

DALY RIVER CATCHMENT

Part 2

Accompanying Sub-catchment Information



Technical Report No TR99/11

J.J. Faulks

Department of Lands, Planning and Environment
Katherine, NT

July 1998



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The report on the Daly River Catchment consists of two parts:

Part 1 Daly River Catchment – An Assessment of the Physical and Ecological Condition of the Daly River and its Major Tributaries

Part 2 Daly River Catchment – Accompanying Sub-catchment Information

The reports are available from the Parks and Wildlife Commission of the Northern Territory (PWCNT) Library and the National Library, Canberra, through interlibrary loan.

The reports may also be obtained from the Katherine Regional Office of the Department of Lands, Planning and Environment (DLP&E). Inquiries should be addressed to:

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Photograph front cover: Pandanus aquaticus fruit (taken by Judy Faulks)



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The project commenced in February 1995 and has been partly funded by the National Landcare Program (now known as the Natural Heritage Trust). I was employed to undertake the field assessment of the Daly River and major tributaries; produce a database to store the information collected and assist with data analysis; and to produce a report and associated maps on the outcomes.

The majority of the field surveys were conducted between June and November 1995; with the remaining surveys carried out April to May 1996, August 1996, October to November 1996 and August 1997. The following people assisted me with my field survey work:

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Debbie Telfer (DLP&E)

At times the survey work was 'challenging', with not only crocodiles to contend with, but mudflats, tidal bores, rapids, fires and hot November weather. The helpfulness of everyone throughout the field surveys was extremely appreciated. The great sites and experiences will never be forgotten.

During 1996 field surveys were also completed for the Victoria River and major tributaries and will form the basis of another report.

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Map 37	Hayes Creek (Sub-section 8)	120
Map 38	Middle Creek (Sub-section 9)	126
Map 39	Stray Creek (Sub-section 10)	132
Map 40	Bradshaw Creek (Sub-section 11)	140
Map 41	Dead Horse Creek (Sub-section 12)	144
Map 42	Fergusson River – Below Edith River (Sub-section 13a)	150
Map 43	Fergusson River – Above Edith River (Sub-section 13b)	156
Map 44	Edith River (Sub-section 14)	162
Map 45	Eight Mile Creek (Sub-section 15)	170
Map 46	Cullen River and Copperfield Creek (Sub-section 16)	174
Map 47	Flora River and Hayward Creek (Sub-section 17)	180
Map 48	Mathison and Aroona Creeks (Sub-section 18)	192
Map 49	Katherine River – Below King River (Sub-section 19a)	200
Map 50	Katherine River – Below Seventeen Mile Creek (Sub-section 19b)	206
Map 51	Katherine River – Below Grace and Fanny Creeks (Sub-section 19c)	220
Map 52	Katherine River – Below Birdie Creek (Sub-section 19d)	228
Map 53	Katherine River – Upper Katherine River (Sub-section 19e)	236
Map 54	Limestone and Scott Creeks (Sub-section 20)	248
Map 55	King River – Below Dry River (Sub-section 21a)	254
Map 56	King River – Above Dry River (Sub-section 21b)	262
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Map 58	Durrinyan Creek (Sub-section 23)	276
Map 59	Seventeen Mile Creek (Sub-section 24)	282



Pandanus spiralis



8. INTRODUCTION

Major waterways of the Northern Territory are being utilised for recreation, pastoralism, cropping, horticulture and mining. Little is known about the condition of these rivers. The waterways are a major resource and require appropriate management in order to minimise their degradation and to achieve sustainable use.

Each of Australia's major drainage divisions can be topographically sub-divided into river basins. Each basin defines the watershed or the catchment area of each major river system. The drainage divisions and basins for the Northern Territory, as defined by the Australian Water Resources Council, are shown in Map 1 (Part 1).

The 'Top End Waterways Project' commenced in February 1995 and has been partly funded by the National Landcare Program (now known as the Natural Heritage Trust). The Department of Lands, Planning and Environment has overseen the project.

The overall aim of the study was to assess, describe and report on the land and water resources of the major waterways in the Katherine Region of the NT and to prepare for publication a comprehensive report on each of those waterways.

Throughout 1995-1997 the major tributaries within the Daly River and Victoria River catchments were assessed. This report focuses on the Daly River catchment. Results for the Victoria River catchment will form the basis of another report.

The majority of the field surveys for the Daly River Catchment were conducted between June and November 1995; with the remaining surveys carried out April to June 1996, August 1996, October to November 1996 and August 1997.

The objectives of the project were to:

- (i) identify the current physical and ecological condition of the major waterways and land corridors within each river catchment studied;
- (ii) identify the use and management of the waterways (ie land tenure, types and levels of use, impacts, etc), highlight major river management issues and propose appropriate broad river management recommendations;
- (iii) establish a 'baseline' for use in the long-term monitoring of the condition of these river systems; and
- (iv) raise the profile of river management issues.

The general methodology framework (ie sampling strategy, survey methods and data sheets) that has been adapted for this project was developed by J.R. Anderson for the Qld Department of Primary Industries (refer Section 3 'Methods' in Part 1).

Unlike the majority of other states, the Northern Territory has no Integrated Catchment Management (ICM) framework in place. The Northern Territory government has a statutory requirement to monitor natural resource condition and has responsibilities for *State of the Environment* reporting and, more recently, the *National Land and Water Resources Audit*.

It is expected that the main users of the information provided by this project will be the Northern Territory government and other groups interested in waterway management, including landcare and community groups, best practice groups and property owners or managers.

The information provided by this project is intended to assist in developing regional and catchment management strategies. In particular the results will contribute to the Katherine-Daly Natural Resources Management Strategy and the Environmental Flows Initiative program. The results can also generally contribute to the NT Weeds Management Strategy, vegetation clearing guidelines, buffer width recommendations and track and river crossing construction guidelines.

The project will help to identify key issues, problems and priorities with the rivers. It will also help to recognise the extent, processes and causes of river degradation and thereby pinpoint actions that would have to be taken in order to reverse any deterioration. Rivers and creeks that are showing signs of degradation (eg weed infestation, accelerated erosion, concentrated use, etc) will be highlighted as requiring more specific river management guidelines or plans.

The project, through the collection of baseline data, provides a reference point or “snap-shot” of what the rivers and creeks are like now. Follow-up surveys of rivers in priority areas would need to be carried out over time in order to look at the rate of change in condition and stability. The project therefore can be used as a monitoring tool.

The Daly River Catchment report consists of two parts. Part 1 provides an overview of the Daly River catchment, the methodology and the results on an overall catchment basis as well as for each sub-catchment. Part 2 provides additional sub-catchment information including sub-section maps, river cross-section diagrams and riverine vegetation profiles or lists.





9. SUMMARY OF INFORMATION PRESENTED

The following information is presented for each of the Daly River sub-sections:

1. Table summarising the survey information collected at each site.

The site numbers and tributary names are listed. As well, sample point letters (eg a, b, *etc*) and the associated channel habitat type being sampled (eg pool, run riffle, rapid, glide, waterfall, cascade, *etc*) are listed. Usually two sample points are selected at each site, one at a pool habitat and one at a shallow habitat-type like a riffle or rapid. More detailed information is collected at these sample points and the table highlights whether a cross-section survey and a vegetation profile has been completed. Those sites where only photographs were taken and very basic information has been collected are called photographic sites.

2. A map showing each sub-section.

Maps 27-59 show each sub-section within the Daly River catchment. Each map shows the location of sites, sample points and vegetation profiles within each sub-section. The location of longitudinal profile surveys (ie depth measurements along the streams' 'thalweg') are also highlighted. Major features within each sub-section, including river crossings and boundaries of nature parks and/or national parks, are shown.

3. Cross-section survey graphs for each site.

Usually two cross-section surveys are carried out at a site, one for each sample point or channel habitat type studied. The graphs present the depth measurements (that were collected in the field and have been stored within the project's database) diagrammatically for each cross-section survey, plotted looking downstream and extending from the left upper bank across the stream channel bed to the right upper bank. The water level at the time of the survey is shown in relation to the 'water mark' level. The concept of a 'water mark' is used to provide a reference point for standardising the channel measurements and for defining the boundary between the lower and upper banks (refer to glossary). The shape of both the left and right upper banks is not shown, but rather only the height and width of these banks is shown. The location of rock outcrops is also recorded.

4. Riverine vegetation profiles.

A vegetation profile survey was not completed at every site. The diagrams present the results of the vegetation profile or belt transect survey diagrammatically in order to show the zonation of, and a typical cross-section through, the riverine vegetation. The diagram includes a site plan of the belt transect showing the location of all vegetation >1.3m tall. A cross-section through a typical section of vegetation is also shown. The cross-section is at right angles to the water's edge and extends to the upper bank or edge of the riverine vegetation. The height range and botanical name for each species has been included. A listing of other major species located at the site, but not shown in the site plan and cross-section, are also listed. Measurements for each tree and shrub (>1.3m tall) located in the profile (such as diameter at 1.3m, bole and tree height, and crown width), and ground covers identified through quadrat sampling, are stored in the project's database.

5. Major riverine vegetation species recorded at a site.

At sites where a vegetation profile survey was not completed a list of the major vegetation species recorded for each site has been compiled. Those species that are exotic and are a declared noxious weed within the Northern Territory are highlighted.

Since the compilation of the riverine vegetation profiles and lists of the major vegetation species recorded for each site where a profile survey was not undertaken, there has been a change to the botanical name of several species listed below:

Botanical name used

Eucalyptus clavigera
Eucalyptus papuana
Vallisneria spiralis

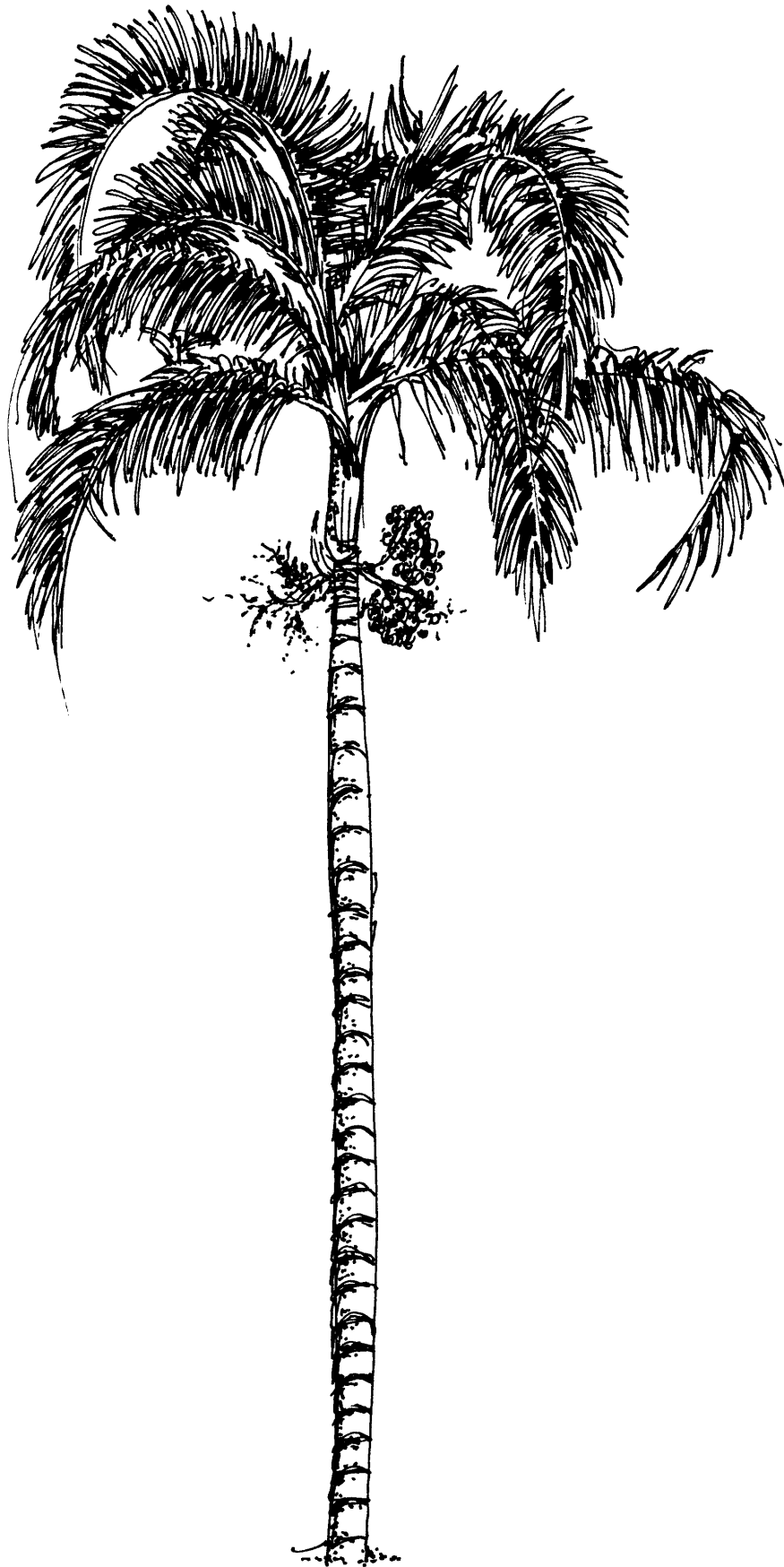
Revised botanical name

Eucalyptus polysciada
Eucalyptus bella
Vallisneria nana

Gymnanthera oblonga has been listed as a shrub on the riverine vegetation profiles but is a climber. Other scandent shrubs (eg *Phyllanthus reticulatus*) have also been listed as shrubs rather than climbers.

The raw data that has been tabulated and presented diagrammatically in Part 2 is currently stored in an Access Relational Database, which has been designed for the 'Top End Waterways Project'. This database can be used as an ongoing management tool to store and analyse the information collected over time.





Carpentaria acuminata



10. SUB-CATCHMENT INFORMATION

Maps 27-59 show each sub-section within the Daly River catchment.

The Daly River catchment has the following sub-catchments:

- Daly River
 - Estuary
 - Below Douglas River
 - Below Fergusson River
 - Below Katherine River
- Chilling Creek
- Hayward Creek
- Fish River
- Bamboo (Moon Boon) Creek
- Green Ant Creek
- Douglas River (including Douglas River, Hayes Creek and Middle Creek Sub-sections)
- Stray Creek
- Bradshaw Creek
- Dead Horse Creek
- Fergusson River (including Fergusson River below and above Edith River, Edith River, Eight Mile Creek, Cullen River and Copperfield Creek Sub-sections)
- Flora River (including Flora River and Hayward Creek and Mathison and Aroona Creeks Sub-sections)
- Katherine River
 - Below King River
 - Below Seventeen Mile Creek
 - Below Grace and Fanny Creeks
 - Below Birdie Creek
 - Upper Katherine River
- Limestone Creek
- King and Dry Rivers (including King River below and above Dry River, Dry River and Durrinyan Creek Sub-sections)
- Seventeen Mile Creek



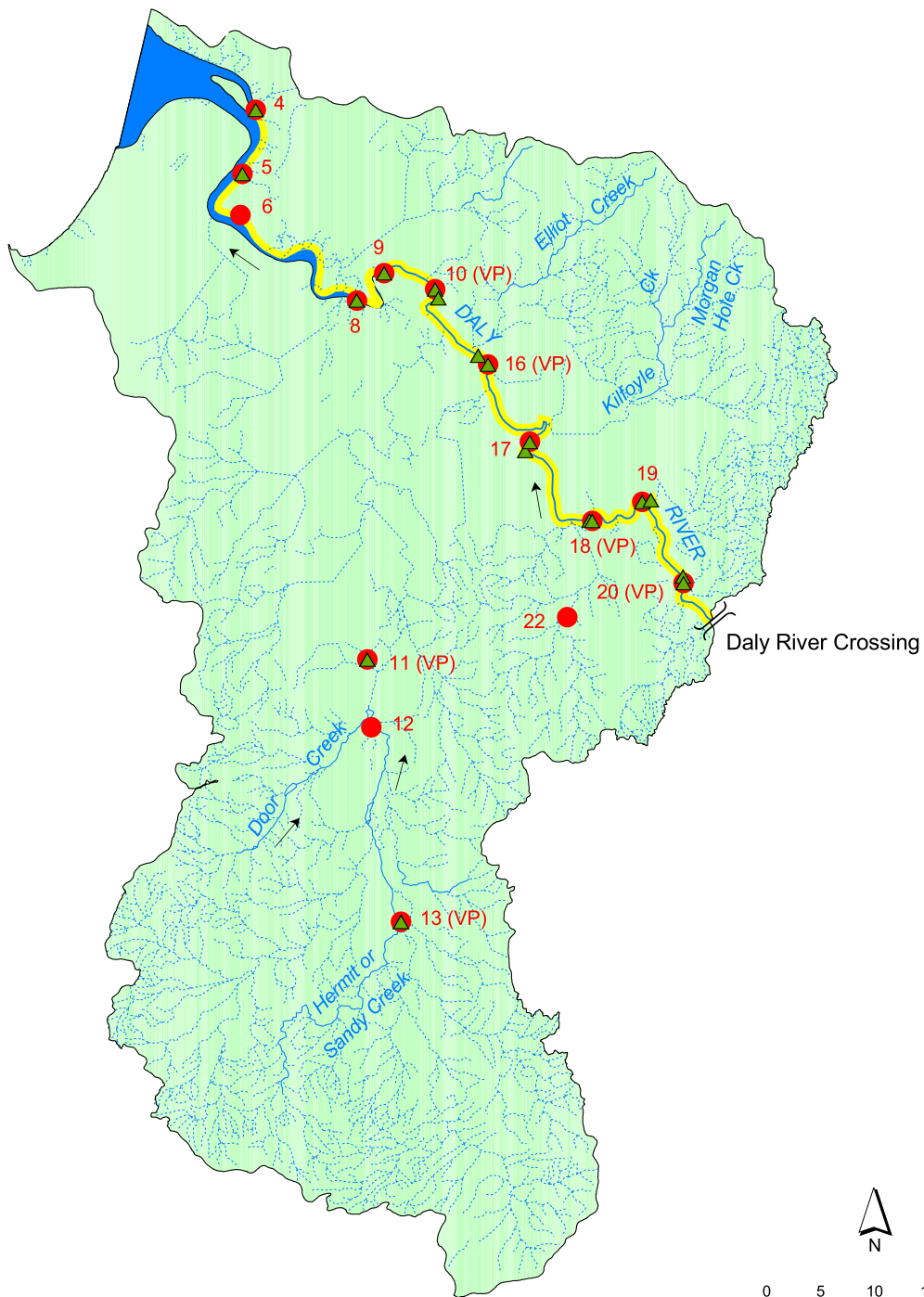
10.1 Daly River

10.1.1 Daly River Estuary

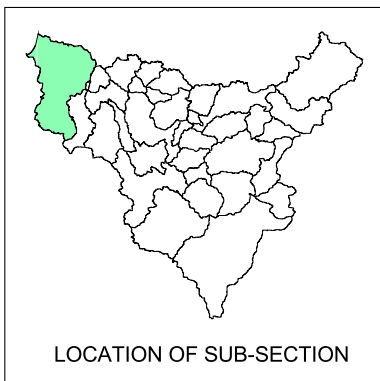
Sub-section 1a incorporates the tidal section of the Daly River, downstream of Daly River Crossing. Sites were located on the Daly River as well as on several small tributaries (4 sites). Of the 15 sites located in this sub-section, 11 of these were fully assessed (refer to Table 10.1 and Map 27).

Table 10.1 Summary of Survey Information for Sub-section 1a – Daly River Estuary

Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
4	Daly River	A	Pool	√		
5	Daly River	A	Pool	√		
6	Daly River					√
8	Daly River	A	Pool	√		
9	Daly River	A	Pool	√		
10	Daly River	A	Pool	√	√	
		B	Run	√		
11	Hermit (or Sandy) Creek	A	Riffle	√	√	
		B	Pool	√		
12	Hermit (or Sandy) Creek					√
13	Hermit (or Sandy) Creek	A	Riffle	√	√	
		B	Pool	√		
16	Daly River	A	Pool	√	√	
		B	Run	√		
17	Daly River	A	Run	√		
		B	Pool	√		
18	Daly River	A	Pool	√	√	
		B	Run	√		
19	Daly River	A	Riffle	√		
		B	Pool	√		
20	Daly River	A	Riffle	√	√	
		B	Pool	√		
22	Charlies Creek					√



Area - 4,945 km²



LEGEND	
● 5	Site
▲	Sample Point
(VP)	Vegetation Profile
—	Longitudinal Profile Survey
—	River
—	Creek
←	Flow direction

