CENTRE FOR
INVASIVE SPECIES SOLUTIONS

weedSCAN

Matthew Shillam and Emily Thomas (NSW DPI)

Australian Government

National Landcare Program

NSW GOVERNMENT

CSIRO

Queensland Government

Government of South Australia

VICTORIA State Government

Project supporters

Funding for WeedScan was provided by the Commonwealth of Australia through the National Landcare Program's Smart Farming Partnerships.

The WeedScan project was developed by

- Centre for Invasive Species Solutions
- NSW DPI
- CSIRO
- Other states and territories

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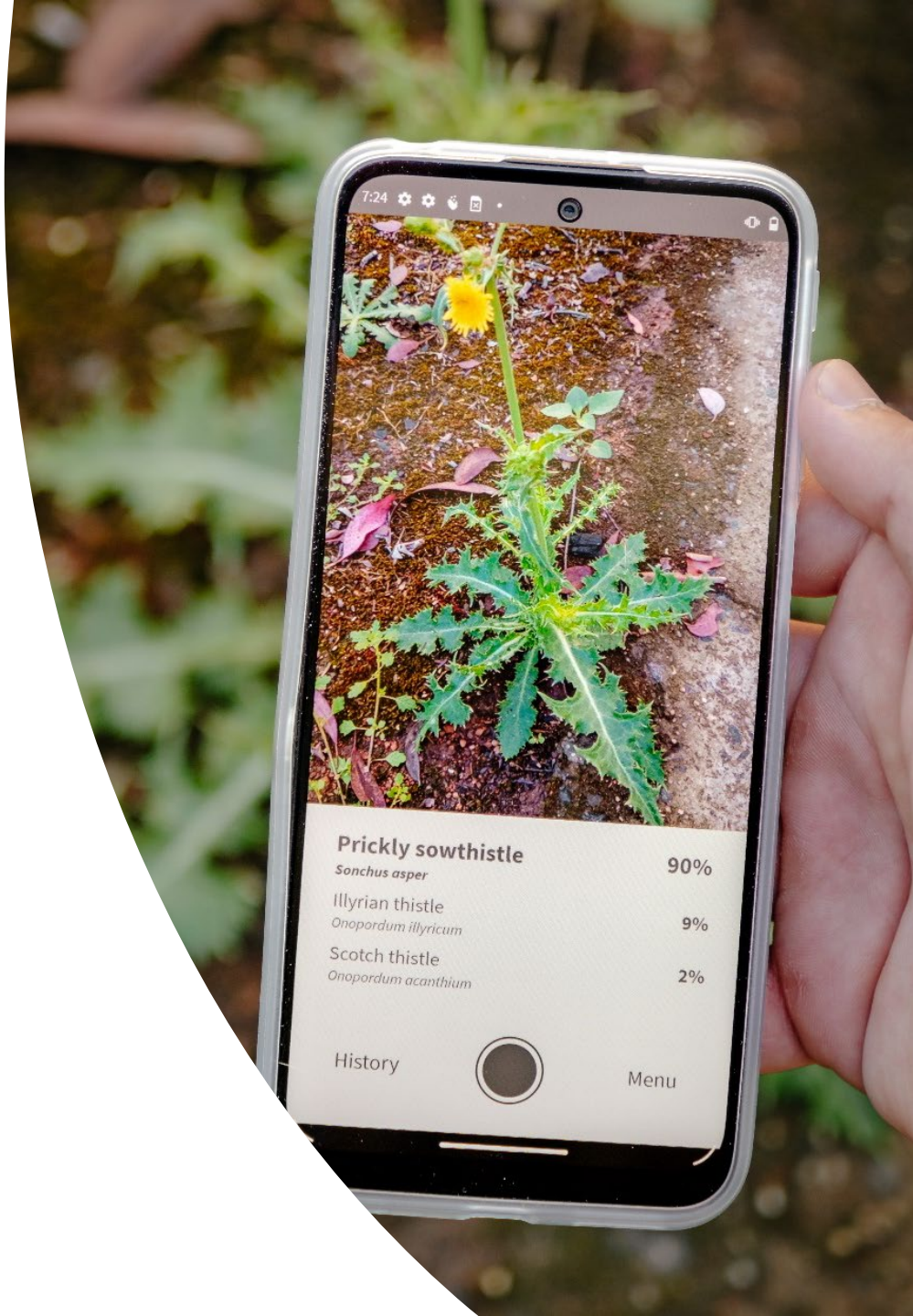
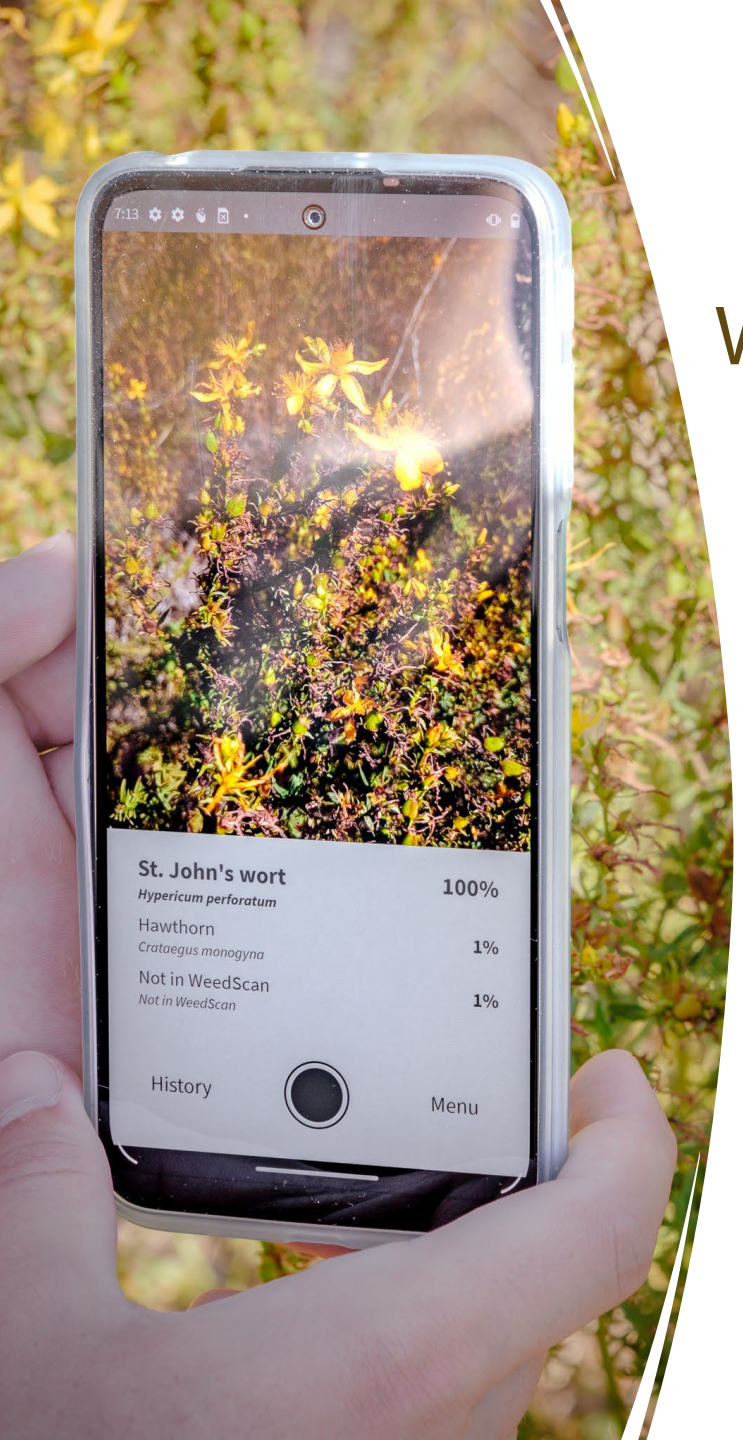
App and Website platforms officially launching **late 2023**

Try out WeedScan website @

test.weedscan.org.au





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Why we developed WeedScan

Weeds cost Australia **$5 billion** every year!

