

# **GUIDELINES FOR WEED DATA COLLECTION IN THE NORTHERN TERRITORY**

VERSION 2.0

11<sup>th</sup> January, 2008

**Weed Management Branch  
Natural Resource Management Division**

**Department of Natural Resources, Environment and The Arts  
Northern Territory Government**



**Northern Territory Government**

Department of Natural Resources, Environment and the Arts

# **GUIDELINES FOR WEED DATA COLLECTION IN THE NORTHERN TERRITORY**

**Version 2.0**

**11<sup>th</sup> January, 2008**

Weed Management Branch  
Natural Resource Management Division  
Department of Natural Resources, Environment and The Arts  
Northern Territory Government

Contact

Email [weedinfo.nreta@nt.gov.au](mailto:weedinfo.nreta@nt.gov.au)  
Phone (08) 8999 4567 Fax (08) 8999 4445

© Copyright Northern Territory Government of Australia

This product and all material forming part of it is copyright belonging to the Northern Territory of Australia. You may use this material for your personal, non-commercial use or use it within your organisation for non-commercial purposes, provided that an appropriate acknowledgment is made and the material is not altered in any way. Subject to the fair dealing provisions of the *Copyright Act 1968*, you must not make any other use of this product (including copying or reproducing it or part of it in any way) unless you have the written permission of the Northern Territory of Australia to do so.

Disclaimer: This publication is made available for information purposes only and on the basis that users remain responsible for satisfying themselves as to its accuracy, completeness and currency. The Northern Territory of Australia accepts no liability (including liability for negligence) for any loss or damage (including consequential or indirect loss or damage) that may be incurred as a result of any person's use of this publication.

Preferred way to cite this publication:

Weed Management Branch, Northern Territory Department of Natural Resources, Environment and The Arts, (2008) *Guidelines for Weed Data Collection in the Northern Territory*. Northern Territory Government of Australia, Darwin.

## CONTENTS

---

1. **INTRODUCTION**
2. **WEED MANAGEMENT BRANCH CONTACT DETAILS**
3. **WHAT WEED DATA IS COLLECTED?**
  - 3.1 Background Information
  - 3.2 NT Weeds Datasets - Attribute Summary List
  - 3.3 How is the Weed Data Collected? An Overview
  - 3.4 Provision of data to the Weed Management Branch
  - 3.5 Translation of data to broader scales
4. **DATA DESCRIPTION**
  - 4.1 NT Weeds Datasets - Metadata
  - 4.2 NT Weeds Datasets - Data Dictionary
  - 4.3 Northern Territory Weed Listing
5. **METHODOLOGY - MANUAL DATA ENTRY**
6. **METHODOLOGY - GIS & PALMTOP DATA ENTRY**

## 1. INTRODUCTION

---

The Department of Natural Resources, Environment and The Arts (NRETA) is the lead agency for weed management in the Northern Territory.

The *Weeds Management Act 2001* was designed to help protect the Territory's economy, community, industry and environment from the adverse impact of weeds. To assist with this duty, the Weed Management Branch of NRETA has developed standards for the collection and description of weed infestation areas. Consistent and reliable data is a critical component for the improvement of effective weed management strategies and practices for the Northern Territory.

### **National standards for weed data collection**

National standards for the mapping of weeds were published in July 2006 as, *A Field Guide for Surveying and Mapping Nationally Significant Weeds*. The guide describes the core attributes required to effectively monitor the distribution and spread of Weeds of National Significance (WoNS) throughout Australia.

The Northern Territory Government has adopted these national standards to capture and store information not only for WoNS, but for all weed species.

*McNaught, I., Thackway, R., Brown, L. and Parsons, M. (2006) "A field manual for surveying and mapping nationally significant weeds" Bureau of Rural Sciences, Canberra.*

### **Northern Territory weed data**

Information about weed infestations is currently supplied to the Weed Management Branch from various sources, including; Weed Branch staff and other groups from within this Department, Federal, Northern Territory and Local Government agencies, community groups and land managers.

The data is compiled and managed according to documented protocols with the Director of the Weed Management Branch in the role of custodian for all spatial datasets. The data is value added to maintain the core set of attributes that describe weeds species and areas of infestation in the Northern Territory.

The data assists the Weed Management Branch monitor both the distribution and location of weed species and the presence of new weed incursions in the Northern Territory; support decision making strategies for control measures and also report to funding bodies.

### **Availability of weed data**

Fine scale data (point, line and polygon) provided to or collected by Weed Management Branch is treated with sensitivity and will not be displayed on maps used in public forums. All fine scale datasets are treated as sensitive and will not be approved for release without ensuring the use of the requested data is deemed appropriate and the external user undertakes to maintain the sensitivity of the data. All spatial data is not available for users outside the Northern Territory Government without a signed Digital Data Agreement (DDA) or a signed Memorandum of Understanding (MOU) for other Northern Territory Government agencies outside Weed Management Branch.

In 2006 spatial data was translated to a broader scale of 1:100,000 using grid cells of 0.5 x 0.5 degrees (approximately 54km x 54km) that have an area of approximately 3000 km<sup>2</sup>. This broad scaled data is available for public use or display.

### **Provision of data to the Weed Management Branch**

The Weed Management Branch is seeking cooperation from all government agencies, industry and community groups in the Northern Territory to use the standards described in these guidelines for weed data collection. Continued discussions with the community will encourage the provision of data to the Weed Management Branch to help support and improve weed management strategies for the Northern Territory.

## 2. WEED MANAGEMENT BRANCH CONTACT DETAILS

---

Director  
Weed Management Branch  
Natural Resource Management Division  
Northern Territory Department of Natural Resources, Environment and The Arts

Phone (08) 899 94567

Facsimile (08) 899 94445

Website [www.nt.gov.au/weeds](http://www.nt.gov.au/weeds)

Email [WeedInfo.NRETA@nt.gov.au](mailto:WeedInfo.NRETA@nt.gov.au)

### REGION CONTACTS

#### **DARWIN REGION**

Weed Management  
3<sup>rd</sup> Floor Goyder Building, Chan Tce,  
Palmerston  
Phone (08) 899 94554  
Facsimile (08) 899 94445  
PO Box 30, Palmerston NT 0831

Biological Control  
Berrimah Research Farm, 29 Makagon Rd,  
Berrimah (at DPIFM)  
PO Box 30, Palmerston NT 0831  
Phone (08) 899 92230  
Facsimile (08) 899 92015

Extension Activities (08) 899 94557

Spatial Data (08) 899 94452

#### **KATHERINE REGION**

Randazzo Building, 16 Katherine Tce, Katherine  
PMB 123, Katherine NT 0851  
Phone (08) 897 38107  
Facsimile (08) 897 38122

#### **TENNANT CREEK REGION**

33 Leichardt St, Tennant Creek  
PO Box 96 Tennant Creek NT 0861  
Phone (08) 896 24495  
Facsimile (08) 896 24388

#### **ALICE SPRINGS REGION**

1<sup>st</sup> Floor Plaza Building, The Mall, Alice Springs  
PO Box 1120, Alice Springs NT 0871  
Phone (08) 895 19210  
Facsimile (08) 895 79222

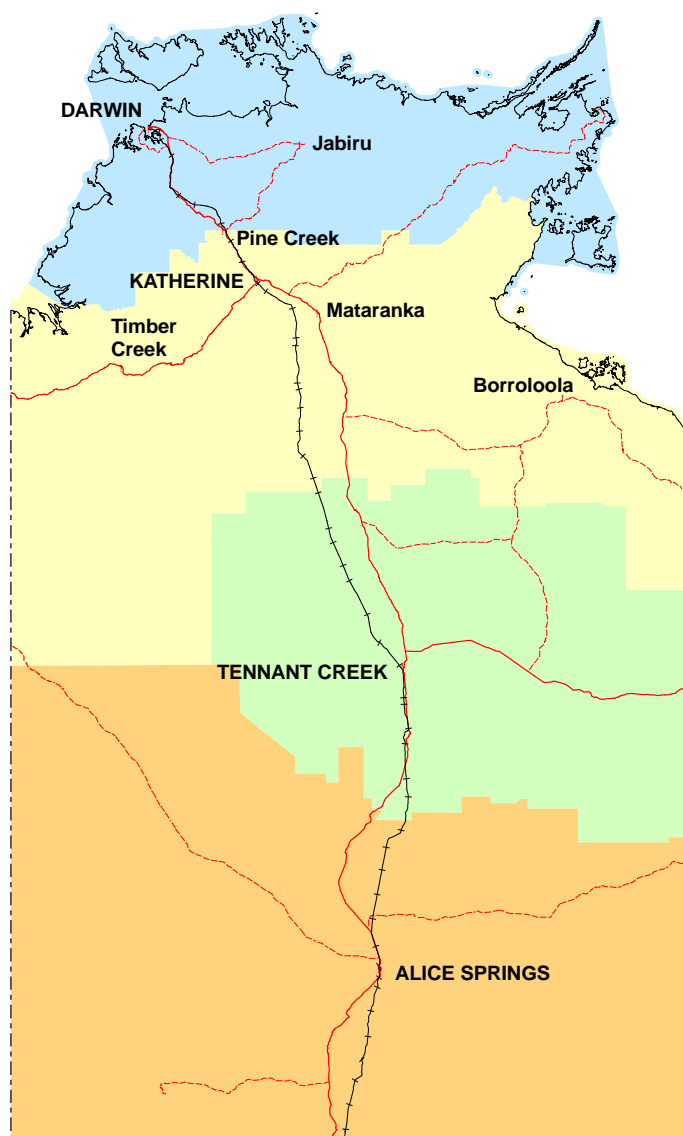


Figure 1.  
Weed Management Branch Administrative Regions

### 3. WHAT WEED DATA IS COLLECTED?

---

#### 3.1 BACKGROUND INFORMATION

In the document, *A Field Guide for Surveying and Mapping Nationally Significant Weeds*, it is recommended that 13 core data attributes should be recorded to adequately describe an area of weed infestation. Seven of the 13 core attributes were endorsed by the Australian Weeds Committee (AWC) as a suitable national standard for mapping weeds (AWC meeting number 10, 2005). All 13 core, and the 2 additional optional attributes, are recognised as relevant for on-ground, project scale monitoring.

