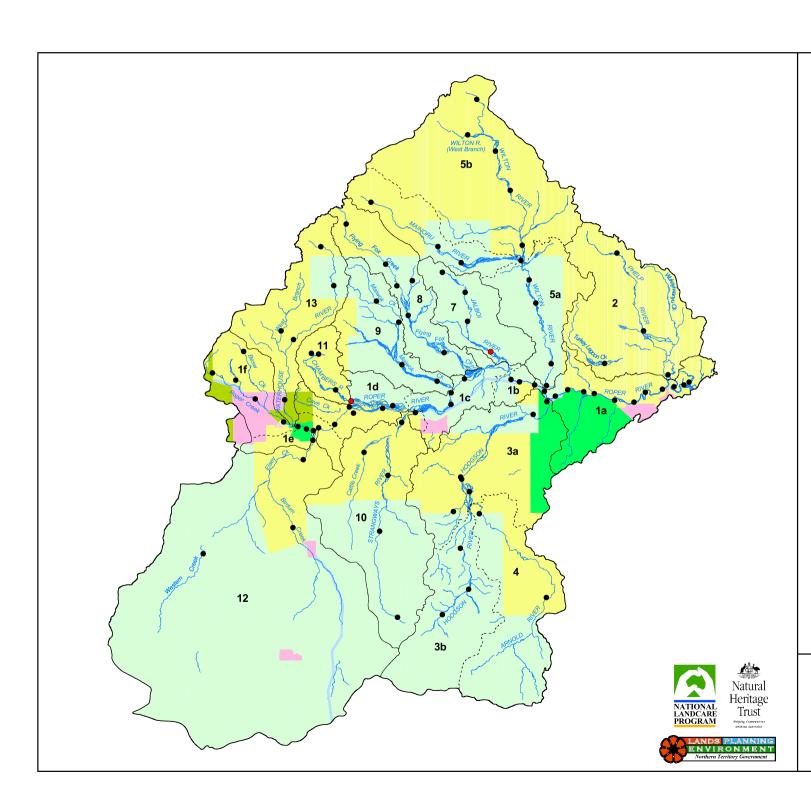


# ASSESSMENT OF RIVERINE CONDITION MAP SERIES

This document displays the following map series relating to the Riverine Condition of the Roper River Catchment.

Map 10	Local Land Tenure at Sites
Map 11	State of the Reach Environs
Map 12	Channel Type Diversity
<b>Map 13</b>	Bank Stability
Map 14	Bed Stability Common Co
<b>Map 15</b>	Cover and Structural Diversity of Riparian Vegetation
Map 16	Width of Riparian Vegetation
Map 17	Cover of Exotic Riparian Vegetation
Map 18	Cover and Distribution of Passiflora foetida
Map 19	Cover and Distribution of Hyptis suaveolens
Map 20	Cover and Distribution of Parkinsonia aculeata
Map 21	<b>Cover and Distribution of Submerged Aquatic Vegetation</b>
Map 22	Cover and Distribution of Emergent Aquatic Vegetation
Map 23	Cover and Distribution of Floating Aquatic Vegetation
Map 24	Cover and Diversity of Instream and Bank Habitats
Map 25	Overall Condition



## LAND CLASSIFICATION National Park or Reserve Pastoral Lease

Vacant Crown Land / Government Use

Private Freehold

Crown Lease Term

Crown Lease Perpetual

#### **LEGEND**

- Surveyed Site
- Site Not Assessed
- 5a Sub-section Number

Catchment BoundarySub-catchment Boundary

----- Sub-section Boundary

River

---- Creek

#### NOTE

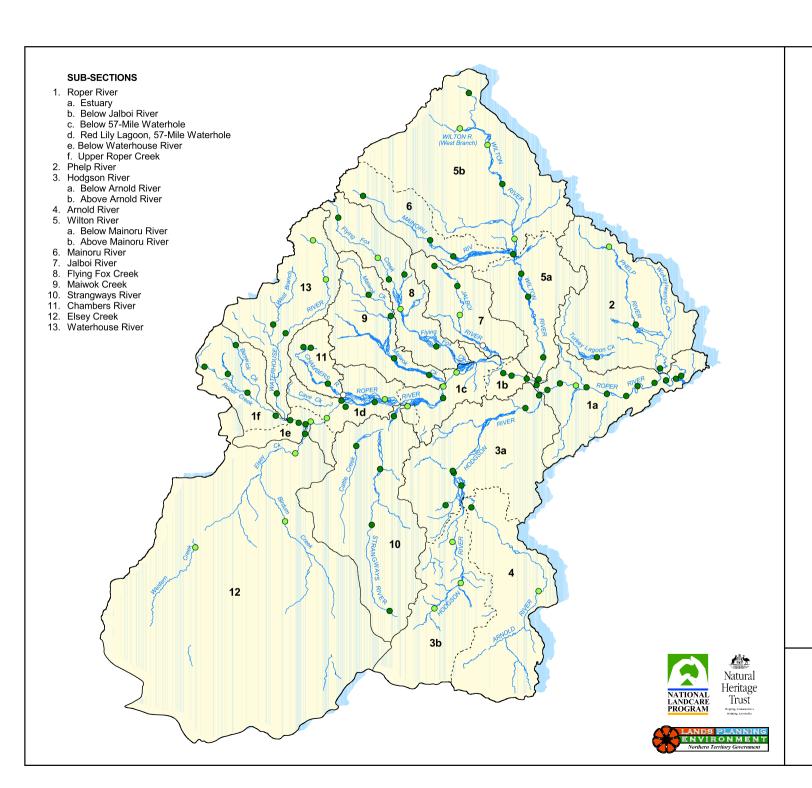
A summary of the land tenure along the reach environs is shown below:

L	and Ten Catego				Perce Sites	
N S R S U	Freehold / Leasehold National Park State Park Reserve / Environmental Park State Forest Urban Reserve Urban			Park	97 3 0 0 0 0 0	
		20	_	$\int_{N}$		400
	Λ	20	40	60	ጸበ	100



### LOCAL LAND TENURE AT SITES

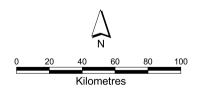
Kilometres



SITE LOCATION	REACH ENVIRONS CATEGORY	RATING (%)
•	Essentially Natural	81 - 100
	Some Modification	61 - 80
0	Moderate Modification	41 - 60
•	Major Modification	21 - 40
	Extreme Modification	0 - 20
0	Site Not Assessed	
5a	Sub-section Number	
	Catchment Boundary	
	Sub-catchment Boundary	
	Sub-section Boundary	
	River	
	Creek	