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

DALY RIVER Estuary

SUB-SECTION 1a

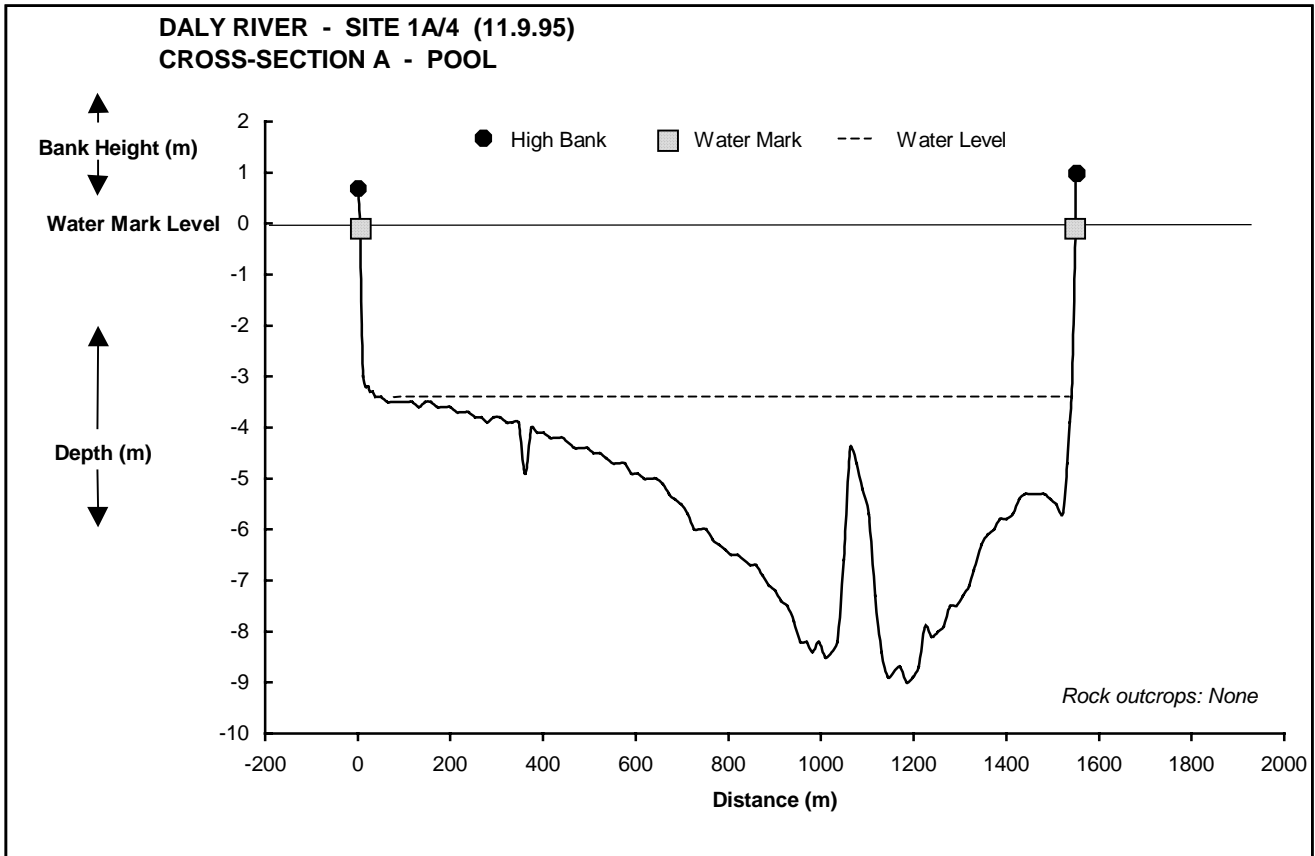


Figure 10.1 Cross-section Survey for Site 1a/4 – Daly River

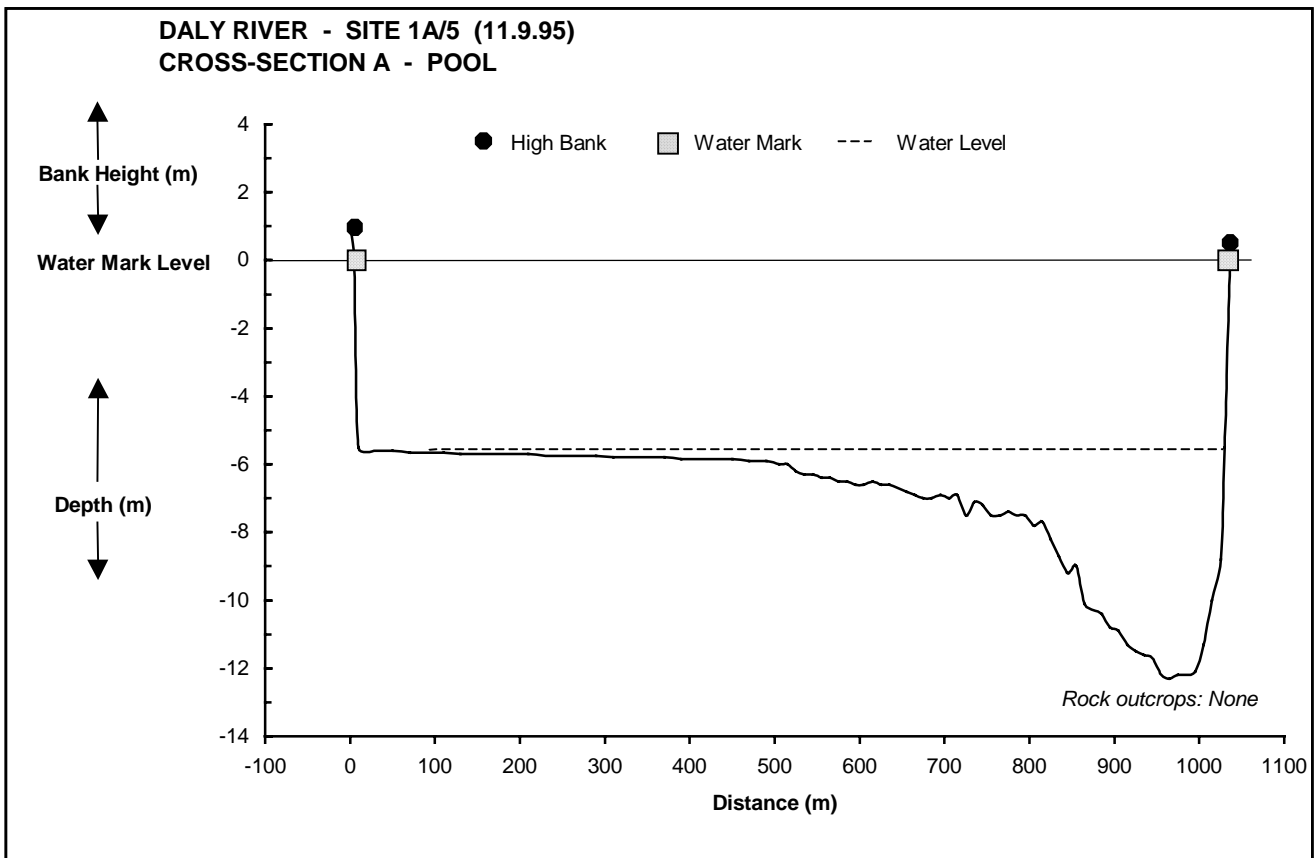


Figure 10.2 Cross-section Survey for Site 1a/5 – Daly River

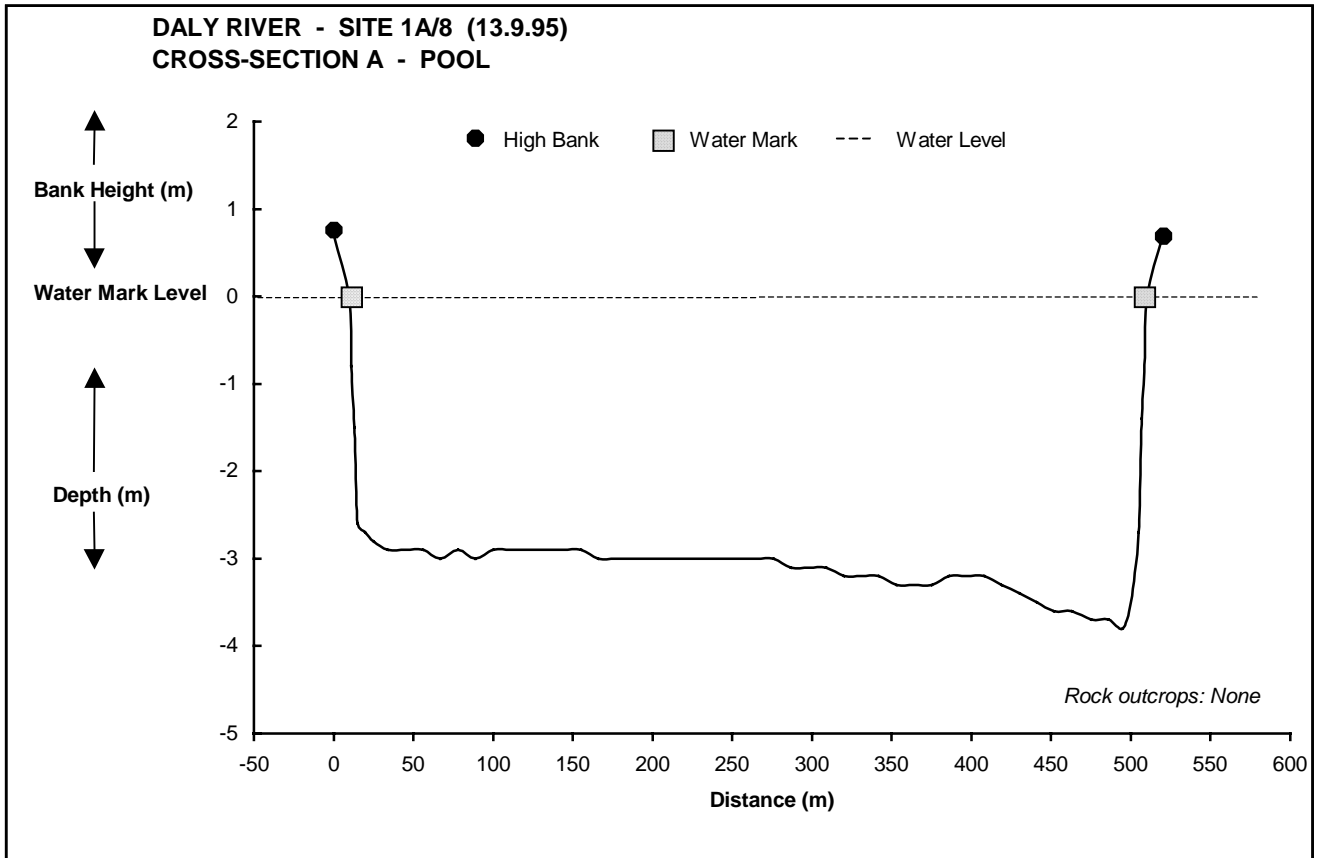


Figure 10.3 Cross-section Survey for Site 1a/8 – Daly River

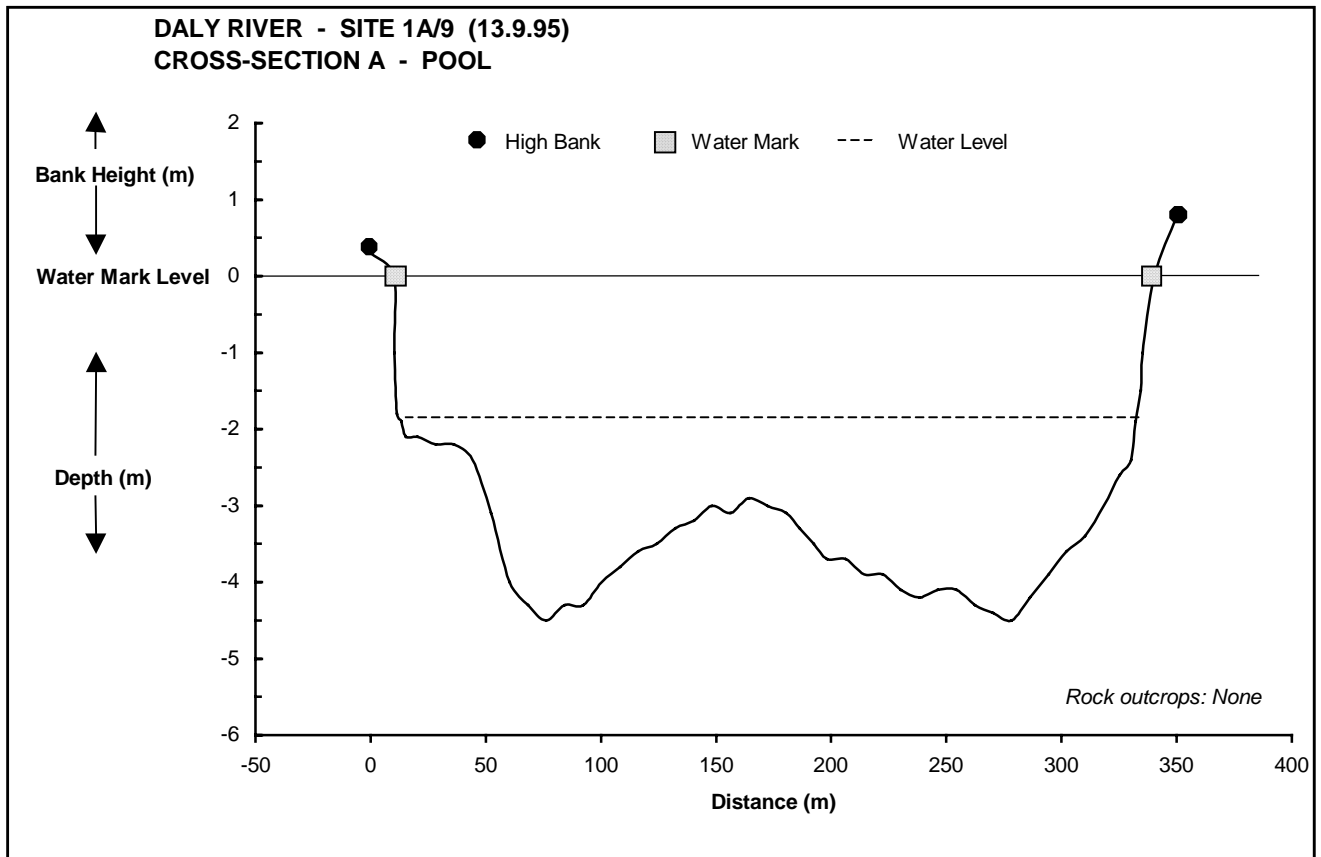


Figure 10.4 Cross-section Survey for Site 1a/9 – Daly River

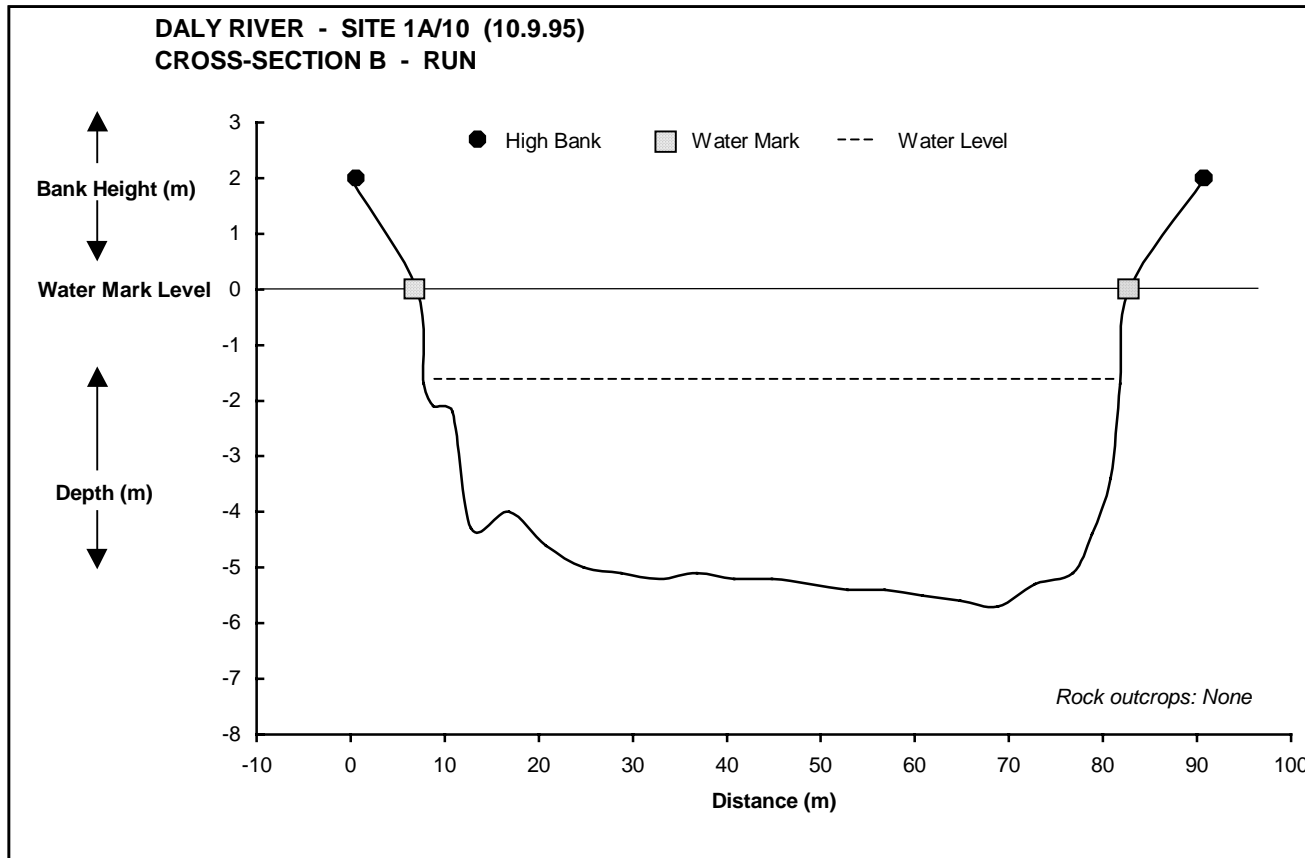
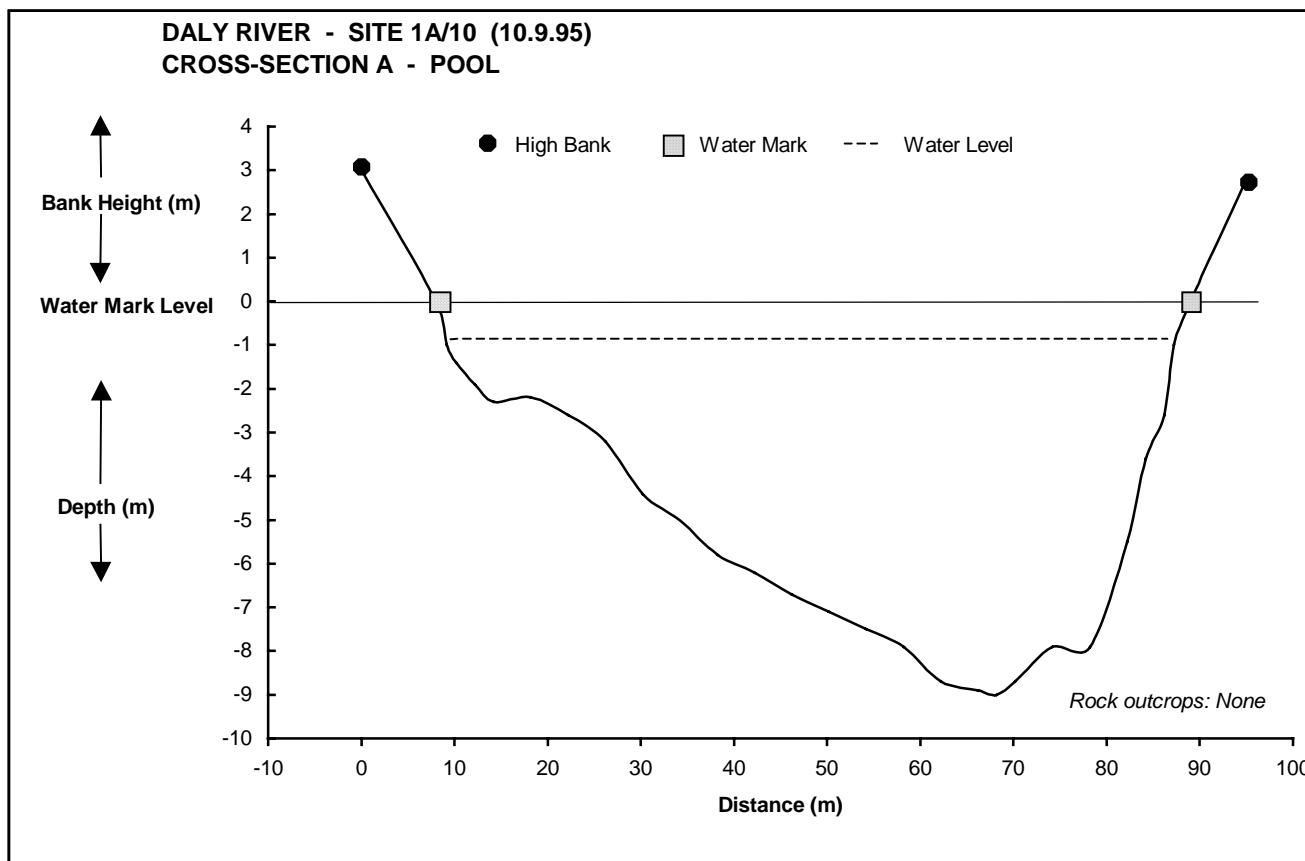


Figure 10.5 Cross-section Surveys for Site 1a/10 – Daly River

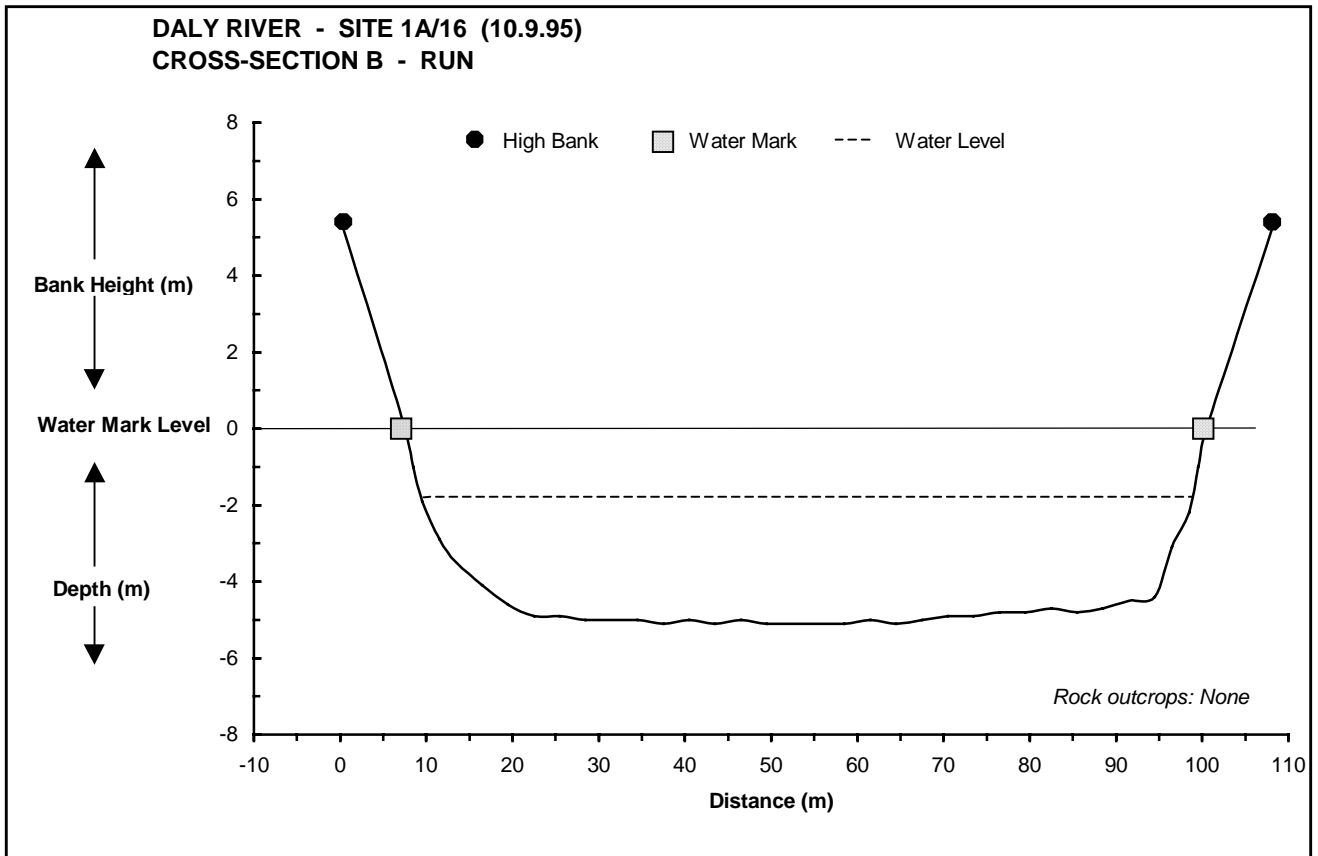
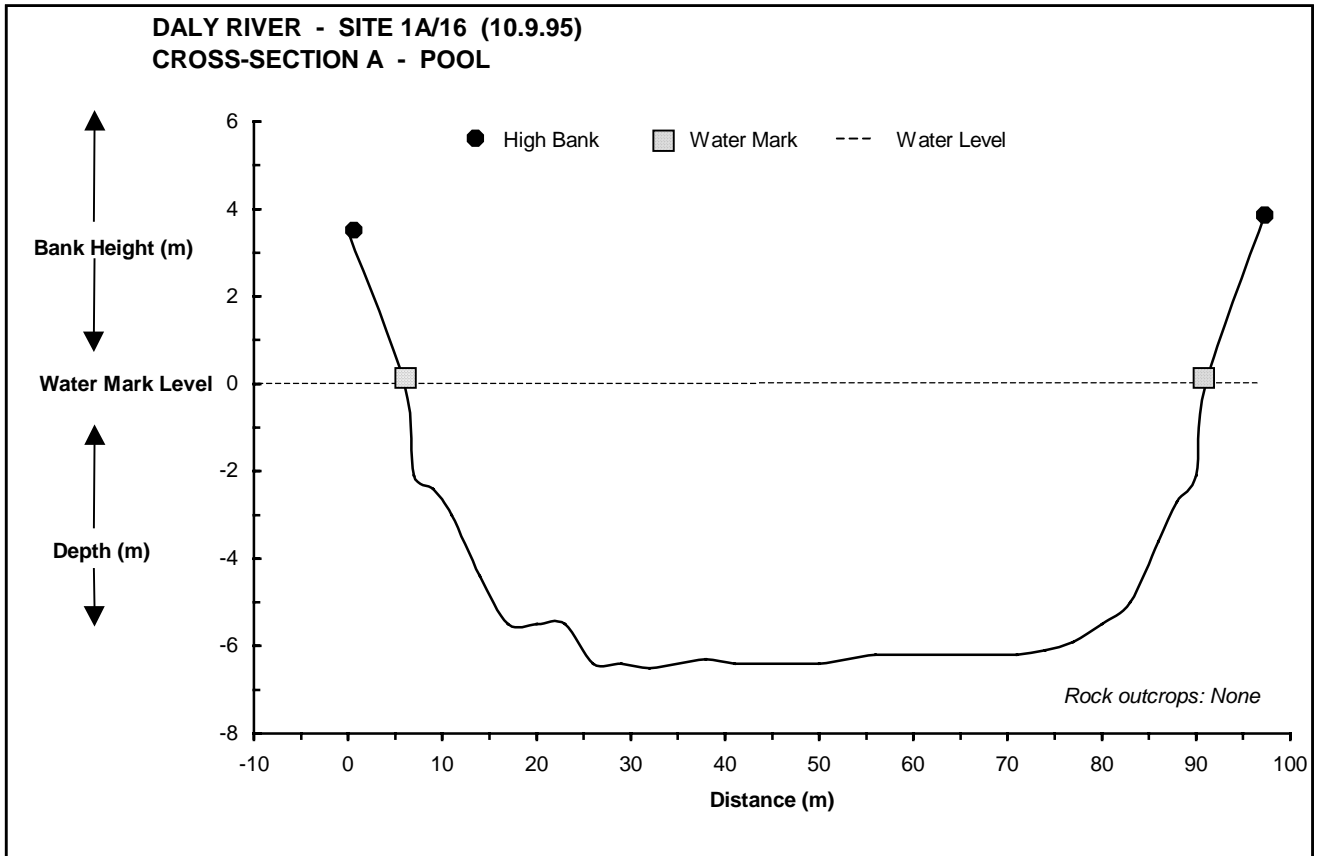


Figure 10.6 Cross-section Surveys for Site 1a/16 – Daly River

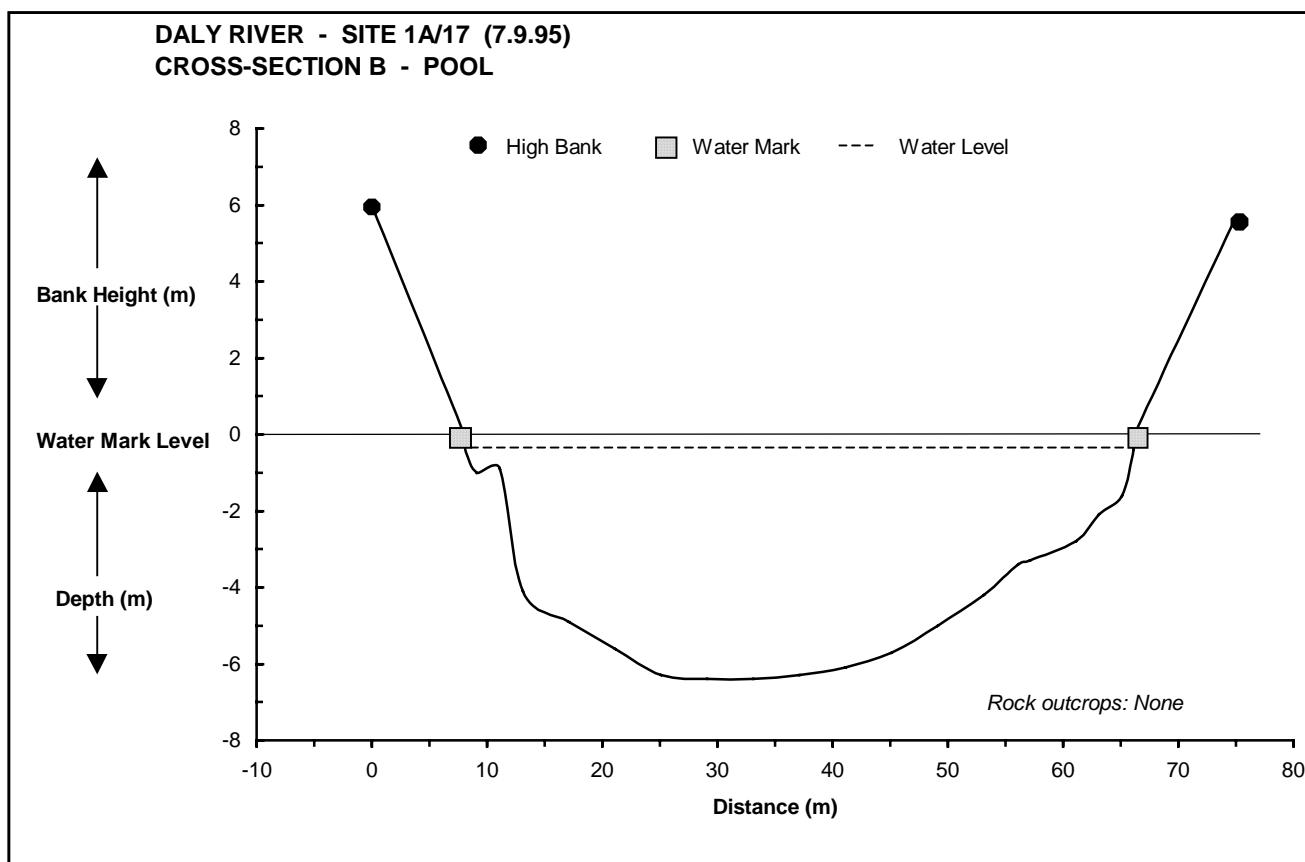
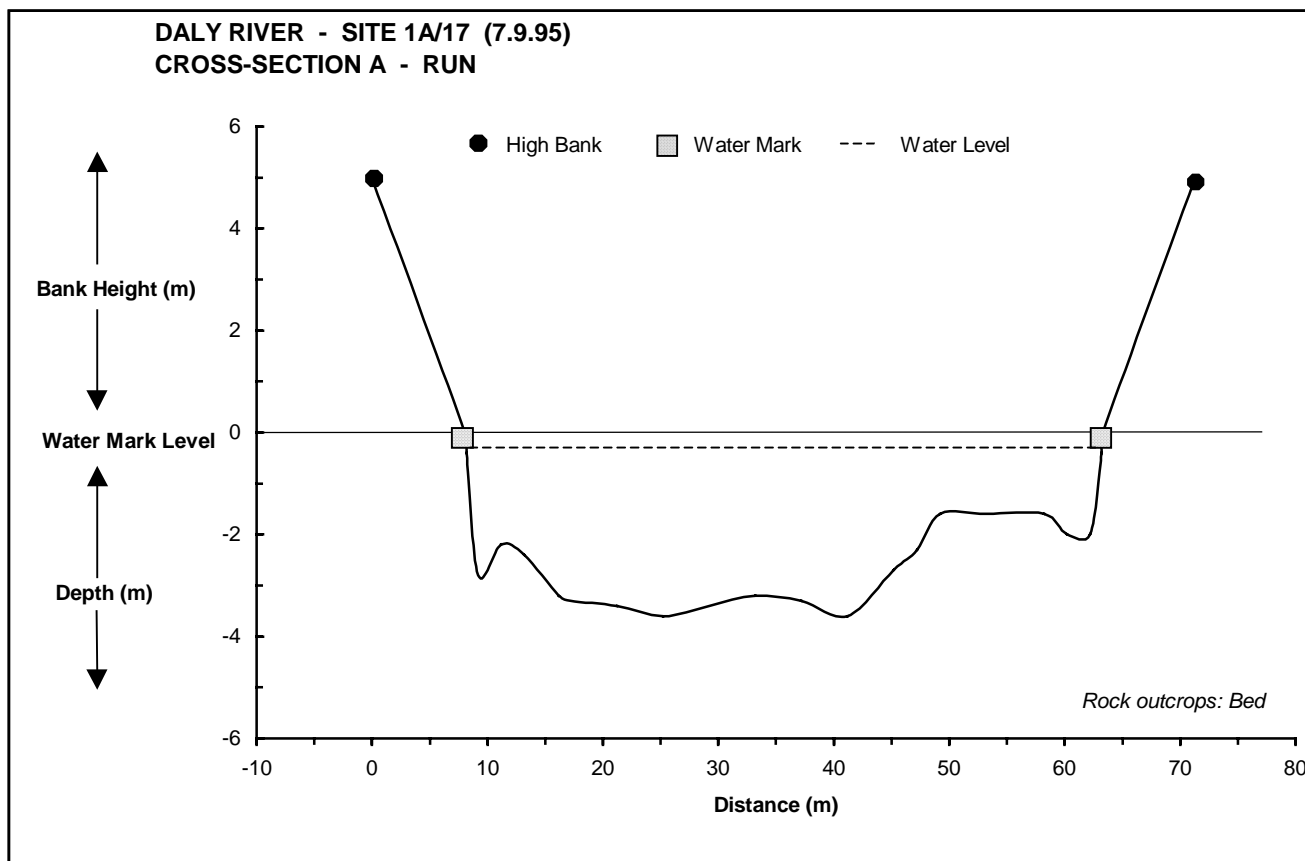