<u>Core Attributes</u>		<u>Data Description Group</u>
<b>What, when, who, why?</b>	1	Data Record
	2	Name of Weed
	3	When was the site assessed?
	4	Who assessed it?
	5	Purpose of visit
<b>Where?</b>	6	Locality
	7	Latitude (northing)
	8	Longitude (easting)
	9	Precision of latitude, longitude
<b>How much?</b>	10	Infestation area size
	11	Infestation area description
<b>Other information</b>	12	Treatment
	13	Comments
<u>Optional Attributes</u>		<i>(currently not stored, but could be generated using a GIS)</i>
<b>Other information</b>	14	Number of records for the site
	15	Land use category

All data collected in the field is converted to a final format using a Geographic Information System (GIS). The Weed Management Branch currently uses the software ArcGIS and stores the final datasets in a shapefile format for data management and mapping display. The final data format is structured to fit the national model using the core attribute groupings.

All data is merged together to cover the Northern Territory and is referred to as the **NT Weeds Datasets**. This spatial data is stored as either point, polyline or polygon geometry. All final spatial datasets are stored in geographics (latitude and longitude in decimal degrees) using Geocentric Datum of Australia (GDA94).

#### 3.2 NT WEEDS DATASETS - ATTRIBUTE SUMMARY LISTING

A weed infestation area is further described during the collection process using the following data attribute names (sometimes referred to as Field Names). Not all of the data attributes are collected on-site, some details are added later in the office using a GIS.

Of the total 33 data attributes described in the final dataset, 19 are collected on-site, 12 are compiled later in the office and 2 may be collected either on-site or in the office. The descriptive term Data Type, used in the summary listing below, is required for a GIS.

	<i>Data Group</i>	<i>Attribute name</i>	<i>Data type</i>	<i>Where collected</i>
<b>1.</b>	<b>Data Record</b>			
	1.1	SITE_ID	number, 7	office
	1.2	SITE_MON	text, 15	office
<b>2.</b>	<b>Name of Weed</b>			
	2.1	WEED_NAME	text, 40	on-site
	2.2	GENUS_SPP	text, 40	office
<b>3.</b>	<b>When was the site assessed?</b>			
	3.1	DATE_REC	date	on-site
	3.2	YEAR	number, 4	office
<b>4.</b>	<b>Who assessed it?</b>			
	4.1	REC_NAME	text, 30	on-site
	4.2	REC_SOURCE	text, 25	office
	4.3	REC_INFO	text, 50	office
<b>5.</b>	<b>Purpose of Visit</b>			
	5.1	PURPOSE	text, 15	office
	5.2	PROJECT	text, 150	office
<b>6.</b>	<b>Locality</b>			
	6.1	REGION	text, 15	office
	6.2	LOCATION	text, 70	office / on-site
<b>7.</b>	<b>Coordinate Position</b>			
	7.1	LAT_G94	number, 18.11	on-site
<b>8.</b>	<b>8.1</b>	LONG_G94	number, 18.11	on-site
<b>9.</b>	<b>Precision of latitude, longitude</b>			
	9.1	PRECISION	text, 25	office / on-site
<b>10.</b>	<b>Infestation Area Size</b>			
	10.1	SIZE_DIA_M (point)	number, 3	on-site
	10.2	LENGTH_M (line)	number, 18	office
	10.3	WIDTH_M (line)	number, 18	on-site
	10.4	AREA_M2	number, 18	office
<b>11.</b>	<b>Infestation Area Description</b>			
	11.1	DENS_CAT	number, 2	on-site
	11.2	SEEDLINGS	number, 3	on-site
	11.3	JUVENILES	number, 3	on-site
	11.4	ADULTS	number, 3	on-site
	11.5	GROWTH_CAT	number, 5.1	office
<b>12.</b>	<b>Treatment</b>			
	12.1	TREATED	text, 15	on-site
	12.2	TREAT_TYPE	text, 20	on-site
	12.3	TREAT_CHEM	text, 20	on-site
	12.4	TREAT_MON	text, 20	on-site
<b>13.</b>	<b>Comments</b>			
	13.1	SEEDED	text, 3	on-site
	13.2	SOIL_DIST	text, 3	on-site
	13.3	VEG_DIST	text, 3	on-site
	13.4	COMMENTS	text, 50	on-site

### 3.3 HOW IS THE WEED DATA COLLECTED? AN OVERVIEW

The Weed Management Branch has devised 2 methods for the collection of weed data. These methods are further described in the Methodology chapters of this document. An outline of each model is noted below.

#### Manual Data Entry

An inexpensive and very simple option has been designed to capture weed data. A Weed Data Collection Sheet is used to manually record information about weed infestations as single point locations using a hand-held GPS receiver. This information is transcribed to a digital version of the field sheet using Microsoft Excel and sent to the Weed Management Branch. The data is converted to a GIS format, the remaining data attribute values are added using GIS processes and finally merged with the NT Weeds Datasets.

#### Digital GIS Data Entry

The Weed Management Branch uses a palm-top recorder with a blue-tooth GPS to record information about weed infestations. The palm-top contains pre-set data entry lists using ESRI ArcPad software. The data is saved and downloaded in an ArcGIS shapefile format as either point, polyline or polygon data. The remaining data attribute values are added using GIS processes and finally merged with the NT Weeds Datasets. This data collection method is a relatively expensive option for the average user. This process also requires considerable knowledge and experience using GIS software and good data management skills.

### 3.4 PROVISION OF DATA TO THE WEED MANAGEMENT BRANCH

Information about weed infestations is regularly provided to the Weed Management Branch by land managers, community groups, Aboriginal organisations, contractors and Local, NT or Federal government agencies. All fine scale data is merged into larger spatial datasets that cover the Northern Territory, referred to as the **NT Weeds Datasets** and are used for strategic management and reporting functions.

Data providers will be asked to sign a Supply Digital Data Agreement (SDDA) with the Weed Management Branch. This agreement notes that the Weed Management Branch will treat the data as private and confidential and shall maintain a system for the safe custody of the data.

The Weed Management Branch will not display the fine scale data on maps used in public forums. This digital data will not be available to anyone or organization outside the Weed Management Branch without the consent of the Director of Weed Management Branch and DDA or MOU.

### 3.5 TRANSLATION OF DATA TO BROADER SCALES

The fine scale datasets that are compiled in the **NT Weeds Datasets** have been translated to a broader scale of 1:100,000 for 44 weed species. The data is represented over the Northern Territory in grid squares of approximately 3000km<sup>2</sup> using the topographic map sheet index as a base. This data translation was provided to the National Land and Water Resources Audit to complete density and distribution maps of weed species at a national scale. This data translation maybe compiled on an annual basis and will include all the species on the NT Declared list. The Northern Territory Weed Density and Distribution 2006 map series can be viewed as pdf documents from NRETA Maps website.

The digital or spatial data for this broader scale is available for the public to use. A DDA is required to be signed by requester and the Weed Management Branch Director. Contact the Branch to access this broad scale dataset.

It is intended that the NT Weeds Datasets will also be translated to a grid dataset based on the 1:50,000 and 1:25,000 topographic map sheets. This could provide useful baseline data at a regional or catchment scale for some of the high priority weed species.

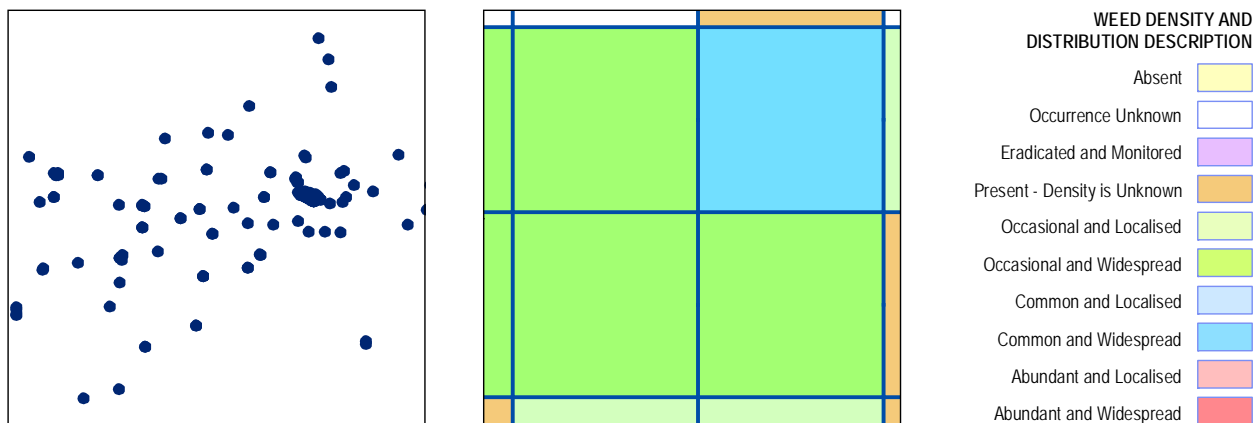


Figure 2. **Current** translation of point data to approximately 3000 km<sup>2</sup> grid cells for NT wide use. Each grid cell is equivalent to 0.5 degrees in size and uses the 1:100,000 topographic map sheets as a base.