Early response to new and emerging weeds is critical for effective management

Existing plant ID apps don't tell you:

- the plant is a weed
- how to manage it
- if or how you should notify someone

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Key WeedScan features

Identify approx 340 priority weeds

Links to weed information relevant to user location

Share weed records within a group

Be anonymous or private

Website and smartphone app

Record priority weeds

Explore public priority weed records across Australia

Alerts local and state weed authorities of high-priority weeds*

Access to GPS coordinates and contact information*

* Where applicable

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WeedScan development process

AI WeedID model

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WeedScan workflow

Take and/or upload weed photo	AI model matches against the priority weed database	User reviews weed resources	User provides observation details + submits	Alert sent to local weed control authorities* *where applicable

WeedScan user types

Anonymous user
No personal information collected

Registered user
Landholders, Landcare members, Weed spotters, interested citizens etc.

Biosecurity officer*
Local weed control authorities

State coordinator*
State government administrative role

Administrator*
National administrative role

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What is different between account types?

WeedScan feature	Anonymous	Registered	Governance*
Identify + record weeds	☑	☑	☑
Browse public weed records	☑	☑	☑
Suggest alternate weed ID	☒	☑	☑
Share weed records in a group	☒	☑	☑
Unrestricted GPS coordinates	☒	Group records ☑ Own records ☑ Public records ☒	☑
Receive weed alerts	☒	☒	☑

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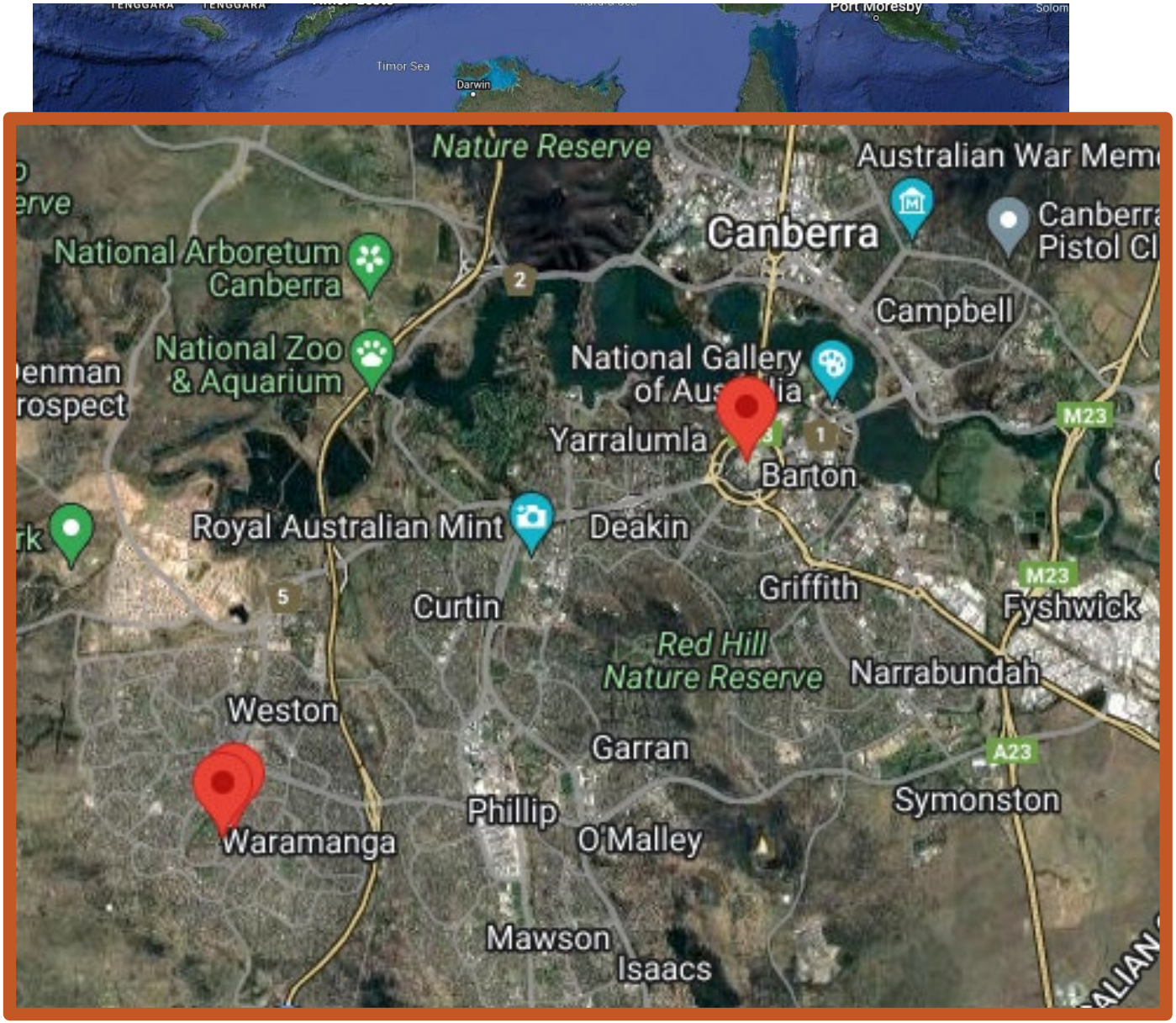
GPS coordinates are restricted for privacy reasons