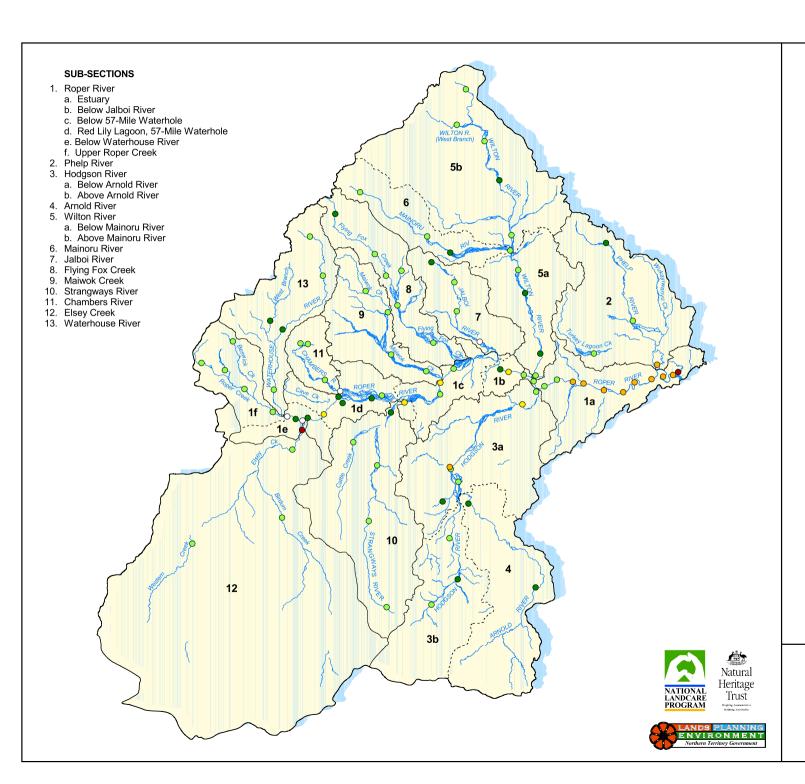
#### NOTE

State of the Reach Environs The rating is based on an assessment of the land corridor along the survey reach and on the floodplain adjacent to the reach. The rating takes into account local land use and local disturbances along the reach environs.





### STATE OF THE REACH ENVIRONS

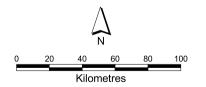


SITE LOCATION	DIVERSITY CATEGORY	RATING (out ot 10)		
	Very High Diversity	9	-	10
	High Diversity	7	-	8
0	Moderate Diversity	5	-	6
•	Low Diversity	3	-	4
	Very Low Diversity	1	-	2
0	Site Not Assessed			
5a	Sub-section Number			
	Catchment Boundary			
	Sub-catchment Bound	ary		
	Sub-section Boundary			
	River			
	Creek			

#### NOTE

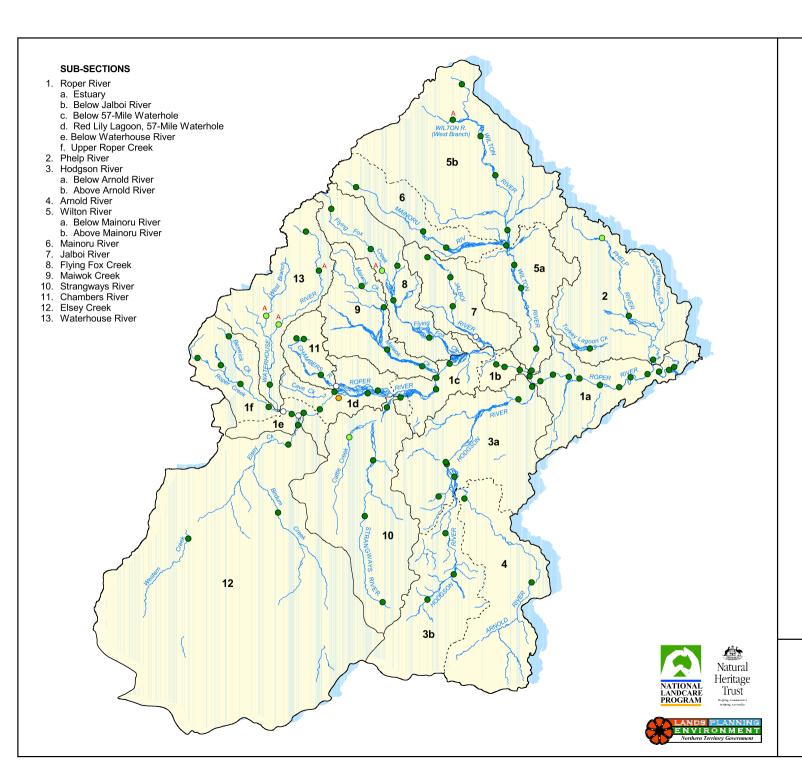
Channel Type Diversity -The diversity categories take into account the number of different channel habitat types present (cascades, glides, pools, rapids, riffles, runs, waterfalls) and the proportion of the reach occupied by pools versus other habitat types.

The derived ratings for this component are NOT used to produce the Overall Condition Rating for each site.