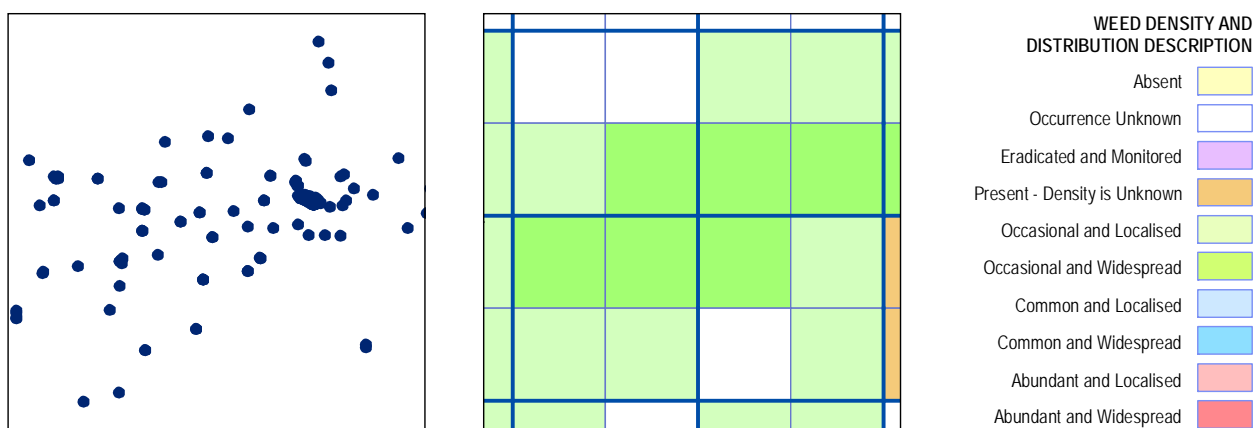


Figure 3. **Proposed** translation of point data to approximately 755 km<sup>2</sup> grid cells for regional use. Each grid cell is equivalent to 0.25 degrees in size and uses the 1:50,000 topographic map sheets as a base.  
4 x 1:50,000 grid cells = 1 x 1:100,000 grid cell

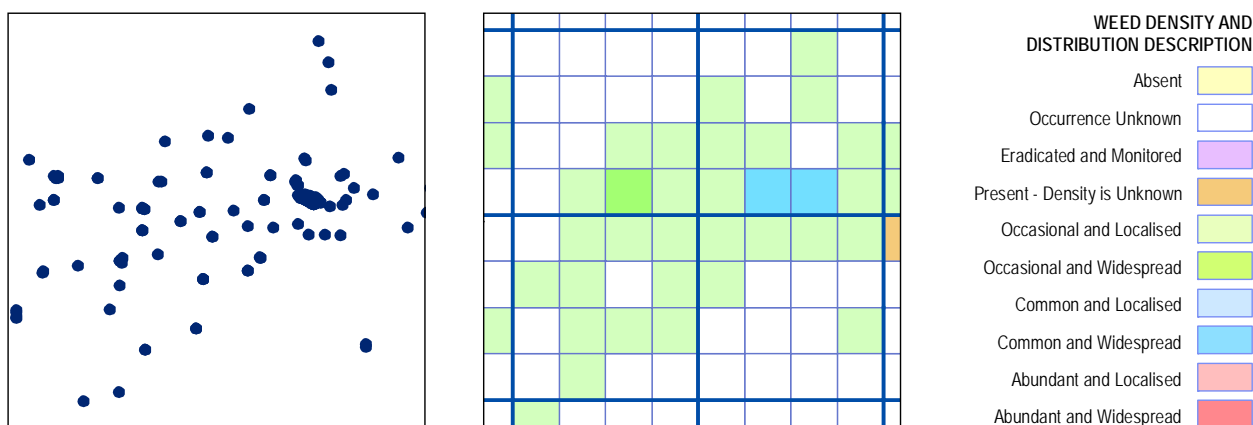


Figure 4. **Proposed** translation of point data to approximately 178 km<sup>2</sup> grid cells for some smaller areas. Each grid cell is equivalent to 0.125 degrees in size and uses the 1:25,000 topographic map sheets as a base.  
16 x 1:25,000 grid cells = 1 x 1:100,000 grid cell

## 4. DATA DESCRIPTION

---

### 4.1 NT WEEDS DATASETS - METADATA

<i>Metadata ID</i>	308A6A197303F15FE040CD9B2144283B
<i>Dataset name</i>	<b>Northern Territory Weeds Datasets</b>
<i>Shapefiles</i>	<b>NT_WEEDS_PTS</b> (points) <b>NT_WEEDS_LINES</b> (polylines) <b>NT_WEEDS_POLYS</b> (polygons)
<i>Abstract</i>	<p>The majority of the Northern Territory Weeds Datasets is point data, derived from GPS locations, containing attributes that describe weeds species in the Northern Territory. These datasets are used to assist the Weed Management Branch and the Northern Territory government identify existing weed infestation locations and new weed incursions, to monitor control measures and report to various funding bodies. Point data location coordinates are stored using decimal degrees.</p> <p>The data is regularly updated and managed by the Spatial Data Manager of the Weed Management Branch.</p>
<i>Custodian</i>	Director, Weed Management Branch Natural Resource Management Division Northern Territory Department of Natural Resources, Environment and The Arts
<i>Phone</i>	(08) 8999 4567
<i>Fax</i>	(08) 8999 4445
<i>Generic email</i>	<a href="mailto:WeedInfo.NRETA@nt.gov.au">WeedInfo.NRETA@nt.gov.au</a>
<i>Format</i>	Digital - Shapefile (ArcGIS version 9.1)
<i>Datum</i>	GDA94
<i>Projection</i>	Geographics
<i>Access</i>	Digital data is available for Weed Management Branch staff and data providers only. This fine scale data should NOT be displayed on maps for public viewing. This data is NOT to be supplied to any person or organization external to the NT Weed Management Branch of DNRETA without the written consent of the custodian.
<i>Data beginning</i>	June 2003
<i>Data ending</i>	In progress - data is regularly added
<i>Extent</i>	Northern Territory West Bounding Coordinate 129.0 East Bounding Coordinate 138.0 North Bounding Coordinate -11.0 South Bounding Coordinate -26.0

## 4.2 NT WEEDS DATASETS - DATA DICTIONARY

The Data Dictionary describes each of the values for the data attributes (or field name). Unless indicated, the attribute descriptions are the same for ALL geometry types. (ie points, polylines or polygons). The specified values must be entered into the datasets exactly as written. Text values are generally written using proper case. eg, write Yes. Do not write YES (upper case) or yes (lower case).

### 1. DATA RECORD

#### 1.1 Field Name: SITE\_ID

**Field Parameters:** number (Integer), 7

**Definition:** A unique record identifier will be allocated by the Weed Management Branch Spatial Data Manager when data is merged to the final NT dataset.

#### 1.2 Field Name: SITE\_MON

**Field Parameters:** Text (string), 15 characters

**Definition:** A unique site record identifier will be allocated to a single site for Monitoring purposes. If a site is revisited, the same Monitoring Site identifier must be used. A different SITE\_ID value will be used each time the site is visited.

For example: SITE\_MON value is 1604-1. This site is assessed on 4 separate dates. Each of the 4 records will have a new SITE\_ID value but will all have the same SITE\_MON value of 1604-1.

**Example:** 1604-1 might refer to Monitoring Site no 1 on parcel no 1604.  
NP3 might refer to Monitoring Site no 3 on Nitmiluk National Park

This value can also be entered as a waypoint in a GPS for on-site work

### 2. NAME OF WEED

#### 2.1 Field Name: WEED\_NAME

**Field Parameters:** Text (string), 40 characters

**Definition:** Common name of the weed species.

**Example:** Mimosa

**Set Values:** Refer to NT Weed Species listing for correct spelling conventions

#### 2.2 Field Name: GENUS\_SPP

**Field Parameters:** Text (string), 40 characters

**Definition:** Scientific or Botanical name of the weed species ie *Genus species*.

**Example:** *Mimosa pigra*

**Set Values:** Refer to NT Weed Species listing for correct spelling conventions

### 3. WHEN WAS THE SITE ASSESSED?

#### 3.1 Field Name: DATE\_REC

<b>Field Parameters:</b>	Date
<b>Definition:</b>	The date of the recorded observation
<b>Format:</b>	DD/MM/YYYY
<b>Example:</b>	12/03/2005

#### 3.2 Field Name: YEAR

<b>Field Parameters:</b>	number (short integer), 4 digits
<b>Definition:</b>	The year the weed data was recorded
<b>Format:</b>	YYYY
<b>Example:</b>	2006

### 4. WHO ASSESSED IT?

#### 4.1 Field Name: REC\_NAME

<b>Field Parameters:</b>	Text (string), 30 characters
<b>Definition:</b>	The name of the person capturing the weed data information. (Check previous entries in current NT dataset to maintain consistency)
<b>Example:</b>	Gary Hillen

#### 4.2 Field Name: REC\_SOURCE

<b>Field Parameters:</b>	Text (string), 25 characters
<b>Definition:</b>	The <u>type of organisation</u> that the recorder belongs to (Check entries in current NT dataset to maintain consistency)
<b>Example:</b>	NT Government
<b>Set Values:</b>	Contractor Community Group Educational Institution Federal Government Land Manager Local Government Other Aust States NT Government Private Organisation

#### 4.3 Field Name: REC\_INFO

**Field Parameters:** Text (string), 50 characters

**Definition:** The name of the organization that the recorder belongs to  
(Check entries in current NT dataset to maintain consistency)