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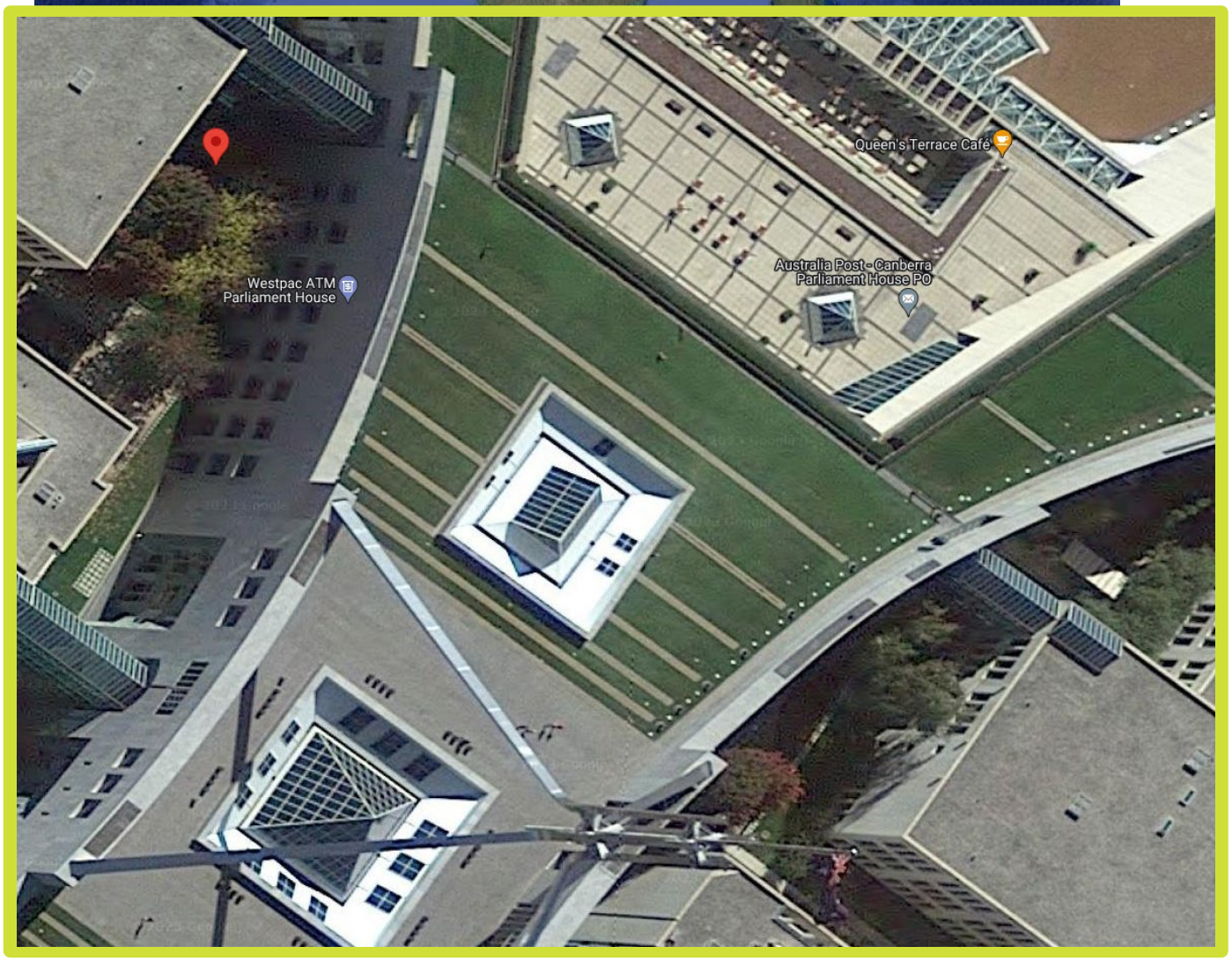
What **Anonymous** or **Registered users** can access

