

# Assessing Roadside Conservation Value



# Roadside Conservation Committee

The RCC's terms of reference:

*'to coordinate and promote the conservation and effective management of rail and roadside vegetation for the benefit of the environment and the people of WA'.*



# Values of Roadsides

- Aesthetic
- Landcare
- Conservation
- Revegetation
- Scientific
- Education
- Tourism
- Cultural
- Historic

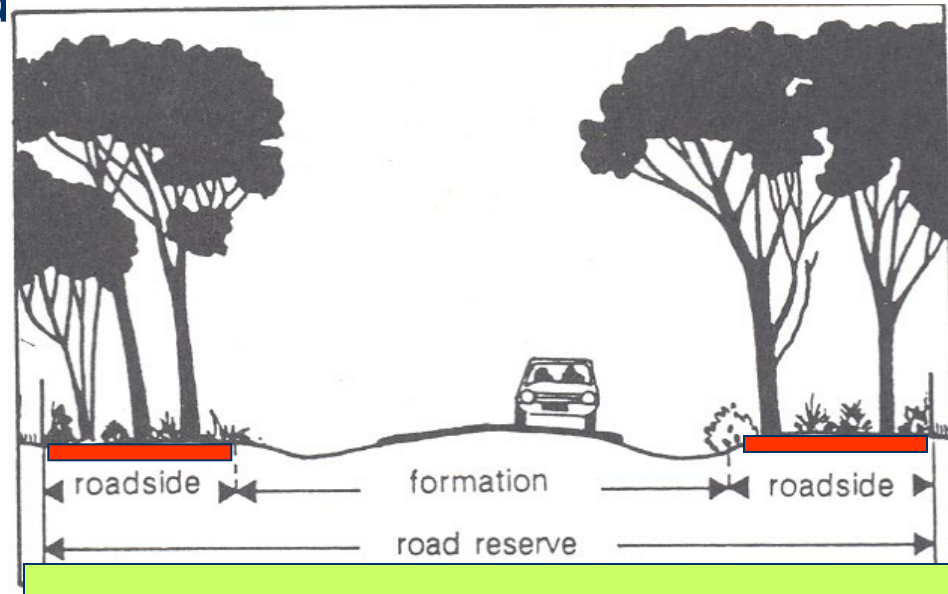




# What is a Road Reserve ?

When a public road is created, a corridor of land is dedicated for this purpose and called the road reserve. ■

The remaining space is called the roadside. ■



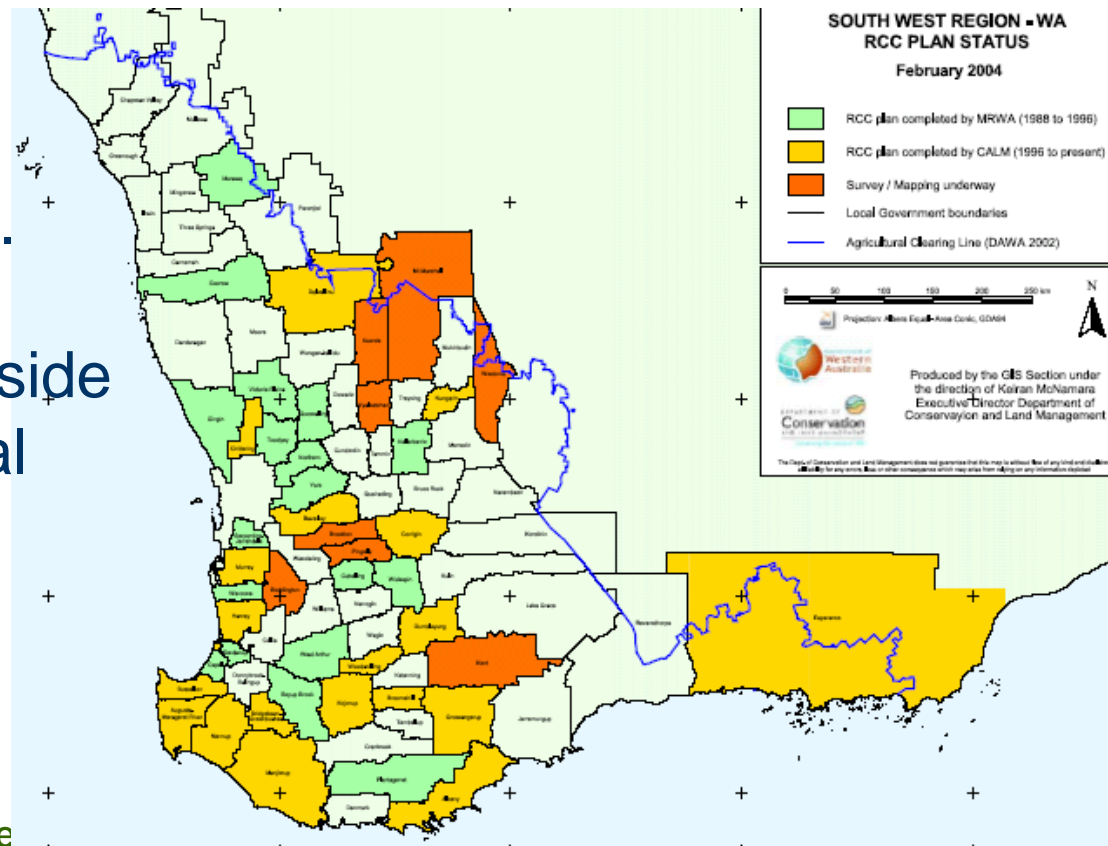
# The Task Ahead: Roadside Surveys

- Roadside surveys are a ‘snap shot’ of roadside conservation values.
- Designed to allow people with or without botanical knowledge to participate.