**Examples:**

Contractor	Wildman, Specialist Weed Control, Albatross Helicopters
Community Group	Roper River Landcare Group, Greening Australia
Educational Institution	Charles Darwin University,
Federal Government	AQIS, NAQS
Land Manager	NT Land Corp, Northern Land Council, Pastoral Lease manager
Local Government	Coomallie Council, Katherine Town Council
NT Government	NRETA Weeds, NRETA Parks, DPI Land Admin
Private Organisation	Mining company, consultant

### 5. PURPOSE OF VISIT

#### 5.1 Field Name: PURPOSE

**Field Parameters:** Text (string), 15 characters

**Definition:** Describe why the site was chosen

**Set Values:** Control  
Inspection  
Investigation  
Monitoring  
Survey  
Unknown

#### 5.2 Field Name: PROJECT

**Field Parameters:** Text (string), 150 characters

**Definition:** General name of the project  
Enter the specific project name and number if externally funded  
(Check entries in current NT dataset to maintain consistency)

**Examples:** NHT 2005/032 Tackling Weeds in the Roper Catchment  
Pastoral Mimosa Project  
Property Inspection  
Darwin Rural Road Survey 2006

### 6. LOCALITY

#### 6.1 Field Name: REGION

**Field Parameters:** Text (string), 15 characters

**Definition:** The NT weed management region the data record falls within.

**Set Values:** Darwin  
Katherine  
Tennant Creek  
Alice Springs

## 6.2 Field Name: LOCATION

**Field Parameters:** Text (string), 70 characters

**Definition:** A general description of the site area. The entry value could be defined by the name of the property, a road name, an NT Park name, or perhaps using the parcel number (laiskey) from the cadastre. This field is not mandatory as location information can be retrieved from other data layers using a GIS.

**Example:**

<i>Road side surveys</i>	Stuart Highway
<i>Property name</i>	Manbullo
<i>Paddock name</i>	Horse Paddock
<i>Park</i>	Nitmiluk National Park
<i>Laiskey</i>	000 1604

## 7. CO-ORDINATE POSITION

### 7.1 Field Name: LAT\_G94

**Field Parameters:** Number (Double), 18, 11

**Definition:** The latitude (Y coordinate), identifying the location of the weed infestation site. This must be captured in Decimal Degrees with a minimum of 6 decimal places. The location should be recorded in the centre of the weed infestation, if possible.

All data is stored using the datum GDA94. (Geocentric Datum of Aust 1994)

**Example:** -13.023456

## 8. CO-ORDINATE POSITION

### 8.1 Field Name: LONG\_G94

**Field Parameters:** Number (Double), 18,11

**Definition:** The longitude (X coordinate), identifying the location of the weed infestation site. This must be captured in Decimal Degrees with a minimum of 6 decimal places. The location should be recorded in the centre of the weed infestation, if possible.

All data is stored using the datum GDA94. (Geocentric Datum of Aust 1994)

**Example:** 131.457613

## 9. PRECISION OF LOCATION

### 9.1 Field Name: PRECISION

<b>Field Parameters:</b>	Text (string), 25 characters
<b>Definition:</b>	Method used to define the weed infestation location
<b>Set Values:</b>	Aerial Spray Aerial Survey Averaged GPS Differential GPS Hand drawn on map On-screen Digitised Prior Record Road Survey Single GPS Topo Map Ref

## 10. INFESTATION AREA SIZE

### 10.1 Field Name: SIZE\_DIA\_M

<b>Geometry:</b>	<b>Point data only</b>
<b>Field Parameters:</b>	Short Integer, 3
<b>Definition:</b>	Approximate diameter of the weed infestation area (using metres)
<b>Set Values:</b>	20 50 100

### 10.2 Field Name: LENGTH\_M

<b>Geometry:</b>	<b>Polyline data only</b>
<b>Field Parameters:</b>	Number (Double), 18
<b>Definition:</b>	Length of the weed infestation as a whole number (in metres)
<b>Values:</b>	This measurement is calculated using a GIS

### 10.3 Field Name: WIDTH\_M

<b>Geometry:</b>	<b>Polyline data only</b>
<b>Field Parameters:</b>	Number (Short Integer), 3
<b>Definition:</b>	Width of the weed infestation in metres.
<b>Set Values:</b>	20 50 100

**10.4 Field Name: AREA\_m2**

**Geometry:** All geometry data types - point, polyline or polygon

**Field Parameters:** Number (Double), 18 (0 decimal places)

**Definition:** The area of the weed infestation in metres<sup>2</sup>

**Calculation:** **Point**  
The area is calculated using the diameter of the infestation area. The value is noted in the field SIZE\_DIA\_M. This formula can be applied in a GIS;

$$(([\text{SIZE\_DIA\_M}] / 2) * ([\text{SIZE\_DIA\_M}] / 2)) * 3.1415926$$

**Polyline**  
The area is calculated using the length and width of the infestation area. The values are noted in the fields LENGTH\_M and WIDTH\_M. This formula can be applied in a GIS;

$$([\text{LENGTH\_M}]) * ([\text{WIDTH\_M}])$$

**Polygon**  
The area in metres<sup>2</sup> can be calculated using built in GIS tools

**11. INFESTATION AREA DESCRIPTION**

**11.1 Field Name: DENS\_CAT**

**Field Parameters:** Number (Short Integer), 2

**Definition:** Weed density is the estimated percentage of the site occupied by the weed over the designated area size, whether assessed by;

- actual surface area occupied (for aquatic plants, grasses and herbs)
- projected canopy cover (for vines, tall shrubs and trees)
- number of stems (large trees)

This information can illustrate changes in severity of weed infestations across the landscape over time. *Ref: A field manual for surveying and mapping nationally significant weeds , page 20*

**Set Values:** 11 Density classes or categories

<u>CLASS</u>	<u>CLASS DESCRIPTION</u>
1	Absent
2	≤ 1%
3	1 – 10%
4	11 – 50%
5	> 50%
6	Present but density unknown
7	Not known
8	Not assessed
9	Aquatic – scattered
10	Aquatic – 100% cover
11	Eradicated and monitored

**Note:** 10 classes were defined in the national mapping guidelines. Class 11 was added by the NT Weed Management Branch

**11.2 Field Name: SEEDLINGS**

**Field Parameters:** Number (Short Integer), 3

**Definition:** The proportion, as a percentage, of the infestation populated with plants at a seedling stage of growth.  
All three stages of growth must total 100

**Set Values:** 0 (use 25 percentiles)  
25  
50  
75  
100

**No value recorded:** -1  
Negative 1 is assigned to any data that does not have a stage of growth value recorded. This will help to differentiate unknown values from any true 0 (ie. Absent) values.

**Monitoring:** To provide more a detailed description, 10 percentiles can also be used (remember: the total for the stages of growth must equal 100)

**11.3 Field Name: JUVENILES**

**Definition:** The proportion, as a percentage, of the infestation populated with plants at a juvenile stage of growth. Data entry as per information for Seedlings.

**11.4 Field Name: ADULTS**

**Definition:** The proportion, as a percentage, of the infestation populated with plants at a adult stage of growth. Data entry as per information for Seedlings.

**11.5 Field Name: GROWTH\_CAT**

**Field Parameters:** Number (Float), 3 and 1 decimal place

**Definition:** A score is calculated to represent the stage of growth using each of the percentage values supplied in the fields - Seedlings, Juveniles, Adults.

**Calculation:**  $([SEEDLINGS] * 0.01) + ([JUVENILES] * 0.02) + ([ADULTS] * 0.03)$

**Result:** numeric score between 0 and 3

**Thematic Display:** Grouped classification description is used for thematic display

<u>Growth Cat Value</u>	<u>Growth Category Description</u>
< 0	No information supplied
0	Absent
> 0.1 and < 1.4	LOW (majority seedlings)
> 1.5 and < 2.4	MEDIUM (combination of seedlings, juveniles and adults)
> 2.5 and < 3	HIGH (majority of adults)

## 12. TREATMENT

### 12.1 Field Name: TREATED

**Field Parameters:** Text (string), 15 characters

**Definition:** When was this site treated?

**Set Values:**

Today	<i>This site was treated today</i>
Previous	<i>This site was treated previously, but not today</i>
No Treatment	<i>No evidence of treatment at this site</i>

### 12.2 Field Name: TREAT\_TYPE

**Field Parameters:** Text (string), 20 characters

**Definition:** Type of control and/or management applied to the weed infestation.

**Set Values:**

- Aerial Spray
- Basal Bark
- Biological Control
- Cut Stump
- Foliar Spray
- Ground Application
- Hand Pull
- Manual
- Mechanical
- Unknown
- No Treatment

### 12.3 Field Name: TREAT\_CHEM

**Field Parameters:** Text (string), 20 characters

**Definition:** What is the name of the chemical used to treat the site?

**Set Values:**

- Access
- Access Graslan
- 2-4D
- Brush-off
- Garlon
- Glyphosate
- Graslan
- Grazon
- Starane
- Unknown
- No Treatment
- Not Applicable

### 12.4 Field Name: TREAT\_MON

**Field Parameters:** Text (string), 25 characters

**Definition:** This information is used to help monitor the treatment used for the weed infestation site. How successful is the treatment management?

**Set Values:** First Treatment  
 0% Success  
 < 50% Success  
 50 - 80% Success  
 > 80% Success  
 100% Success  
 Unknown  
 No Treatment

### 13. COMMENTS

#### 13.1 Field Name: SEEDED

**Field Parameters:** Text (string), 3 characters  
**Definition:** Have any plants seeded at this site?  
**Set Values:** Yes or No  
**No value recorded:** -1 Negative 1 is assigned if seeding not recorded.

#### 13.2 Field Name: SITE\_DIST

**Field Parameters:** Text (string), 3 characters  
**Definition:** Is there evidence of soil disturbance at this site?  
 eg. from cattle, feral animals, machinery  
**Set Values:** Yes or No  
**No value recorded:** -1 Negative 1 is assigned if site disturbance not recorded.