Figure 10.7 Cross-section Surveys for Site 1a/17 – Daly River

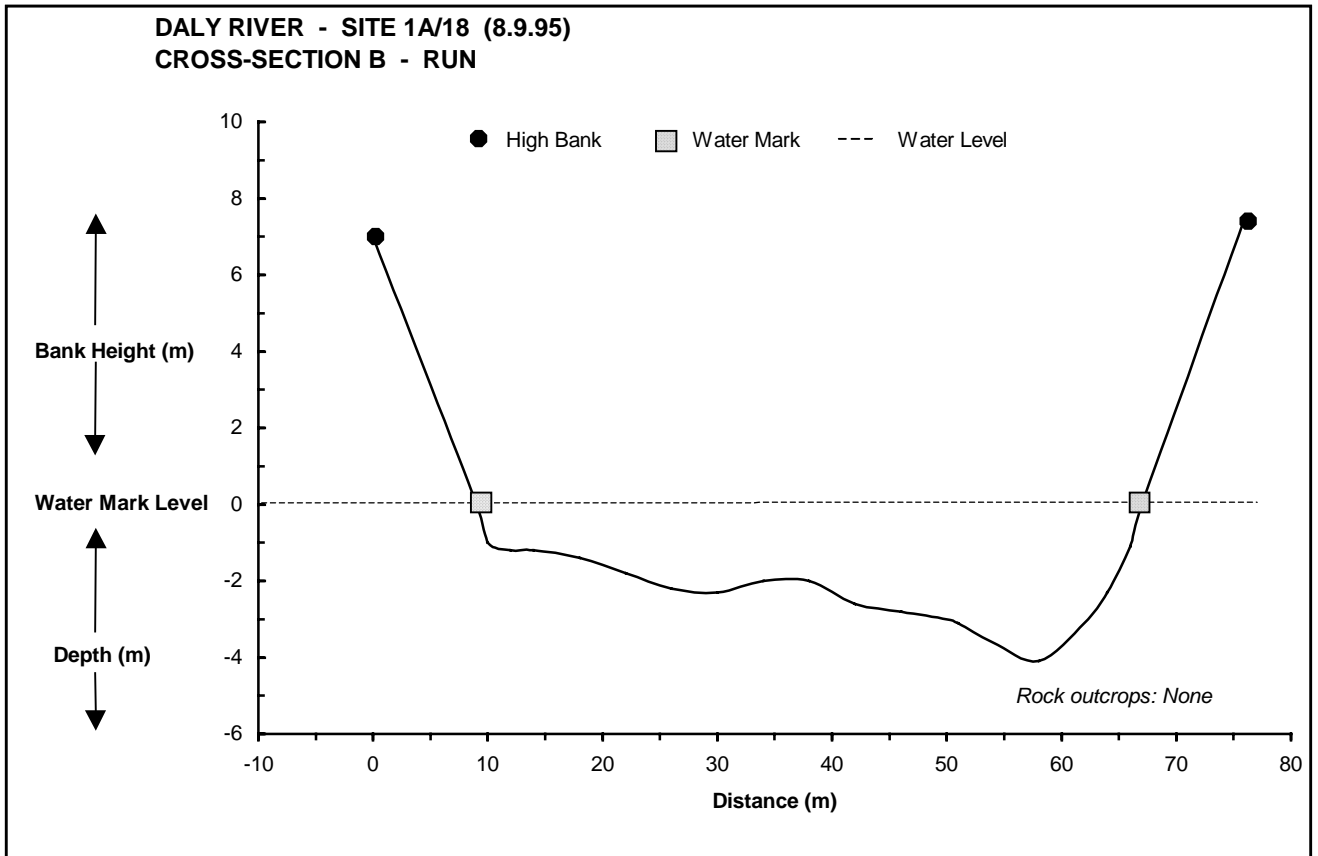
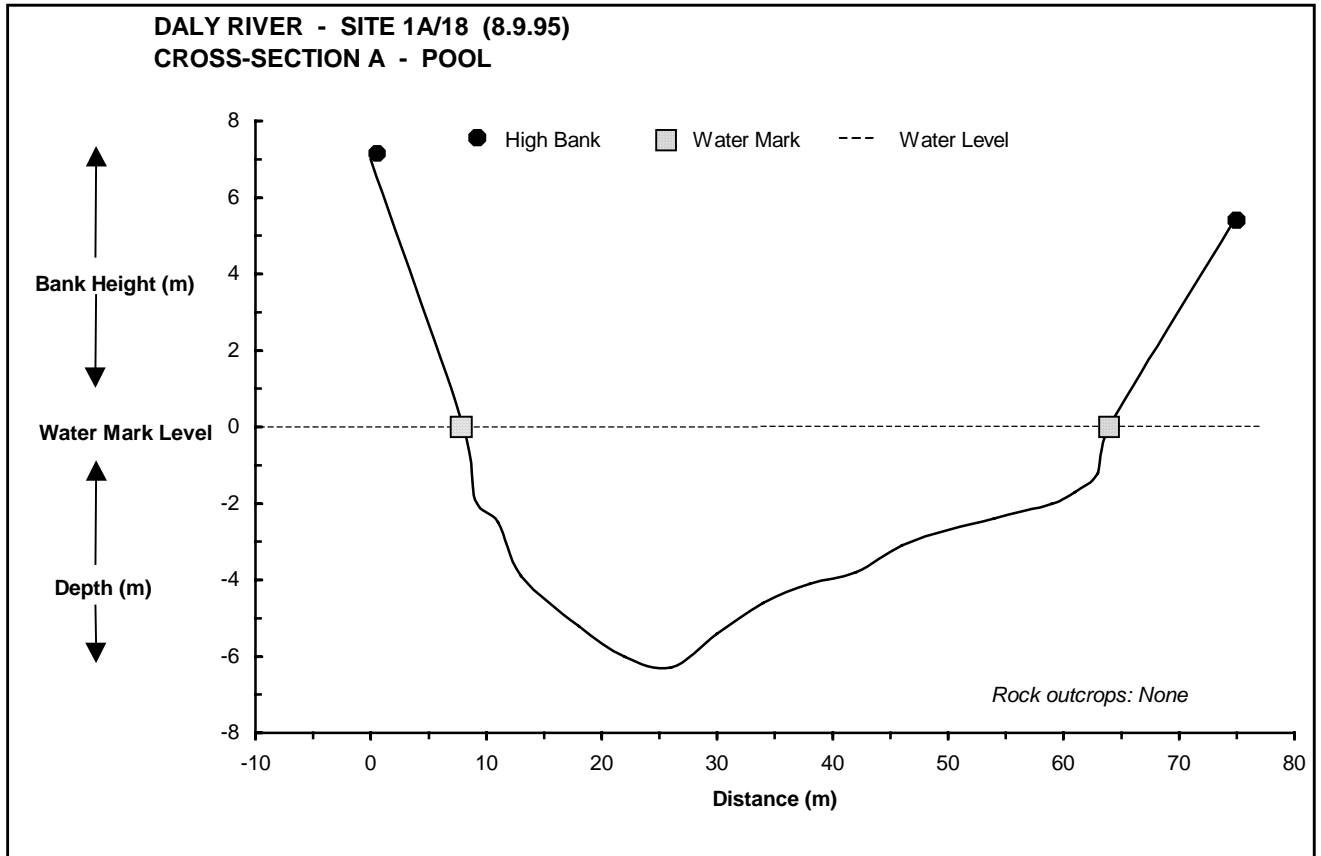


Figure 10.8 Cross-section Surveys for Site 1a/18 – Daly River

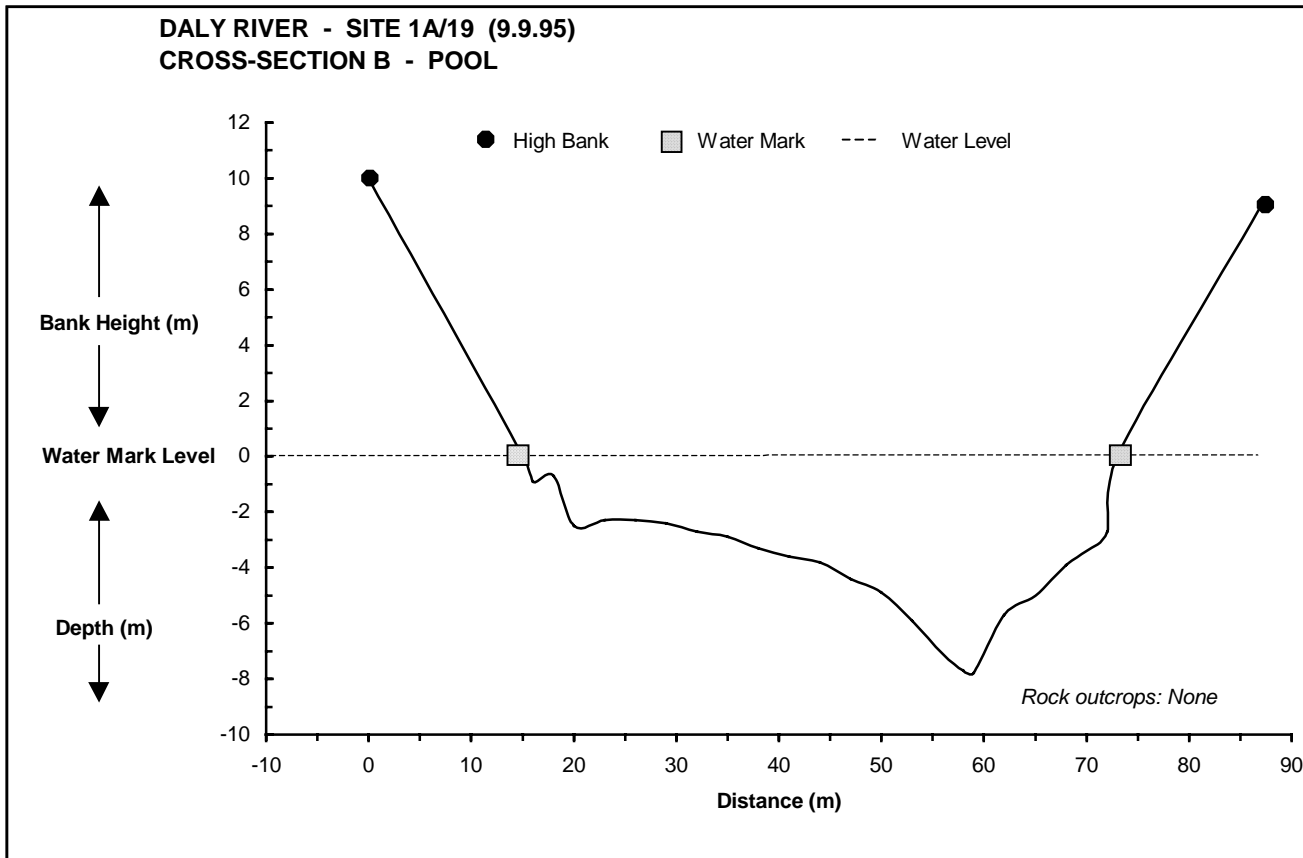
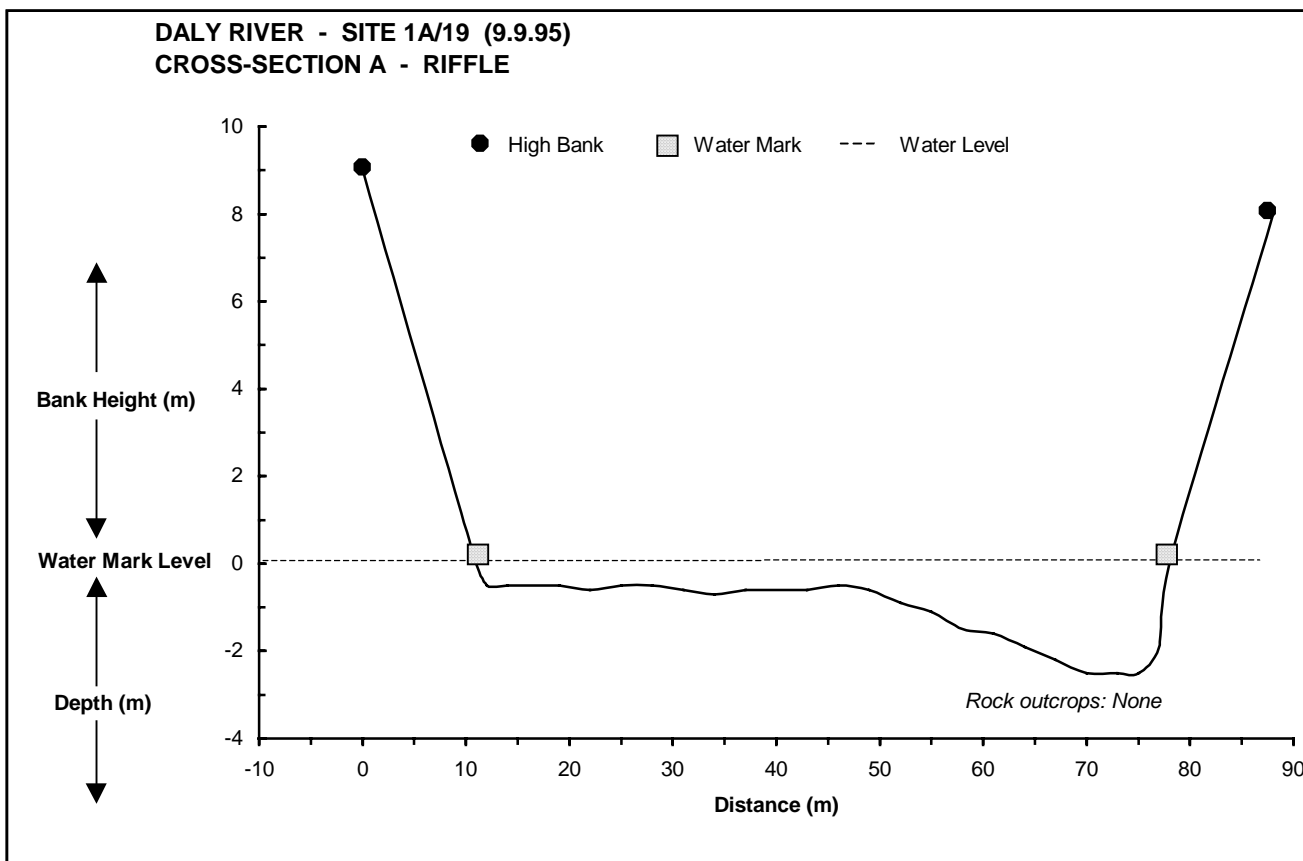


Figure 10.9 Cross-section Surveys for Site 1a/19 – Daly River

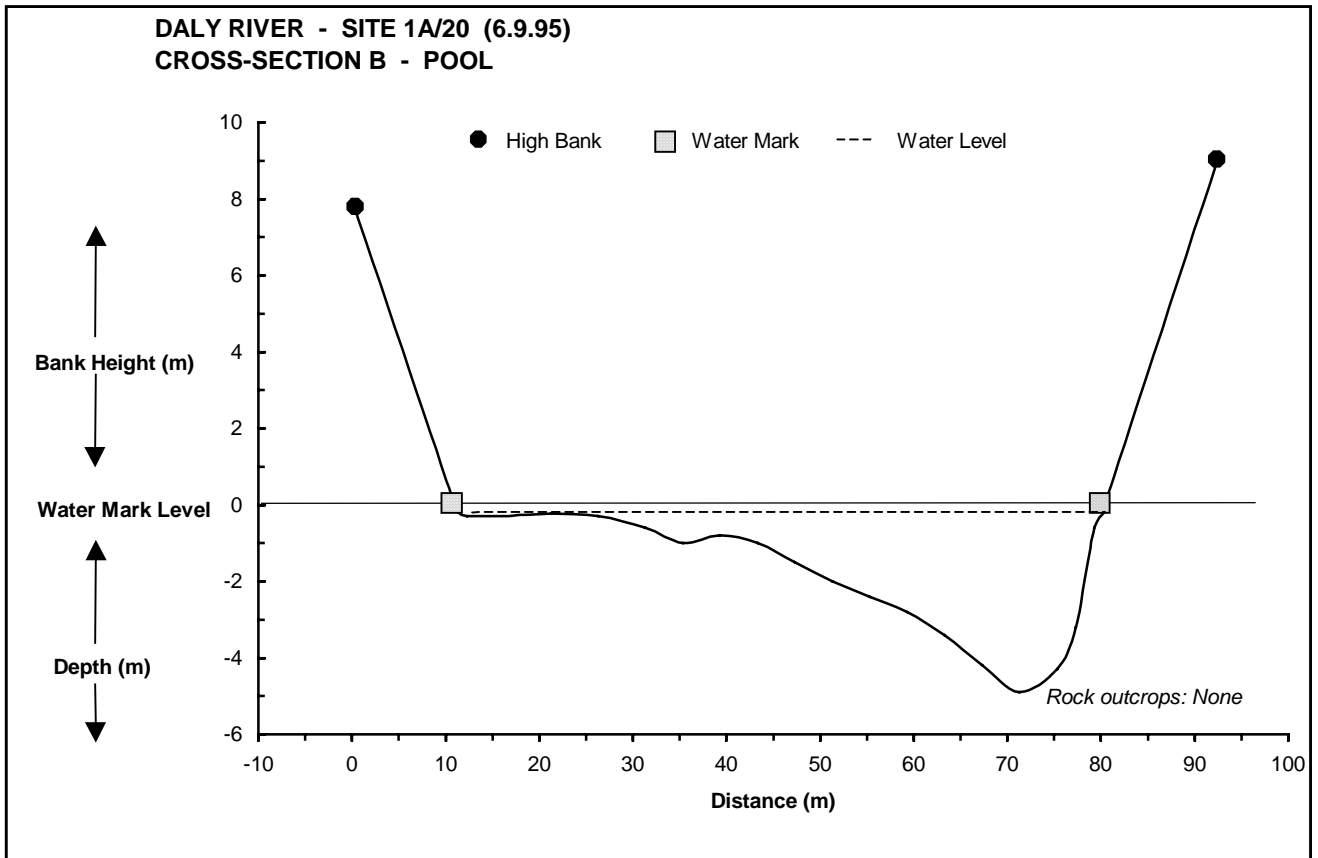
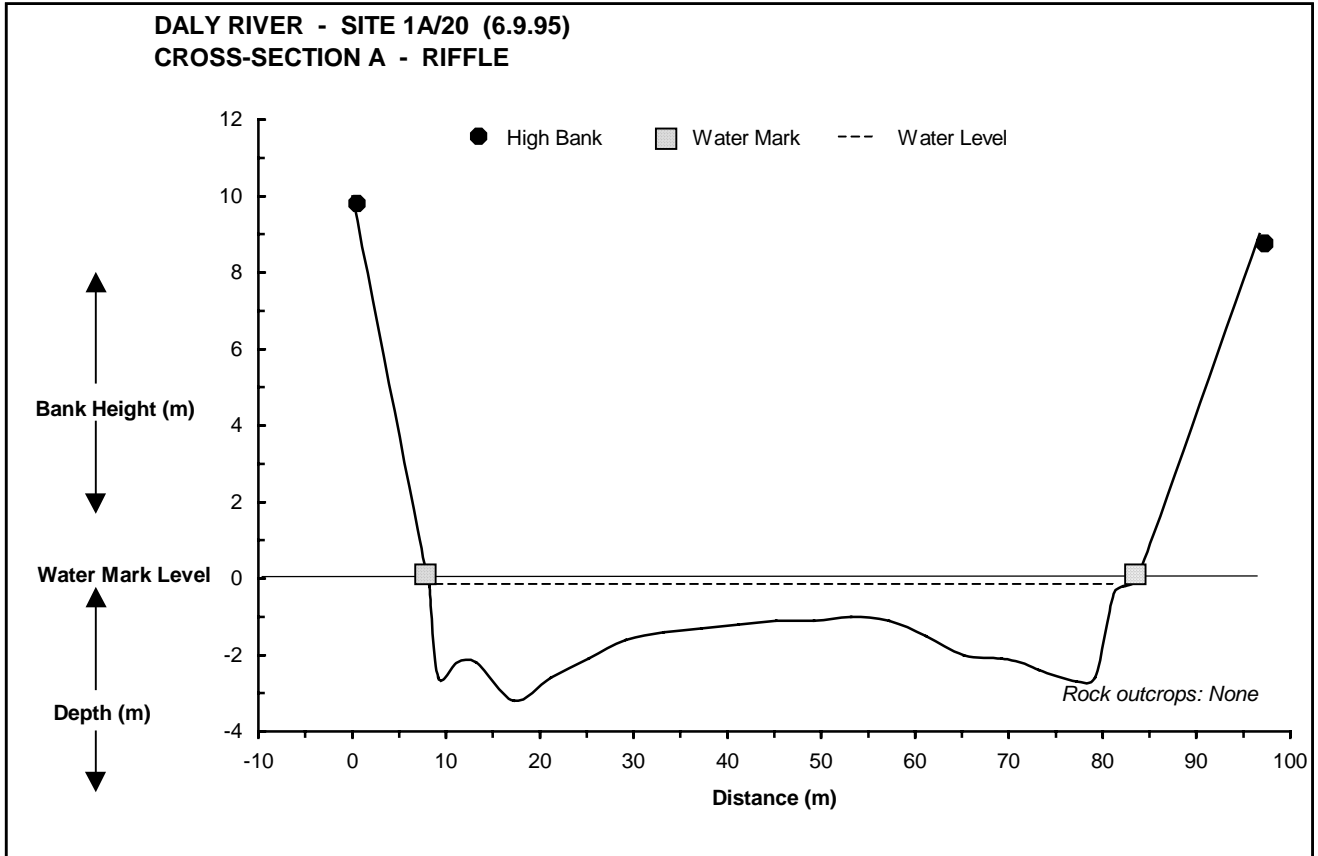


Figure 10.10 Cross-section Surveys for Site 1a/20 – Daly River

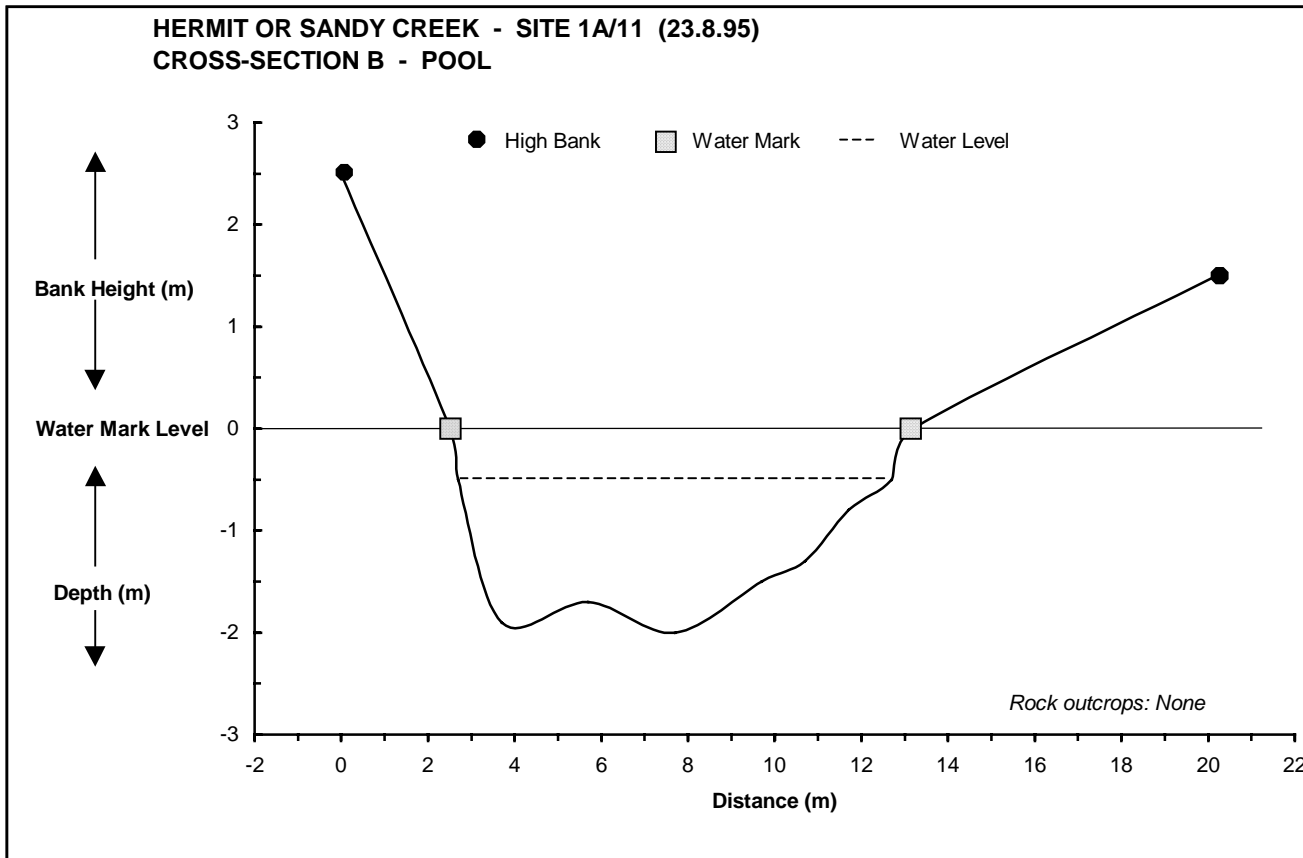
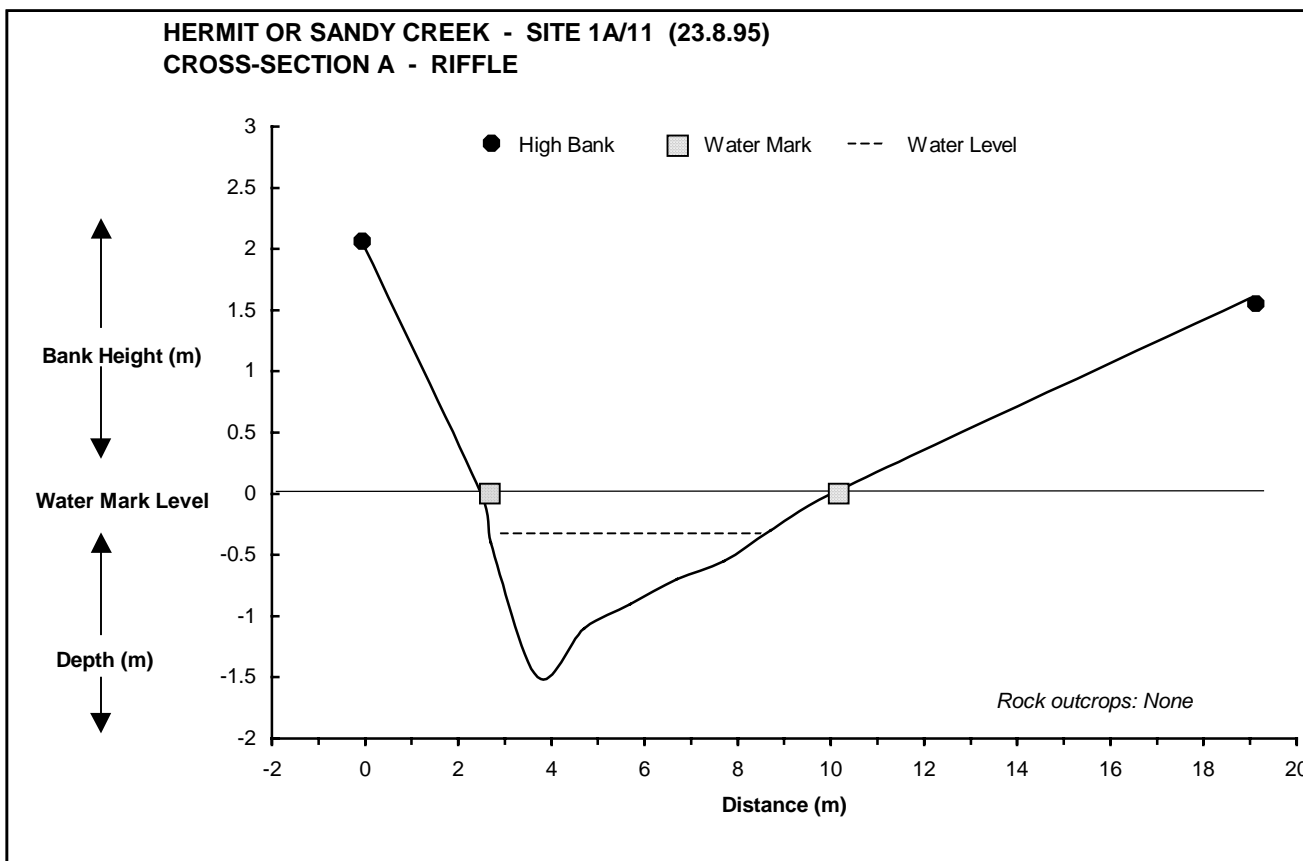