#### **CHANNEL TYPE DIVERSITY**



SITE LOCATION	STABILITY CATEGORY	RATING (%)
•	Stable	81 - 100
	Limited Instability	61 - 80
0	Moderate Instability	41 - 60
•	Extensive Instability	21 - 40
	Extreme Instability	0 - 20
0	Site Not Assessed	

#### DOMINANT PROCESS AT EACH SITE

A	Aggradation Erosion (the dominant process at all sites assessed, other than those with an 'A', is erosion)
50	Sub-section Number

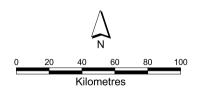
ъa	Sub-section Number
	Catchment Boundary
	Sub-catchment Boundary
	Sub-section Boundary
	River



#### NOTE

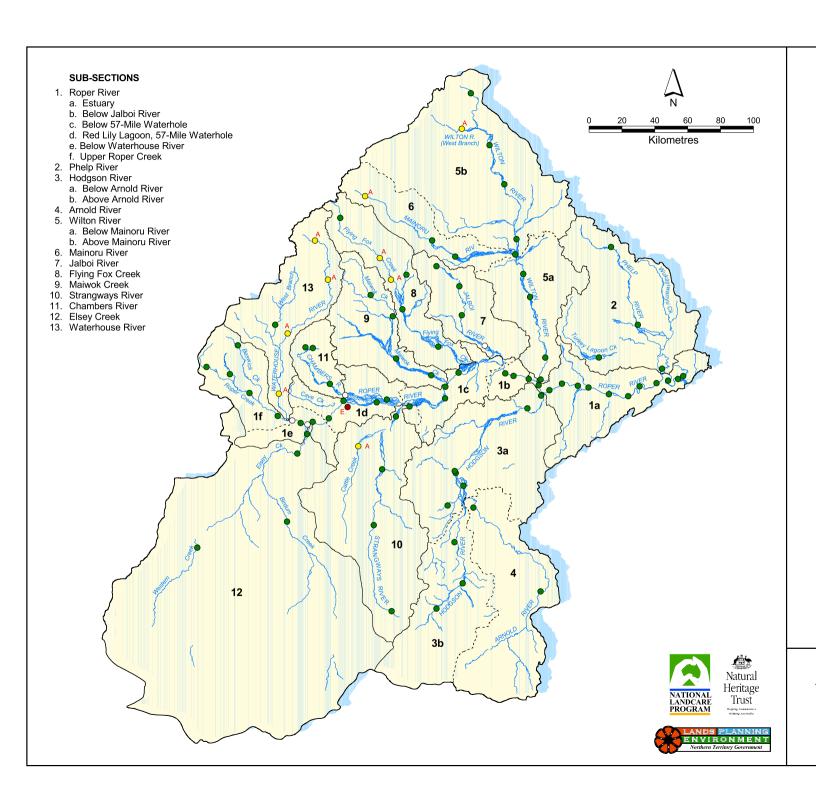
Bank Stability -

The ratings are determined from the recorded percentages of the banks on each side of the reach which are rated as stable. Upper banks are assigned a greater proportion of the score than lower banks. The dominant process at each site (erosion or aggradation) is recorded.





#### **BANK STABILITY**



SITE LOCATION	STABILITY CATEGORY	RATING (out of 10)
•	Stable	10
0	Moderate Aggradation or Erosion	6
•	Severe Aggradation or Erosion	2
0	Site Not Assessed	

#### DOMINANT PROCESS AT EACH SITE

Α	Aggradation
E	Erosion
	Stable (No Process) - not labelled
5a	Sub-section Number
	Catchment Boundary
	Sub-catchment Boundary
	Sub-section Boundary
	River
	Creek

#### NOTE

Bed Stability -

The ratings are determined from a subjective assessment made in the field of whether the river bed is stable; moderately eroding or aggrading; or severely eroding or aggrading. That is,

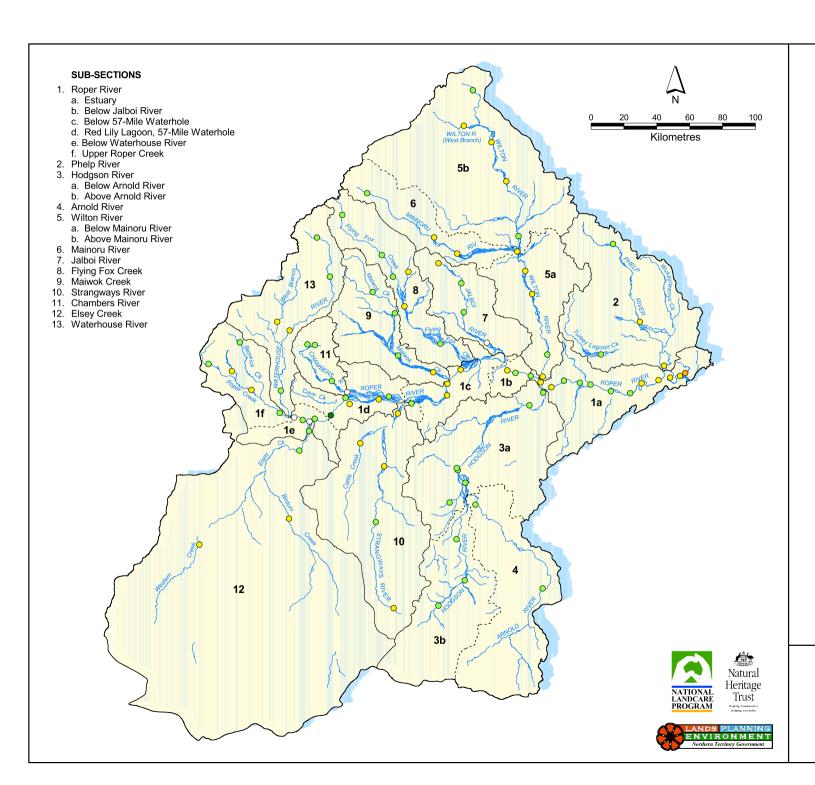
- Stable bed: The river bed is consolidated; bed and bar material is the same size; alluvium balanced: and banks stable.
- Moderate erosion: There is little alluvium; signs of deepening; eroded banks; bed deep, narrow and steep; unconsolidated.
- Moderate aggradation: There is moderate buildup at obstructions and bars; bed is flat, uniform, wide and shallow; some over-bank siltation.
- Severe erosion: The bed is scoured of sand; signs of deepening; bare eroded banks; erosion heads; erosion causes; and a steep bed.
- Severe aggradation: The bed is flat, wide but shallow and channel blocked; bars large, covering most of bed and bank; bed is loose and unconsolidated.



TOP END WATERWAYS PROJECT

ROPER RIVER CATCHMENT

**BED STABILITY** 



SITE LOCATION	RIPARIAN VEGETATION CATEGORY	RATING (out ot 10)
	Very High Cover/Diversity	9 - 10
	High Cover/Diversity	7 - 8
0	Moderate Cover/Diversity	5 - 6
•	Low Cover/Diversity	3 - 4
	Very Low Cover/Diversity	1 - 2
0	Site Not Assessed	
5a	Sub-section Number	
	Catchment Boundary	
	Sub-catchment Boundary	
	Sub-section Boundary	
	River	
	Creek	

#### NOTE

Cover and Structural Diversity of the Riparian Vegetation - The ratings take into account:

- The foliage cover or density provided by the overstorey, understorey and ground cover vegetation types or growth forms . The distinction between these three vegetation layers is -
  - overstorey vegetation includes large trees (>30m tall), medium-sized trees (10-30m tall) and palms;
  - understorey vegetation includes small trees (2-10m tall), regenerating trees (<2m tall), mangroves and woody shrubs (<2m tall);</li>
  - ground cover vegetation includes vines, rushes/sedges, forbs, salt marsh, ferns, grasses and Phragmites.