# The Task Ahead: Roadside Surveys

- The RCC coordinates roadside surveys all the roadsides within the south west land division.
- Surveys have been completed in 41 shires.
- > 75,000 km of roadside being surveyed by local community volunteers.



# What Is the RCC's Role?

- ✓ provide training for community volunteers undertaking Roadside Surveys;
- ✓ supply materials and equipment;
- ✓ produce the Roadside Conservation Value maps and weed overlays; and
- ✓ provide a summary report outlining the results of the roadside survey.



# What Is Your Role?

- ✓ Attend RCC training session;
- ✓ Organise to work in teams of 2-3 people per vehicle;
- ✓ Take care of the equipment; and
- ✓ Carry out roadside surveys.





# Benefits to the Shire & Community?

- ✓ Increase knowledge about, and awareness of, threats to roadside vegetation, and human impacts;
- ✓ Community ownership of map and survey data;
- ✓ Baseline data, useful for measuring changes over time.
- ✓ Easy to interpret Management Tool:

Weed control,

Wildlife corridors,

Road works,

Tourism,

Revegetation,

Funding applications - NRM




# Roadside Surveys



# The Roadside Survey Is Vehicle Based

- The survey is best done with 2 people per vehicle:
  1. a driver-observer, and
  2. an observer-recorder.
- In most instances the survey can be done @ approximately 30km/h.

 Remember **SAFETY FIRST** particularly if driving slowly or stopping.



# Things That You Will Need...

- ✓ A checklist and map of the roads;
- ✓ RCC survey pack:
  - ✓ **iPAQ;**
  - ✓ **User's Guide;**
  - ✓ **Power charger; and**
  - ✓ **pens/pencil, highlighter.**
- ✓ A good sense of direction, you **MUST** indicate direction of travel.



*Make sure you know your left from your right!*





# What Information Is Collected?

- Width of road reserve;
- Width of vegetation on left and right sides;
- Structure of native vegetation;
- Extent of native vegetation;
- Number of native plant species;
- Value as a biological corridor;
- Degree of weed infestation;
- Nominated weeds.
- Adjoining land use;
- Presence of utility (eg. water, power)



# Roadside Conservation Values

High conservation value roadsides:





# Roadside Conservation Values

Medium-high conservation value roadsides:



# Roadside Conservation Values

Medium-low conservation value roadsides:





# Roadside Conservation Values

Low conservation value roadsides:



# Quick Refresher...



1. What 10 characteristics are recorded?
2. Differences between high conservation value roadside and a low conservation value roadside?
3. Name three things you will need for the survey?



# Changing Sections



Some roadsides may be uniform along their length, and so can be surveyed as *one section* from start to finish.

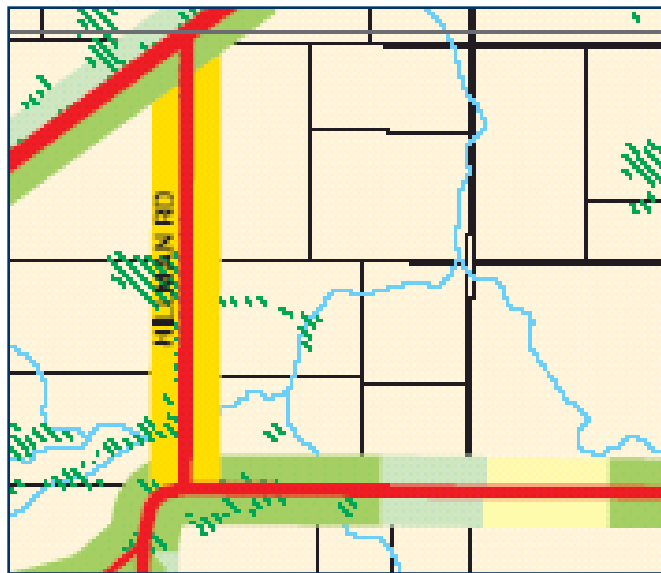
Other roadsides may be quite changeable, for example:

- ✓ road reserve width change, eg. from 20m to 60m;
- ✓ adjoining land use change, eg. from Nature reserve to farmland;
- ✓ quality of roadside vegetation changes, eg. from mostly native to mostly weeds.