Figure 10.11 Cross-section Surveys for Site 1a/11 – Hermit or Sandy Creek

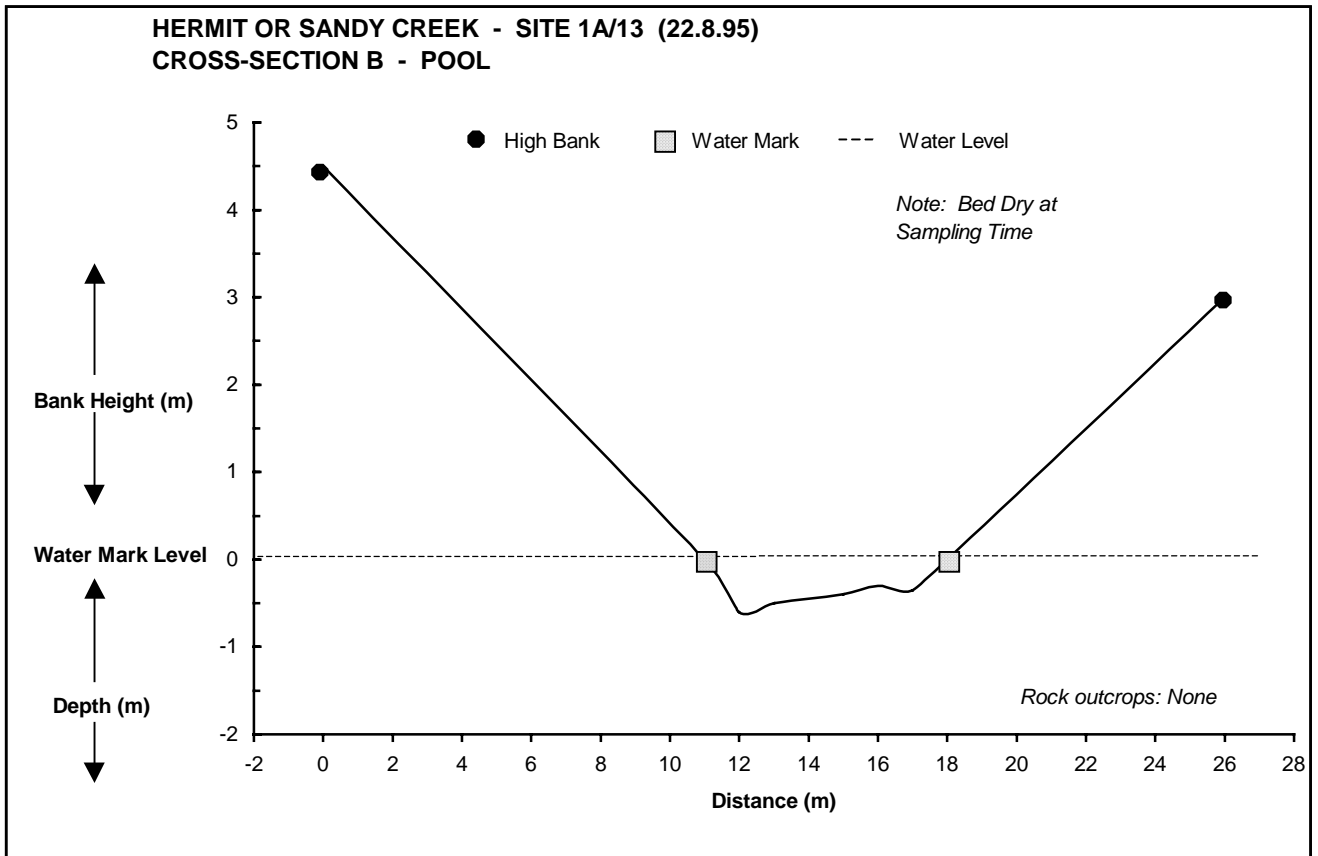
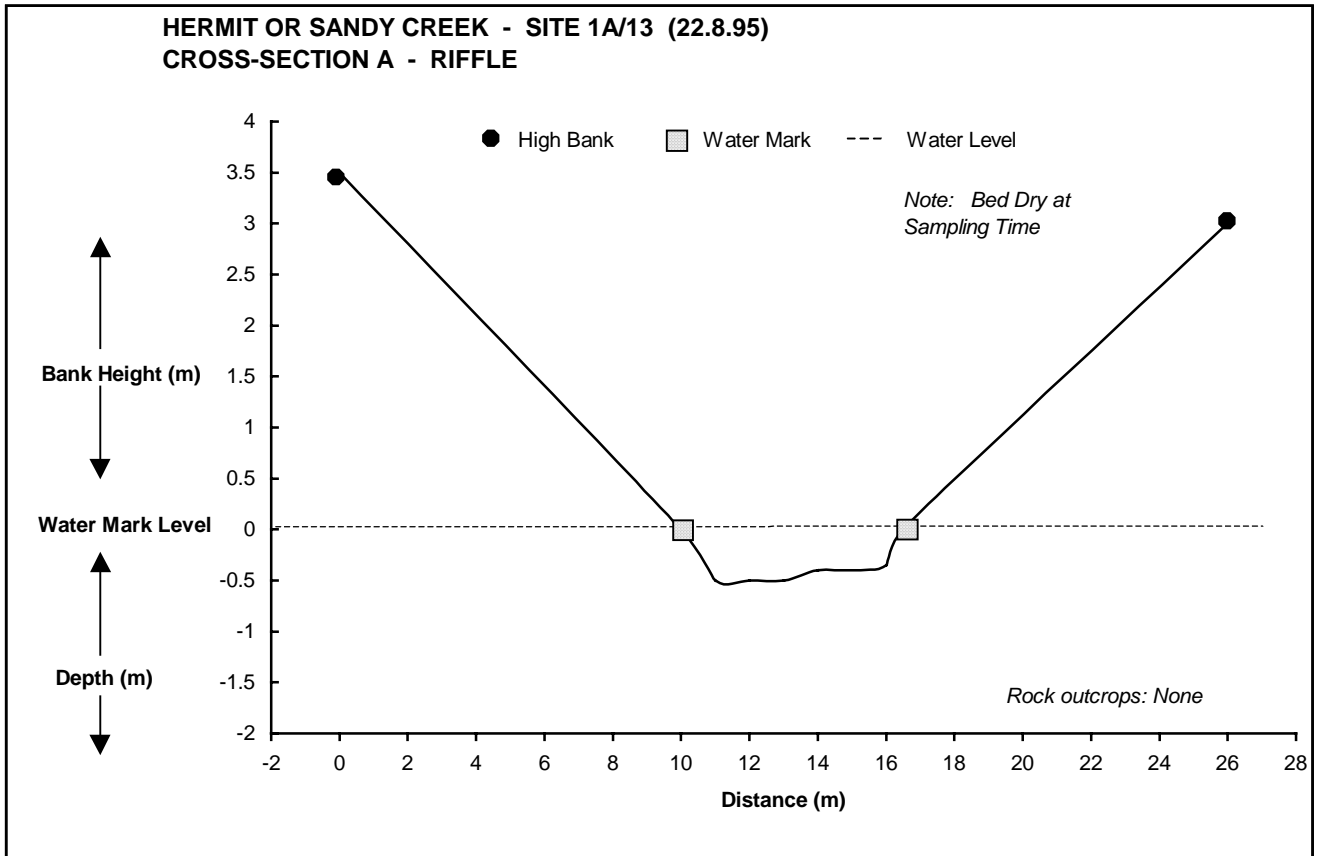
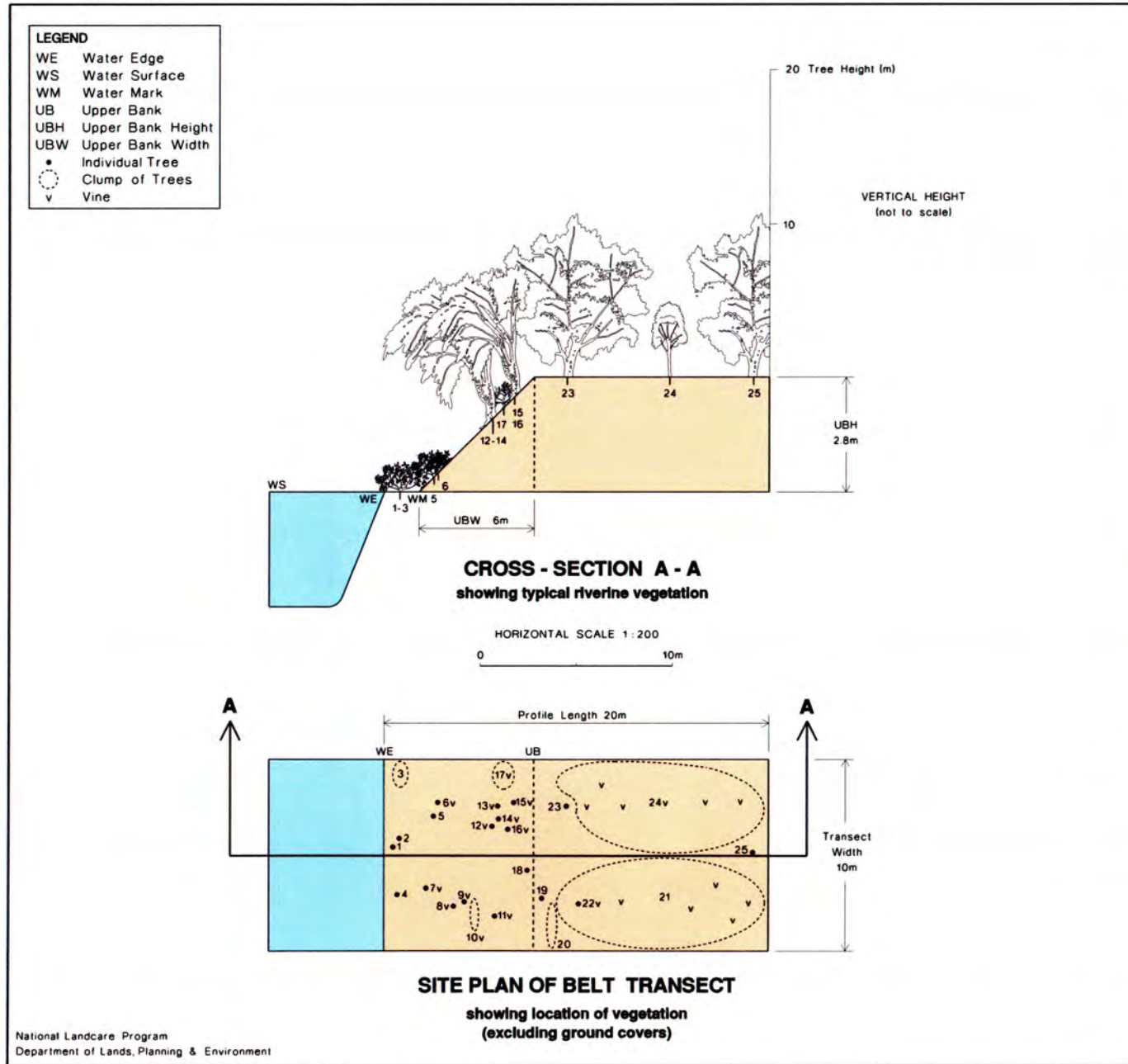


Figure 10.12 Cross-section Surveys for Site 1a/13 – Hermit or Sandy Creek



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1, 2, 3 (6 shrubs), 5	1.5-2	<i>Clerodendrum inerme</i>
4, 8, 12-16	2.8-10.5	<i>Melaleuca leucadendra</i>
6, 17 (4 shrubs)	1.3-1.8	<i>Phyllanthus reticulatus</i>
7, 11	1.3-2.1	<i>Cathormion umbellatum</i>
9, 10 (4 trees), 18	1.9-5	<i>Hibiscus tiliaceus</i>
19	4-5	<i>Excoecaria parvifolia</i>
20 (2 trees), 21 (23 trees), 24 (19 trees)		
22	5	<i>Lophostemon grandiflorus</i>
23, 25	11	<i>Casuarina cunninghamiana</i>

OTHER SPECIES LOCATED AT SITE:

Forbs: *Alternanthera nodiflora*
Scoparia dulcis

Grasses: *Bothriochloa bladhii*
Cynodon dactylon
Phragmites karka

Shrubs: *Gossypium hirsutum*
Hibiscus panduriformis

Trees: *Bombax ceiba*
Pongamia pinnata
Terminalia microcarpa

Vines: *Derris trifoliata*

Weeds: **Hyptis suaveolens* (Noxious)
**Xanthium occidentale* (Noxious)

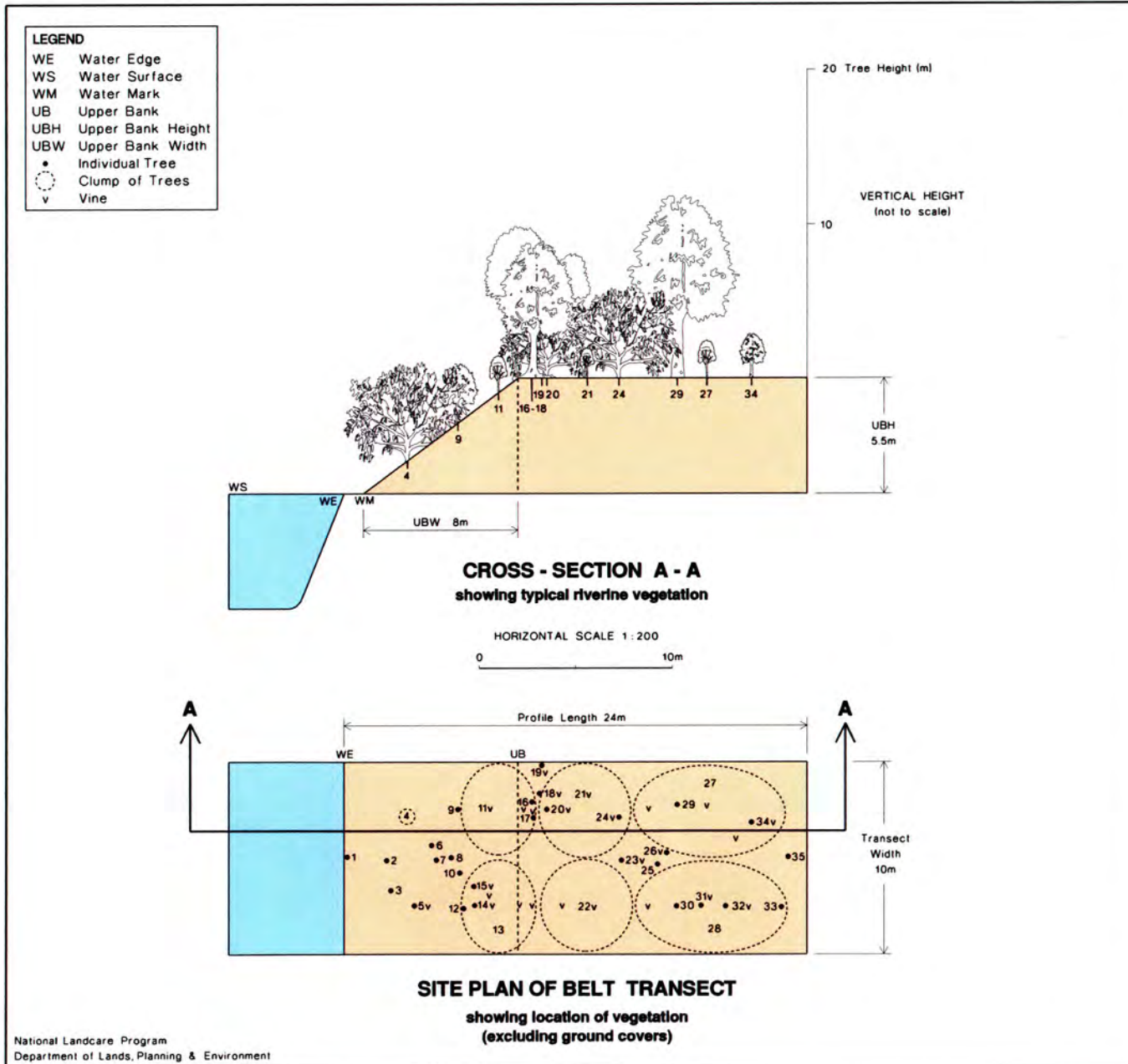
* Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 - Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

DALY RIVER	Date 10.9.95
Sub-section 1A Site 10	Figure 10.13



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1	1.5	<i>Barringtonia acutangula</i>
2, 4 (4 trees), 5, 6, 20, 23, 24, 26, 31, 32, 35	1-15	<i>Pongamia pinnata</i>
3	5.5	<i>Ficus racemosa</i>
7, 15	3.5-15	<i>Polyathia australis</i>
8, 11 (75 trees), 13 (93 trees), 21 (38 trees), 22 (38 trees), 27 (50 trees), 28 (60 trees)	2-3	<i>Glycosmis trifoliata</i>
9, 10, 12, 16-18, 25, 29, 30, 34	3.5-12	<i>Litsea glutinosa</i>
14, 19	10-17	<i>Buchanania arborescens</i>
33	2	<i>Strychnos lucida</i>

OTHER SPECIES LOCATED AT SITE:

Grasses: *Bambusa arnhemica*
Cynodon dactylon
Phragmites karka

Tree/shrub: *Canthium* sp.

Trees: *Melaleuca argentea* or
Melaleuca leucadendra
Nauclea orientalis

Vines: *Derris trifoliata*

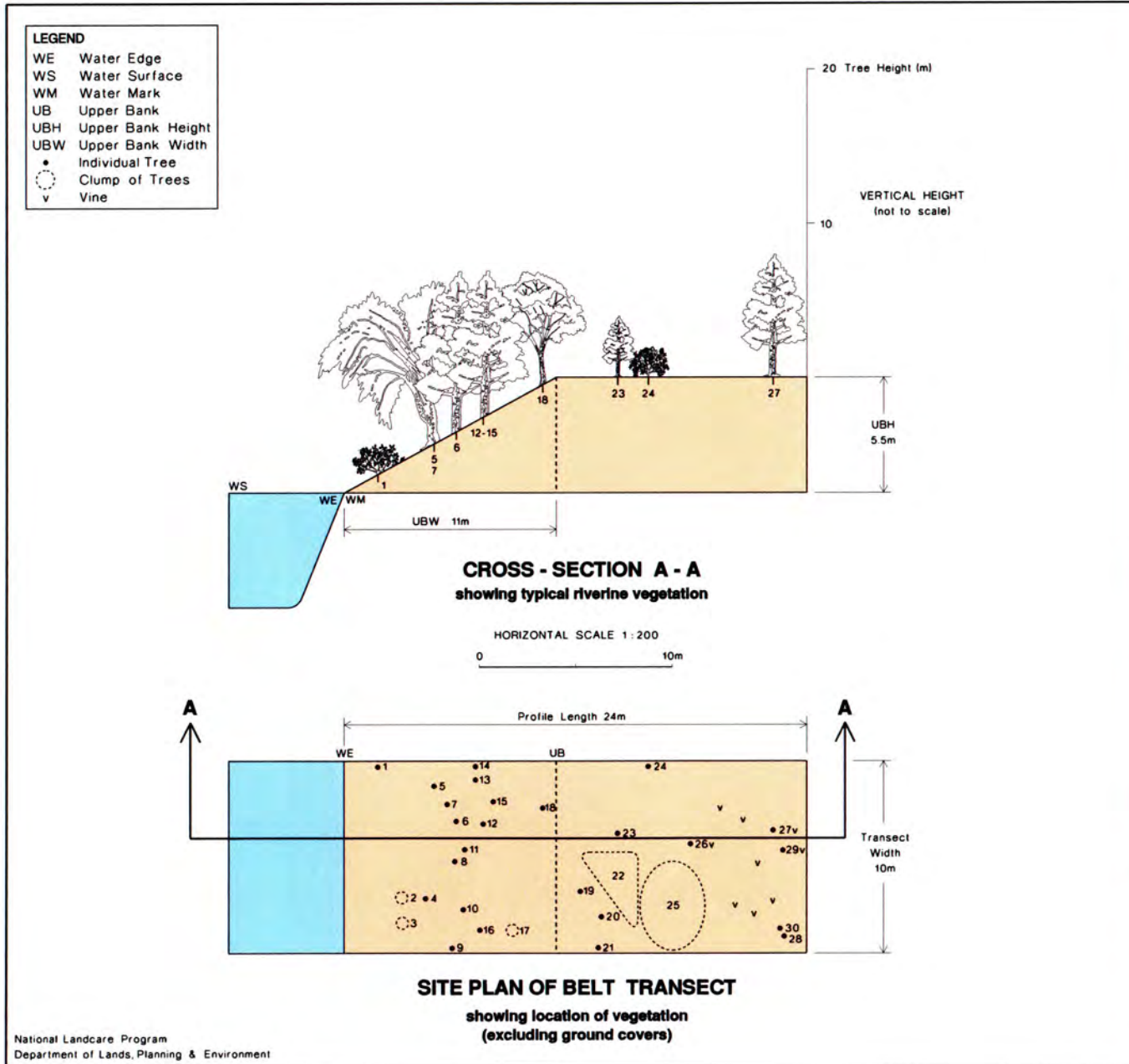
*Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 - Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

DALY RIVER		Date 10.9.95
Sub-section 1A	Site 16	Figure 10.14



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1	2	<i>Phyllanthus reticulatus</i>
2 (3 trees), 3 (4 trees), 16, 20, 30	1.2-19	<i>Ficus racemosa</i>
4, 5, 7	6-11	<i>Melaleuca leucadendra</i>
6, 12-15, 23, 27, 29	4-12	<i>Nauclea orientalis</i>
8-11	8-18	<i>Melaleuca argentea</i>
17 (3 trees), 24	3-3.5	<i>Ficus scobina</i>
18, 19	7.5-8	<i>Acacia auriculiformis</i>
21, 28	12-15	<i>Hibiscus tiliaceus</i>
22 (8 trees), 25 (15 trees)	3	<i>Capparis sepiaria</i>
26	3.5	<i>Breynia cernua</i>

OTHER SPECIES LOCATED AT SITE:

Forbs: *Hypoestes floribunda*

Grasses: *Bambusa arnhemica*
Cynodon dactylon

Trees: *Casuarina cunninghamiana*
Pandanus aquaticus

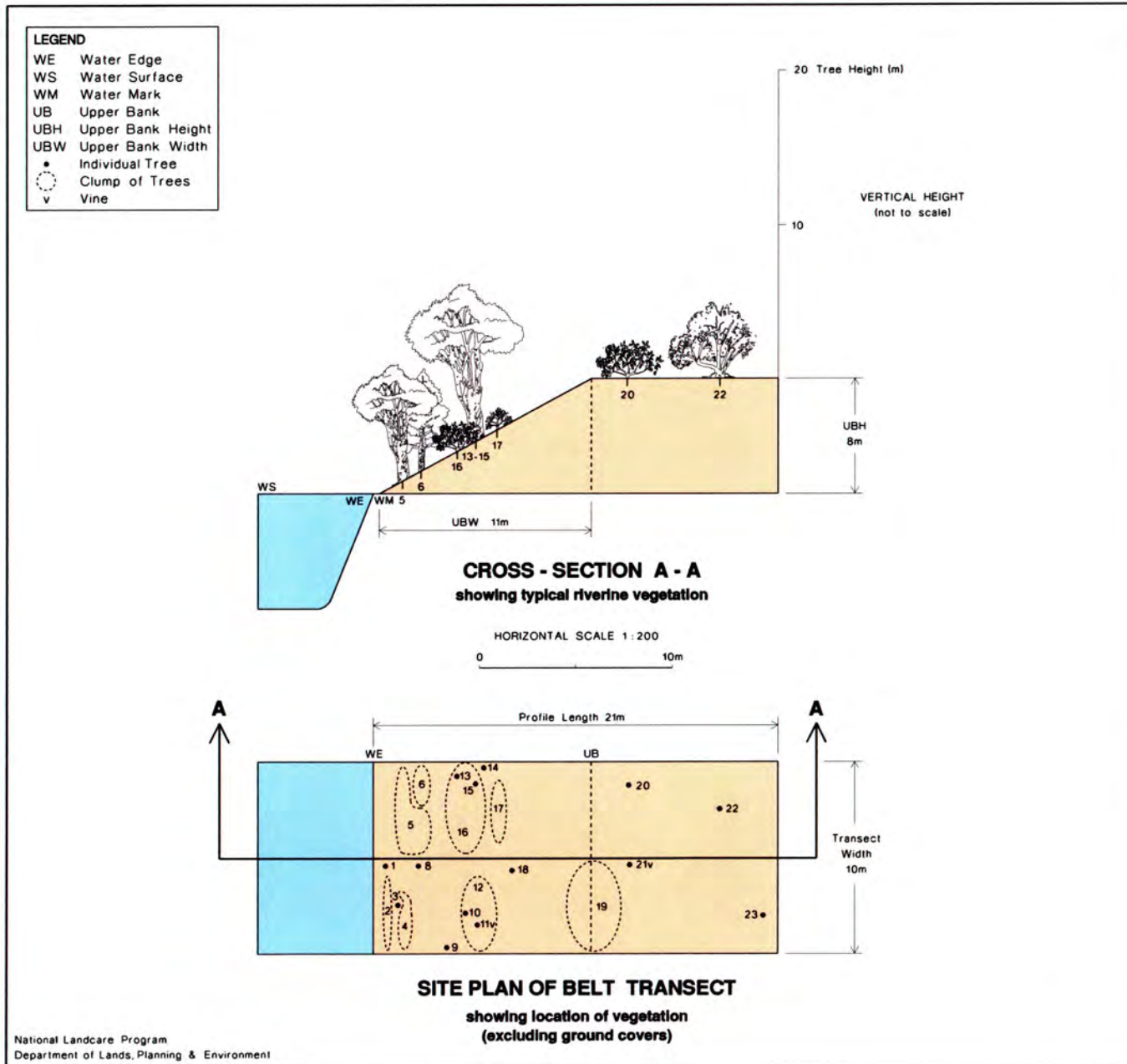
*Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 - Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

DALY RIVER	Date 8.9.95
Sub-section 1A Site 18	Figure 10.15



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1,2 (6 trees), 5 (9 trees), 8-10,13-15, 21	2-19	<i>Melaleuca argentea</i>
3,7, 12 (8 shrubs), 16 (4 shrubs), 19 (4 shrubs), 20	1.5-2.5	<i>Phyllanthus reticulatus</i>
4 (20 trees), 6 (8 trees), 17 (6 trees), 18	2-7	<i>Nauclea orientalis</i>
11,22	4-5	<i>Barringtonia acutangula</i>
23	6	<i>Ficus scobina</i>
24	2	<i>Strychnos lucida</i>

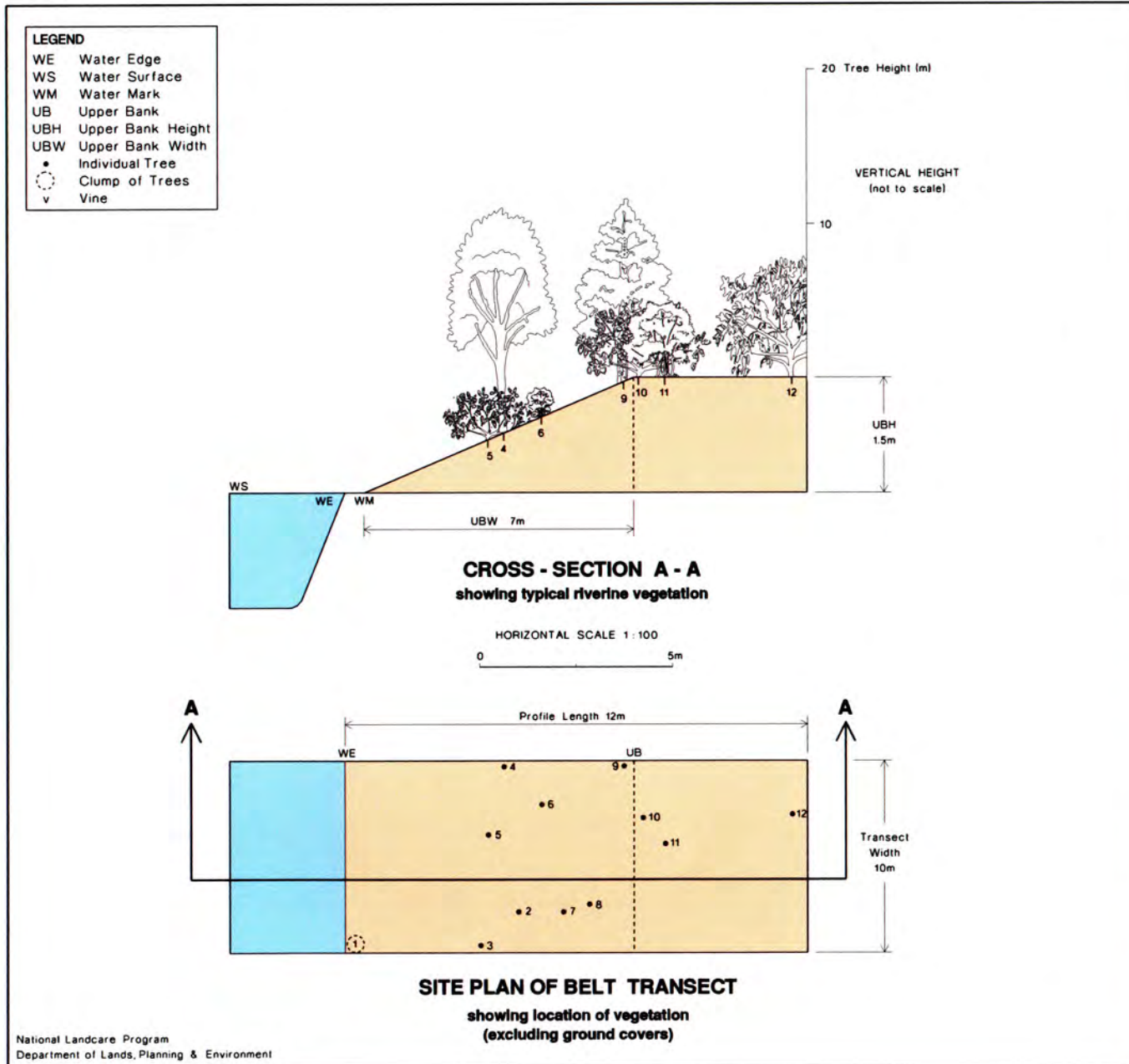
- OTHER SPECIES LOCATED AT SITE:**
- Forbs:** *Chara* sp. (Aquatic)
Hypoestes floribunda
Schoenoplectus littoralis
 - Grasses:** *Bambusa arnhemica*
Paspalidium distans
Phragmites karka
 - Tree/shrub:** *Cathormion umbellatum*
 - Trees:** *Casuarina cunninghamiana*
Pandanus aquaticus
 - Vines:** **Cardiospermum halicacabum*
**Passiflora foetida*
 - Weeds:** **Xanthium occidentale* (Noxious)
- * Exotic species

- NOTES**
1. The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 2. Cross-section A-A includes all vegetation above the line marked through the belt transect.
 3. The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 4. Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

DALY RIVER	Date 6.9.95
Sub-section 1A Site 20	Figure 10.16



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1 (2 trees)	4	<i>Pandanus aquaticus</i>
2, 6, 7, 11	2-4.8	<i>Barringtonia acutangula</i>
3, 4	15	<i>Syzygium armstrongii</i>
5	3.5	<i>Canthium schultzei</i>
8	2.1	<i>Diospyros calycantha</i>
9	12.5	<i>Nauclea orientalis</i>
10	5	<i>Elaeocarpus arnhemicus</i>
12	8	<i>Alphitonia excelsa</i>

OTHER SPECIES LOCATED AT SITE:

Forbs: *Alternanthera angustifolia*
Basilicum polystachyon
Centipeda minima
Hypoestes floribunda