Both native and exotic vegetation species are included when calculating the covers. The extent of bare ground along the river banks within the riparian zone reduce the ratings.

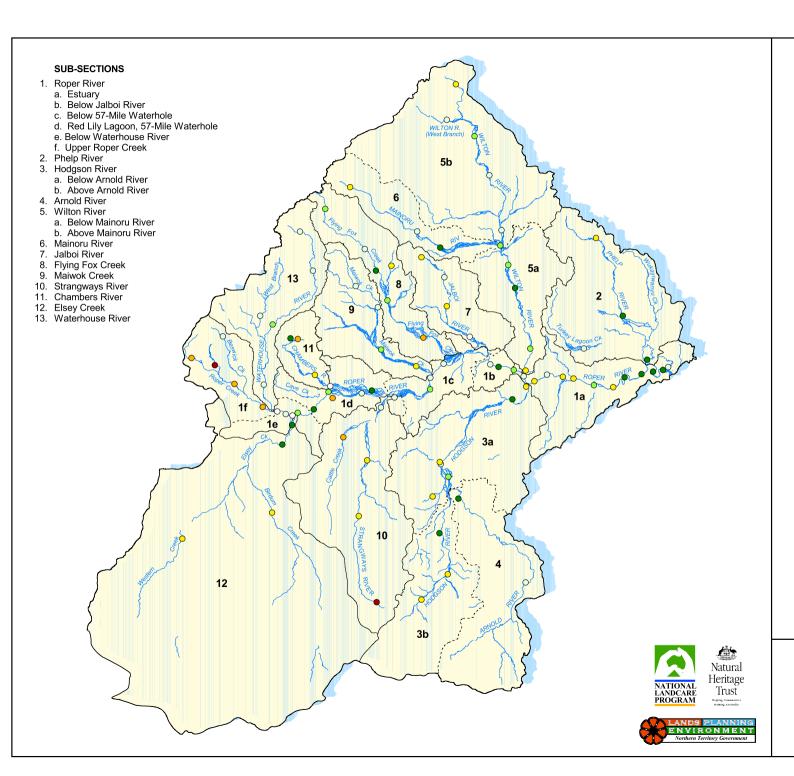
 The structural diversity or number of different growth forms present (eg trees of different height classes, palms, shrubs, vines, forbs, grasses, ferns, etc).

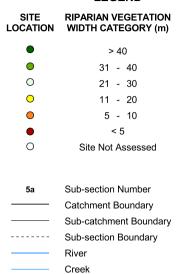


TOP END WATERWAYS PROJECT

ROPER RIVER CATCHMENT

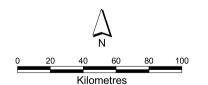
COVER AND STRUCTURAL DIVERSITY OF RIPARIAN VEGETATION





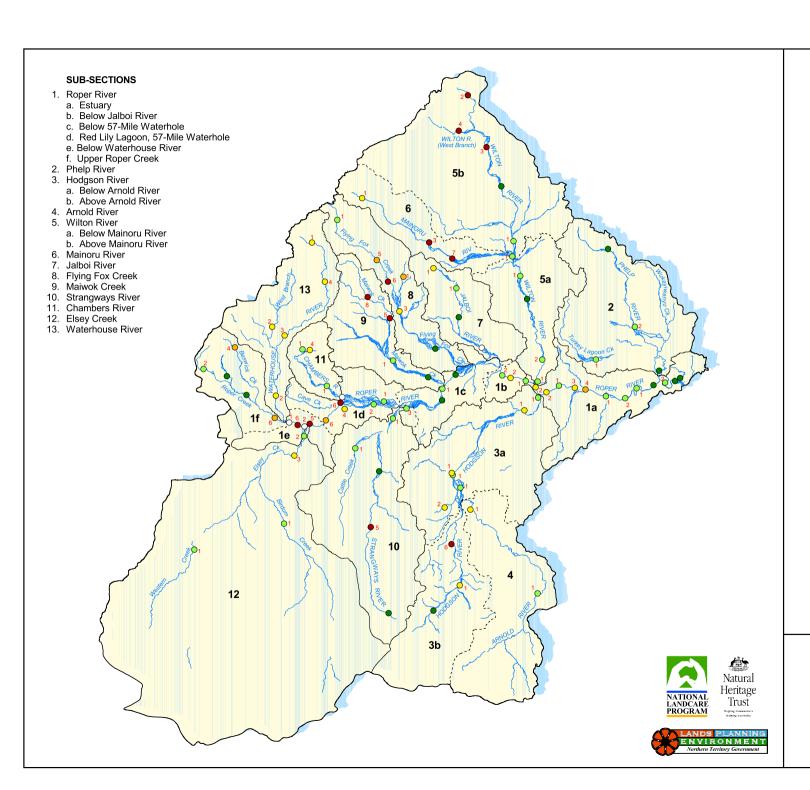
#### NOTE

The width of the riparian vegetation is averaged for both river banks at a site before being assigned a width category.