#### 13.3 Field Name: VEG\_DIST

**Field Parameters:** Text (string), 3 characters  
**Definition:** Is there evidence of vegetation disturbance at this site?  
 eg. from fire, flood damage, machinery  
**Set Values:** Yes or No  
**No value recorded:** -1 Negative 1 is assigned if vegetation disturbance not recorded.

#### 13.4 Field Name: COMMENTS

**Field Parameters:** Text, 50 characters  
**Definition:** This field should provide useful information – it is NOT mandatory.  
 The listed comments can be changed to suit either the region or some specific project requirements. (eg monitoring)  
**Set Values:** Aerial spray work is required  
 Contact Weeds Officer for advice  
 Difficult site to access  
 First known recording of species in catchment  
 Follow-up inspection required  
 Mechanical work is required  
 No chemical available, control required  
 No control work possible  
 URGENT Follow-up control required

### 4.3 NORTHERN TERRITORY WEED SPECIES LISTING

The common name is used during the weed data collection process. Please use the same spelling format noted in this listing. Example - write Athel Pine, not athel pine. Use spp if you are unsure of the species and seek identification assistance from the Weed Management Branch.

For more information about these species, refer to the NT Declared List, [www.nt.gov.au/weeds](http://www.nt.gov.au/weeds)

#### SCHEDULE OF CLASSES

- A To be eradicated**  
Reasonable effort must be made to eradicate the plant within the NT
- B Growth and spread to be controlled**  
Reasonable attempts must be made to contain the growth and prevent the movement of the plant
- C Not to be introduced to the Territory**  
All Class A and Class B weeds are also considered to be Class C weeds

Area to which declaration applies is all of the Northern Territory unless otherwise stated

ENV Environmental Threat

WoNS Weed of National Significance

COMMON NAME	BOTANIC NAME	NT Declared Species	WoNS	Other Information
A Barnyard Grass	<i>Echinochloa glabrescens</i>	C		
African Boxthorn	<i>Lycium ferocissimum</i>	A/C		
African Mahogany	<i>Khaya senegalensis</i>	Env		
African Tulip Tree	<i>Spathodea campanulata</i>	Env		
Alligator Weed	<i>Alternanthera philoxeroides</i>	A/C	Yes	
Annual Ragweed	<i>Ambrosia artemisiifolia</i>	C		
Athel Pine	<i>Tamarix aphylla</i>	B/C	Yes	
Balsam Pear	<i>Momocordia charantia</i>			
Barleria lupulina	<i>Barleria lupulina</i>	A/C		
Barleria prionitis	<i>Barleria prionitis</i>	A/C		
Barleria spp	<i>Barleria spp</i>	A/C		
Bathurst Burr	<i>Xanthium spinosum</i>	B/C		
Bellyache Bush	<i>Jatropha gossypifolia</i>	B/C	Yes	
Bitou Bush	<i>Chrysanthemoides monilifera</i>	A/C		
Blackberry	<i>Rubus fruticosus agg</i>	A/C		
Bridal Creeper	<i>Asparagus asparagoides</i>	A/C		
Broomrape	<i>Orabanche spp.</i>	C		all except O.minor and O.cernua var.australiana
Buffel Grass	<i>Cenchrus ciliaris</i>			
Burning Bush	<i>Kochia</i>	C		
Burrs	<i>Xanthium spp</i>	C		
Butterfly Pea	<i>Clitoria ternatea</i>			
Cabomba	<i>Cabomba caroliniana</i>	A/C	Yes	
Caltrop cistoides	<i>Tribulus cistoides</i>	B/C		
Caltrop spp	<i>Tribulus spp</i>	B/C		
Caltrop terrestris	<i>Tribulus terrestris</i>	B/C		

COMMON NAME	BOTANIC NAME	NT Declared Species	WoNS	Other Information
Canadian Pondweed	<i>Elodea canadensis</i>	C		
Candle Bush	<i>Senna alata</i>	B/C		
Carib Grass	<i>Eriochloa polystachya</i>	C		
Cashew	<i>Anacardium occidentale</i>			
Castor Oil Plant	<i>Ricinus communis</i>	B/C		
Centipede Grass	<i>Ischaemum timorense</i>	C		
Chilean Needle Grass	<i>Nassella neesiana</i>	A/C		
Chinee Apple	<i>Ziziphus mauritiana</i>	A/C		
Chinese Spinach	<i>Amaranthus dubius</i>	C		
Coffee Bush	<i>Leuchena leucocephala</i>			
Coffee Senna	<i>Senna occidentalis</i>	B/C		
Common Brachiaria	<i>Brachiaria paspaloides</i>	C		Thurston grass
Common Crabgrass	<i>Digitaria fuscescens</i>	C		
Creeping Knapweed	<i>Acroptilon repens</i>	C		
Cutch Tree	<i>Acacia catechu</i>	A/C		
Dalbergia	<i>Dalbergia sissoo</i>	A/C		Area North of 18° S latitude
Dense Waterweed	<i>Egeria densa</i>	C		
Devils Claw	<i>Martynia annua</i>	A/C		
Downy Rose Myrtle	<i>Rhodomyrtus tomentosa</i>	C		
Erasian Watermilfoil	<i>Myriophyllum spicatum</i>	C		
Erect Bohavia	<i>Boerhavia erecta</i>			
Flannel Weed	<i>Sida cordifolia</i>	B/C		
Floating Water Chestnut	<i>Trapa spp</i>	C		
Fringed Spider Flower	<i>Cleome ruidosperma</i>			
Gamba Grass	<i>Andropogon gayanus</i>	Env		
Giant Sensitive Plant	<i>Mimosa invisa</i>	C		
Globular Fimbristylis	<i>Fimbristylis umbellaris</i>	C		
Golden Rain Tree	<i>Cassia fistula</i>			
Gorse	<i>Ulex europaeus</i>	A/C		
Grader Grass	<i>Themeda quadrivalvis</i>	B/C		
Groundsel Bush	<i>Baccharis halimifolia</i>	C		
Guinea Grass	<i>Panicum maximum</i>			
Harrisia Cactus	<i>Eriocereus martinii</i>	C		
Horsetail Scouring Rush	<i>Equisetum ramosissimum</i>	C		Horsetail, Scouring rush
Horsetail spp	<i>Equisetum spp</i>	C		
Hyptis	<i>Hyptis suaveolens</i>	B/C		
Itch Grass	<i>Rottboellia exaltata</i>			
Jobs Tears	<i>Coix aquatica</i>	C		
Johnson Grass	<i>Sorghum halepense</i>	C		
Khaki Weed	<i>Alternanthera pungens</i>	B/C		
Knob Weed	<i>Hyptis capitata</i>	B/C		
Kosters Curse	<i>Clidemia hirta</i>	C		
Lagarosiphon	<i>Lagarosiphon major</i>	C		

COMMON NAME	BOTANIC NAME	NT Declared Species	WoNS	Other Information
Lantana Common	<i>Lantana camara</i>	B/C	Yes	
Lantana Creeping	<i>Lantana montevidensis</i>	B/C		
Lantana spp	<i>Lantana spp</i>	B/C	Yes	
Lesser Malayan Stinkwort	<i>Paederia foetida</i>			
Lesser Malayan Stinkwort	<i>Paederia foetida</i>	C		
Lesser Roundweed	<i>Hyptis brevipes</i>	C		
Lions Tail	<i>Leonotis nepetifolia</i>	B/C		
Longspine Thornapple	<i>Datura ferox</i>	A/C		
Mesquite limensis	<i>Prosopis limensis</i>	A/C	Yes	
Mesquite pallida	<i>Prosopis pallida</i>	A/C	Yes	
Mexican Poppy	<i>Argemone ochroleuca</i>	B/C		
Mexican Sunflower	<i>Tithonia diversifolia</i>			
Mile a Minute	<i>Mikania micrantha</i>	C		
Mimosa	<i>Mimosa pigra</i>	A/C, B/C	Yes	giant sensitive plant, Area North of 14° S latitude
Mimosa Common	<i>Mimosa pudica</i>	B/C		common sensitive plant
Mission Grass Annual	<i>Pennisetum pedicellatum</i>	B/C		
Mission Grass Perennial	<i>Pennisetum polystachion</i>	B/C		
Mission Grass spp	<i>Pennisetum spp</i>	B/C		
Mistflower	<i>Ageratina riparia</i>	C		
Mole Plant	<i>Euphorbia heterophylla</i>			
Mollasses Grass	<i>Melinis minutiflora</i>			
Mossman River Grass	<i>Cenchrus echinatus</i>	B/C		
Neem	<i>Azadirachta indica</i>	Env		
Neurada	<i>Neurada procumbens</i>			
Noogoora Burr	<i>Xanthium occidentale</i>	B/C		
Olive Hymenachne	<i>Hymenachne amplexicaulis</i>	B/C	Yes	
Onion Weed	<i>Asphodelus fistulosus</i>	A/C		
Ornamental Rubber Vine	<i>Cryptostegia madagascariensis</i>		Yes	
Paddys Lucerne	<i>Sida rhombifolia</i>	B/C		
Para Grass	<i>Urochloa mutica</i>			
Parkinsonia	<i>Parkinsonia aculeata</i>	B/C	Yes	
Parthenium Weed	<i>Parthenium hysterophorus</i>	A/C	Yes	
Patersons Curse	<i>Echium plantagineum</i>	A/C		
Perennial Ragweed	<i>Ambrosia psilostachya</i>	C		
Physic Nut	<i>Jatropha curcas</i>	A/C		
Pond Apple	<i>Annona glabra</i>	A/C	Yes	
Prickly Acacia	<i>Acacia nilotica</i>	A/C	Yes	
Prickly Pear	<i>Opuntia spp</i>	B/C		Area North of 14° S latitude
Red Natal Grass	<i>Melinis repens</i>			
Red Sprangletop	<i>Leptochloa chinensis</i>	C		Feathergrass