Shrubs: *Gymnanthera oblonga*
Phyllanthus reticulatus
Urena lobata

Tree/Shrub: *Ficus opposita*
Ficocurtia territorialis
Ixora klanderana

Trees: *Melaleuca argentea*
Melaleuca leucadendra

Vines: *Flagellaria indica*
Passiflora foetida

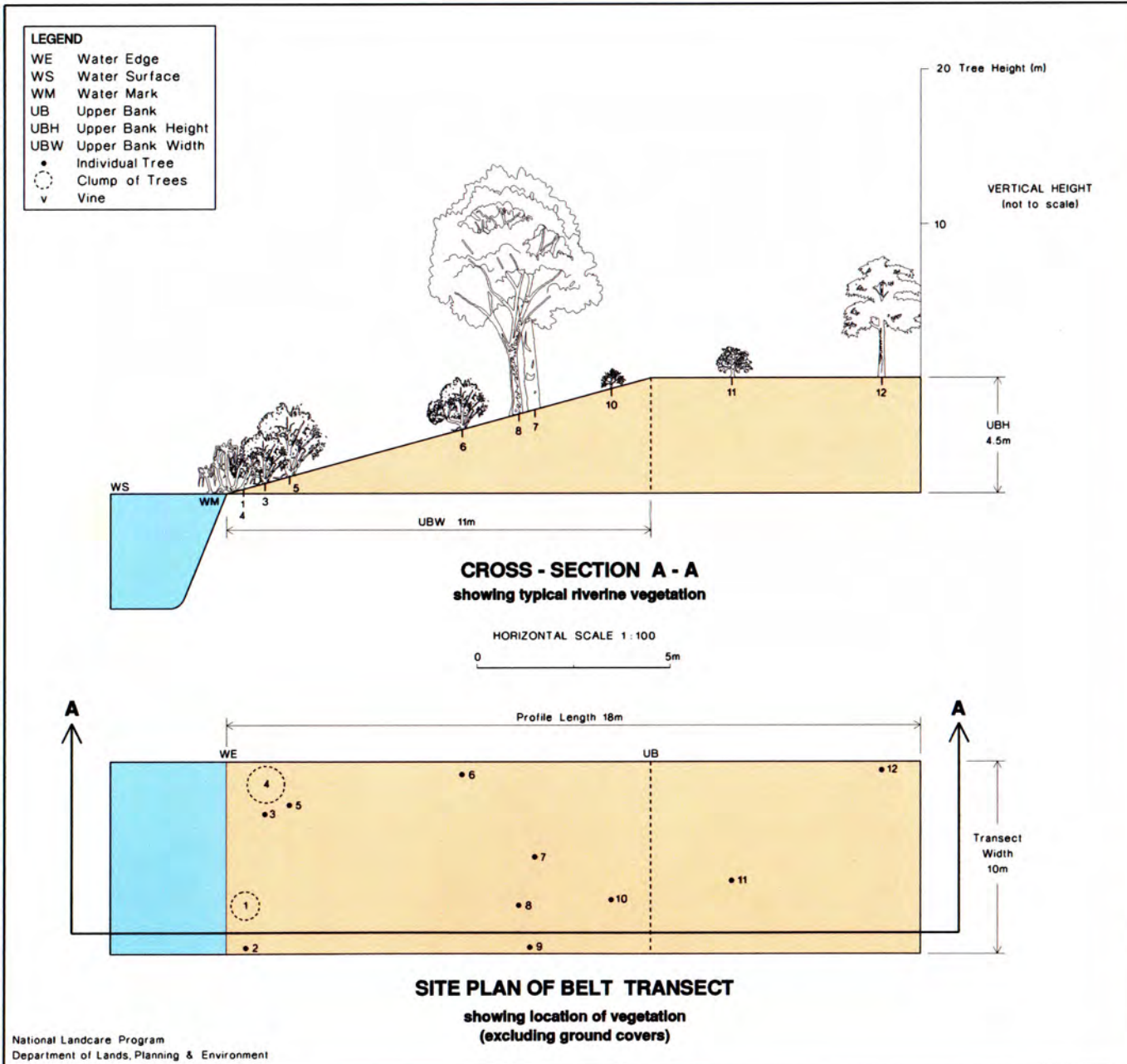
* Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 - Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

HERMIT OR SANDY CREEK	Date 23.8.95
Sub-section 1A Site 11	Figure 10.17



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1 (11 trees), 4 (14 trees)	3-4	<i>Pandanus aquaticus</i>
2, 3, 5, 6	3.5-5	<i>Barringtonia acutangula</i>
7, 9	16	<i>Melaleuca leucadendra</i>
8	15	<i>Acacia auriculiformis</i>
10	1.3	Unidentified shrub
11	2	<i>Wrightia pubescens</i>
12	8	<i>Canarium australianum</i>

OTHER SPECIES LOCATED AT SITE:

Forbs: *Corchorus aestuans*
Hypoestes floribunda
Triumfetta sp

Grasses: *Optimemus burmannii*
Panicum trichoides

Trees: *Diospyros calycantha*
Syzygium armstrongii

Vines: **Passiflora foetida*

* Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 - Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

HERMIT OR SANDY CREEK	Date 22.9.95
Sub-section 1A Site 13	Figure 10.18

Table 10.2 Major Vegetation Species Recorded at Sites 6, 8, 9, 17 and 19 located on the Daly River within Sub-section 1a – Daly River Estuary

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Sites Where Recorded (Sub-section No. / Site No.)
<i>Avicennia marina</i>	Mangrove tree / shrub		1a/6, 1a/8
<i>Acacia auriculiformis</i>	Tree		1a/17
<i>Bambusa arnhemica</i>	Grass (Bamboo)		1a/17
<i>Barringtonia acutangula</i>	Low tree / shrub		1a/17, 1a/19
<i>Casuarina cunninghamiana</i>	Tree		1a/9, 1a/17, 1a/19
<i>Cathormion umbellatum</i>	Low tree / shrub		1a/17
<i>Clerodendrum inerme</i>	Low tree / shrub		1a/8, 1a/17
<i>Cupaniopsis anacardioides</i>	Low tree / shrub		1a/17
<i>Cynodon dactylon</i>	Grass		1a/17, 1a/19
<i>Cyperus javanicus</i>	Forb		1a/8
<i>Cyperus sp.</i>	Forb		1a/9
<i>Diospyros calycantha</i>	Tree		1a/19
<i>Eleutheranthera ruderalis</i>	Forb	E	1a/19
<i>Excoecaria agallocha</i>	Mangrove tree / shrub		1a/6, 1a/8
<i>Excoecaria ovalis</i>	Mangrove tree / shrub		1a/9
<i>Ficus racemosa</i>	Tree		1a/17, 1a/19
<i>Ficus virens</i>	Tree		1a/17, 1a/19
<i>Flacourtia territorialis</i>	Low tree / shrub		1a/17
<i>Hibiscus tiliaceus</i>	Tree		1a/8, 1a/9, 1a/19
<i>Hypoestes floribunda</i>	Forb		1a/17
<i>Hyptis suaveolens</i>	Forb	E/N	1a/9, 1a/17
<i>Macroptilium lathyroides</i>	Forb	E	1a/19
<i>Melaleuca argentea</i>	Tree		1a/17, 1a/19
<i>Melaleuca leucadendra</i>	Tree		1a/9, 1a/17, 1a/19
<i>Nauclea orientalis</i>	Tree		1a/17, 1a/19
<i>Pandanus aquaticus</i>	Tree		1a/17, 1a/19
<i>Parkinsonia aculeata</i>	Low tree / shrub	E/N	1a/8, 1a/9
<i>Phragmites karka</i>	Grass		1a/9, 1a/17
<i>Phyllanthus reticulatus</i>	Low tree / shrub		1a/19
<i>Pongamia pinnata</i>	Tree		1a/8, 1a/17
<i>Schoenoplectus litoralis</i>	Forb		1a/19
<i>Sesuvium portulacastrum</i>	Forb		1a/8
<i>Strychnos lucida</i>	Tree		1a/17, 1a/19
<i>Syzygium nervosum</i>	Tree		1a/17, 1a/19
<i>Tamarindus indica</i>	Tree	E	1a/17
<i>Terminalia microcarpa</i>	Tree		1a/8, 1a/9, 1a/19
<i>Xanthium occidentale</i>	Forb	E/N	1a/8, 1a/19
<i>Xylocarpus mekongensis</i>	Mangrove tree / shrub		1a/8

* Declared Noxious Weed within the Northern Territory

Table 10.3 Major Vegetation Species Recorded at Sites 12 on Hermit (or Sandy) Creek and 22 on Charlies Creek located in Sub-section 1a – Daly River Estuary

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Sites Where Recorded (Sub-section No. / Site No.)
<i>Asteromyrtus symphocarpa</i>	Tree		1a/22
<i>Barringtonia acutangula</i>	Low tree / shrub		1a/12, 1a/22
<i>Diospyros calycantha</i>	Tree		1a/12
<i>Excoecaria parvifolia</i>	Tree		1a/22
<i>Melaleuca argentea</i>	Tree		1a/22
<i>Melaleuca leucadendra</i>	Tree		1a/12
<i>Melaleuca viridiflora</i>	Low tree / shrub		1a/22
<i>Nauclea orientalis</i>	Tree		1a/12
<i>Pandanus aquaticus</i>	Tree		1a/12
<i>Syzygium armstrongii</i>	Tree		1a/12

* Declared Noxious Weed within the Northern Territory



10.1.2 Daly River – Below Douglas River

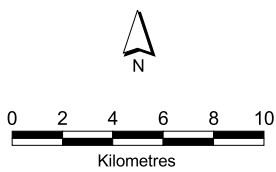
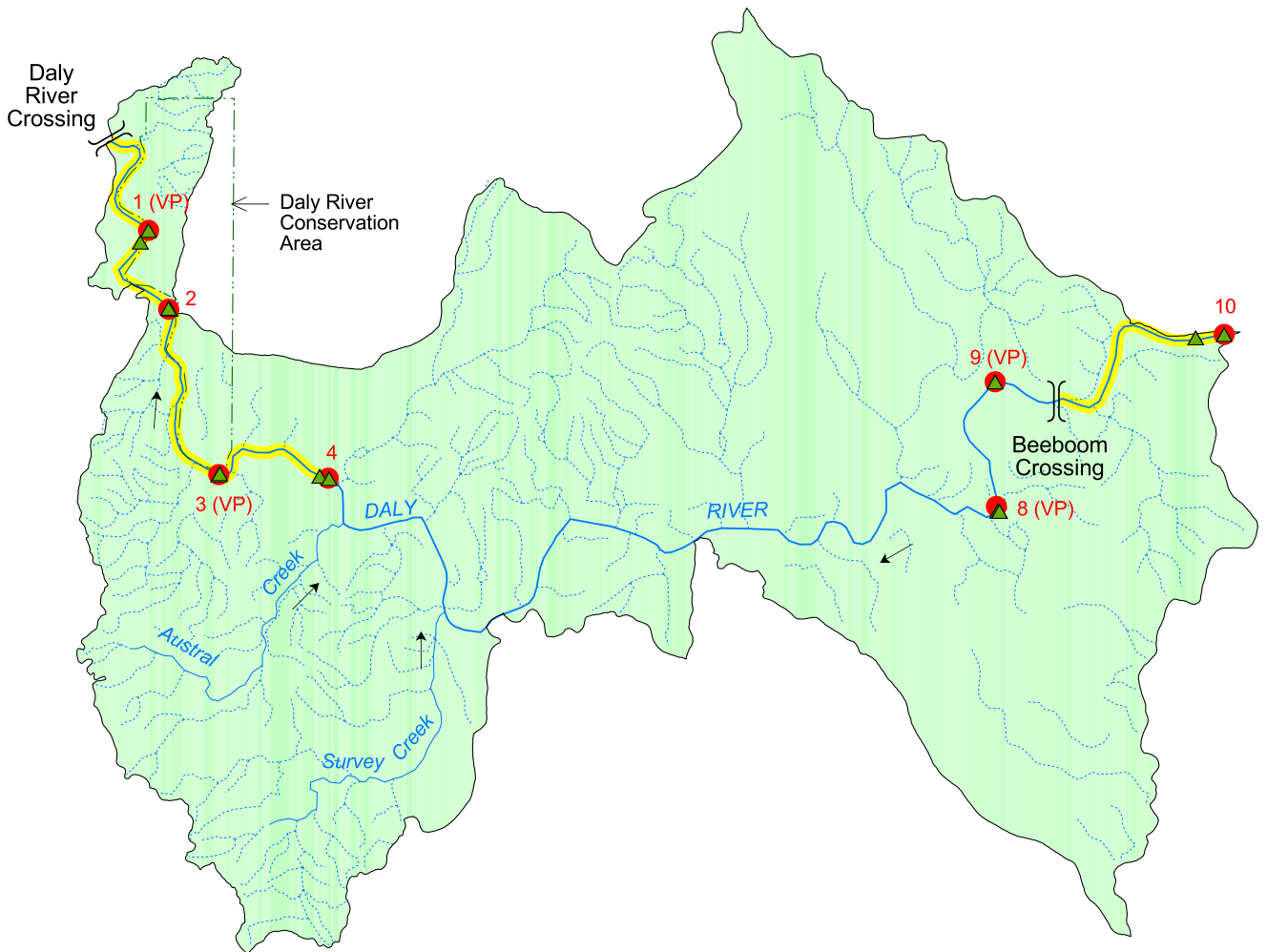
Sub-section 1b encompasses the Daly River from Daly River Crossing upstream to Douglas River junction. Seven sites, located on the Daly River, were fully assessed in this sub-section (refer to Table 10.4 and Map 28).

Table 10.4 Summary of Survey Information for Sub-section 1b – Daly River Below Douglas River

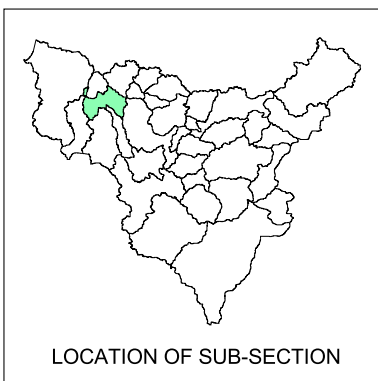
Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
1	Daly River	A	Pool	√	√	
		B	Run	√		
2	Daly River	A	Pool	√		
		B	Run	√		
3	Daly River	A	Pool	√	√	
		B	Run	√		
4	Daly River	A	Rapid	√		
		B	Pool	√		
8	Daly River	A	Riffle	√	√	
		B	Pool			
9	Daly River	A	Pool		√	
		B	Riffle			
10	Daly River	A	Pool	√		
		B	Riffle	√		



A rapid on Daly River located approximately 25km upstream of Daly River Crossing at Site 1b/4



Area - 1,012 km²



LEGEND	
● 5	Site
▲	Sample Point
(VP)	Vegetation Profile
— (Yellow)	Longitudinal Profile Survey
— (Blue)	River
— (Light Blue)	Creek
←	Flow direction

 TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

DALY RIVER Below Douglas River

SUB-SECTION 1b

Map 28

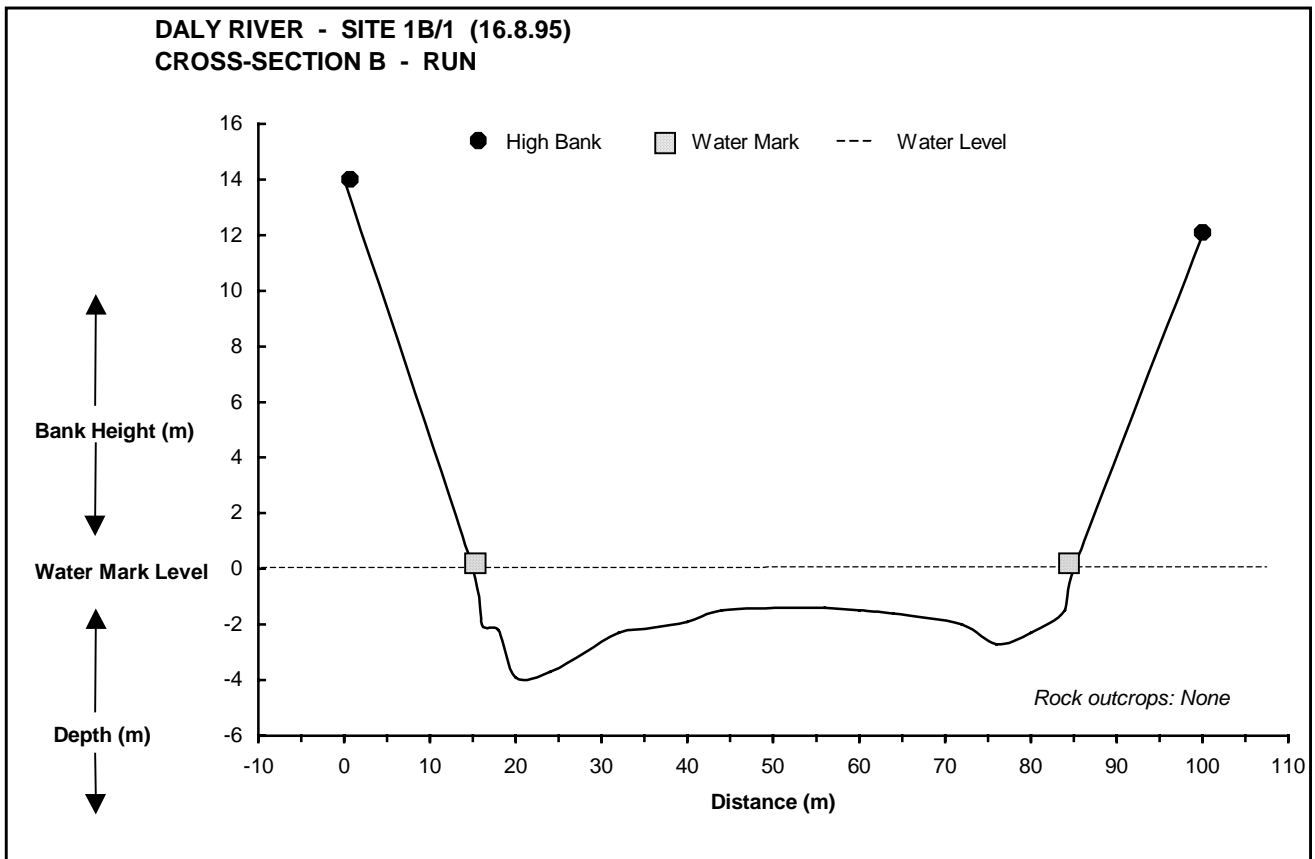
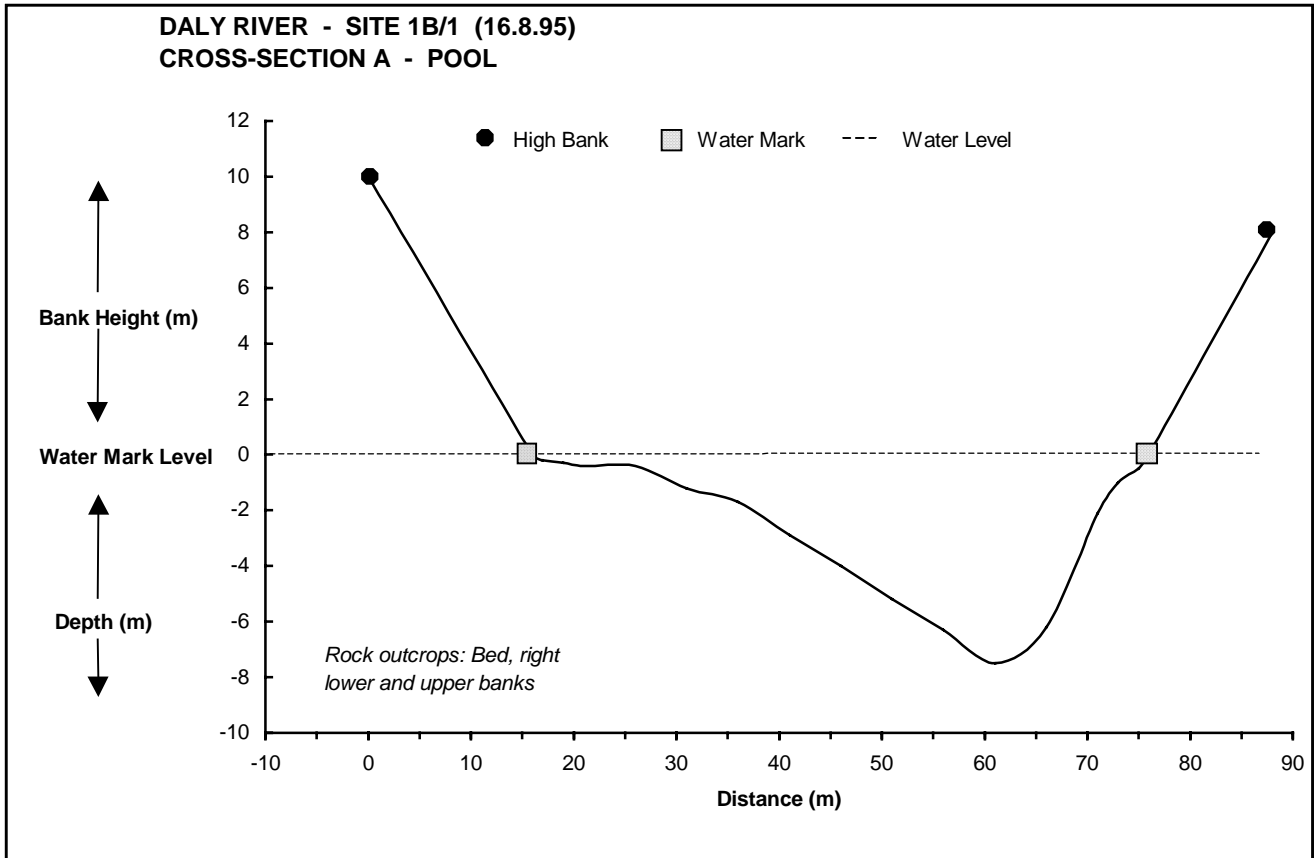


Figure 10.19 Cross-section Surveys for Site 1b/1 – Daly River

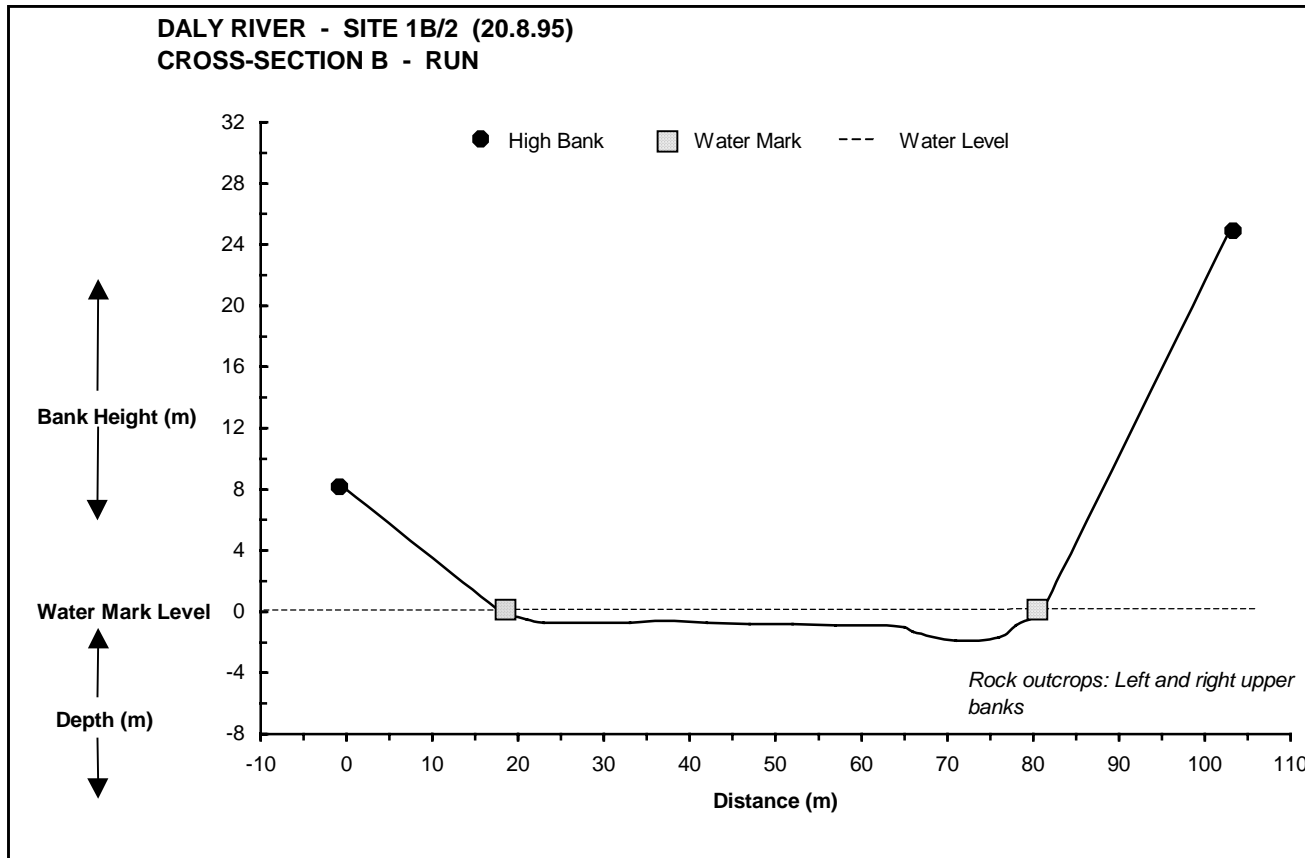
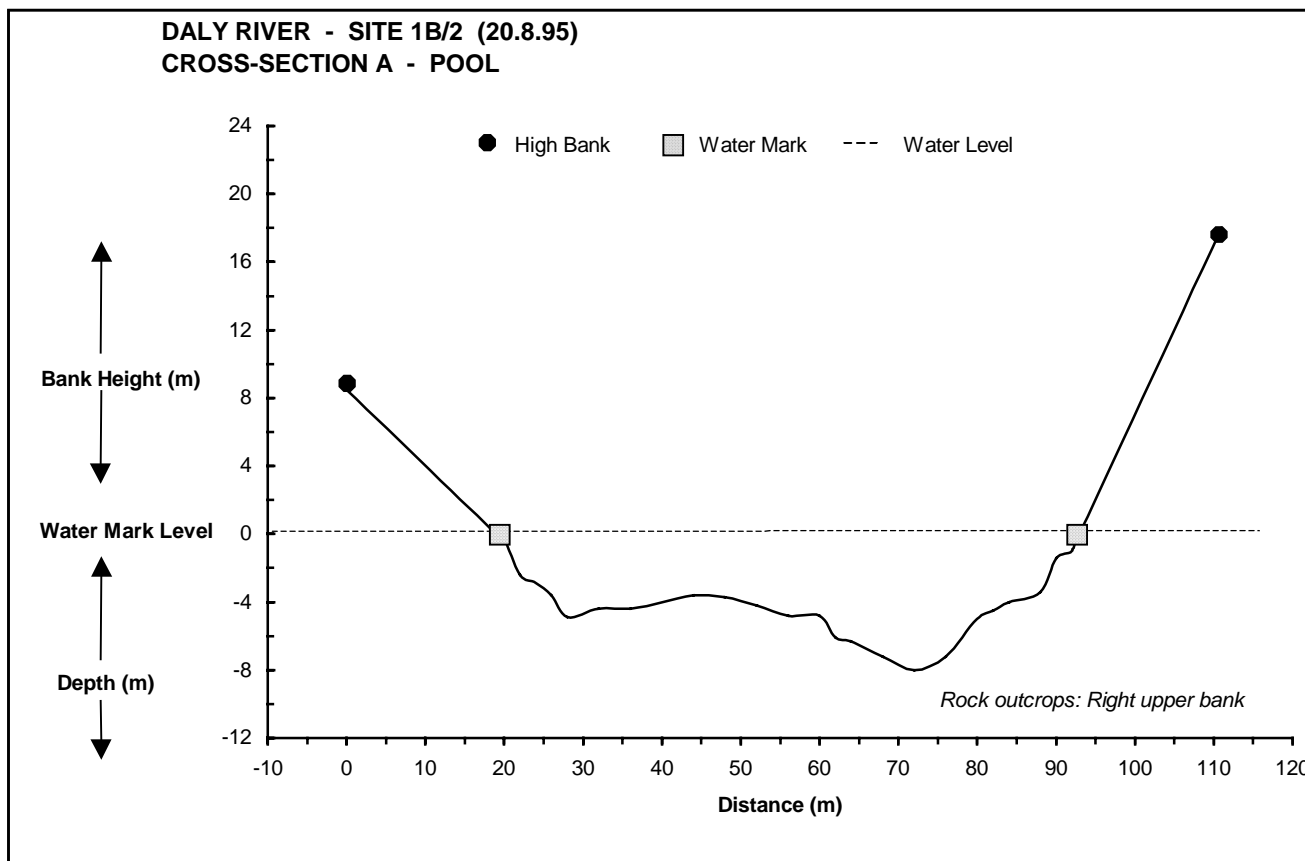