Restricted GPS coordinates



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What **Biosecurity officer, state coordinator** and **administrator users** can access

Also **registered users** IF own or group record

Unrestricted GPS coordinates

My notification profile

Select a notification type for your weeds of interest. You will receive notifications when your selected weeds are recorded in your associated Local Government areas (LGAs) in your state or territory (NSW).

- Albury (C)
- Dubbo Regional (A)
- Griffith (C)
- Greater Hume Shire (A)

As Biosecurity Officer choose what weeds you want to know about and how you are notified

Order by: **common name** | scientific name

Weed	Notification type
Afghan melon (*Citrullus lanatus*)	email | in-app | both | **none**
African boxthorn (*Lycium ferocissimum*)	email | **in-app** | both | none
African feathergrass (*Cenchrus macrourus*)	email | in-app | **both** | none
African lovegrass (*Eragrostis curvula*)	email | **in-app** | both | none
African olive (*Olea europaea* subsp. *cuspidata*)	**email** | in-app | both | none
African rue (*Peganum harmala*)	email | in-app | both | **none**
African turnip weed (*Sisymbrium thellungi*)	email | in-app | both | **none**
Aleppo pine (*Pinus halepensis*)	email | in-app | both | **none**
Alisma (*Alisma lanceolatum*)	email | in-app | **both** | none
Alkali sida (*Malvella leprosa*)	**email** | in-app | both | none
Alligator weed (*Alternanthera philoxeroides*)	email | **in-app** | both | none
Amsinckia (*Amsinckia* species)	email | in-app | both | **none**