### WIDTH OF RIPARIAN VEGETATION



	LEGEND	
SITE LOCATION	% COVER CATEGORY	RATING (out of 10)
	0	10
0	1 - 5	8
0	6 - 10	6
•	11 - 15	4
	16 - 34*	2
0	Site Not Assessed	

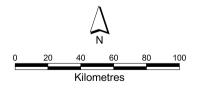
#### NUMBER OF TYPES OF EXOTIC SPECIES

1 - 8	The number of different types of exotic species recorded at a site, if present.
5a	Sub-section Number
	Catchment Boundary
	Sub-catchment Boundary
	Sub-section Boundary
	River
	Creek

#### NOTE

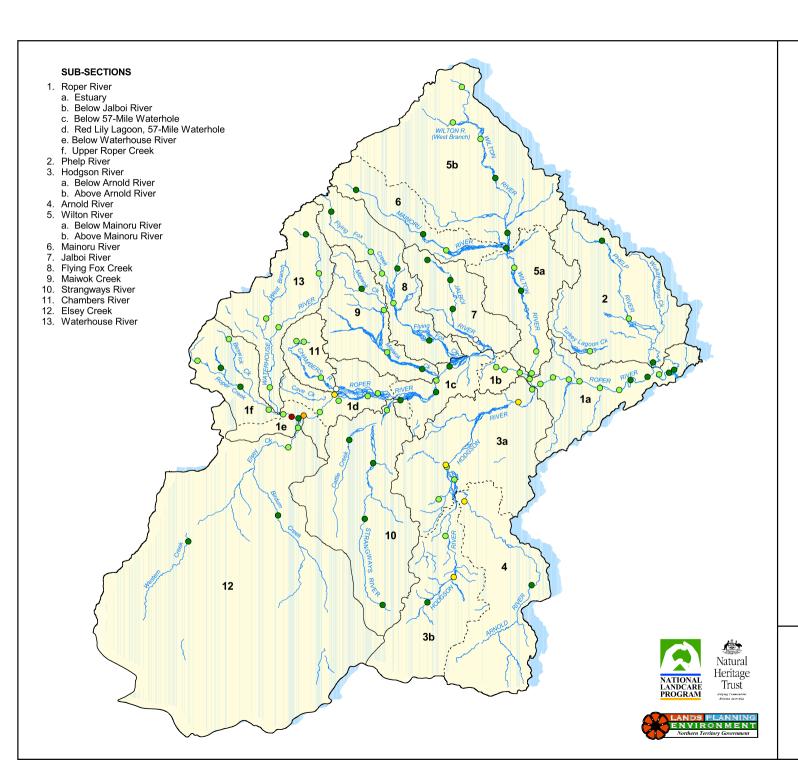
Cover of Exotic Riparian Vegetation The ratings take into account the percentage cover
recorded for exotic species within the riparian zone,
averaged for both river banks at a site. The higher
the percentage cover recorded for exotic species, or
the higher the degree of invasion, the lower the rating.
The number of different types of exotic species
recorded at a site, if present, is shown.

\* The maximum percentage cover recorded for exotic riparian vegetation was 34%.





### COVER OF EXOTIC RIPARIAN VEGETATION

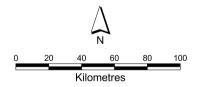


SITE LOCATION	% COVER CATEGORY	
•	0	
	1 - 5	
0	6 - 10	
•	11 - 15	
	16 - 20*	
0	Site Not Assessed	
5a	Sub-section Number Catchment Boundary Sub-catchment Boundary Sub-section Boundary River Creek	

#### NOTE

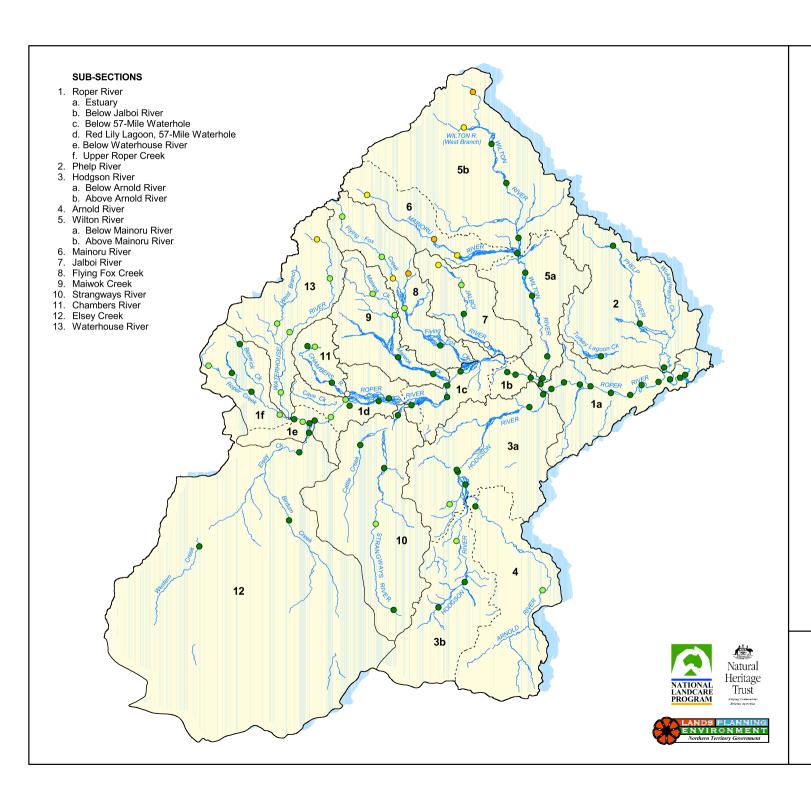
Passiflora foetida (Stinking Passion Flower), a naturalised vine, was the major exotic species recorded throughout the catchment. Its distribution and the percentage cover recorded are shown. Percentage covers are averaged if the species is recorded for both river banks at a site.

\* The maximum percentage cover recorded for *Passiflora foetida* was 20%.





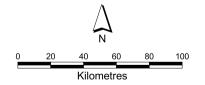
COVER AND DISTRIBUTION OF Passiflora foetida



LEGEND			
SITE LOCATION	% COVER CATEGORY		
•	0		
	1 - 5		
0	6 - 10		
•	11 - 15*		
	>15		
0	Site Not Assessed		
5a	Sub-section Number		
	Catchment Boundary		
	Sub-catchment Boundary		
	Sub-section Boundary		
	River		
	Creek		

