

## Providing GPS locations to the Water Management Branch

The Water Management Branch of NRETAS collects location details of bores and pumping equipment throughout the Northern Territory. This information assists the Branch with regulatory requirements associated with the *Water Act*. Many property owners are now using GPS (Global Positioning System) to record the location of features on their property. If you are supplying location information about bores or pumping equipment to this Department we ask that you use the following navigation settings on your hand-held GPS receiver.

### Navigation settings to use for GPS receiver

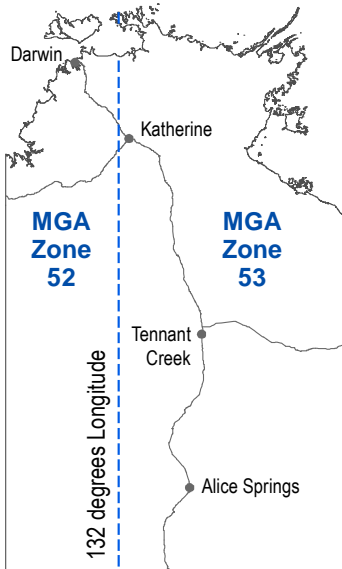
**MAP DATUM**                      **WGS84 or GDA94**  
**POSITION FORMAT**            **Coordinates displayed using UTM / UPS with units in metres**

### ABOUT GPS

GPS can measure a position on earth using transmitted signals that define a distance from a network of satellites. Using the intersection of at least 3 satellite signals, the GPS receiver is able to record a location position to +/- 20 metres accuracy. This level of stand-alone positioning is deemed suitable for this Department to record bore locations. Surveyors use Differential GPS technology to improve accuracy to just centimetres.

### MAP DATUM

A map datum is a set of parameters and control points used to define the shape of the earth. On your GPS receiver you will find a very long list of map datums. The default setting when you purchase a GPS is the World Geodetic System 1984 (WGS84). This is a geocentric map datum and will locate a position from an origin point that is also the centre of the earth. This Department stores information using the Geocentric Datum of Australia (GDA94). For most practical purposes, GDA94 coordinates and satellite derived (GPS) coordinates based on WGS84 are the same. The map datum WGS84 may be selected to provide information to this Department.



### POSITION FORMAT (or coordinate system)

A location position can be displayed in many different coordinate formats on a GPS receiver. In the setup menu, find the navigation settings for either: position format, coordinate system or units. **Select UTM / UPS using units in metres.** (this refers to: Universal Transverse Mercator projection / Universal Polar Stereographic)

This setting will display Easting and Northing coordinates in metres. It will project the coordinate format from latitude, longitude in degrees to units of metres over small areas called Zones. There are 60 Zones of 6° longitude each in width.

Over the Northern Territory, the Map Grid of Australia (MGA) Zones are either 52 or 53. MGA Zone 52 is west of 132° long and MGA Zone 53 is east of 132° long.

Example: The NRETAS office location in Katherine is displayed on my Garmin GPS like this graphic (on right). The recorded coordinate is described as; MGA Zone 53, 205020 Easting, 8398923 Northing

Location	53 L	0205020
	UTM	8398923

### HELPFUL WEBSITES

**NRETA Maps** is a web mapping application for the discovery, interrogation and mapping of Northern Territory natural and cultural resource data and information. This free resource is managed by this Department and is available for use by the public. A help guide is located at the home page. [www.nt.gov.au/nretamaps](http://www.nt.gov.au/nretamaps)

- Geoscience Australia - Using GPS
- Garmin - Guides to using GPS

[www.ga.gov.au/geodesy/gps/](http://www.ga.gov.au/geodesy/gps/)  
[www8.garmin.com/aboutGPS/manual.html](http://www8.garmin.com/aboutGPS/manual.html)

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