My WeedScan notifications

Manage my notification profile

#	Date seen	LGA	Observation
1194	13/03/2023	Dubbo Regional (A)	Alligator weed (*Alternanthera philoxeroides*) uploaded on 13/03/2023 5:12:46 PM (AEST)
1193	13/03/2023	Dubbo Regional (A)	Alligator weed (*Alternanthera philoxeroides*) uploaded on 13/03/2023 5:09:48 PM (AEST)
1161	10/03/2023	Unincorporated ACT	African lovegrass (*Eragrostis curvula*) uploaded on 10/03/2023 12:24:37 PM (AEST)
1154	10/03/2023	Unincorporated ACT	African lovegrass (*Eragrostis curvula*) uploaded on 10/03/2023 12:16:18 PM (AEST)
1153	10/03/2023	Unincorporated ACT	African lovegrass (*Eragrostis curvula*) uploaded on 10/03/2023 12:15:57 PM (AEST)
1088	7/03/2023	Bega Valley (A)	Pond apple (*Annona glabra*) uploaded on 8/03/2023 10:57:03 AM (AEST)
1084	7/03/2023	Bega Valley (A)	Buffel grass (*Cenchrus ciliaris*) uploaded on 8/03/2023 10:54:22 AM (AEST)
1081	7/03/2023	Bega Valley (A)	Pond apple (*Annona glabra*) uploaded on 8/03/2023 10:51:07 AM (AEST)
1077	7/03/2023	Hobart (C)	African lovegrass (*Eragrostis curvula*) uploaded on 7/03/2023 12:02:26 PM (AEST)
1075	7/03/2023	Hobart (C)	Pond apple (*Annona glabra*) uploaded on 7/03/2023 11:52:39 AM (AEST)
1074	7/03/2023	Hobart (C)	Pond apple (*Annona glabra*) uploaded on 7/03/2023 11:52:22 AM (AEST)
1072	7/03/2023	Hobart (C)	Pond apple (*Annona glabra*) uploaded on 7/03/2023 11:49:35 AM (AEST)
1071	7/03/2023	Hobart (C)	Pond apple (*Annona glabra*) uploaded on 7/03/2023 11:49:21 AM (AEST)
1070	7/03/2023	Hobart (C)	Pond apple (*Annona glabra*) uploaded on 7/03/2023 11:49:10 AM (AEST)
1069	7/03/2023	Hobart (C)	Alligator weed (*Alternanthera philoxeroides*) uploaded on 7/03/2023

Weed record

EXAMPLE RECORD

Top AI match: Alligator weed (*Alternanthera philoxeroides*)

NSW WeedWise
Weeds Australia

Observation details:
Record #: 1194
State/Territory: NSW
Local government area: Dubbo Regional (A)
Latitude: -32.20439
Longitude: 148.61727
Date observed: 13/03/2023
Date recorded: 13/03/2023 5:12:46 PM (AEST)

Comments: EXAMPLE COMMENT Located growing along the Macquarie River in Troy Reserve. Only one small plant was observed. Happy to be contacted if you need more information or assistance locating the plant.

Model version date: 12/11/2022 12:30:26 AM

Recorded by: Emily Thomas
Recorder's email: emily.thomas@dpi.nsw.gov.au
Recorder's phone: 0437463211

This record is shared with the following groups:

- Weed warriors
- Weedies group
- E group

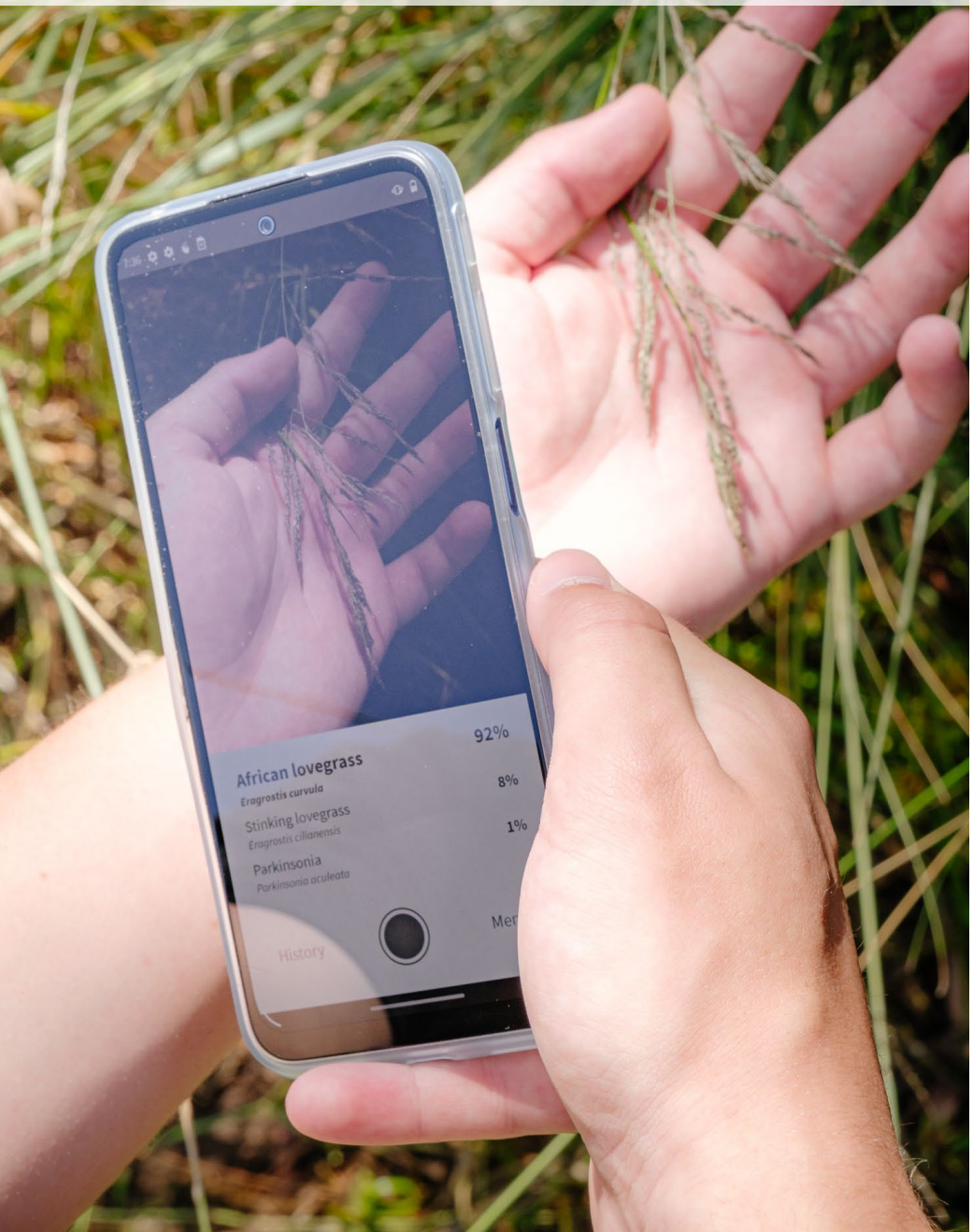
For privacy reasons

Grey box details + map link are restricted to Biosecurity officer, state coordinator and administrator users.

Also available for registered user IF own or group record

Click here to see the location on Google maps

Considerations for Weedscan



1. All data in WeedScan is just for play until the soft launch
2. WeedScan does not know about every weed
3. AI model analyses 280 x 280-pixel area in the centre field of view
4. Focus on distinguishing features of plant
5. Check out provided resources to confirm AI is right
6. Cannot edit records or indicate as verified
7. ID accuracy may be impacted by:

- Image quality (resolution, out of focus)
- Non-plants in the field of view
- Platform used, device and camera specifications
- Environmental conditions including glare, wind, shadows etc

Ideal

Out of focus

In shadow

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Try out WeedScan

WeedScan has a demonstration website which lets you:

- browse public records,
- Biosecurity officer notifications and
- group features

Record priority weeds in your local area to protect the environment, farms and communities

WeedScan is a free community priority weed identification, alert, recording and communication system that supports cooperative weeds action Australia-wide. WeedScan uses artificial intelligence to identify priority weeds. Users can create, view and share records through groups to improve weed control. WeedScan links users to weed biology and management information relevant to their location and allows them to notify state and local government of new weed incursions.

The WeedScan website and smartphone app will be officially launched in April 2023.

Prototype considerations

- WeedScan is currently a prototype. Data in the prototype is for demonstration and testing purposes only, it will not be transferred to the live database when the full versions of the WeedScan website and smartphone app are launched. Any records made in the WeedScan prototype is not real and will not be reported to your local Weeds Officer or state government agency.
- **If you would like to give feedback about the WeedScan prototype, please** email the WeedScan project officer.

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