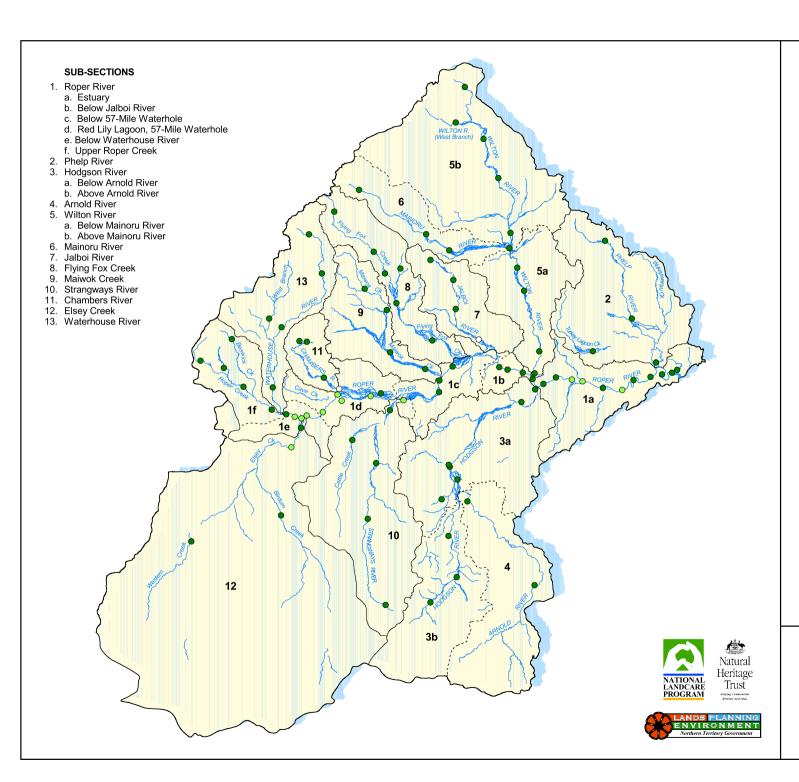
Hyptis suaveolens (Hyptis), a forb, was the second major exotic species recorded throughout the catchment. Its distribution and the percentage cover recorded are shown. Percentage covers are averaged if the species is recorded for both river banks at a site.

\* The maximum percentage cover recorded for *Hyptis suaveolens* was 15%.





#### COVER AND DISTRIBUTION OF Hyptis suaveolens



SITE LOCATION	% COVER CATEGORY	
	0	
	1 - 5*	
<u> </u>	6 - 10	
0	11 - 15	

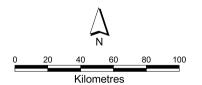
	16 - 28	
0	Site Not Assessed	

5a	Sub-section Number	
-	Catchment Boundary	
	Sub-catchment Boundary	
	Sub-section Boundary	
	River	
	Creek	

#### NOTE

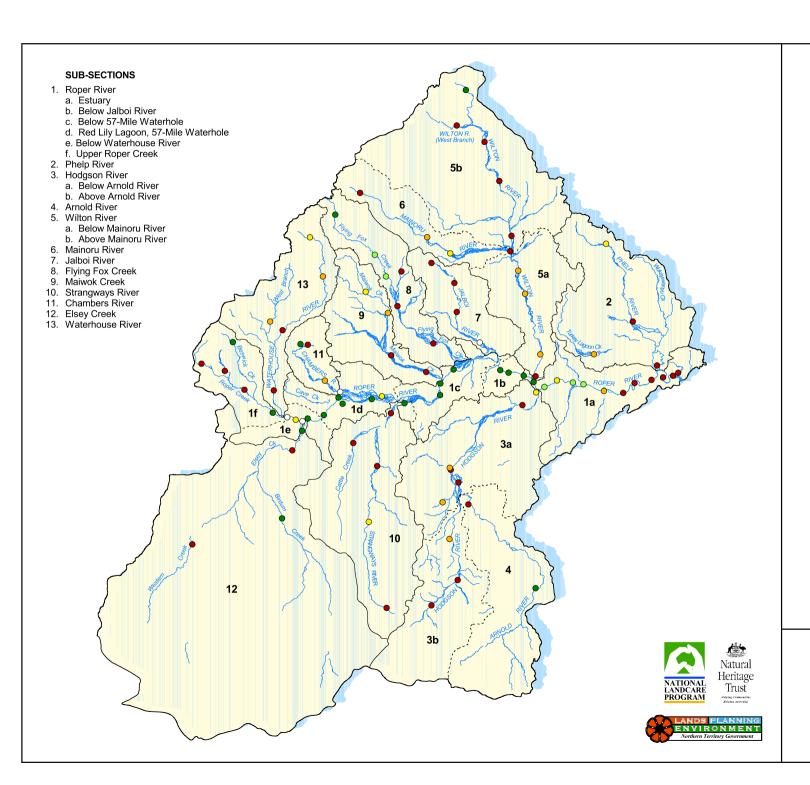
Parkinsonia aculeata (Parkinsonia), a low tree, was the third major exotic species recorded throughout the catchment. Its distribution and the percentage cover recorded are shown. Percentage covers are averaged if the species is recorded for both river banks at a site.

\* The maximum percentage cover for Parkinsonia aculeata was 5%





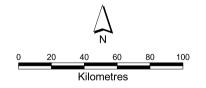
#### COVER AND DISTRIBUTION OF Parkinsonia aculeata



SITE LOCATION	LEGEND % COVER CATEGORY
	16 - 53*
	11 - 15
<u> </u>	6 - 10
•	1 - 5
	0
0	Site Not Assessed
5a	Sub-section Number
	Catchment Boundary
	Sub-catchment Boundary
	Sub-section Boundary
	River
	Creek

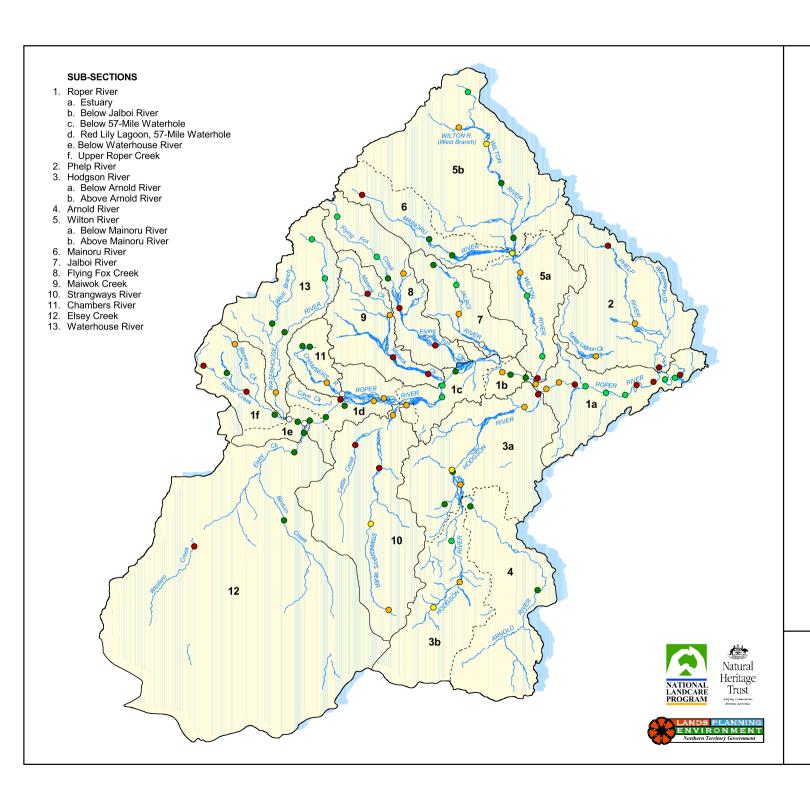
Cover and Distribution of Submerged Aquatic Vegetation - The categories where covers were recorded include filamentous algae, Chara/Nitella, Vallisneria, Myriophyllum and other herb-like forms. No exotic species were recorded.

