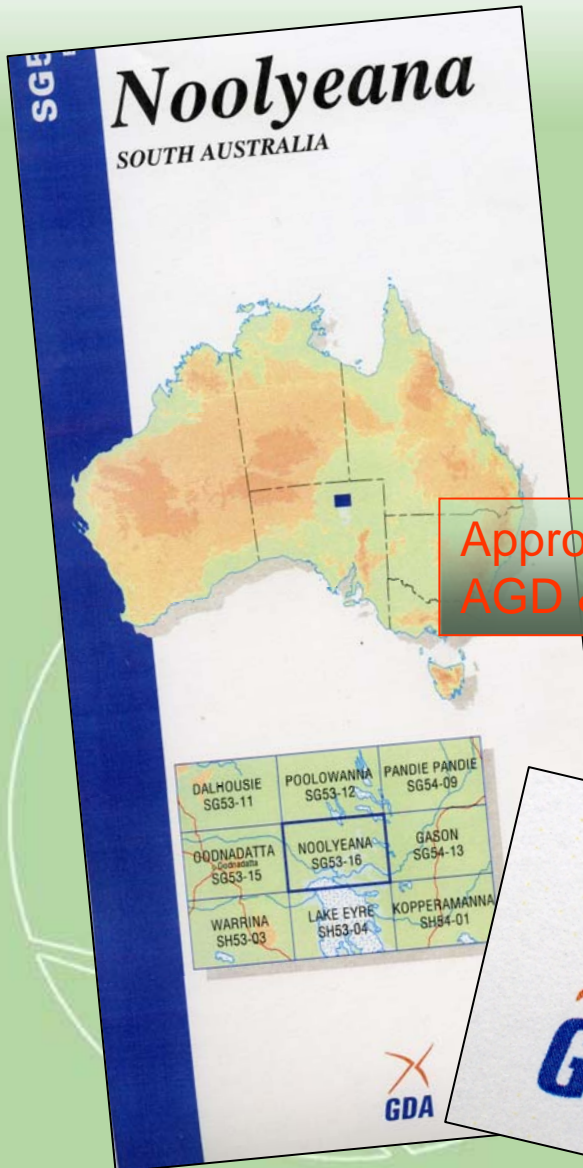


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# Know Your Maps

## Map legend



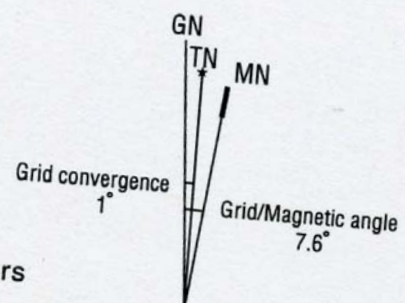
Approx. difference between AGD & GDA is 200m

### About this Map

Projection ..... Map Grid of Australia 1994 (MGA94)  
 Universal Transverse Mercator on GRS80 ellipsoid  
 Horizontal Datum .. Geocentric Datum of Australia 1994 (GDA94)  
 equivalent to WGS84  
 Vertical Datum ..... Australian Height Datum (AHD)  
 Horizontal Accuracy ..... +/- 140 metres  
 Vertical Accuracy ..... +/- 25 metres  
 Elevations in metres; 50 metre contour interval

True North (TN), Grid North (GN) and Magnetic North (MN) are shown diagrammatically for the centre of the map

MN is correct for 2002 and moves easterly by less than 0.1° in 10 years




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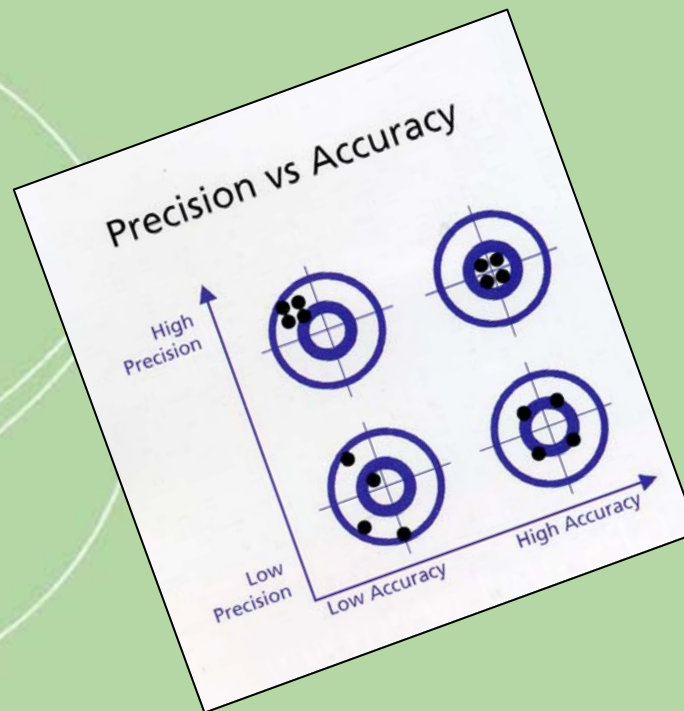
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# GPS Do's and Don'ts

## What does 95 per cent confidence mean?

GPS accuracy levels are stated as having a *95 per cent confidence factor*. This means, for example, that when using a basic GPS receiver, 95 per cent of the time it calculates your position within a 13 metre radius of your true position. The other 5 per cent of the time your GPS receiver could show your position outside a 13 metre radius from your true position. Experiments have shown these positions can be hundreds of metres from their true location.