Figure 10.20 Cross-section Surveys for Site 1b/2 – Daly River

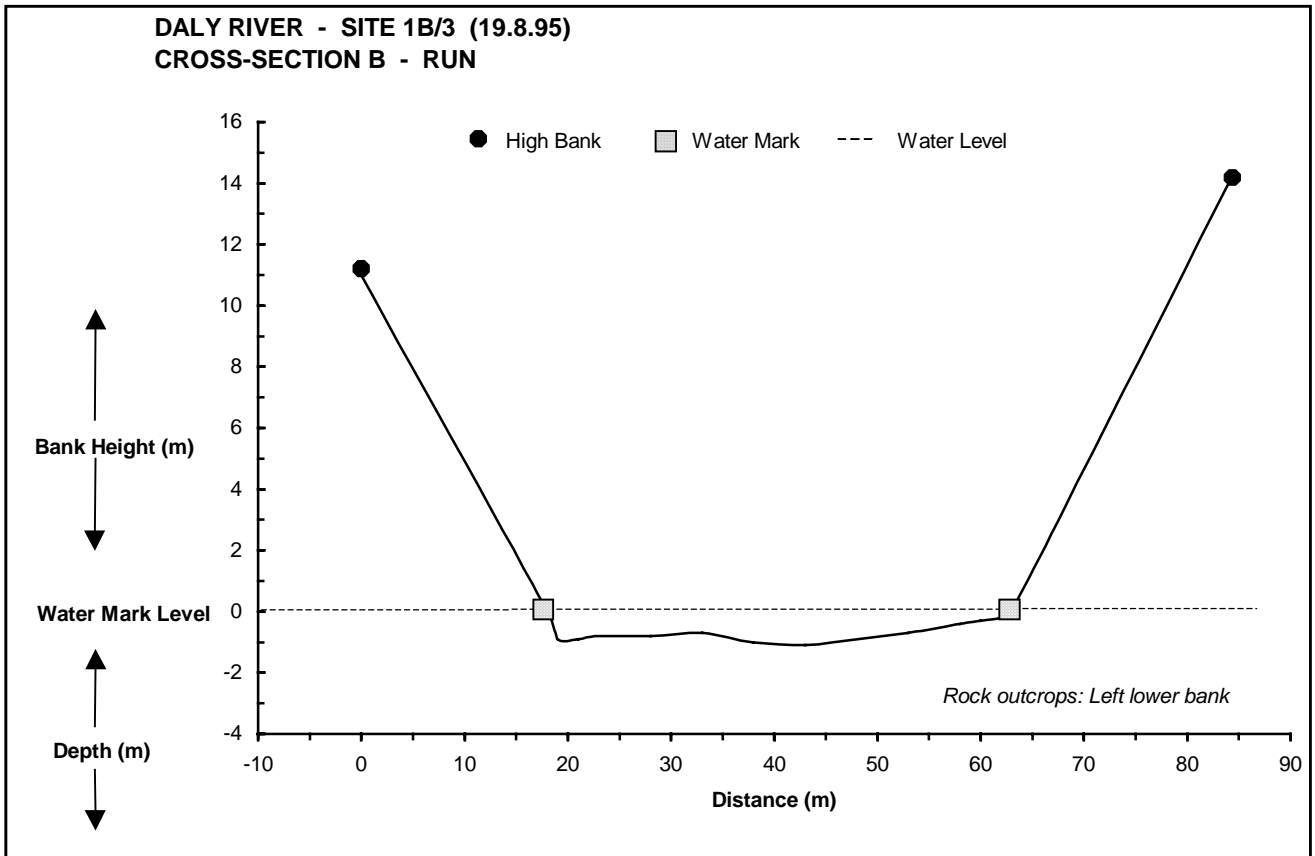
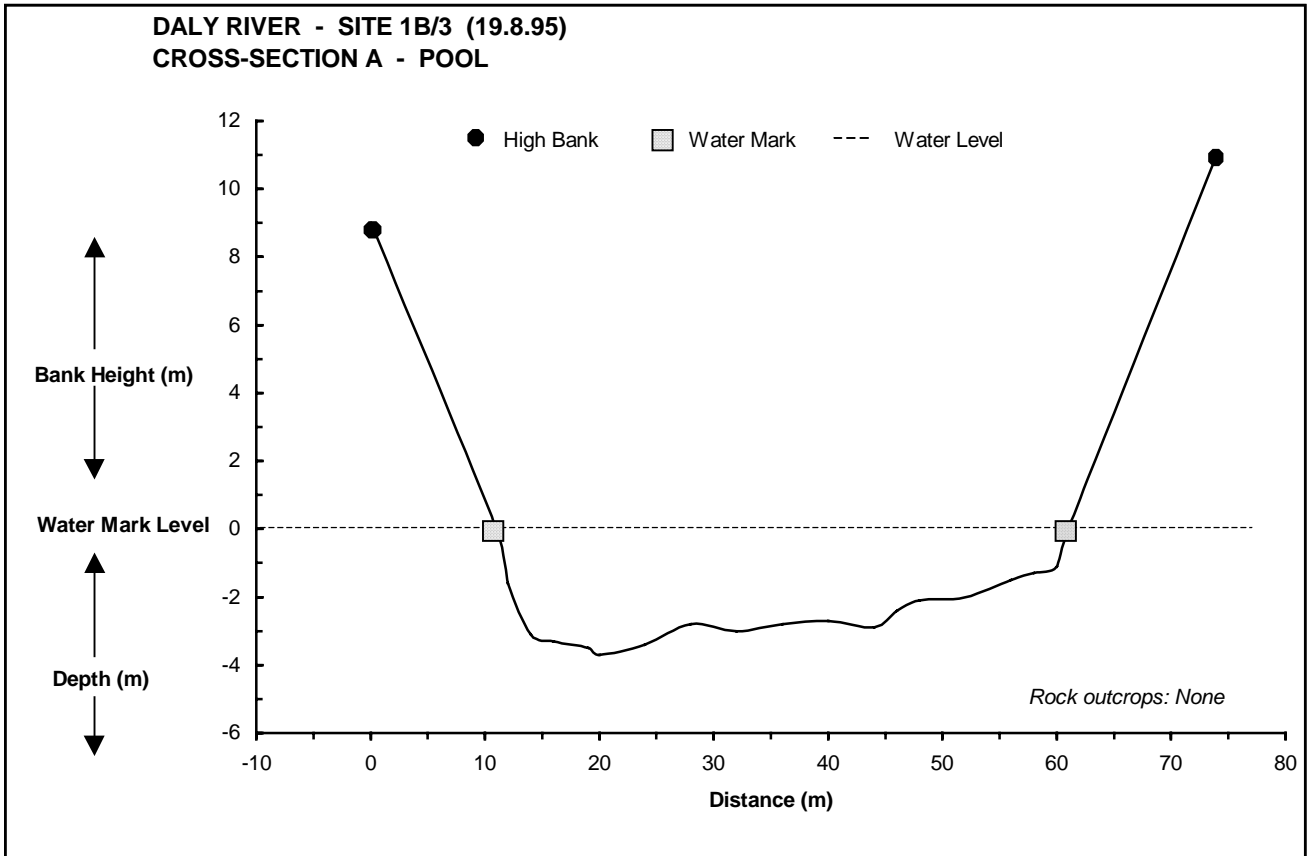


Figure 10.21 Cross-section Surveys for Site 1b/3 – Daly River

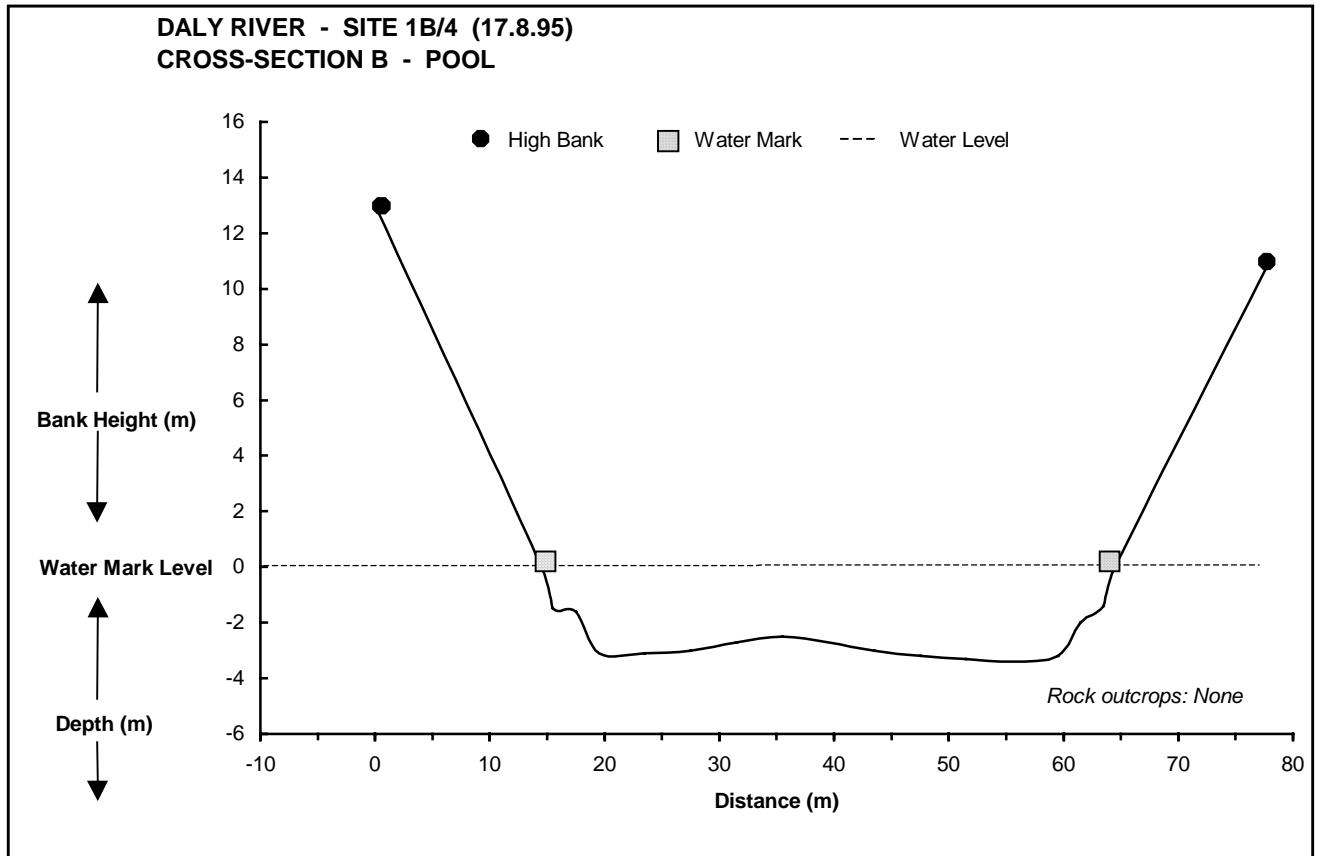
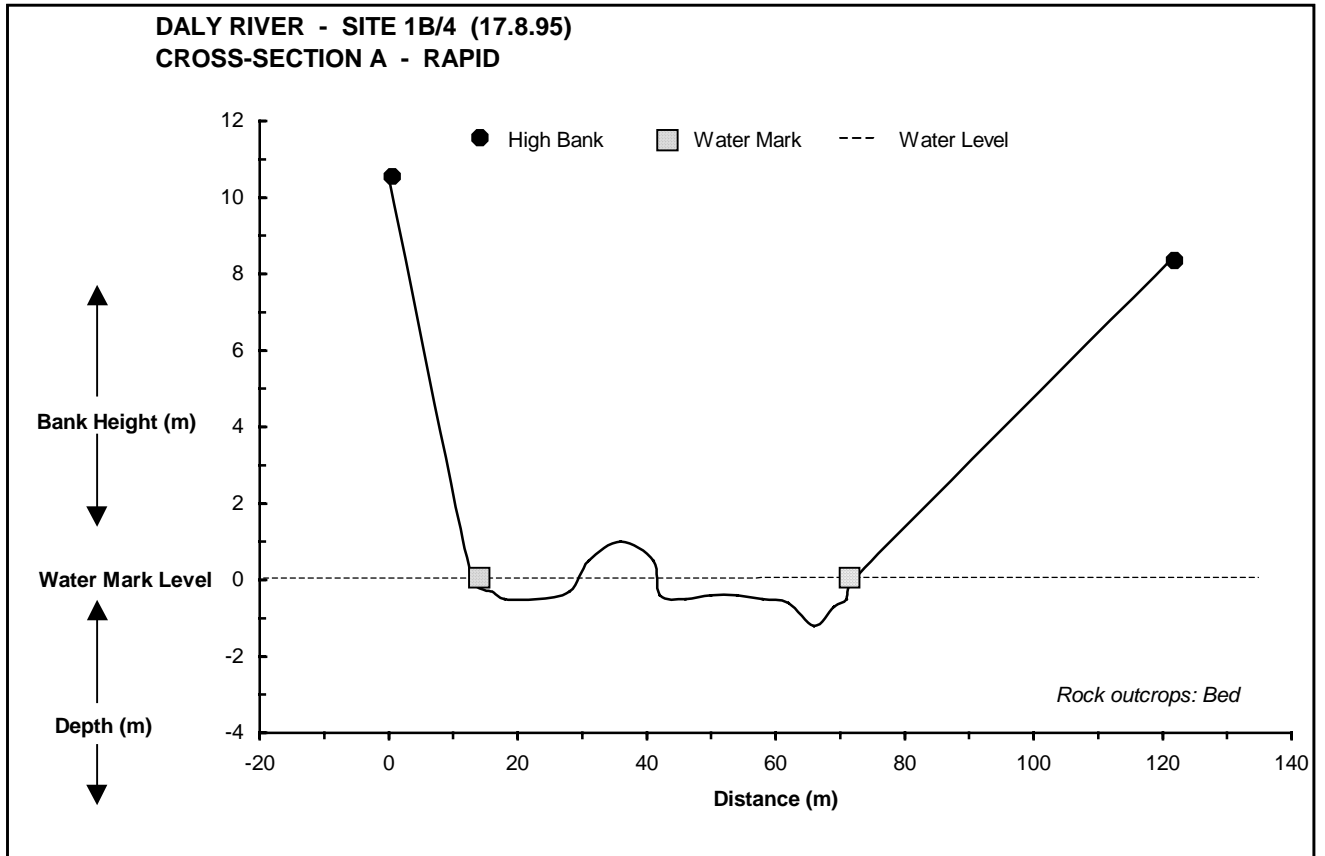


Figure 10.22 Cross-section Surveys for Site 1b/4 – Daly River

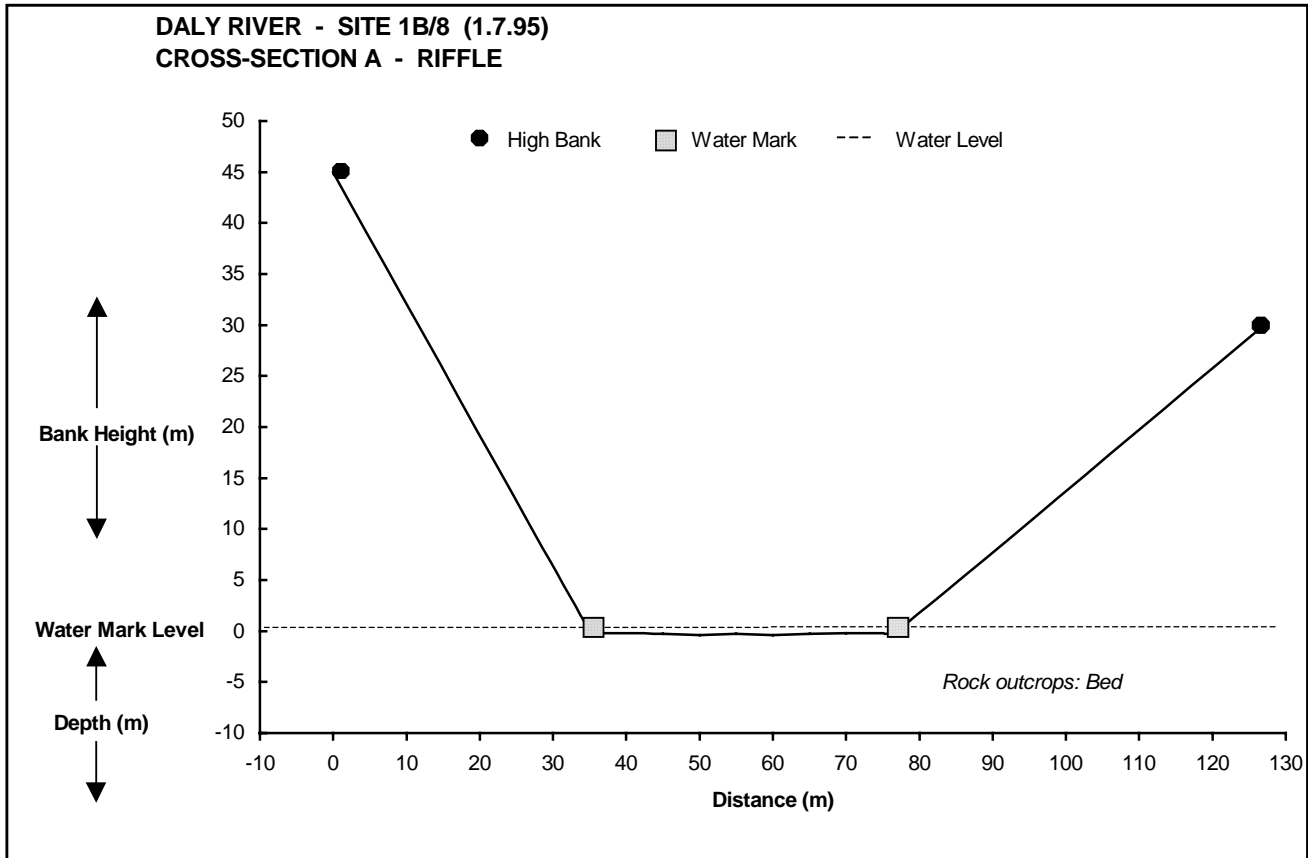


Figure 10.23 Cross-section Survey for Site 1b/8 – Daly River



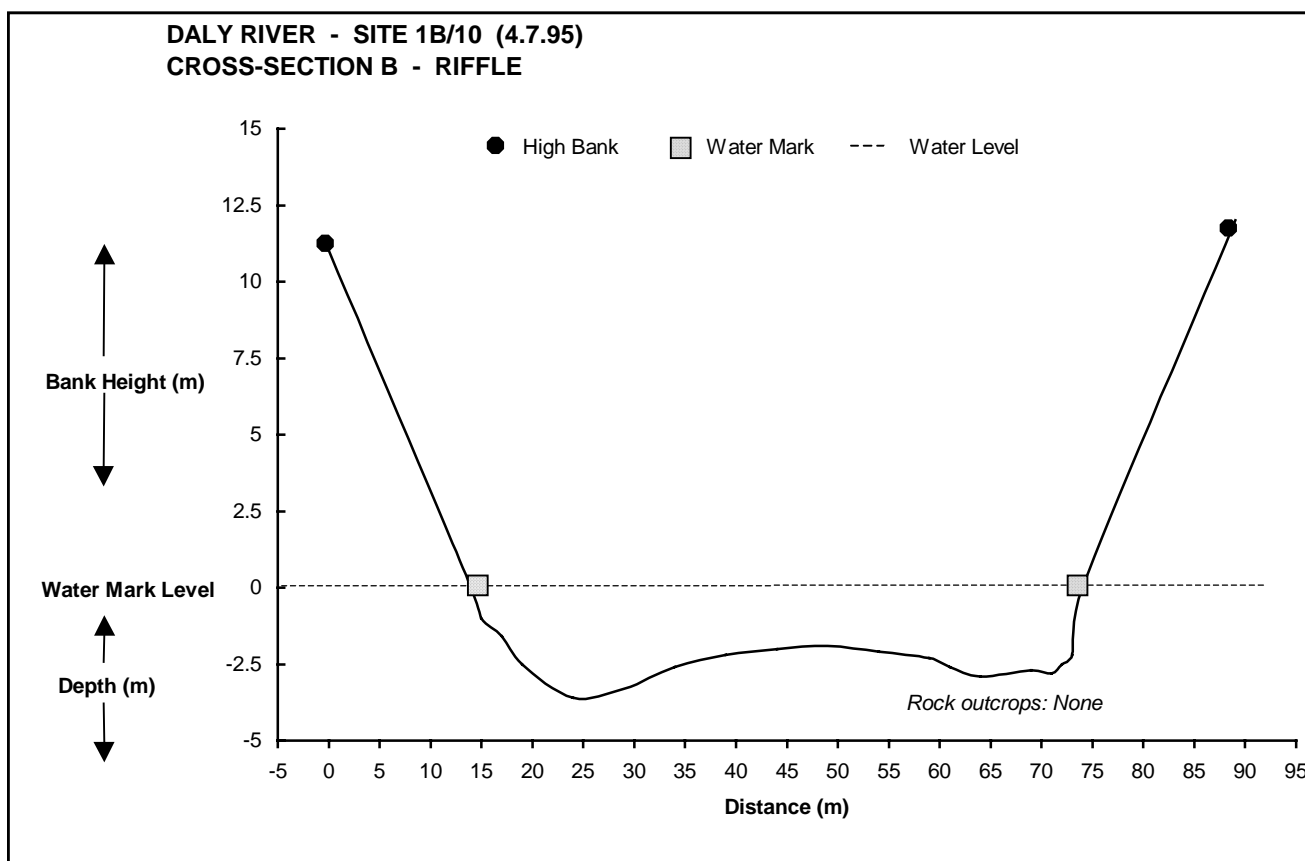
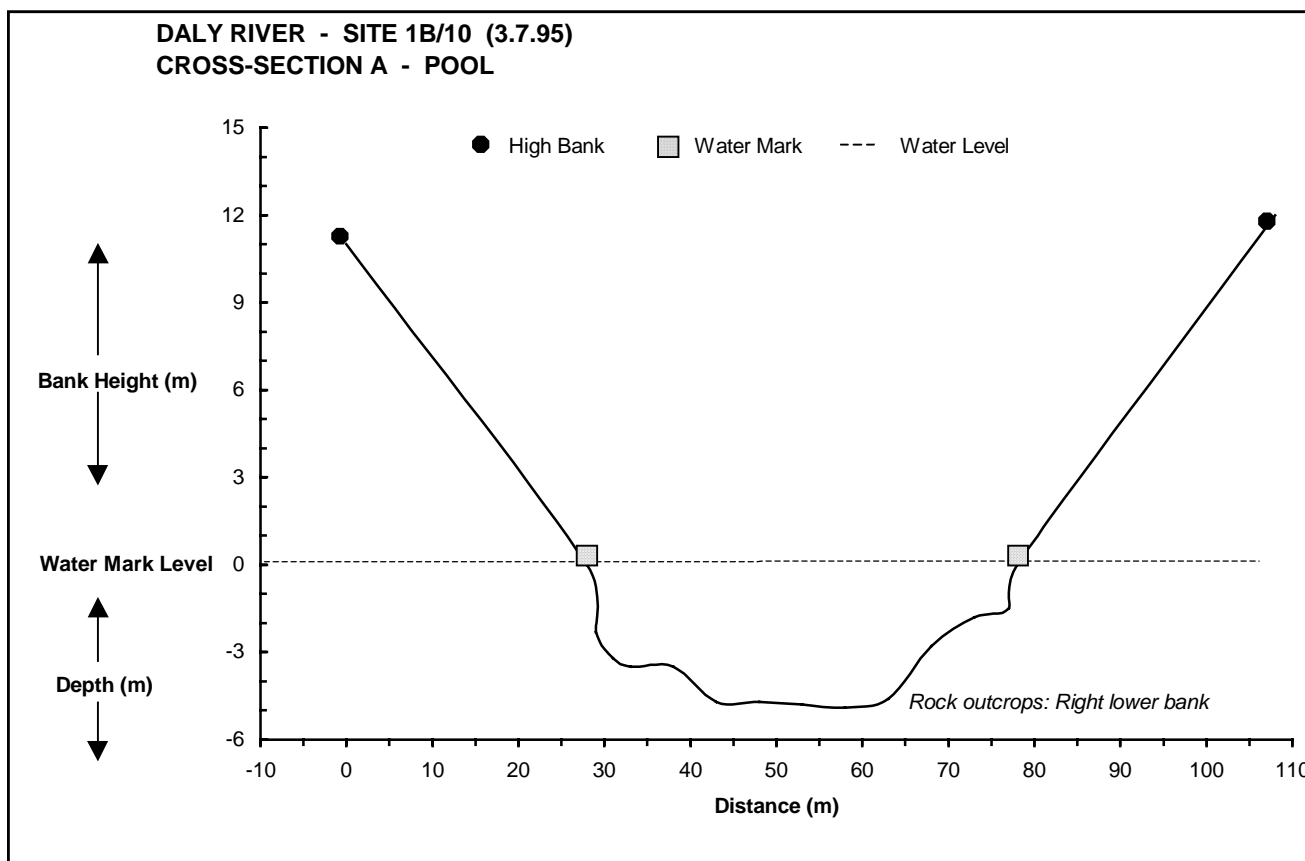
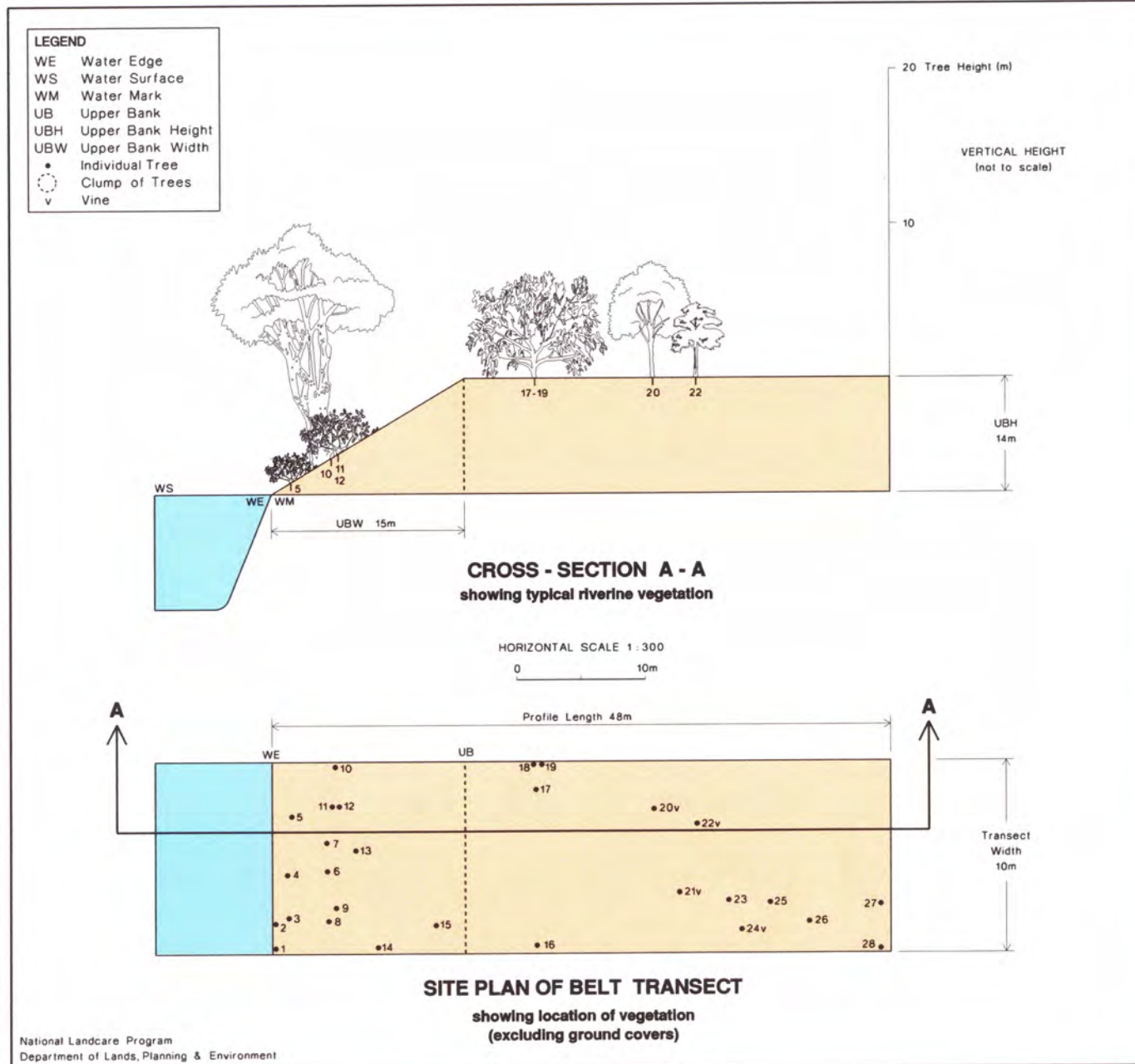


Figure 10.24 Cross-section Surveys for Site 1b/10 – Daly River



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1, 2, 6, 7	8-10	<i>Barringtonia acutangula</i>
3, 8-10, 13, 14	12-19	<i>Melaleuca argentea</i>
4, 5, 11, 12	1-3	<i>Phyllanthus reticulatus</i>
15	11	<i>Nauclea orientalis</i>
16	8	<i>Bambusa arnhemica</i>
17-19, 24, 27, 28	5-7	<i>Stychnos lucida</i>
20, 21	4-7	<i>Diospyros calycantha</i>
22, 23, 25, 26	2.3-8	<i>Carallia brachiata</i>

OTHER SPECIES LOCATED AT SITE:

- Ferns:** *Ampelopteris prolifera*
- Forbs:** *Hypoestes floribunda*
- Grasses:** *Cynodon dactylon*, *Phragmites karka*, *Pseudoraphis spinescens*
- Trees:** *Casuarina cunninghamiana*, *Melaleuca leucadendra*, *Pandanus aquaticus*
- Vines:** **Cardiospermum halicacabum*, *Flagellaria indica*, **Passiflora foetida*
- Weeds:** **Hyptis suaveolens* (Noxious), **Xanthium occidentale* (Noxious)