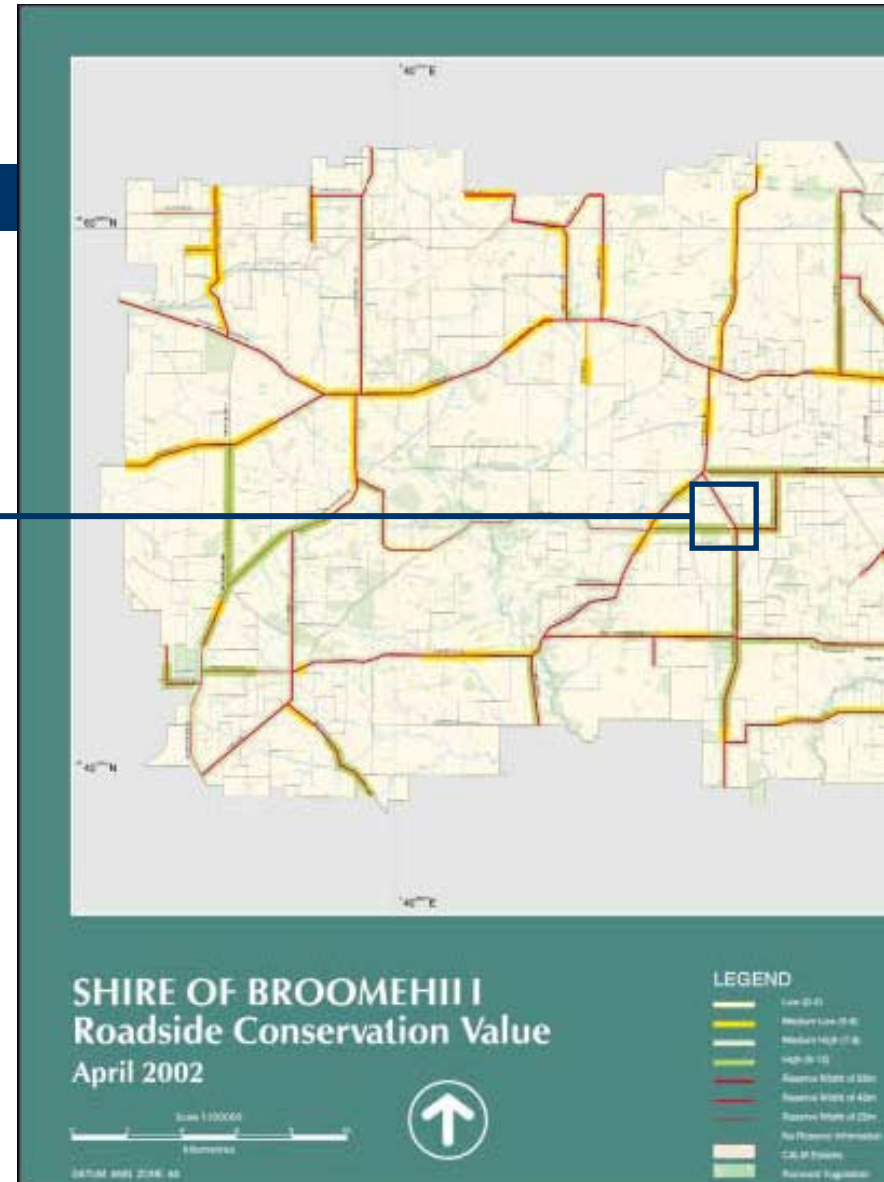
 Ignore small changes, i.e. less than 200m along the roadside.



# Changing Sections




The colour (conservation value) changes along this road. Each coloured 'section' reflects the change.





# Changing Sections

- As a general rule, a new section is started when there is a change in the **quality** of the roadside vegetation, over a distance of 200m or more.
- The change may occur on only one side of the road or both sides.

 **If you are unsure, it is better to start a new section than not.**



# 1. In the Beginning

- Always start the survey at an intersection;
- At the start of the road, set your trip meter to 0.0;
- Look at the roadside in front of you. Fill in the general details (road name, direction, width of road reserve, adjoining land use);
- Drive slowly along the road, start filling in the 'items' for left and right hand sides (more about these later);
- Continue driving until there is a significant change or until the road ends.



# Changing Sections



- Note the odometer reading at change over point, this will give the length of section 1 of the road.
- Section 2 will continue until another marked change is observed, when section 3 will begin, etc.
- Each subsequent section is numbered accordingly (1,2,3,4 etc).
- ✓ Occasionally note down the odometer reading for some identifiable point, eg a side road.

(This is very useful as an office check on the accuracy of your odometer!)



# Quick Refresher...



1. Would you change sections if the width of the roadside changed?
2. Changes under ?? metres should be ignored?
3. Do you start a new section if the 'change' only happens on one side of the road?





# Roadside Surveys

- What characteristics will you be recording?



Natural, high value.



Weedy, low value.



# Width of Road Reserve

Historically, road widths were measured in chains (20.1m). Early roads were usually one chain wide, or a multiple of this. i.e. normally 20, 40, 60 or 100m wide.



# Native Vegetation on Roadsides

Most native vegetation formations have more than one layer.

Eg, Woodlands have trees, a scrub layer & a ground layer containing reeds, everlastings and orchids.

If one or more of the layers is missing, the conservation value of the area is reduced.



# Native Vegetation on Roadsides

RCC Survey 5:00 ok

Native Vegetation on Roadside Prev. Next

	Left	Right
Tree Layer	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Shub Layer	<input type="checkbox"/>	<input type="checkbox"/>
Ground Layer	<input type="checkbox"/>	<input type="checkbox"/>

Details Location Comments Items





# Extent of Native Vegetation

This is a measure of the continuity of native vegetation along the roadside.

➤ Is the native vegetation continuous along the road section, or interrupted by weeds or other disturbances (e.g, fire, machinery).

## EXTENT OF NATIVE VEGETATION ON ROADSIDE

	Left	Right
Less than 20%	<input checked="" type="checkbox"/>	<input type="checkbox"/>
20 -80%	<input type="checkbox"/>	<input type="checkbox"/>
over 80%	<input type="checkbox"/>	<input checked="" type="checkbox"/>





# Number of Native Species

This is a measure of the diversity of the vegetation and so of its conservation value.

Make an average estimate length of roadside. It does not have to be done in detail.

