



## WAND is a spray drift hazardous weather warning system that provides real-time weather data for growers and spray operators about the presence or absence of hazardous temperature inversions.

The WAND system is a new decision support tool that measures several weather parameters and includes novel technology that detects hazardous inversions in real time, along with offering a two-hour predictive “Nowcast” function.

The establishment of WAND is the result of six years collaborative research by the Grains Research and Development Corporation (GRDC) and Cotton Research and Development Corporation (CRDC). The RDC’s have partnered with Goanna Ag to develop the WAND network consisting of 100 Profiling Automatic Weather Stations across the grain and cotton regions of Queensland and NSW.

WAND provides critical real-time data to support planning and spraying operations. Before WAND, there was no way to distinguish a hazardous inversion from a non-hazardous inversion. All inversions had to be considered hazardous and treated the same with no spraying being conducted.

By eliminating uncertainty, spray applicators can now make better, more informed decisions. WAND clearly shows when not to spray due to the presence of a hazardous inversion. But importantly it also provides clear information that shows the absence of hazardous inversions, and that spray application may be considered.

Nowcast is a key feature of the WAND network, showing a two-hour prediction of inversion conditions. Taking the guess work out of the decision to start a job, refill tanks once a job has commenced, or to stop spraying.

WAND has shown that you cannot rely on the old visual cues such as fog or dust levels, as these can take time to develop or might not occur at all even when conditions are hazardous. The network has shown that hazardous inversions set in at different times across different regions, and that this can change daily.

### Network capability

It is important to recognise that tower measurements represent conditions at the location of the tower. As insightful and helpful as WAND is, it does not negate the need for spray applicators to follow all label requirements including monitoring weather at the site of spraying, including maximum wind speeds, correct nozzle choice and operating at appropriate speed and boom height. There are some important factors to consider when choosing which tower to use when assessing weather conditions at your specific location, including:

- Proximity to the tower
- Is the tower “up-wind” of your location
- Is there a direct line of sight between you and the tower. There should not be any topographical features (i.e. hills) between your location and the tower that would significantly impact or vary air movements.

## SPRAY WINDOW IMPROVEMENT

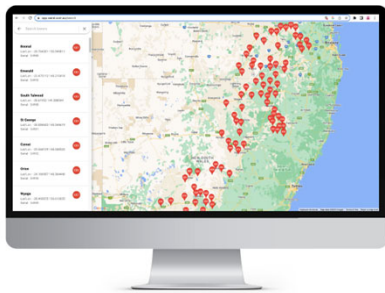
Since the launch of WAND, around 120,000 hours of observations\* have been accumulated, determining:

- The average hours/day/site where **inversion is present is 10.9 hours.**
- On average **hazardous inversion is present for 6.5 hours.**
- When a **hazardous inversion is present**, but a **temperature inversion is not**, is averaging **0.5 hours.**
- Therefore, the **adjusted ‘benefit’ is averaging 4 hours per day**  $\{10.9 - (6.5 + 0.5)\} = 3.9$  hrs
- Translated to practical outcome and working on a spray rig covering 50 hectares per hour, that means **one operator could theoretically cover an additional 200 hectares per day** (all else being equal).

\* Date range: December 2022 to May 2023

## SIGN UP FOR WAND

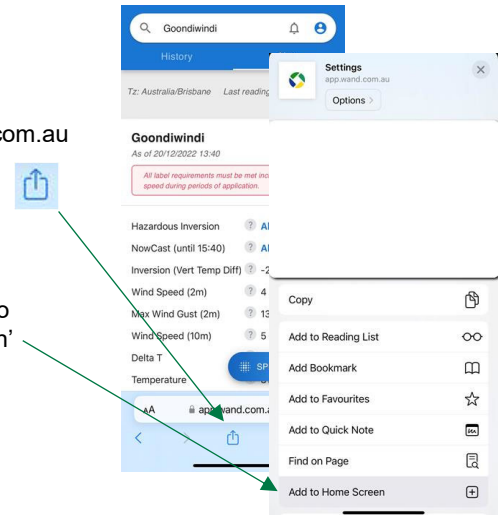
- Visit **wand.com.au**
- Click on "Don't have an account? Sign up"
- Use your email address to create an account
- Choose a password that meets the following criteria, at least:
  - six characters
  - one lowercase character
  - one uppercase character
  - one special character
  - Confirm your password.



## ADD APP ICON TO HOME SCREEN

### SAFARI

- Open Safari
- Go to wand.com.au
- Select the share button
- Scroll down the menu
- Select 'Add to Home Screen'
- Select add.

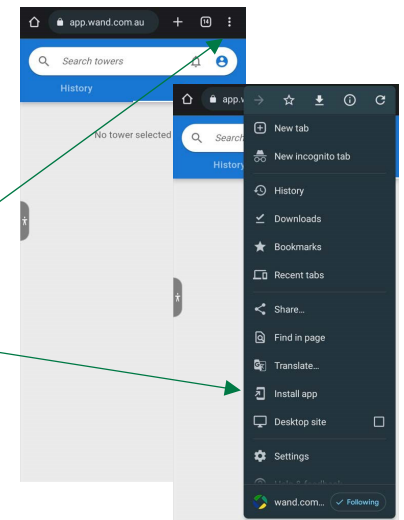


## CHOOSING A WAND STATION

- To find the closest tower using the WAND app, type your location into the search box and allow location sharing. This will show you the available towers and their distance and direction from you.
- Select the tower by its serial number or name, or by clicking on the map.
- Check if there are any obstacles like hills between you and the tower that could affect weather conditions. If there are, identify a suitable alternative tower nearby.
- If you have multiple towers with similar terrain nearby, check the weather conditions at all of them and choose the one you think is most relevant for your location.

### CHROME

- Open Chrome
- Go to wand.com.au
- Select 'More options'
- Click 'Install App'
- Select install in the popup.



## SET A DEFAULT TOWER FOR YOUR PROFILE

- Identify the tower that is most relevant to your location by searching for it
- Once you have found the tower, select the "Default" button
- Set the "Default" button to blue to save it as your default tower
- Your chosen default tower will be displayed each time you log into the app.

## LEARN MORE

Learn more about WAND:  
[goannaag.com.au/wand-network](http://goannaag.com.au/wand-network)

Access WAND:  
[app.wand.com.au](http://app.wand.com.au)

Additional Resources:  
[grdc.com.au/spray-drift](http://grdc.com.au/spray-drift)

Read the full User Guide [HERE](#) (5MB PDF)

Technical support: Call Goanna Ag on (07) 4671 3790