\* The maximum percentage cover recorded for submerged aquatic vegetation was 53%.





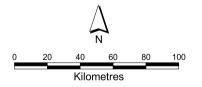
## COVER AND DISTRIBUTION OF SUBMERGED AQUATIC VEGETATION



SITE LOCATION	LEGEND % COVER CATEGORY	
•	16 - 55*	
	11 - 15	
0	6 - 10	
•	1 - 5	
	0	
0	Site Not Assessed	
5a	Sub-section Number	
	Catchment Boundary	
	Sub-catchment Boundary	
	Sub-section Boundary	
	River	
	Creek	

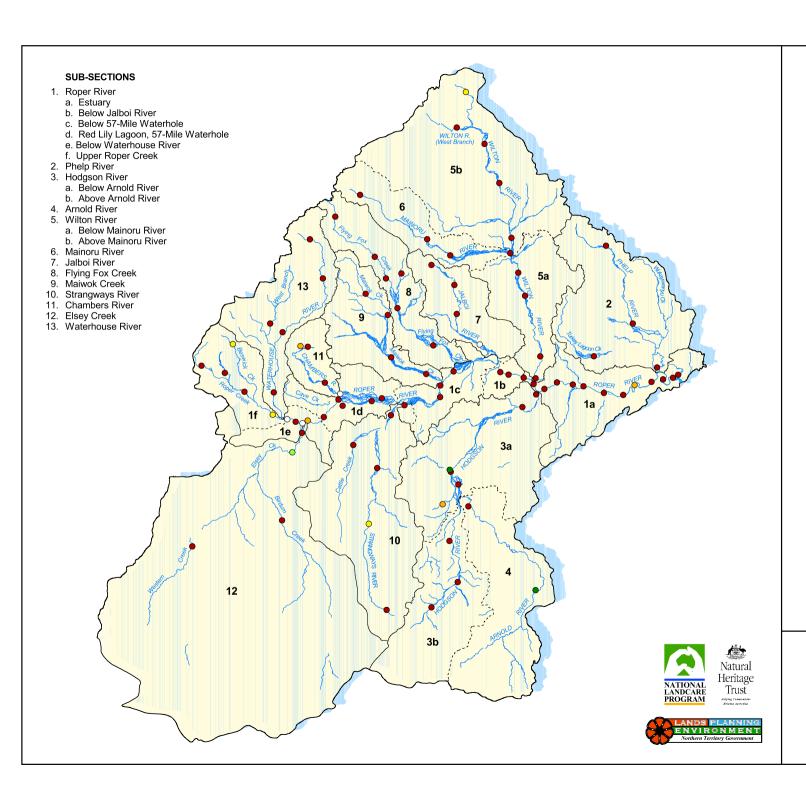
Cover and Distribution of Emergent Aquatic Vegetation - The categories where covers were recorded include Phragmites, Typha, rushes/sedges, Pandanus, Melaleuca, other shrubs/trees and ground covers. The only exotic species recorded was *Phyla nodiflora* (Lippia), which was located on Elsey Creek at Site 12/1 and recorded a cover of 18%.

\* The maximum percentage cover recorded for emergent aquatic vegetation was 55%.





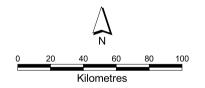
## COVER AND DISTRIBUTION OF EMERGENT AQUATIC VEGETATION



SITE LOCATION	LEGEND % COVER CATEGORY
	16 - 45*
	11 - 15
0	6 - 10
•	1 - 5
	0
0	Site Not Assessed
5a 	Sub-section Number Catchment Boundary Sub-catchment Boundary Sub-section Boundary River Creek
	Сгеек

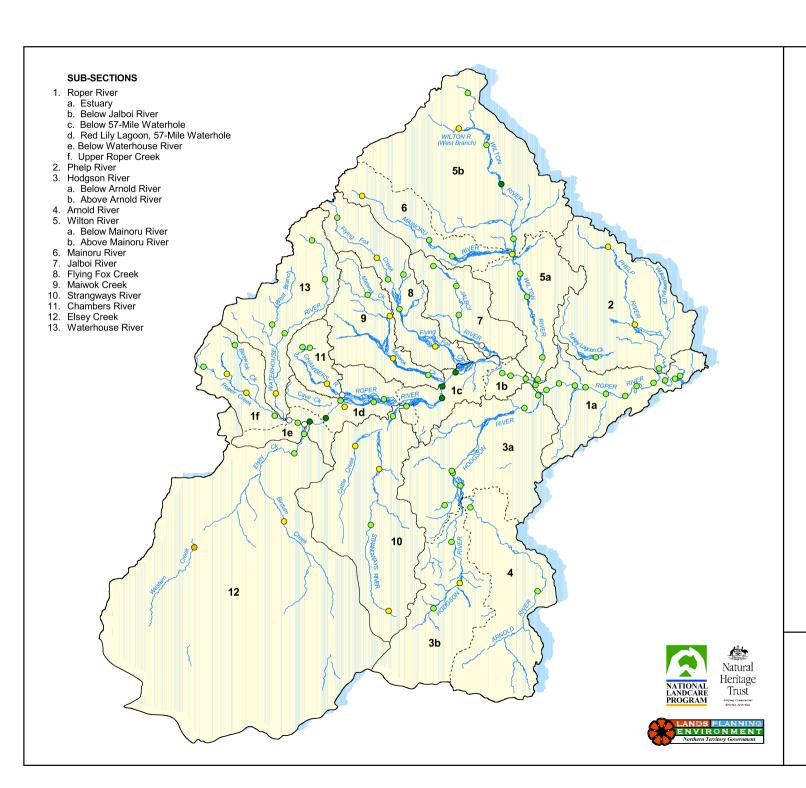
Cover and Distribution of Floating Aquatic Vegetation - The categories where covers were recorded include water lilies and other floating vegetation. No exotic species were recorded.