## NO. OF NATIVE SPECIES

	Left	Right
0 -5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6 -19	<input type="checkbox"/>	<input type="checkbox"/>
OVER 20	<input type="checkbox"/>	<input type="checkbox"/>



# Weeds



ABOVE: >80% total  
plants are weeds

Estimate an average of weediness over the section being considered.

It should be estimated as a percentage of total plants along the section.

On some roadsides, there may be good tree and shrub cover but the ground layer is totally weeds. Please note this.





LEFT: Ground layer totally weeds

## WEEDS

Few weeds (<20% total plants)

Left

Right

Half weeds (20 - 80% total)

Mostly weeds (>80% total)

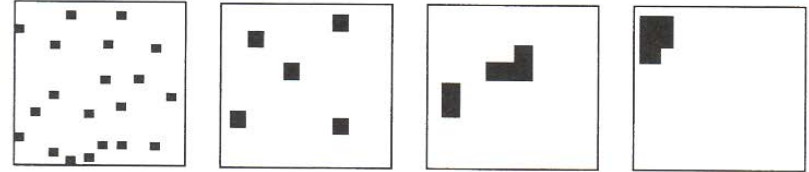
Ground layer totally weeds



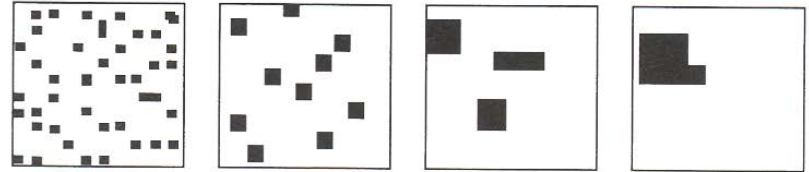
# Weeds

Weeds may be clumped, or spread out, but their % cover is still the same.

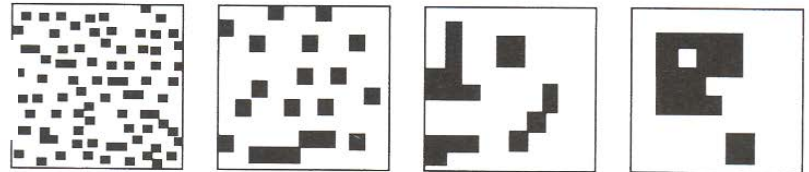
5% cover



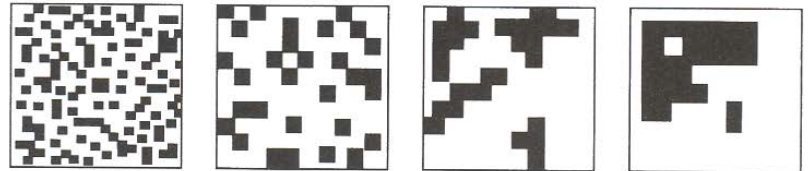
10% cover



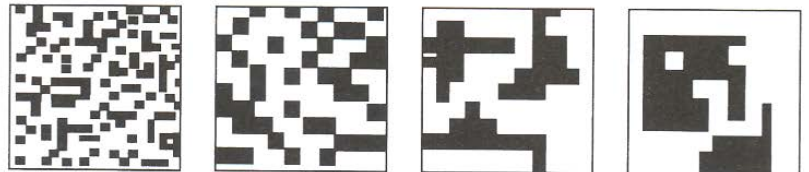
20% cover



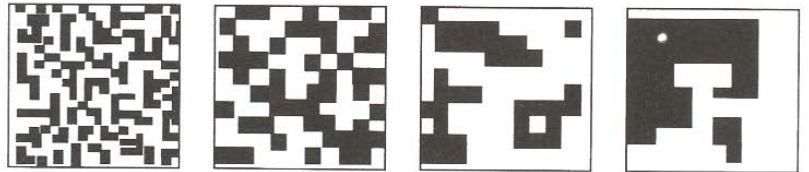
30% cover



40% cover



50% cover



*Bayley, D (2001) Efficient Weed Management. NSW Agriculture Paterson NSW.*



# Nominated Weeds

- Roadside populations of these nominated weeds appear as weed-map overlays;
  - African lovegrass;
  - Paterson's curse;
  - Tagasaste;
  - Couch;
  - Soursob; and
  - Perennial Veldt Grass.





# Soursob



*Oxalis pes-caprae*

Photos: R. Knox & Anon





# Wild Radish



*Raphanus raphanistrum*

Photos: J. Dodd



# Paterson's Curse





# African lovegrass



*Eragrostis curvula*

Photos: J. Dodd & R. Randall



# Tagasaste (Tree Lucerne)



*Chamaecytisus palmensis*

Photos: S.M. Armstrong





# Couch

There are many varieties of Couch. Be sure it's the right one, it may be a native!



*Digitaria*

Photo: J. Do

## Queensland blue couch



*Sporobolus virginicus*

Photos: G.F. Craig

## Marine couch



# Value As a Biological Corridor

In cleared areas, the road reserve can be very important as a corridor, allowing the movement of fauna – especially birds – enabling them to seek out feeding and nesting areas.



## VALUE AS A BIOLOGICAL CORRIDOR

	Left	Right
Connects uncleared areas	<input type="checkbox"/>	<input type="checkbox"/>
Flowering shrubs	<input type="checkbox"/>	<input type="checkbox"/>
Large trees with hollows	<input type="checkbox"/>	<input type="checkbox"/>
Hollow logs	<input type="checkbox"/>	<input type="checkbox"/>





# Utilities

- Electricity, telegraph lines and water pipelines are often built on the roadside.
- To construct and maintain them, the roadside vegetation may be destroyed and so their presence may be detrimental.