*Exotic species

NOTES

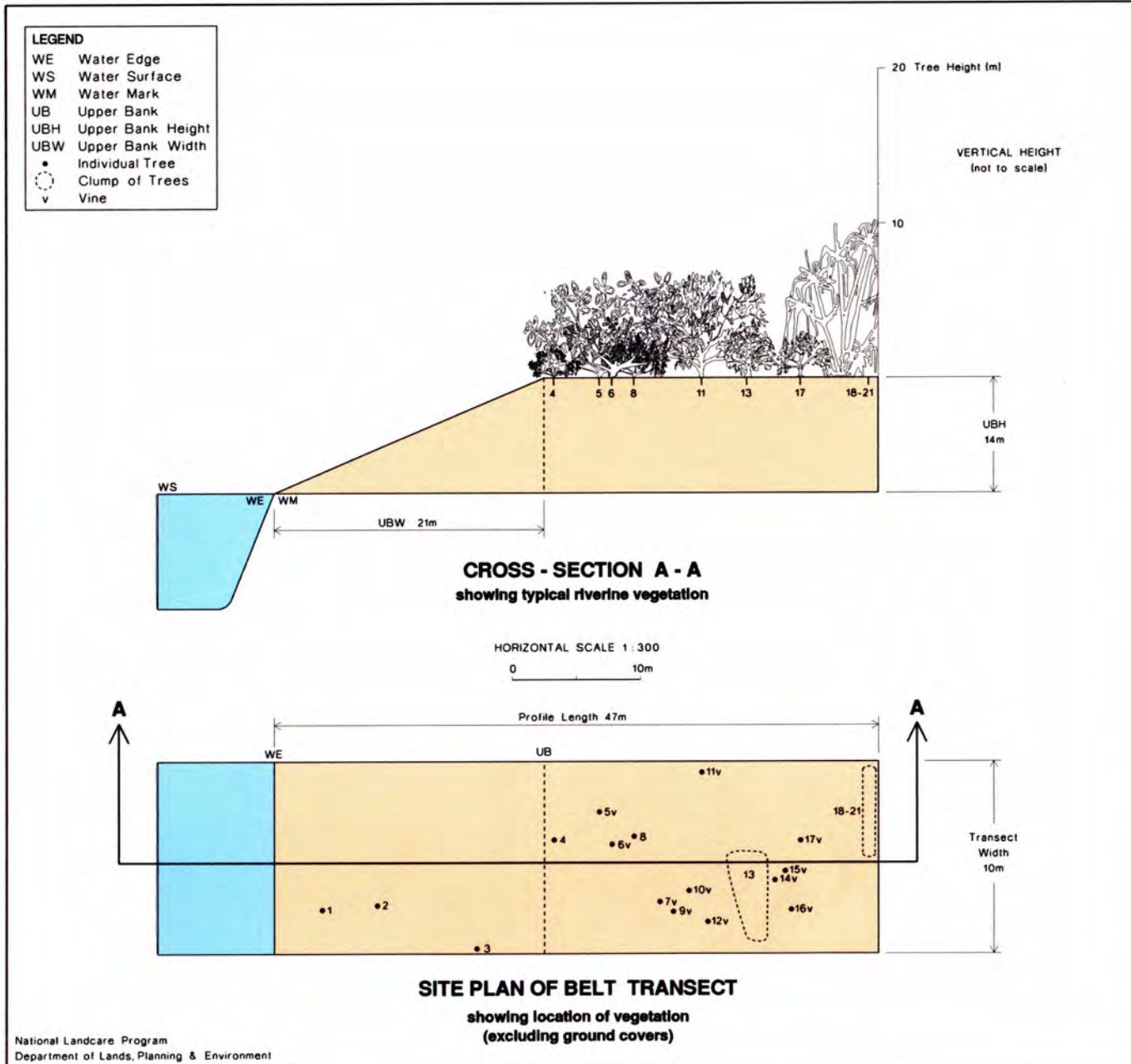
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- Cross-section A-A includes all vegetation above the line marked through the belt transect.
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TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

DALY RIVER		Date 16.8.95
Sub-section 1B	Site 1	Figure 10.25



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1	1.3	<i>Phyllanthus reticulatus</i>
2	12	<i>Metaleuca argentea</i>
3	7	<i>Barringtonia acutangula</i>
4-8, 10	2-7	<i>Cathormion umbellatum</i>
9, 11, 12, 16	4.5-7	<i>Strychnos lucida</i>
13 (18 trees)	3	<i>Flacourtia territorialis</i>
14	9	<i>Wrightia pubescens</i>
15	4	<i>Cupaniopsis anacardioides</i>
17	3	<i>Breynia cernua</i>
18-21	11	<i>Pandanus spiralis</i>

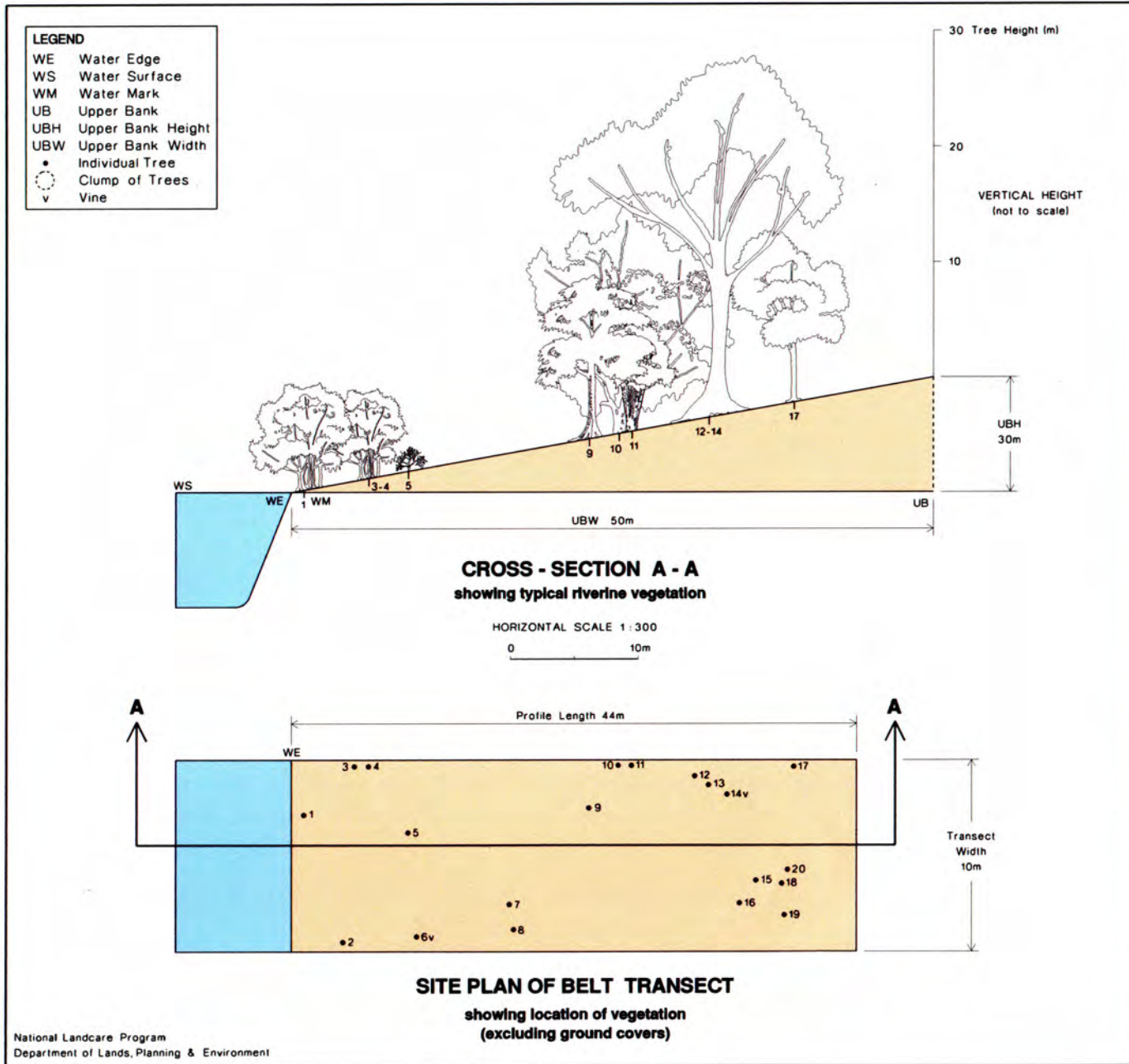
- OTHER SPECIES LOCATED AT SITE:**
- Ferns:** *Ampelopteris prolifera*
 - Forbs:** **Amaranthus viridis*
Cleome viscosa
Coldenia procumbens
Nitella sp. (Aquatic)
Valisneria spiralis (Aquatic)
 - Grasses:** *Bambusa arnhemica*
Cynodon dactylon
Phragmites karka
 - Trees:** *Casuarina cunninghamiana*
Eucalyptus papuana
Metaleuca leucadendra
Nauclea orientalis
Pandanus aquaticus
 - Vines:** *Canavalia papuana*
**Cardiospermum halicacabum*
**Passiflora foetida*
 - Weeds:** **Hypsis suaveolens* (Noxious)
**Leonotis nepetifolia* (Noxious)
**Xanthium occidentale* (Noxious)
- * Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
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TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

DALY RIVER	Date 19.8.95
Sub-section 1B Site 3	Figure 10.26



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1, 3, 4	5.5-9.5	<i>Barringtonia acutangula</i>
2, 22	15-26	<i>Melaleuca leucadendra</i>
5	2.2	<i>Phyllanthus reticulatus</i>
6	1.8	<i>Gymnanthera oblonga</i>
7, 8, 21	7.5-11	<i>Strychnos lucida</i>
9	15	<i>Ficus racemosa</i>
10, 15	21-27	<i>Casuarina cunninghamiana</i>
11	10	<i>Bambusa arnhemica</i>
12-14	15-31	<i>Eucalyptus camaldulensis</i>
16, 17	10-15	<i>Alatalaya hemiglauca</i>
18-20	3	<i>Excoecaria parvifolia</i>

OTHER SPECIES LOCATED AT SITE:

Fern: *Ampelopteris proliferata*

Grasses: *Cynodon dactylon*
Phragmites karka

Trees: *Neuclea orientalis*
Pandanus aquaticus

Weeds: **Hyptis suaveolens* (Noxious)
**Xanthium occidentale* (Noxious)

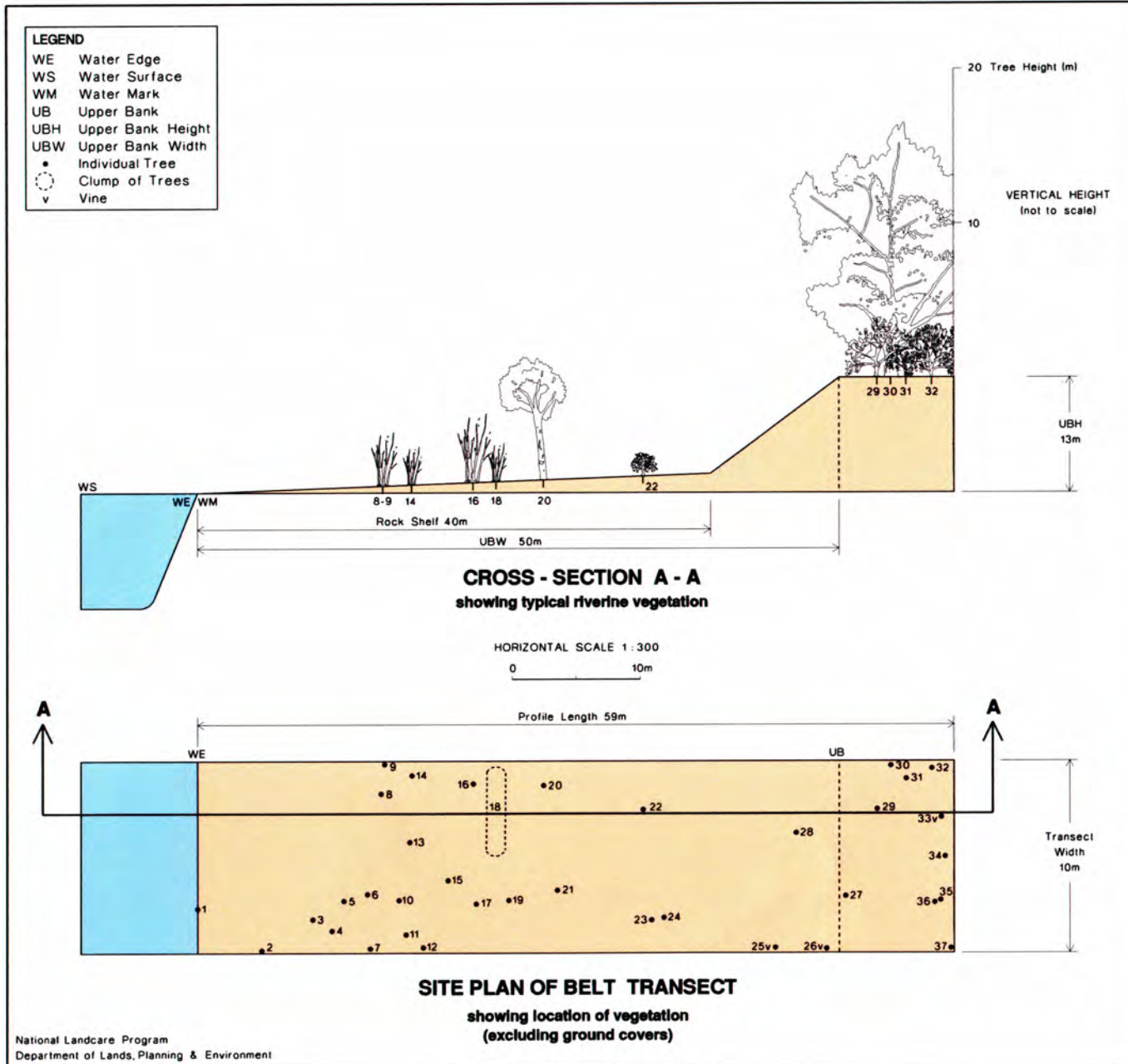
* Exotic species

- NOTES**
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 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
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TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

DALY RIVER	Date 1.7.95
Sub-section 1B Site 8	Figure 10.27



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1-17, 18 (18 trees), 19-21, 23, 26	1.3-16	<i>Melaleuca leucadendra</i>
22, 30, 37	1.4-17	<i>Casuarina cunninghamiana</i>
24, 27-29, 34	1.8-4	<i>Phyllanthus reticulatus</i>
25	10	<i>Barringtonia acutangula</i>
31, 33, 35, 36	1.4-3.5	<i>Flueggea virosa</i>
32	3.5	<i>Ficus scobina</i>

OTHER SPECIES LOCATED AT SITE:

- Forbs:** *Alternanthera nodiflora*
Cyperus difformis
Euphorbia mitchelliana
Fimbristylis acuminata
Heliotropium ovalifolium
Ludwigia hyssopifolia
Melochia pyramidata
- Grasses:** *Bambusa arnhemica*
Cynodon dactylon
Paspalum distans
- Shrubs:** *Phyllanthus maderaspatensis*
- Trees:** *Canarium australianum*
Eucalyptus papuana
Pandanus aquaticus
Strychnos lucida
- Weeds:** **Hyptis suaveolens* (Noxious)
**Xanthium occidentale* (Noxious)

*Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
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TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

DALY RIVER	Date 5.7.95
Sub-section 1B Site 9	Figure 10.28

Table 10.5 Major Vegetation Species Recorded at Sites 2, 4 and 10 located on the Daly River within Sub-section 1b

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Sites Where Recorded (Sub-section No. / Site No.)
<i>Alternanthera nodiflora</i>	Forb		1b/2, 1b/4
<i>Ampelopteris prolifera</i>	Fern		1b/4, 1b/10
<i>Atalaya hemiglauca</i>	Low tree / shrub		1b/4
<i>Bambusa arnhemica</i>	Grass (Bamboo)		1b/10
<i>Barringtonia acutangula</i>	Low tree / shrub		1b/2, 1b/4, 1b/10
<i>Cardiospermum halicacabum</i>	Vine	E	1b/2
<i>Casuarina cunninghamiana</i>	Tree		1b/2, 1b/4, 1b/10
<i>Centaurium spicatum</i>	Forb		1b/4
<i>Cleome viscosa</i>	Forb		1b/2
<i>Coldenia procumbens</i>	Forb		1b/2
<i>Cynodon dactylon</i>	Grass		1b/2, 1b/4, 1b/10
<i>Drosera sp.</i>	Forb		1b/4
<i>Eragrostis tenellula</i>	Grass		1b/4
<i>Excoecaria parvifolia</i>	Tree		1b/4
<i>Eucalyptus camaldulensis</i>	Tree		1b/2
<i>Eucalyptus papuana</i>	Tree		1b/10
<i>Ficus scobina</i>	Low tree / shrub		1b/4
<i>Fimbristylis acuminata</i>	Forb		1b/4
<i>Flacourtia territorialis</i>	Low tree / shrub		1b/4
<i>Flueggea virosa</i>	Low tree / shrub		1b/4
<i>Glinus oppositifolius</i>	Forb		1b/2
<i>Gossypium hirsutum</i>	Low tree / shrub	E	1b/4
<i>Hyptis suaveolens</i>	Forb	E/N	1b/4
<i>Leonotis nepetifolia</i>	Forb	E/N	1b/4
<i>Melaleuca argentea</i>	Tree		1b/2, 1b/4, 1b/10
<i>Melaleuca leucadendra</i>	Tree		1b/4, 1b/10
<i>Nauclea orientalis</i>	Tree		1b/2, 1b/4, 1b/10
<i>Nitella sp.</i>	Forb		1b/2
<i>Pandanus aquaticus</i>	Tree		1b/2, 1b/4, 1b/10
<i>Paspalidium distans</i>	Grass		1b/2
<i>Passiflora foetida</i>	Vine	E	1b/2, 1b/4
<i>Phragmites karka</i>	Grass		1b/2, 1b/4
<i>Phyllanthus reticulatus</i>	Low tree / shrub		1b/2, 1b/4
<i>Pseudoraphis spinescens</i>	Grass		1b/4
<i>Strychnos lucida</i>	Tree		1b/4
<i>Syzygium forte</i>	Tree		1b/10
<i>Vallisneria spiralis</i>	Forb		1b/4, 1b/10
<i>Xanthium occidentale</i>	Forb	E/N	1b/2, 1b/4, 1b/10

* Declared Noxious Weed within the Northern Territory



Bambusa arnhemica

10.1.3 Daly River – Below Fergusson River

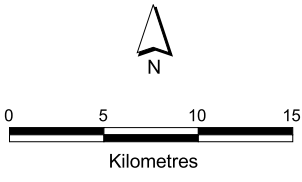
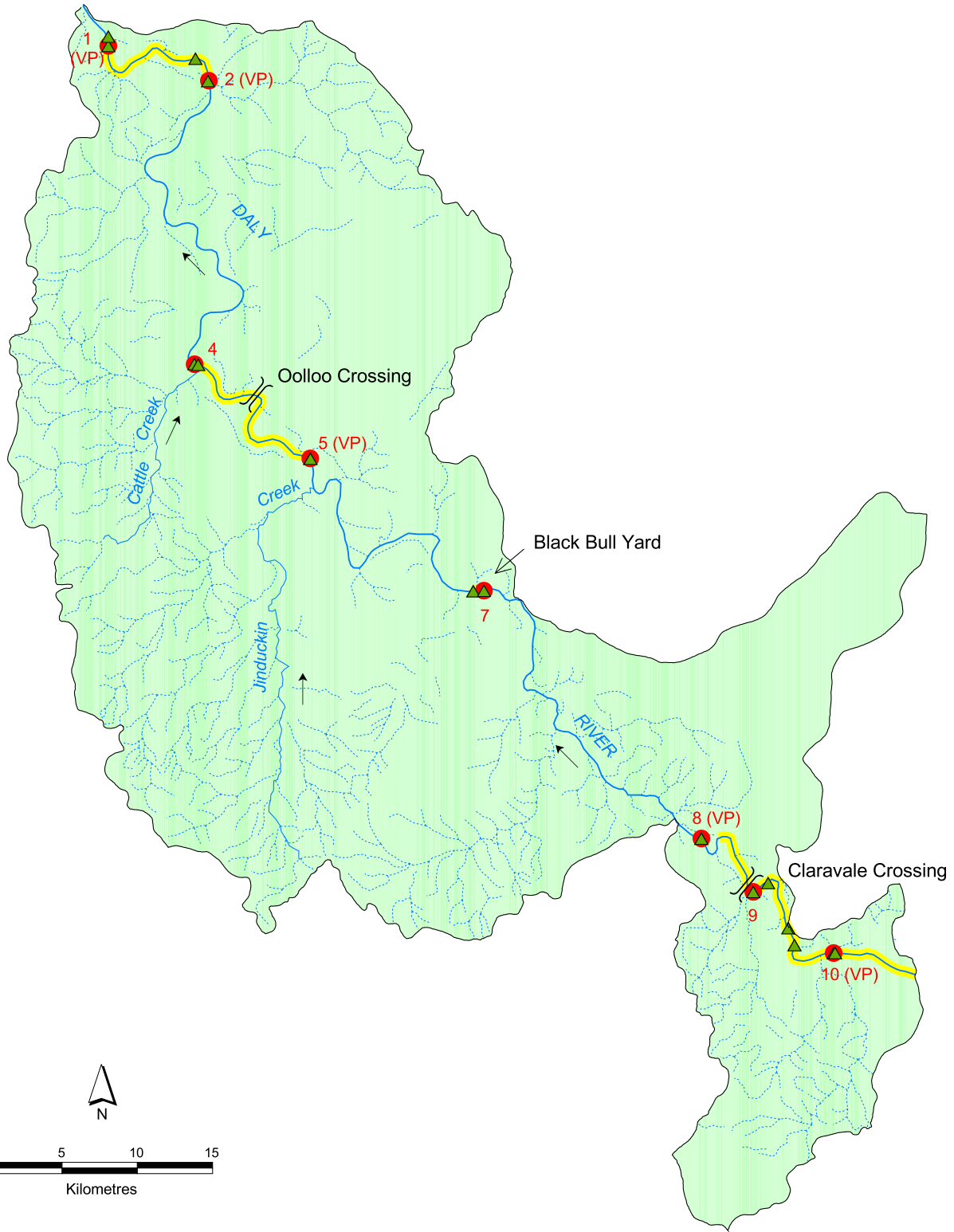
Sub-section 1c encompasses the Daly River from the junction with the Douglas River upstream to Fergusson River junction. Of the 8 sites in this sub-section, all of which are located on the Daly River, 7 were fully assessed (refer Table 10.6 and Map 29).

Table 10.6 Summary of Survey Information for Sub-section 1c – Daly River Below Fergusson River

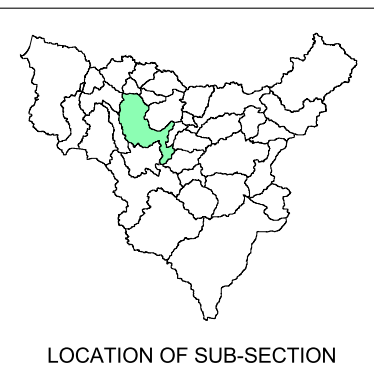
Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
1	Daly River	A	Pool	√	√	
		B	Pool	√		
2	Daly River	A	Riffle	√	√	
		B	Pool	√		
4	Daly River	A	Rapid	√		
		B	Pool	√		
5	Daly River	A	Riffle	√	√	
		B	Pool	√		
7	Daly River	A	Riffle	√		
		B	Pool	√		
8	Daly River	A	Riffle	√	√	
		B	Pool			
9	Daly River	A	Run	√		
		B	Pool	√		
10	Daly River	A	Rapid	√	√	
		B	Pool	√		
		C	Pool	√		
		D	Run	√		



View along the Daly River showing a riffle at Site 1c/7 located downstream of Black Bull Yard



Area - 2,192 km²



LOCATION OF SUB-SECTION

LEGEND	
● 5	Site
▲	Sample Point
(VP)	Vegetation Profile
—	Longitudinal Profile Survey
—	River
—	Creek
←	Flow direction

DALY RIVER Below Fergusson River

SUB-SECTION 1c

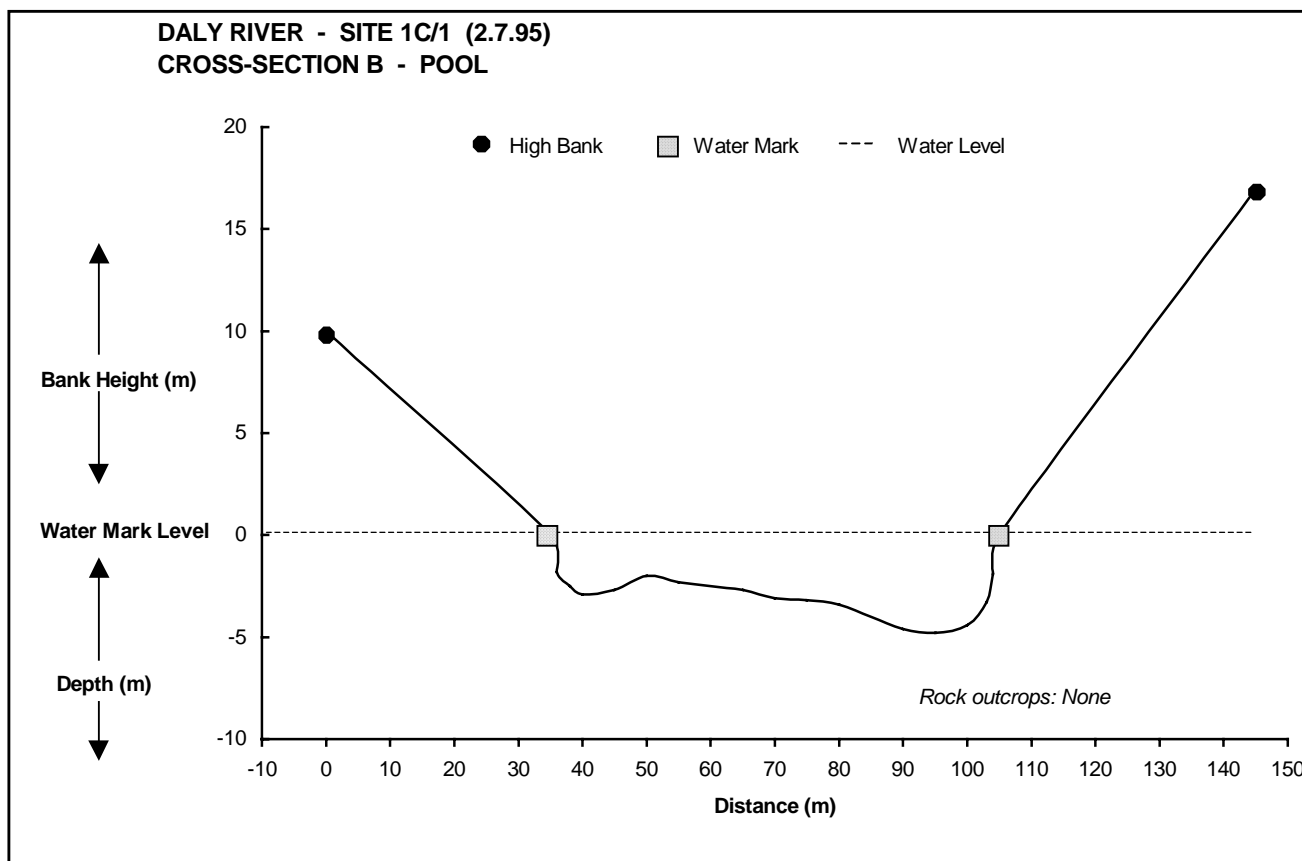
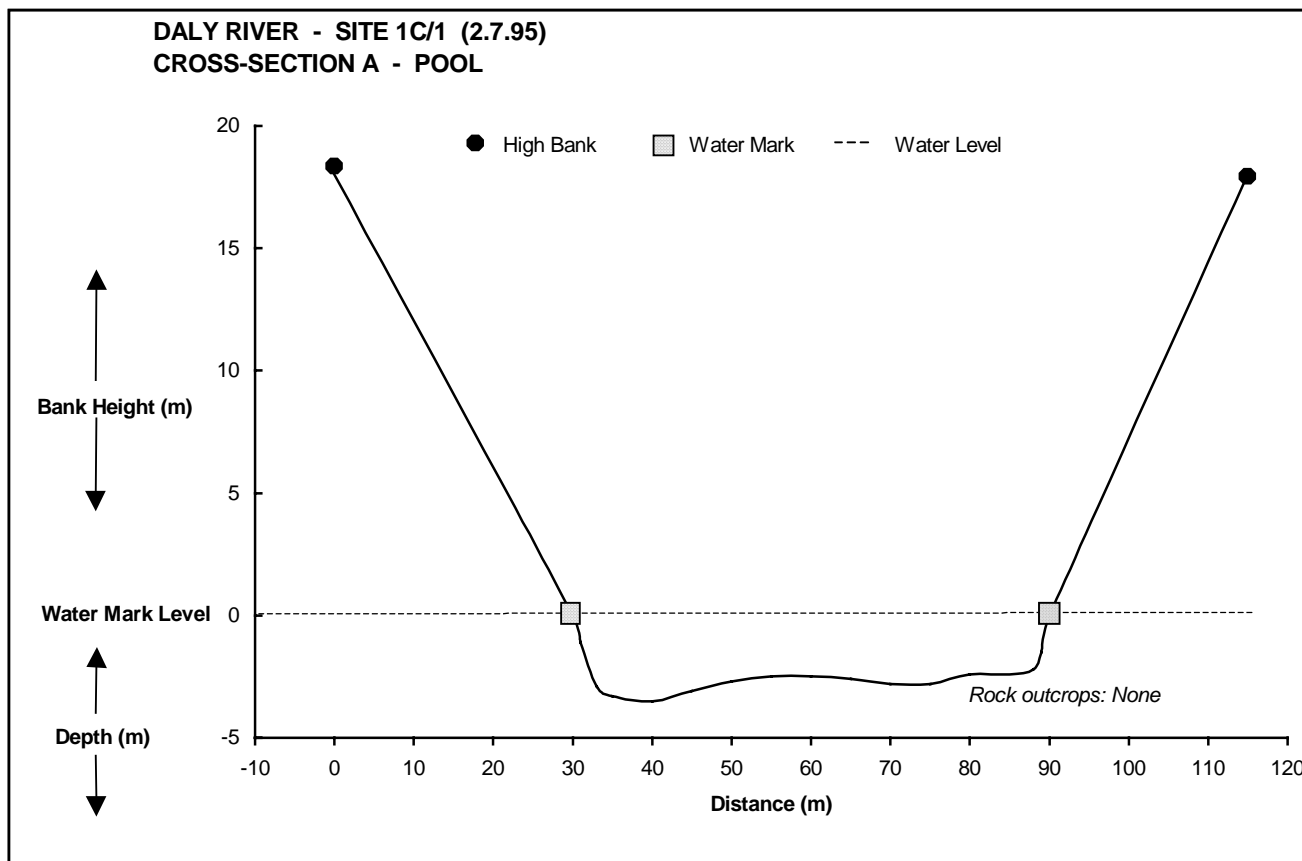