COMMON NAME	BOTANIC NAME	NT Declared Species	WoNS	Other Information
Rubber Bush	<i>Calotropis procera</i>	B/C		Area South of 16° 30' S latitude
Rubber Vine	<i>Cryptostegia grandiflora</i>	A/C	Yes	
Saffron Thistle	<i>Carthamus lanatus</i>	B/C		
Salvinia	<i>Salvinia molesta</i>	B/C	Yes	
Salvinia cucullata	<i>Salvinia cucullata</i>	C		
Salvinia natans	<i>Salvinia natans</i>	C		
Serrated Tussock	<i>Nassella trichotoma</i>	A/C		
Sesame	<i>Sesamum indicum</i>			
Siam Weed	<i>Chromolaena odorata</i>	C		
Sicklepod	<i>Senna obtusifolia</i>	B/C		
Singapore Daisy	<i>Sphagneticola trilobata</i>			
Snake Weed australis	<i>Stachytarpheta australis</i>	B/C		
Snake Weed cayennensis	<i>Stachytarpheta cayennensis</i>	B/C		
Snake Weed jamaicensis	<i>Stachytarpheta jamaicensis</i>	B/C		
Snake Weed spp	<i>Stachytarpheta spp</i>	B/C		
Spiked Pepper	<i>Piper aduncum</i>			
Spiny Emex	<i>Emec australis</i>	B/C		
Spinyhead Sida	<i>Sida acuta</i>	B/C		
Sprangletop	<i>Leptochloa panicea</i>	C		
Star Burr	<i>Acanthospermum hispidum</i>	B/C		
Thornapples spp	<i>Datura spp</i>	C		
Toothcup	<i>Rotala indica</i>	C		
Tully Grass	<i>Urochloa humidicola</i>			
Velvet Bean	<i>Mucuna pruriens</i>			
Velvet Tree	<i>Miconia spp</i>	C		
Water Hyacinth	<i>Eichhornia crassipes</i>	A/C		
Water Lettuce	<i>Pistia stratiotes</i>	B/C		
Willows	<i>Salix spp</i>	A/C		except weeping willows, pussy willow, sterile pussy willow
Witchweed angustifolia	<i>Striga angustifolia</i>	C		
Witchweed asiatica	<i>Striga asiatica</i>	C		
Witchweed spp	<i>Striga spp</i>	C		all non-indigenous
Witchweed asiatica	<i>Striga asiatica</i>			
Yellow Burhead	<i>Limnocharis flava</i>			Yellow sawah lettuce
Yellow Oleander	<i>Casbebela thevita</i>			



# **Guidelines for Weed Data Collection in the Northern Territory**

## **METHODOLOGY**

## **MANUAL DATA ENTRY**

## MANUAL DATA ENTRY – AN OVERVIEW

### 1. Contact the Weed Management Branch

- Refer to the Contact details provided in this document.

### 2. Check list BEFORE you collect any weed data

- Do you need some assistance to start this project?
- Do you need some help to set up your GPS?
- Do you need some Weed ID information for your area?
- Do you need advice about treatment methods?
- Do you have computer skills / excel / email?

### 3. Which Field Sheet will you use?

#### Sheet 1. GPS Waypoints

Save the location position on your GPS as a named waypoint. Download the waypoints from your GPS to a computer and copy the coordinate locations to the digital version of the field sheet.

#### Sheet 2. Decimal Degrees

Set the coordinate system on your GPS receiver to latitude and longitude using decimal degrees, choose the setting d.ddddd°. Copy the coordinate location from the GPS to the field sheet, carefully!

1 degree is approximately 100km.

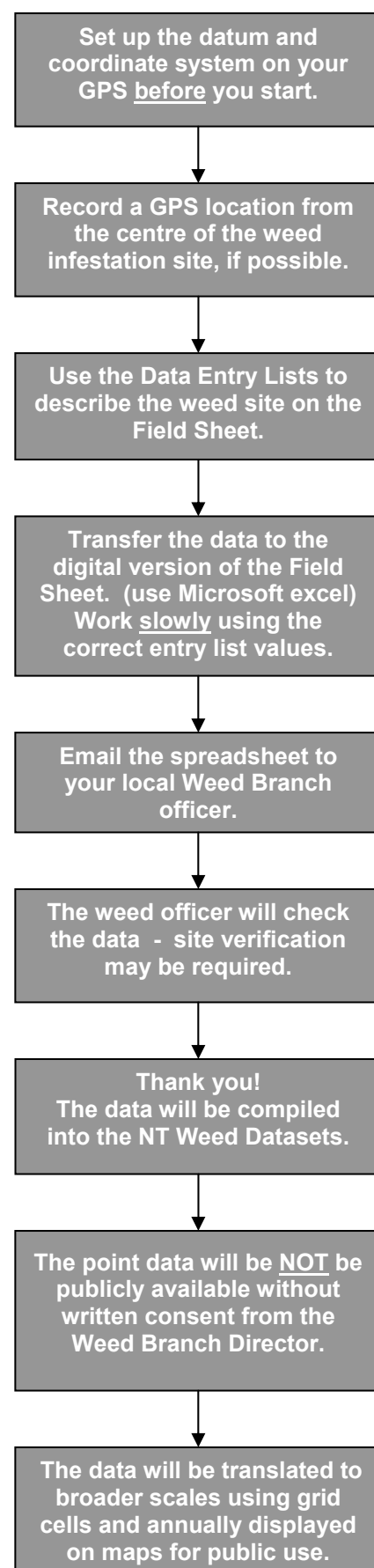
#### Sheet 3. Easting Northing (metres)

Set the coordinate system on your GPS receiver to UTM using units of metres. This may be useful if you have a map of your project area with these grid coordinates already noted. (eg. Pastoral property map) Copy the coordinate location from the GPS to the field sheet, carefully!

An easting has 6 numerals, a northing has 7 numerals. Also note the UTM zone noted on your GPS. (NT is either 52 or 53)

### 4. What do you need to collect weed data?

- A printed copy of the data entry lists
- Which field sheet will you use? Print some copies
- Weed ID information suitable for your area
- Hand-held GPS receiver (correct settings)
- Digital Field Sheet – software used is Microsoft Excel
- Access to email

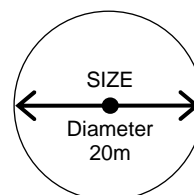


**NT WEED DATA COLLECTION MANUAL DATA ENTRY - HOW TO USE THE FIELD SHEETS**

Use the field sheet to record weed infestation sites as a single point, using a hand-held GPS.

**1. Set the Map Datum on your GPS**

The Map Datum on your GPS receiver **must** be set to either WGS84 or, if available to GDA94. The coordinate location should be taken in the centre of the weed infestation site, if possible.



*Example of a weed infestation area. The GPS location is noted at the centre, if possible.*

**2. Select the coordinate setting on your GPS**

The Weed Management Branch sets GPS coordinate settings (sometimes called position format) to Latitude / Longitude in decimal degrees (d.dddd°) *Example* -14.23434, 132.45673

The NT pastoral property maps display coordinates as Easting and Northings in metres. You may prefer to also use these settings. Select UTM on your GPS and make sure you note the UTM Zone. The Northern Territory uses either UTM Zone 52 or UTM Zone 53.

*Example* The NRETA office location in Katherine is displayed on my Garmin GPS like this graphic.

The UTM coordinate should be written as 205020, 8398923 ie Easting 205020, Northing 8398923 UTM Zone 53

<b>Location</b>	<b>53 L</b>	<b>0205020</b>
	<b>UTM</b>	<b>8398923</b>

**3. Weed identification**

Visit the Weed Management Branch website for weed ID information, [www.nt.gov.au/weeds](http://www.nt.gov.au/weeds)

If you would like a sample to be verified, please collect as much of the plant as possible.

Place the sample between newspaper and press between something heavy.

Deliver the sample in a sealed container to the nearest Weed Management Branch office.

**4. Write down details about the weed infestation site using the Field Sheet**

i) Select the Field Sheet that is suitable for your requirements;

1. Enter only GPS waypoints (if you are able to download from your GPS)
2. Enter the coordinates as decimal degrees
3. Enter the coordinates as easting, northings (metres)

The field sheet can be printed to a black and white A4 printer, or copies can be provided. All information should be entered using the Data Entry Lists provided.

ii) Transcribe the data to the digital version of the Field Sheet (Microsoft Excel spreadsheet)

The cells in the spreadsheet are formatted – please do not change them.

Hover over each title cell to display descriptive information about the data attributes.

**5. What to do with the Weed Data Collection Sheet**

Please send the digital spreadsheet as an email attachment to the Weed Management Branch. Discuss alternatives if this is not possible.

**6. Weed Management Branch – Region Contact Details**

**Generic email address to the Weed Branch**  
(or email your local Weed Branch officer)

[WeedInfo.NRETA@nt.gov.au](mailto:WeedInfo.NRETA@nt.gov.au)

**Darwin Region**

3<sup>rd</sup> Floor Goyder Bdg, Chan Tce, Palmerston

Phone 899 94567 Fax 899 94445  
PO Box 30 Palmerston NT 0831

**Katherine Region**

Randazzo Building, 16 Katherine Tce, Katherine

Phone 897 38100 Fax 897 38122  
PMB 123 Katherine NT 0851

**Tennant Creek Region**

33 Leichardt St, Tennant Creek

Phone 896 24495 Fax 896 24388  
PO Box 96 Tennant Creek NT 0861

**Alice Springs Region**

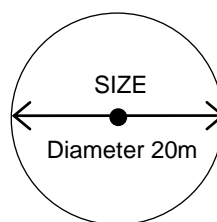
1<sup>st</sup> Floor Plaza Building, The Mall, Alice Springs

Phone 895 19210 Fax 895 79222  
PO Box 1120 Alice Springs NT 0871

**MANUAL DATA ENTRY LISTING - FILL IN THE FIELD SHEET USING THE BLUE VALUES**

What is the **DIAMETER** of the weed infestation site in metres?  
Use one of these sizes as an estimate.