	<b>UTILITIES</b>	
	Left	Right
<b>Utility Absent</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Utility Present</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Water</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Electricity</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Gas</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Telecomm.</b>	<input type="checkbox"/>	<input type="checkbox"/>

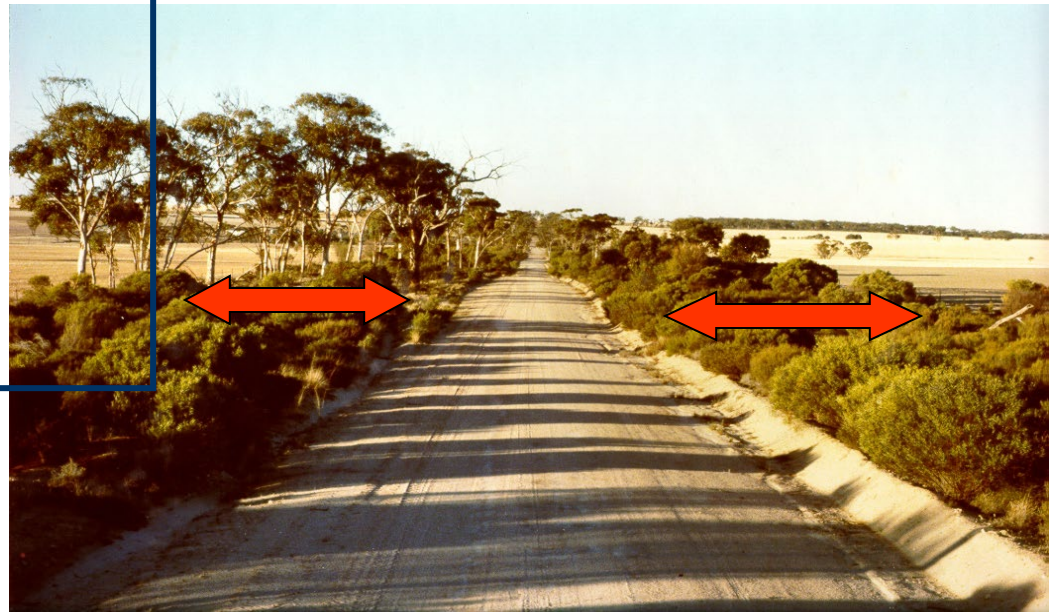


# Width of Vegetated Roadside

This is a measure of how much vegetation/land is left along the roadside. Again, with practice, it is easy to recognise the width categories.

## WIDTH OF VEGETATION ON ROADSIDE

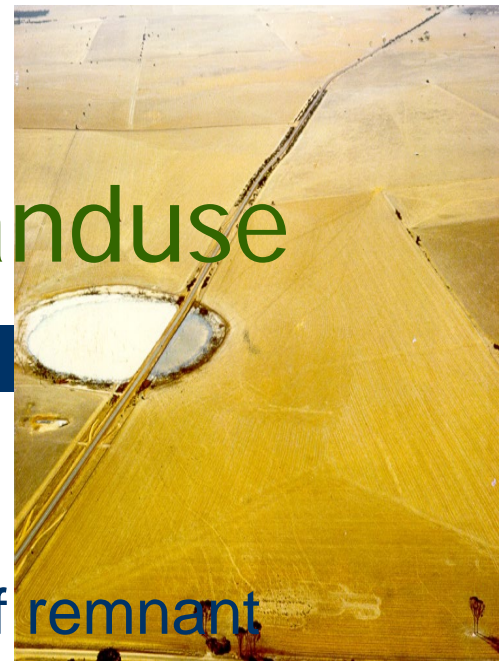
	Left	Right
1-5 m	<input type="checkbox"/>	<input type="checkbox"/>
5-20 m	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
over 20 m	<input type="checkbox"/>	<input type="checkbox"/>



# Predominant Adjoining Landuse

The road reserve is most valuable as a conservation area where it is a corridor of remnant vegetation in an otherwise cleared landscape.

- Where a road runs through or alongside a National Park or Nature Reserve, that area represents the main conservation region and the road reserve merely compliments it.
- When considering changing sections, ignore small land use changes (i.e. less than 300m).





# Adjoining Landuse



## ADJOINING LAND USE

**Agricultural crop or pasture**

- completely cleared

- scattered

**Uncleared land**

**Plantation of non-native trees**

**Urban or industrial**

**Railway Reserve**

**Drain Reserve**

**Other**

Left

Right





# Predominant Adjoining Landuse



scattered



plantation  
non-native



completely cleared



# Getting Acquainted...

- The roadside survey is carried out using a hand-held computer, called an iPAQ.



# Getting Acquainted...

1. **Power:** press to turn power on or off.  
Press and hold to turn screen on or off.

amber flash= battery charging;  
amber solid= battery charged.

3. **Screen:** the display screen.