\* The maximum percentage cover recorded for emergent aquatic vegetation was 45%.





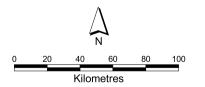
## COVER AND DISTRIBUTION OF FLOATING AQUATIC VEGETATION



SITE LOCATION	INSTREAM / BANK HABITAT CATEGORY	RATING (%)
•	Very High Cover/Diversity	81 - 100
•	High Cover/Diversity	61 - 80
0	Moderate Cover/Diversity	41 - 60
•	Low Cover/Diversity	21 - 40
	Very Low Cover/Diversity	0 - 20
0	Site Not Assessed	
5a	Sub-section Number	
	Catchment Boundary	
	Sub-catchment Boundary	
	Sub-section Boundary	
	River	
	Creek	

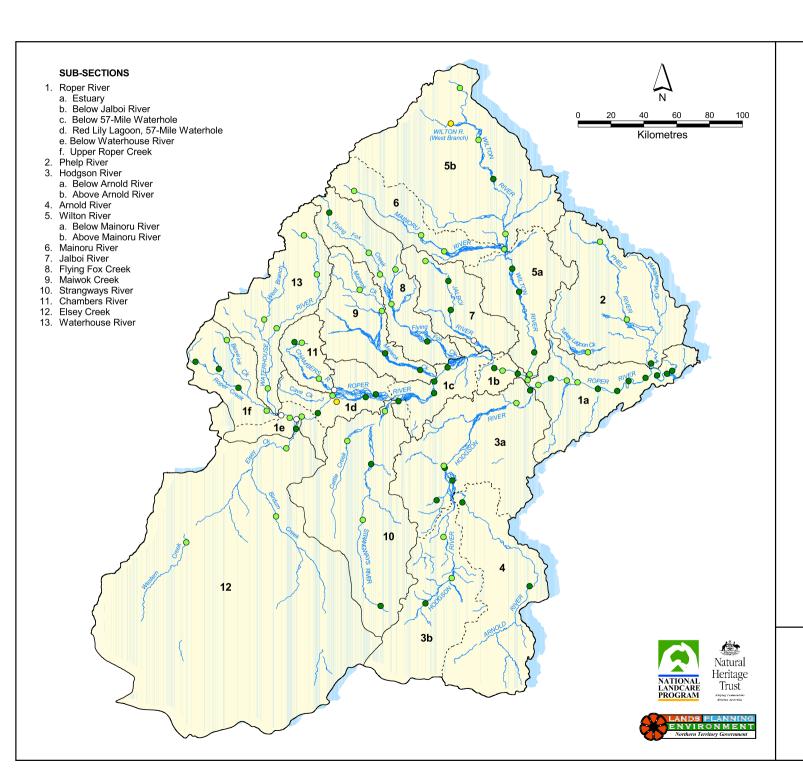
#### NOTE

Cover and Diversity of Instream and Bank Habitats - The ratings are based on a combination of the cover and diversity provided by instream organic debris (logs, branches, leaves/twigs, etc), aquatic vegetation and other habitat types (such as rock, permanent pools) on the bed, as well as the cover and diversity provided by the canopy and other habitats (low vegetation, roots, bank overhang) along the river banks.





COVER AND DIVERSITY OF INSTREAM AND BANK HABITATS



	LEGEND	
SITE LOCATION	OVERALL CONDITION CATEGORY	RATING (%)
•	Essentially Natural/ Stable, Very High Cover/ Diversity or Exotics Absent/Negligible	81 - 100
•		61 - 80
0		41 - 60
•	<b>\</b>	21 - 40
•	Extreme Modification/ Instability, Very Low Cover/ Diversity or Very High Cover for Exotics	0 - 20
0	Site Not Assessed	
5a	Sub-section Number	
	Catchment Boundary	
	Sub-catchment Boundary	
	Sub-section Boundary	
	River	
	Creek	
NOTE  Overall Condition - Provides an indication of the overall condition of the sites based on the following six components that were assessed:  • state of the reach environs		



cover and structural diversity of riparian vegetation

 cover and diversity of instream and bank habitats The rating for each component is combined equally to produce an Overall Condition Rating

cover of exotic riparian vegetation

bank stabilitybed stability

for each site.

#### **OVERALL CONDITION**



#### HANDY HINTS USING ADOBE ACROBAT READER

An update of this free software is available to download from the web. Click on this address to visit the web site: http://www.adobe.com/products/acrobat/readermain.html

#### 1. SETTING UP YOUR PAGE IN ADOBE ACROBAT

Pull down menu FILE and select PREFERENCES Now select GENERAL Change the page units to "millimetres" Change the magnification default zoom to "Fit in Window"

You will notice the <u>actual</u> page size for each pdf page is noted in millimetres at the bottom of the view.

Each page number is also noted as you scroll through the document.

#### 2. HANDY FUNCTIONS TO USE



**BOOKMARKS** have been created to help you locate information in this document. Click on this tool to view the bookmarks.



**FIT IN VIEW** Select this tool to view the entire page.



**ZOOM IN** Drag and click a rectangle to enlarge a selected area.



<u>PANNING</u> This tool allows you to move around the viewing screen. Select the tool and drag the hand icon to scroll around the screen.



**SEARCH** The left binoculars can search and locate a specific word or phrase in the current page. The right binoculars will search the entire document. (control G to find the next location)

#### 3. HOW TO PRINT THIS PDF DOCUMENT

These maps were designed to be printed on an A4 colour printer. For best results when printing, select the highest resolution possible.

- 1. Select Print icon
- 2. Select printer required.
- 3. "FIT TO PAGE" must NOT be ticked
- 4. Select which pages you wish to print (see page no bottom of the screen)
- 5. Select PROPERTIES tab
- 6. Select A4 portrait or landscape to suit the page
- 7. Change the resolution to suit
- 8. Press OK
- 9. Press OK to print