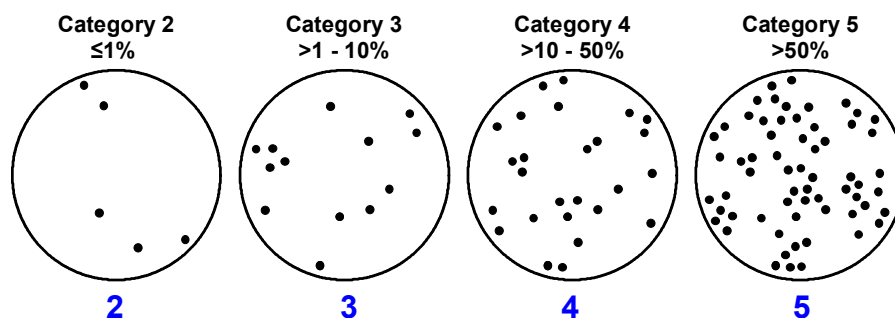
**SIZE\_DIA\_M**  
**20**  
**50**  
**100**



Example of a weed infestation site. Stand in the centre, if possible, to record the GPS location.

**DENS\_CAT**

Select one of these **Density Categories** if species is present. This describes the plants as a percentage of the total site.

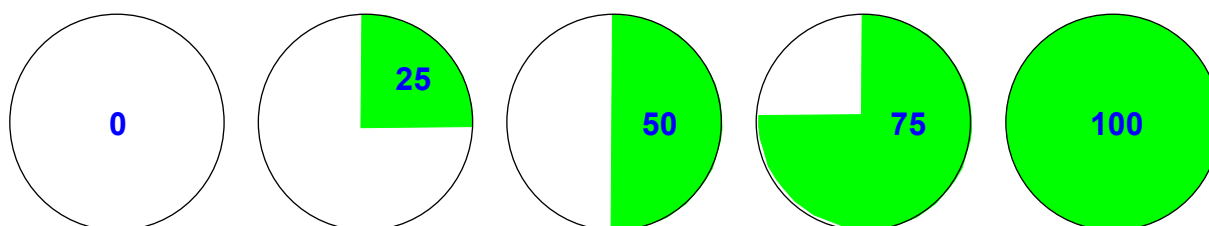


**Other Categories**

- Cat 1** Absent
- Cat 2** Not Assessed
- Cat 3** Eradicated and monitored
- Cat 6** Present by density unknown
- Cat 9** Aquatic – scattered
- Cat 7** Unknown
- Cat 10** Aquatic – 100% cover

**STAGE OF GROWTH**

**Estimate % Seedlings + % Juveniles + % Adults = 100%** (total site area)



**TREATED**

When was the site treated?  
**Today** This site was treated today  
**Previous** This site was treated previously, but not today  
**No Treatment** or no evidence of treatment can be seen at this site

**TREAT\_TYPE**

- Aerial Spray**
- Basal Bark**
- Biological Control**
- Cut Stump**
- Foliar Spray**
- Hand Pull**
- Ground Application**
- Mechanical**
- Unknown**
- No Treatment**

**TREAT\_CHEM**

- 2-4D**
- Access**
- Brush-off**
- Glyphosate**
- Graslan**
- Starane**
- Unknown**
- No Treatment**
- Not Applicable**

**TREAT\_MON**

- Monitor the treatment
- First Treatment**
- 0% Success**
- < 50% Success**
- 50 - 80% Success**
- > 80% Success**
- Unknown**
- No Treatment**

**SEEDED**

Have the plants **seeded**?  
**Yes** or **No**

**SOIL\_DIST**

Is there evidence of **soil disturbance**? eg. from cattle, feral animals, machinery  
**Yes** or **No**

**VEG\_DIST**

Is there evidence of **vegetation disturbance**? eg. from fire, flood damage, machinery  
**Yes** or **No**

**COMMENTS** (not essential, can be left blank)

1. **Aerial spray work is required**
2. **Contact Weeds Officer for advice**
3. **Difficult site to access**
4. **Follow-up inspection required**
5. **First known recording of species in catchment**
6. **Mechanical work is required**
7. **No chemical available, control required**
8. **No control work possible**
9. **URGENT Follow-up control required**













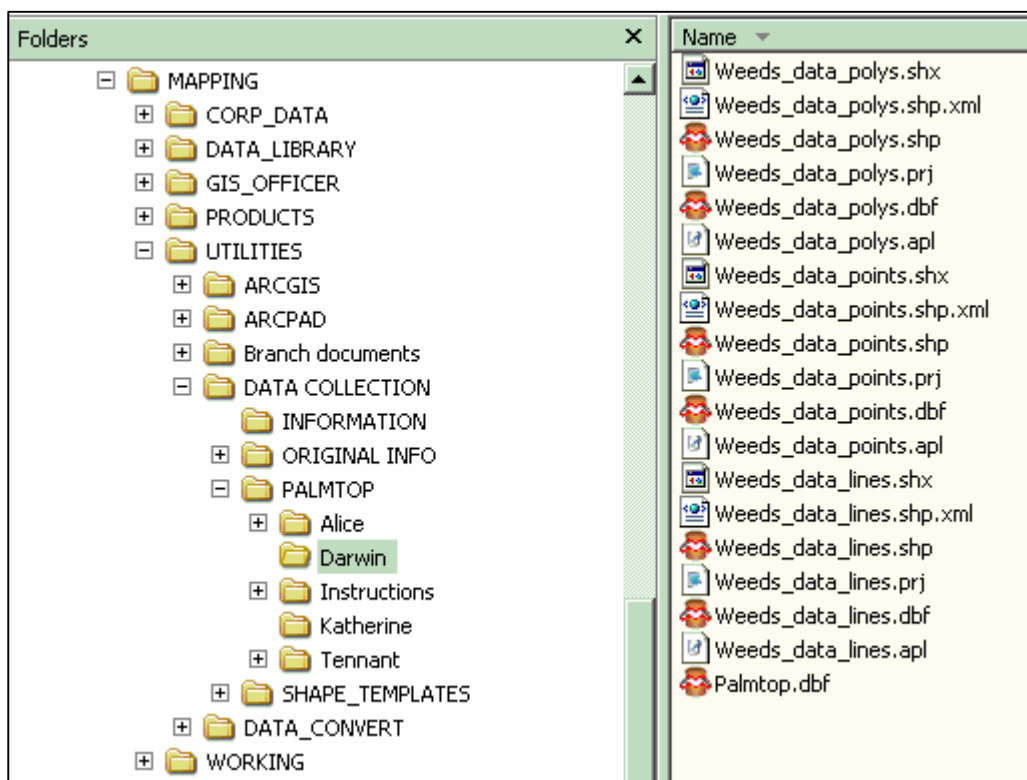
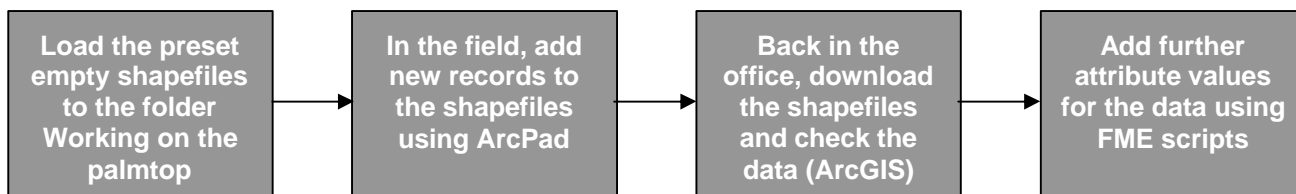
# **Guidelines for Weed Data Collection in the Northern Territory**

## **METHODOLOGY**

## **GIS & PALMTOP DATA ENTRY**

## 1. OVERVIEW - COLLECTING WEED DATA USING THE PALM-TOP

Weed data is collected by the Weed Management Branch staff using ESRI GIS software, ArcPad 7.0 with a palmtop recorder linked to a GPS. Data entry forms have been created in ArcPad for the user to select pre-set values in the field. The data records are added to empty ESRI shapefiles. (either as point, polyline or polygon geometry) The data is downloaded and managed using ESRI ArcGIS 9.1 software. The Weed Management Branch also uses the software FME to add the remaining required attribute values after the weed data collected has been reviewed and verified.