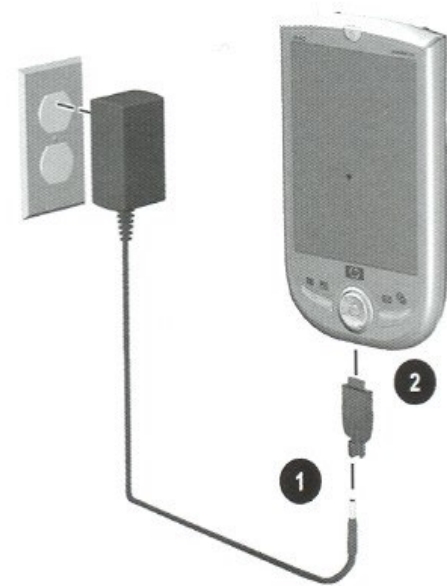
4. **Stylus pen:** slide up to remove, slide down to store.



# Getting Acquainted...


## CHARGING THE iPAQ:

- Make sure the iPAQ is fully charged before use, and charge again at the end of each day. Approx. 4 hours





# Backing up...

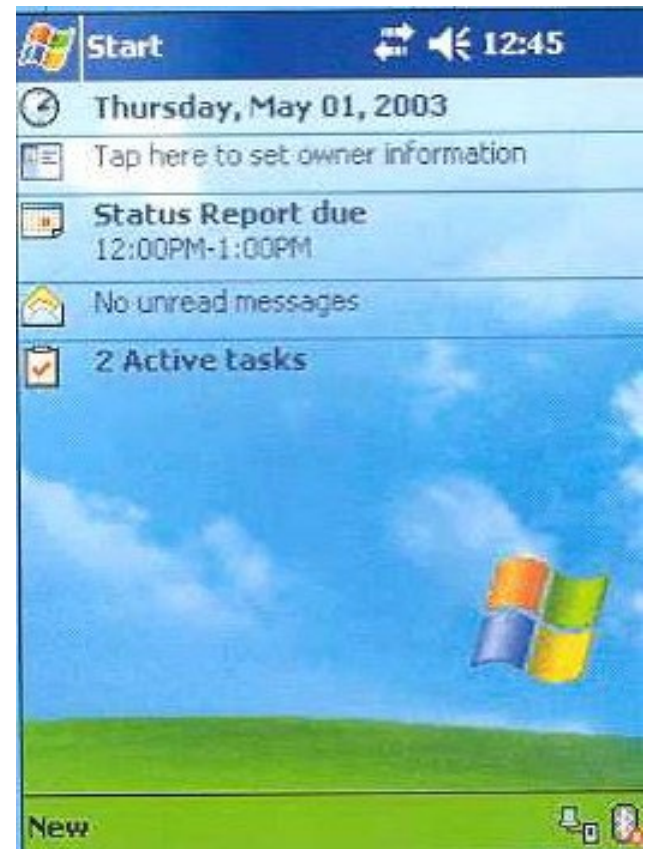
- Sprite Backup saves your data onto a memory card.
- Automatic back-up occurs daily at 5pm. Automatically backs up if battery is low.
- To backup manually:
  - Tap Start icon 
  - Tap *Sprite Backup*
  - Tap the '*Backup*' key
  - Wait 1-2 minutes
  - Press *OK*.



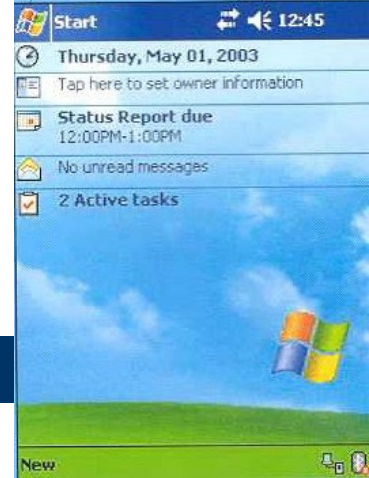
# Getting Acquainted...


## THE TODAY SCREEN:

- The Today screen is like the desktop of any computer.
- On the Today screen, you can see general information such as the time, date and owner information.



# Getting Started...



1. Turn the device on;
2. Using the stylus pen, tap this icon:  (top left corner, next to the word 'Start'). The start menu will drop down.
3. Select 'RCC survey'. The program may take a few seconds to start up.

*Make sure the device is fully charged before use.*



# Starting the Survey

1. Select the name of the Shire from the drop-down menu. They are listed alphabetically;
2. Select the name of the road you are going to be surveying. Press **OK**.

If the road is not listed, select '**Add New Road**'. In the space provided, type the road name. Press **OK**.

3. You are now ready to begin the roadside survey for the selected road.

RCC Survey 4:58 OK

Roadside Conservation Committee Survey

Select Shire **Katanning**

- Then -

Select Road

Add New

- Adam St
- Aerial Rd
- Andrews East
- Angle Rd
- Borlise Rd
- Boring Rd

Config



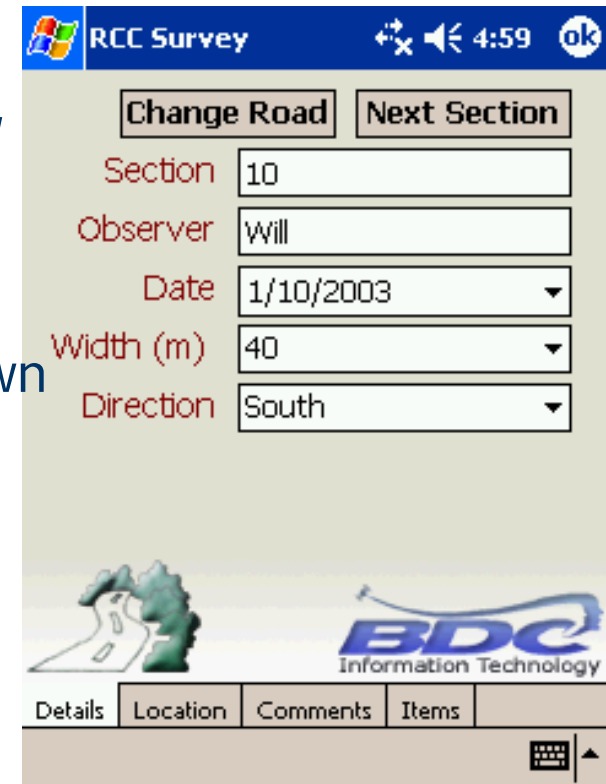


# Details

Enter the following information:

- **Section:** the section number (eg 1, 2, or 3, etc);
- **Observer:** your name;
- **Date:** automatically today's date;
- **Width:** in metres, select from the drop-down menu;
- **Direction:** N, S, E, or W, select from the drop-down menu.

Once completed, go to the next tab, named **Location**.



The screenshot shows a software window titled "RCC Survey" with a blue header bar. The window contains a form with the following fields and values:

Field	Value
Section	10
Observer	Will
Date	1/10/2003
Width (m)	40
Direction	South

At the top of the form are two buttons: "Change Road" and "Next Section". At the bottom of the window is a navigation bar with tabs: "Details", "Location", "Comments", and "Items". The "Details" tab is currently selected. There is also a small logo of a road and trees in the bottom left corner of the window, and the "BDC Information Technology" logo in the bottom right corner.



# Location

Enter the following details:

- **Nearest Place:** nearest named locality;
- **Odometer Start:** odometer reading when you start the section (eg. 0.0);
- **Odometer Finish:** odometer reading when you finish the section (eg. 5.6);
- **Start:** a written indication of your start point, eg. Jones Rd.
- **Finish:** a written indication of your finish point, eg. Boundary Rd.
- **Predominant Weeds:** record the presence of up to 6 pre-determined weed species. Select from drop-down menu. Leave blank if not present.

RCC Survey 4:59 ok

Nearest Place

Odometer Start

Odometer Finish

Start

Finish

Predominant Weeds

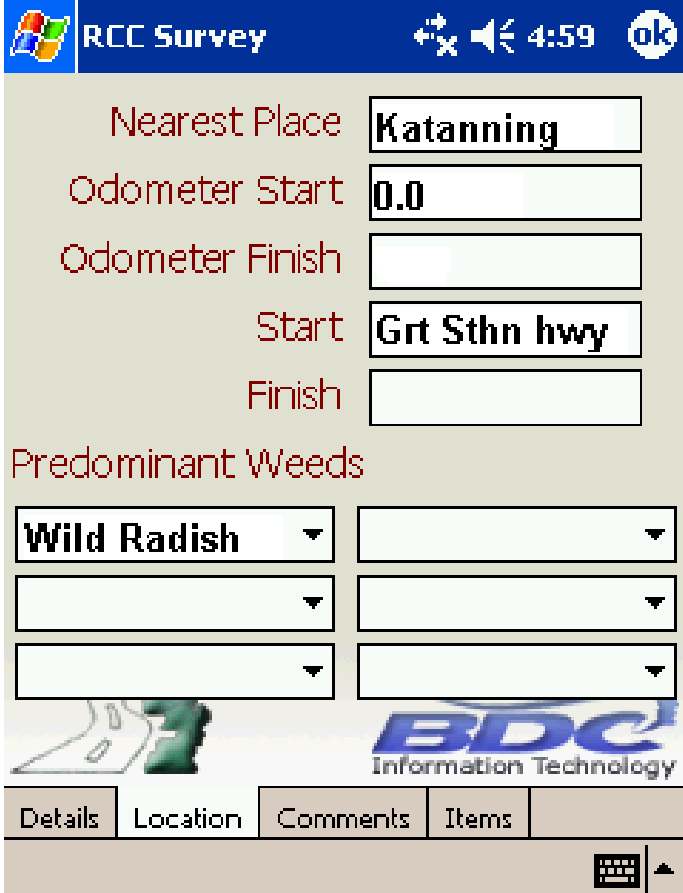
Details Location Comments Items



# Location

**!** You will need to come back to this page later to fill in Odometer finish and Finish point.

For now, fill in the rest of the information and go to the next tab, **Comments**.



The screenshot shows the 'RCC Survey' mobile application interface. The top status bar includes the Windows logo, the title 'RCC Survey', a signal strength icon, a speaker icon, the time '4:59', and an 'ok' button. The main form area contains the following fields:

- Nearest Place:
- Odometer Start:
- Odometer Finish:
- Start:
- Finish:

Below these fields is a section titled 'Predominant Weeds' with three rows of dropdown menus. The first row has 'Wild Radish' selected in the first dropdown and an empty dropdown in the second. The second and third rows have empty dropdowns in both columns.

At the bottom of the form, there is a navigation bar with four tabs: 'Details', 'Location' (which is currently selected), 'Comments', and 'Items'. To the right of the navigation bar is a small icon of a mobile phone.

The BDC Information Technology logo is visible in the bottom right corner of the form area.