- Satellites
- Averaging
- What else?



## Maps and heights

GPS receivers generate (ellipsoid) heights using the WGS84 datum rather than mean sea level. These GPS heights need to be *corrected* to compute local AHD heights.

The difference between the two datums is called the *geoid-ellipsoid separation*. In Australia the separation may range between -40 and +75 metres. Globally it can be in the range of -100 to +100 metres.

AUSgeoid is a free height translation program available from the Geoscience Australia website [www.ga.gov.au/nmd/geodesy/ausgeoid/](http://www.ga.gov.au/nmd/geodesy/ausgeoid/).

# Field data Sheets

- See examples pps. 25-27
- Excel sheet from [www.weeds.org.au](http://www.weeds.org.au)
- Customise your own
- Keep it simple and be creative
- Match data collection to task being undertaken (it may be an adjunct to a routine spray activity or other control program)
- Include the requirement to collect data in outside tenders and contracts



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# Quality Assurance

- Maximise accuracy and reduce errors
- Use minimum core attributes
- Single data custodian responsible
- Use consistent methods that suit species
- Use aids, GPS, Photopoints, diagrams, standard measurement techniques
- Consult colleagues e.g. WONS Coordinators



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# Field Record Sheet 1

## Metadata Section

**Organisation:**

**Program/Project:**

**File identifier:**

**Archive Location:**

**Dataset Number:**

**Title:**

**Abstract:**



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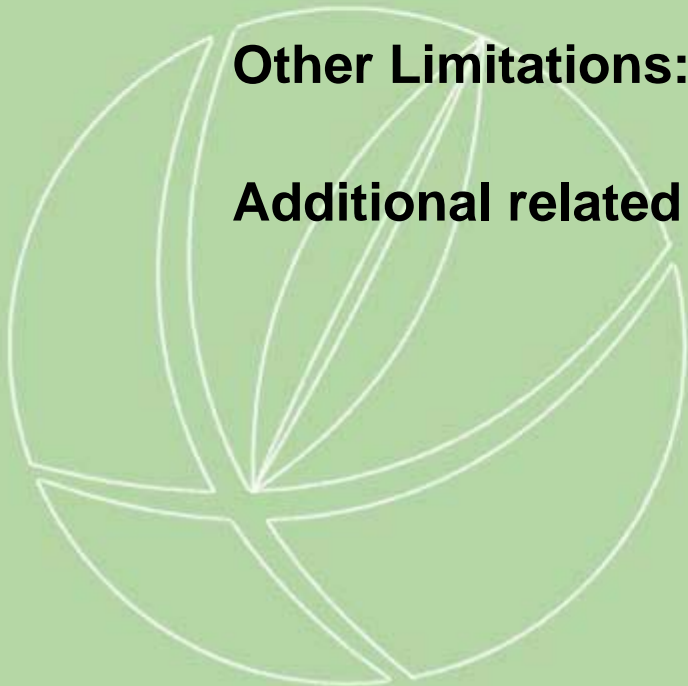
# Field record Sheet 1 cont.

## LEGAL CONSTRAINTS

**Use Limitation:**

**Other Limitations:**

**Additional related information:**



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# Field Record Sheet 1 cont.

## RESPONSIBLE PARTY INFORMATION

Role of responsible party:

Organisation responsible for product:

Position responsible for product:

### ADDRESS

Delivery point:

City:

State:

Postcode:

Country

Telephone:

Fax:

Email address(es)



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# Field Record Sheet 1 cont.

## DATA SECTION

**1. Data record**

Record starting number:

**2. Name of weed**

Common name:

Genus:

Species:

Sub-species:

Variety:

Hybrid:

DD-MON-YYYY

**3. Day-month-year**

Name:

**4. Source of data**

Agency/ Employer:



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# Field Record Sheet 1 cont.

**5. Purpose of visit**

Reason site was chosen

**6. Place name or locality**

Distance and direction FROM place name:

**7. Northing**

If using GPS complete the following

Projection:

Datum:

**8, Easting**

If using a map complete the following

Mapsheet Name:

Mapsheet Number:

Scale of map 1:

Edition:

Coordinate system:

Datum:

**9. Precision of latitude and longitude**

Measurement method:

**14. Number of records**

Count

**15, Land use category**

ALUM Classification



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# Evaluate

- What did we collect and how efficiently was it done?
- Can we make improvements?
- Finalise mapping frequency



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# Provide Prompt Feedback

- Produce maps
- Incorporate into project
- Use them to help manage the weeds efficiently
- Seek feedback and suggestions



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# Any questions?



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