Copy the 3 empty shapefiles and the palmtop.dbf to your palmtop in the folder Original\_Files

**Before you start using ArcPad in the field, copy a new set of empty data files to the folder Working\_files.** (overwrite any existing data files)

Each of the shapefiles uses the data values contained in Palmtop.dbf (these can be edited to suit)

- |    |                          |  |
|----|--------------------------|--|
| 1. | <b>WEEDS_DATA_POINTS</b> | empty shapefile point dataset (gda94 geographics)    |
| 2. | <b>WEEDS_DATA_LINE</b>   | empty shapefile polyline dataset (gda94 geographics) |
| 3. | <b>WEEDS_DATA_POLY</b>   | empty shapefile polygon dataset (gda94 geographics)  |
| 4. | <b>PALMTOP.DBF</b>       | listing of all required data entry values            |

## 2. WHAT DATA IS COLLECTED USING THE PALMTOP?

---

Data is collected in the field using the ESRI software ArcPad 7.0 using these attribute values. The shapefile must be in edit mode. (Point data attribute values are displayed below)

To collect data select an entry from the drop down lists

### PAGE 1

DATE_REC	today's date – ArcPad will automatically enter this for you	
REC_NAME	default Gary Hillen	or select from listing
WEED_NAME	default Parkinsonia	or select from listing
DENS_CAT	default 2	or select from listing 1 to 11
SIZE_DIA_M	default 20	or select either 50, 100
SEEDLINGS	default 0	or select either 25, 50, 75, 100
JUVENILES	default 0	or select either 25, 50, 75, 100
ADULTS	default 0	or select either 25, 50, 75, 100

### PAGE 2

TREATED	default Today	or select Previous, No Treatment
TREAT_TYPE	default Basal Bark	or Select from listing
TREAT_CHEM	default Access	or Select from listing
TREAT_MON	default First Treatment	or Select from listing
SEEDED	default No	or select Yes
SOIL_DIST	default No	or select Yes
VEG_DIST	default No	or select Yes
COMMENTS	default is blank	or select from listing (this field is not mandatory)

### PAGE 3

LOCATION	default is blank	or key in your own value (this field is not mandatory)
SITE_MON	default is blank	or key in your own value (this field is not mandatory)

### **CAUTION**

**THE DEFAULT ENTRY VALUES MAY NEED TO BE EDITED**

**THE LISTS IN PALMTOP.DBF MAY ALSO NEED TO BE EDITED**

### 3. HOW DO I CHANGE THE DEFAULT VALUES FOR ARCPAD?

All the default values are stored in the associated APL file for each of the 3 empty shapefiles.

You will need to edit a **COPY** of these files. **DO NOT CHANGE THE ORIGINALS.**

In Windows explorer,

Select the filename.apl                      This is the arcpad legend file that contains all the scripting required.

Right mouse click                              select open with – using a text file editor, eg wordpad

Edit the lines required with the appropriate text, for example;

#### To edit the REC\_NAME default value

The text for this field starts with                      <COMBOBOX name="cboREC\_NAME"

The current text in this line is:                      defaultvalue="&quot;Gary Hillen&quot; "

Overwrite the text to suit your name:                      defaultvalue="&quot;Roni Opden&quot; "

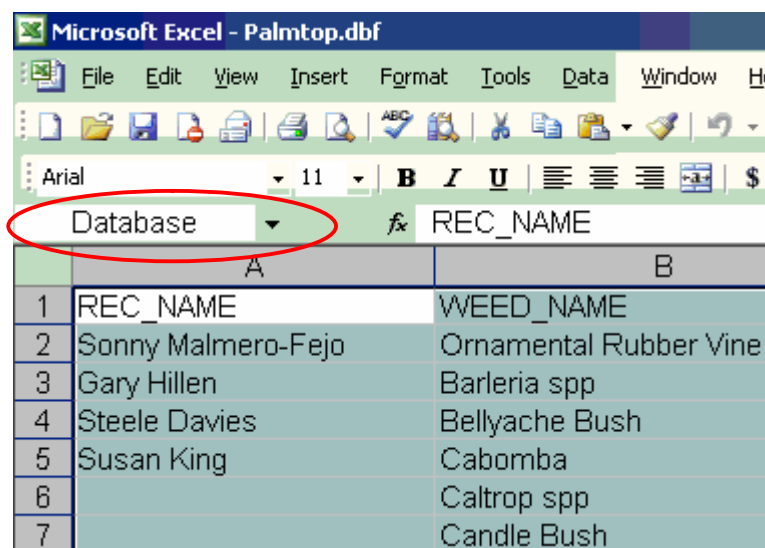
**Make sure that you only use text from the standard lists in Palmtop.dbf**

### 4. HOW DO I CHANGE THE VALUES IN PALMTOP.DBF?

Review the information written in Palmtop.dbf. These details may have to be edited to suit your requirements.

1. Open PALMTOP.DBF in microsoft excel

Dbf stands for database format. The database is defined by a range of cells.



Pull-down the arrow above column A heading and select Database.

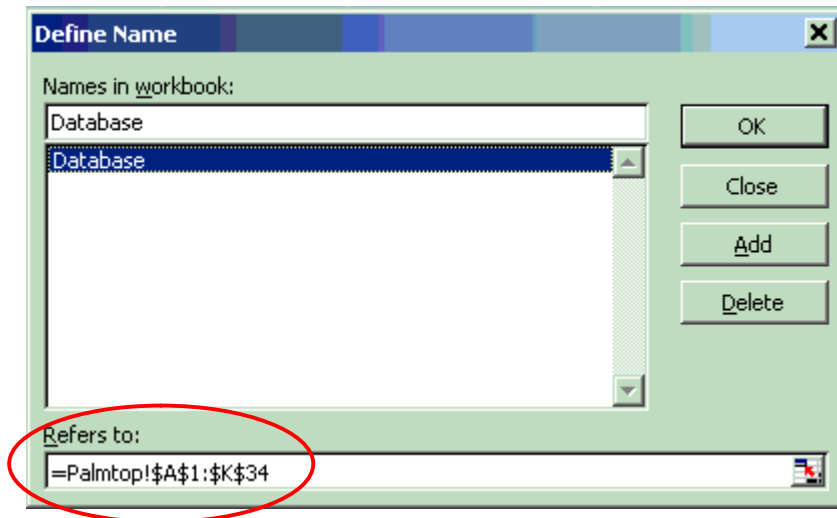
The current database range will be highlighted in a blue colour. All data must be within this defined database area.

You may need to redefine the database range if more information is added (eg increase weed list)

**EXAMPLE**      I would like to add more names in the WEED\_NAME column.

Key in the new entries required in the column WEED\_NAME  
 You will now have to redefine the new range of cells

Pull-down menu INSERT, select NAME, then select DEFINE



You can see that this current database range refers to the columns from A to K and includes the rows from 1 to 34.

Change the row value to suit your data entries  
 Then press OK

Pull-down the arrow above the column A heading and select Database again.

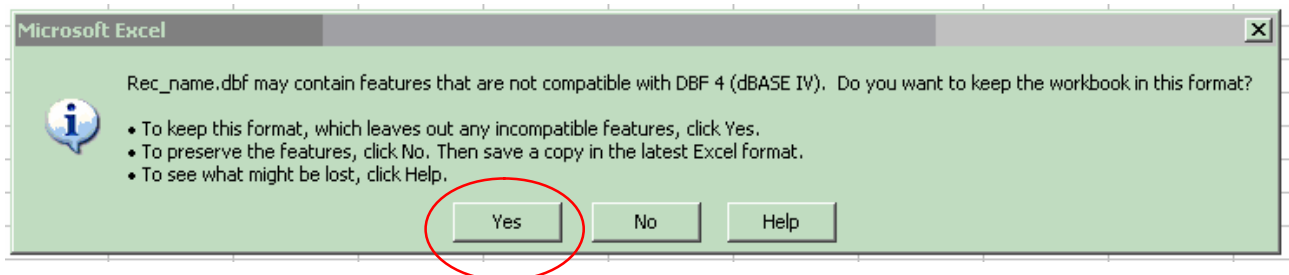
The new database range will be highlighted and will include your new entries.

## 5. CAUTION WHEN SAVING THE DBF TABLE

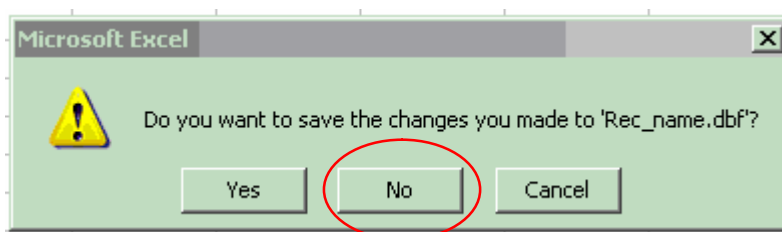
Expand the width of the column to make sure that you can view all the text.

Make sure your cursor is in a cell that contains some data before you save.

Save            Select **YES** when asked to keep this format.



EXIT            Now choose **NO** when asked to save changes.



## 6. AFTER DATA HAS BEEN COLLECTED

---

### Copy shapefile from palmtop using windows explorer

- The resulting shapefile data should be copied to a standard location. The Weed Branch uses Mapping\Working\Temporary\ArcPad Download
- You do NOT need to copy the palmtop.dbf table or the apl files
- These shapefiles are stored as geographics, datum GDA94.
- In ArcCatalog, change the name of the file to suit your current project requirements.
- Review the data collected (eg using ArcGIS ArcMap). Check the location information and also the data values. For example; check the weed names match the standard listing.

### ADD OTHER ATTRIBUTE VALUES REQUIRED

Other data attribute values will need to be added to the data records. The shapefile could be edited using ArcMap.

These fields generally require a single value and can be attributed to all records in the downloaded dataset after the ArcPad data collection session. Refer to the DATA DICTIONARY to review the correct entry lists for these fields.

GENUS\_SPP                    refer to NT Weed listing

YEAR

REC\_SOURCE

REC\_INFO

PURPOSE

PROJECT

REGION

LOCATION

LAT\_G94                    coordinate location is not written to the shapefile

LONG\_G94                  coordinate location is not written to the shapefile

PRECISION

AREA\_M2

GROWTH\_CAT

The Weed Management Branch has access to the software, Feature Manipulation Engine (FME) and uses Workbench scripts to edit the file and add the attribute values.

**Refer to the DATA CONVERT \ INFORMATION folder.**

A document has been written to describe how to use the FME scripts and add the remaining attribute values required for the Northern Territory data collection standards.