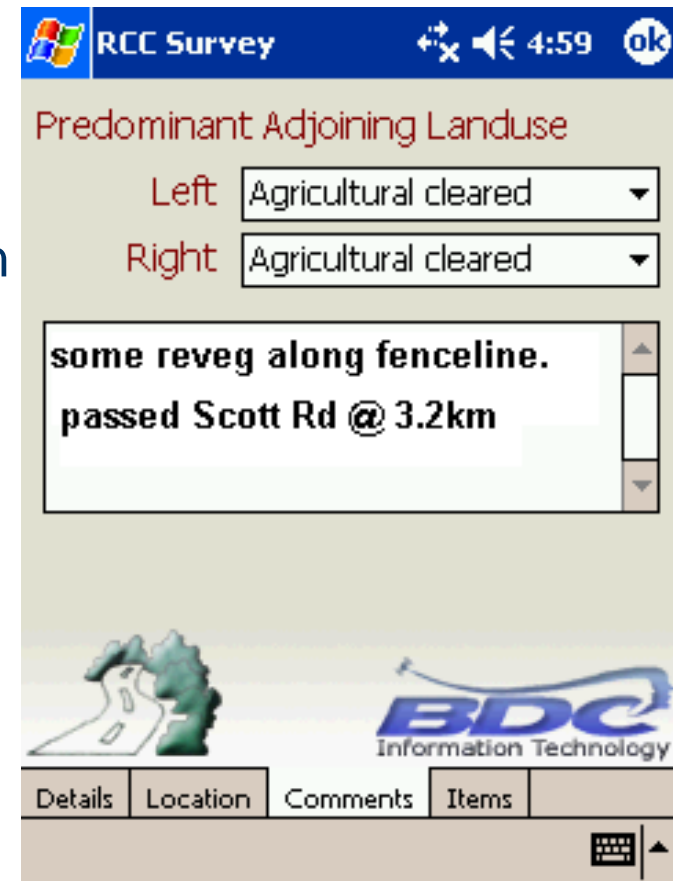


# Comments

Record:

- **Predominant adjoining landuse:** select the dominant land use from the drop-down menu (make sure you record both the left and right sides), and
- **Comments:** you may like to enter further details.  
Occasionally note down an identifiable point, such as a side road and the odometer reading. This helps in the GIS map production.

Go to the next tab, named **Items**.



The screenshot shows the 'RCC Survey' application window. The title bar includes the Windows logo, the text 'RCC Survey', and system icons for zoom, volume, and time (4:59). The main content area is titled 'Predominant Adjoining Landuse' and contains two dropdown menus: 'Left' and 'Right', both set to 'Agricultural cleared'. Below these is a text input field containing the comment: 'some reveg along fenceline. passed Scott Rd @ 3.2km'. At the bottom, there is a navigation bar with tabs for 'Details', 'Location', 'Comments', and 'Items'. The 'Comments' tab is currently selected. A small map icon is visible on the left side of the bottom bar, and the 'BDC Information Technology' logo is on the right.





# Items

The items page requires you to record the presence or absence of **eight (8) roadside characteristics** that, when combined, make up the roadside conservation value.

Record the left and right sides independently.

The options will change from **red** to **green**, indicating that you have made a selection. Press **Next**.

The screenshot shows the 'RCC Survey' application interface. At the top, there is a blue header bar with the Windows logo, the text 'RCC Survey', and icons for zoom, volume, and time (5:00). Below the header, the title 'Native Vegetation on Roadside' is displayed in red, with 'Prev.' and 'Next' buttons to its right. The main content area features a table with two columns: 'Left' and 'Right'. The table has three rows: 'Tree Layer' (highlighted in green), 'Shub Layer' (highlighted in red), and 'Ground Layer' (highlighted in red). Each row has two checkboxes, one for the 'Left' side and one for the 'Right' side. The 'Tree Layer' row has a green checkmark in the 'Left' checkbox. Below the table, there is a navigation bar with tabs for 'Details', 'Location', 'Comments', and 'Items'. The 'Items' tab is currently selected. At the bottom right, there is a small icon of a surveyor's equipment.

	Left	Right
Tree Layer	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Shub Layer	<input type="checkbox"/>	<input type="checkbox"/>
Ground Layer	<input type="checkbox"/>	<input type="checkbox"/>



# Finishing the Section

- The last items page will be “Juncus acutus”, select Present or Absent. Press **Next**.
- You will receive an error message ‘*Odometer finish cannot be left blank*’, press ‘ok’.
- Continue driving along the road until there is a significant change, or until the road ends.
- When this happens, pull over or slow down, ensure you enter the **Odometer Finish** and **Finish** point on the ‘**Location**’ page.



# Finishing the Section

On the **Details** page select:

- **Change Road:** to begin surveying a new road, or
- **Next Section:** if you are still on the same road, and want to start surveying a new section.



The screenshot shows the 'RCC Survey' application window. The title bar includes the Windows logo, the text 'RCC Survey', and system icons for network, volume, and time (4:59). The main interface has two buttons at the top: 'Change Road' and 'Next Section'. Below these are five input fields:

Section	10
Observer	Will
Date	1/10/2003
Width (m)	40
Direction	South

At the bottom of the form, there is a navigation bar with tabs for 'Details', 'Location', 'Comments', and 'Items'. The 'Details' tab is currently selected. To the right of the navigation bar is a small keyboard icon and an upward-pointing arrow. The BDC Information Technology logo is visible in the bottom right corner of the application area.



# Plan the Survey...

- Groups of 4 to go for practice run (20 mins);
- While here, plan their survey teams and roads, mark onto a central map, and organise roster for using iPAQ's.





# Thank-you...

**For further information please contact**

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