Figure 10.29 Cross-section Surveys for Site 1c/1 – Daly River

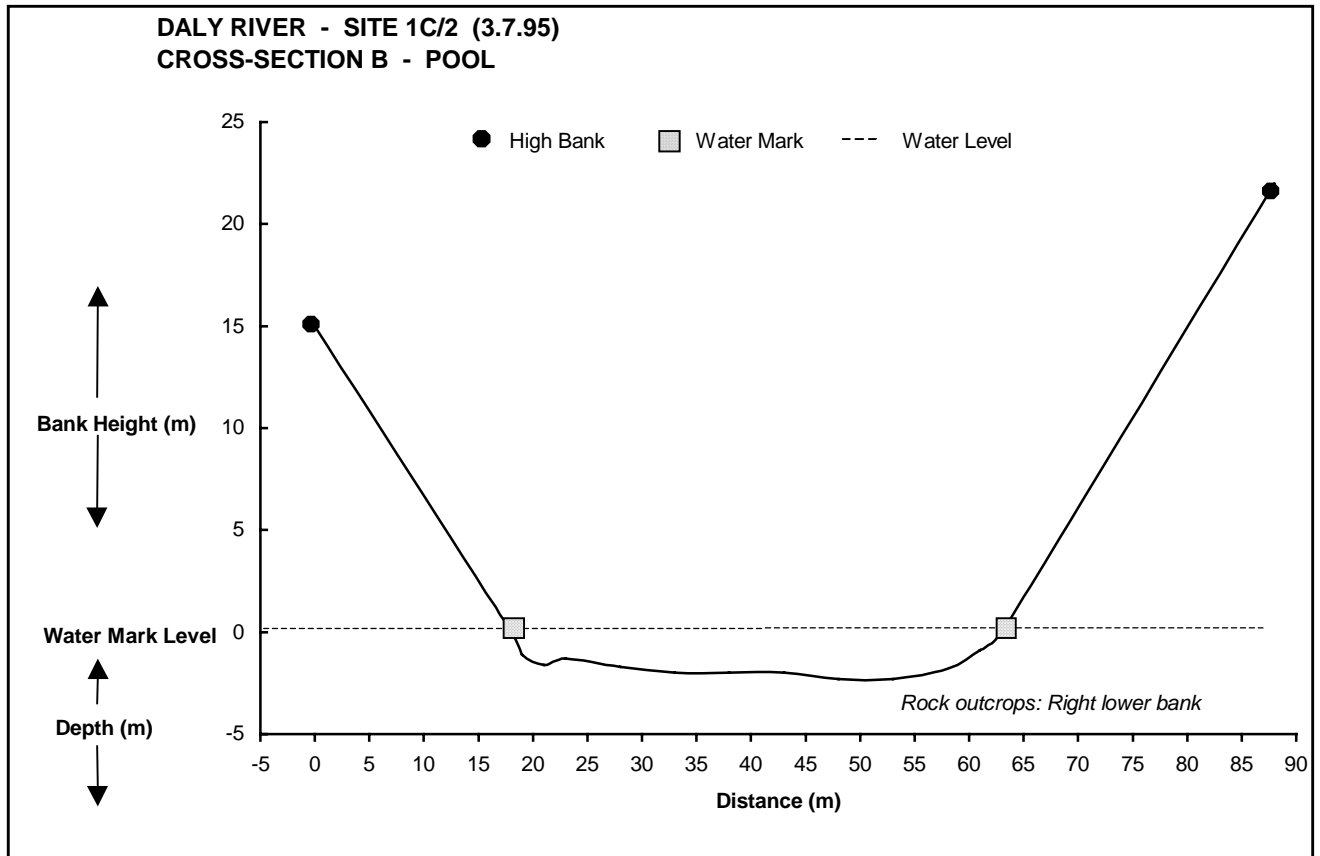
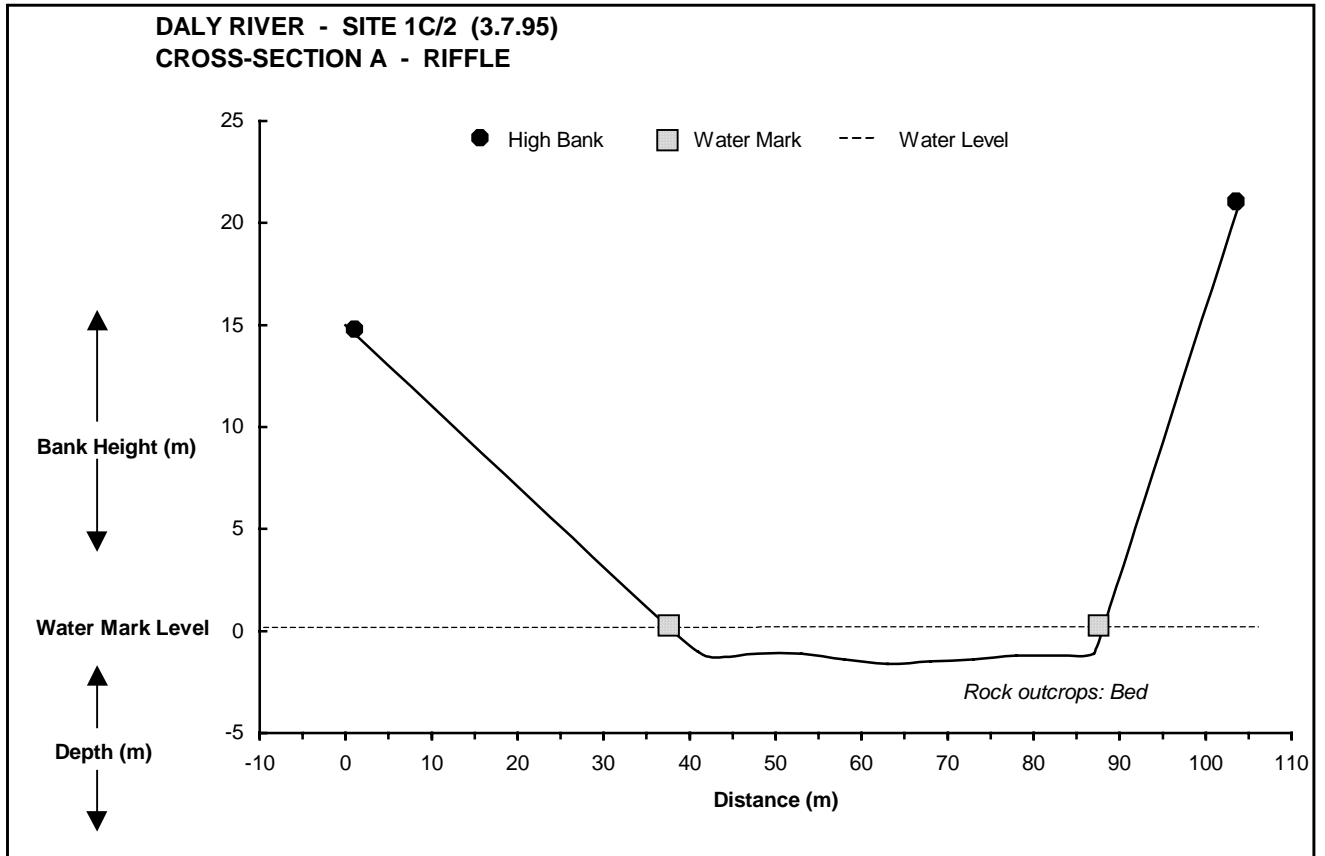


Figure 10.30 Cross-section Surveys for Site 1c/2 – Daly River

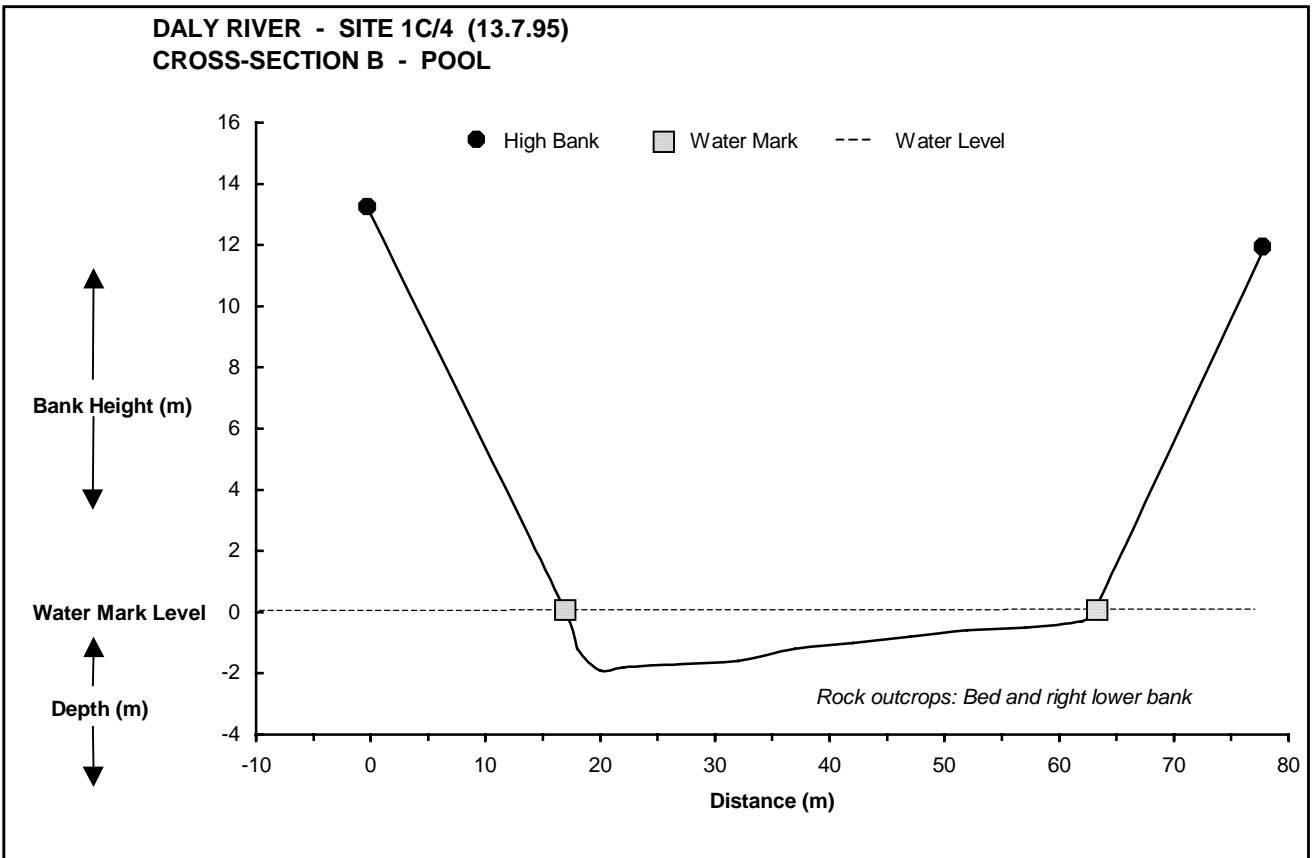
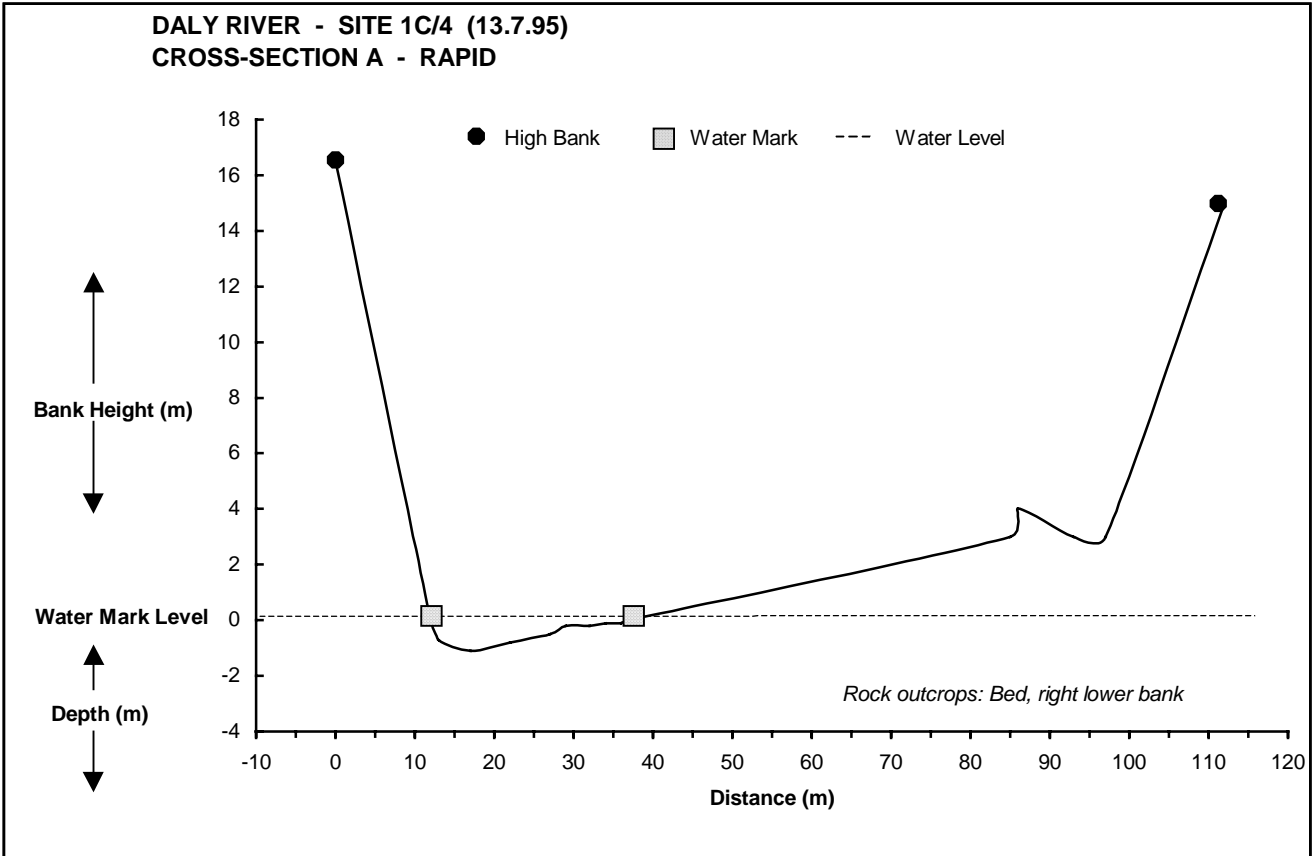


Figure 10.31 Cross-section Surveys for Site 1c/4 – Daly River

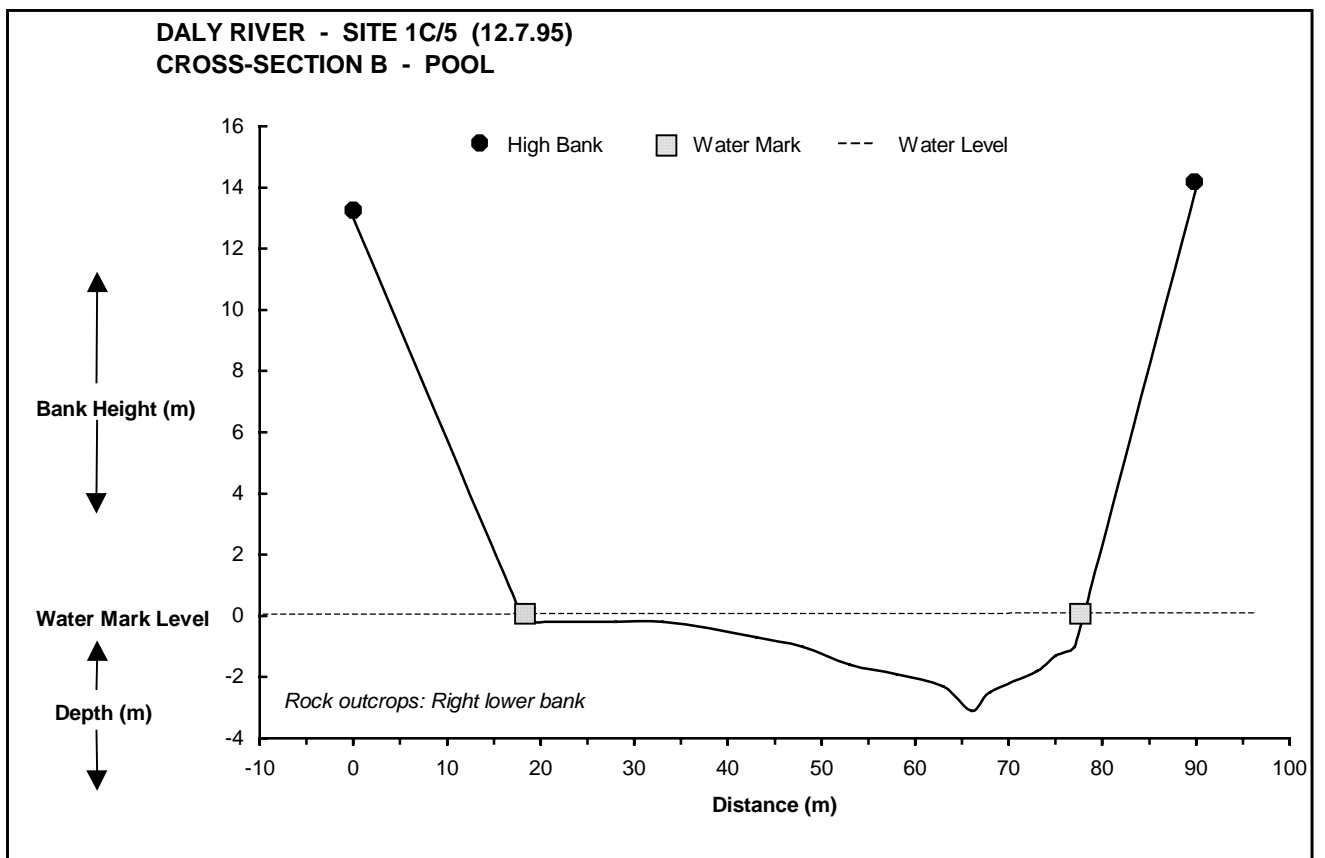
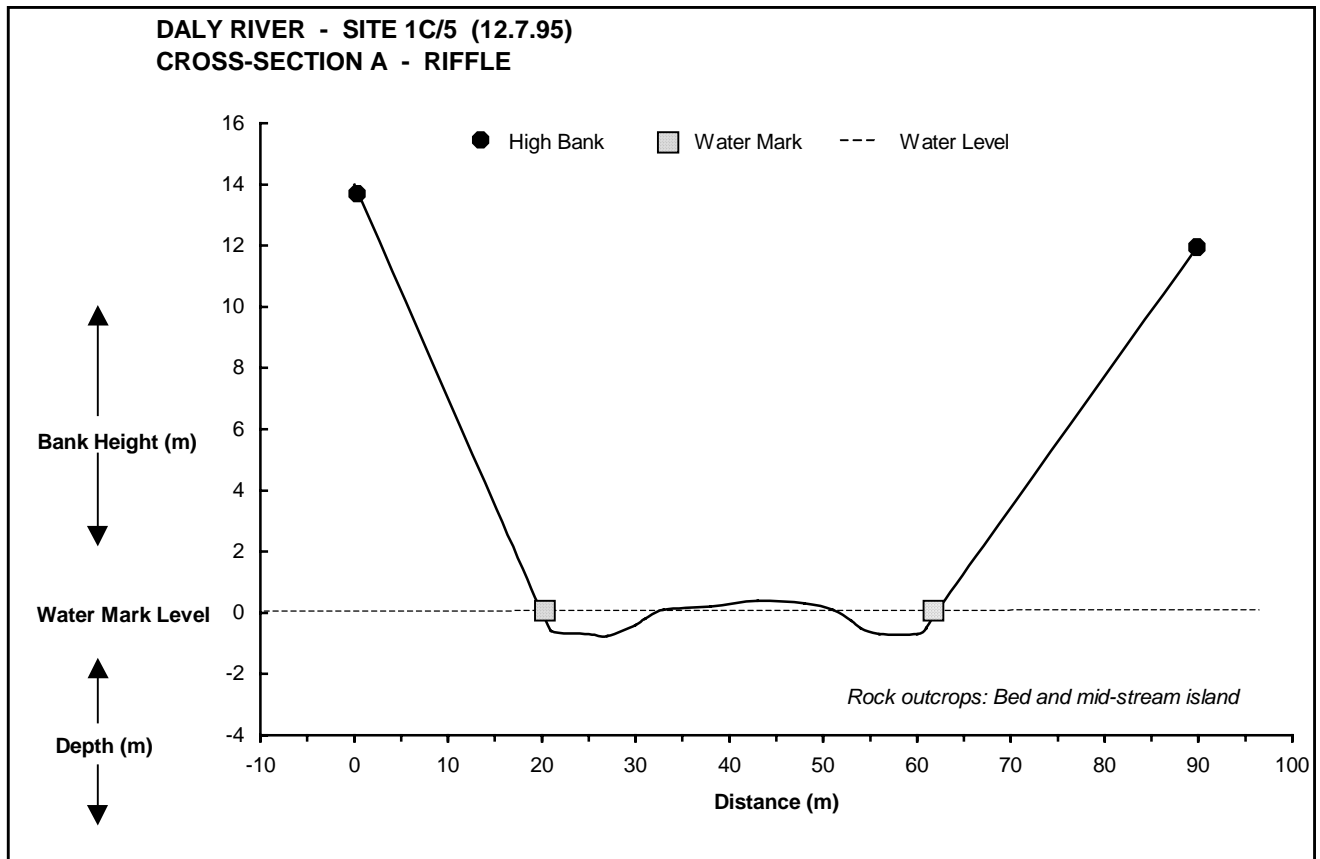


Figure 10.32 Cross-section Surveys for Site 1c/5 – Daly River

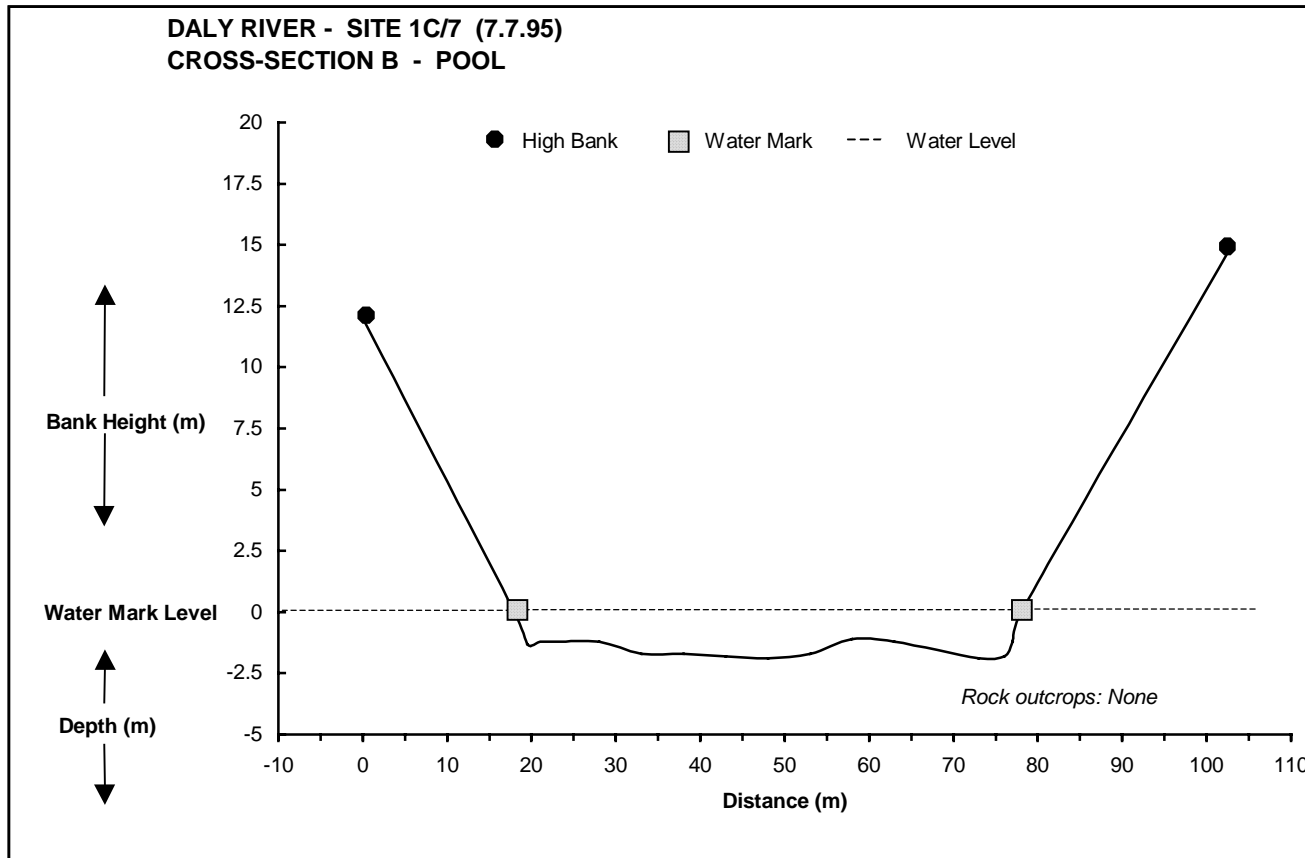
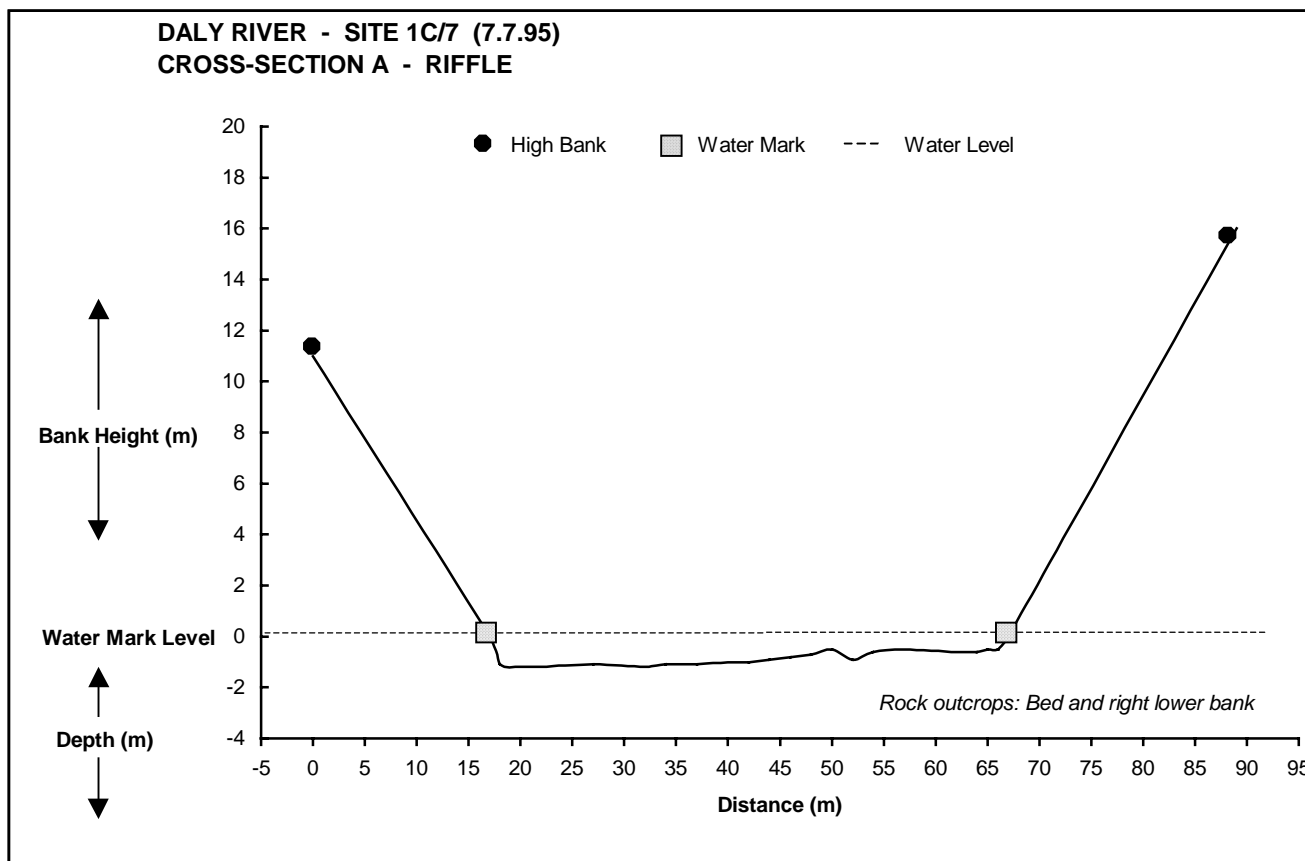


Figure 10.33 Cross-section Surveys for Site 1c/7 – Daly River

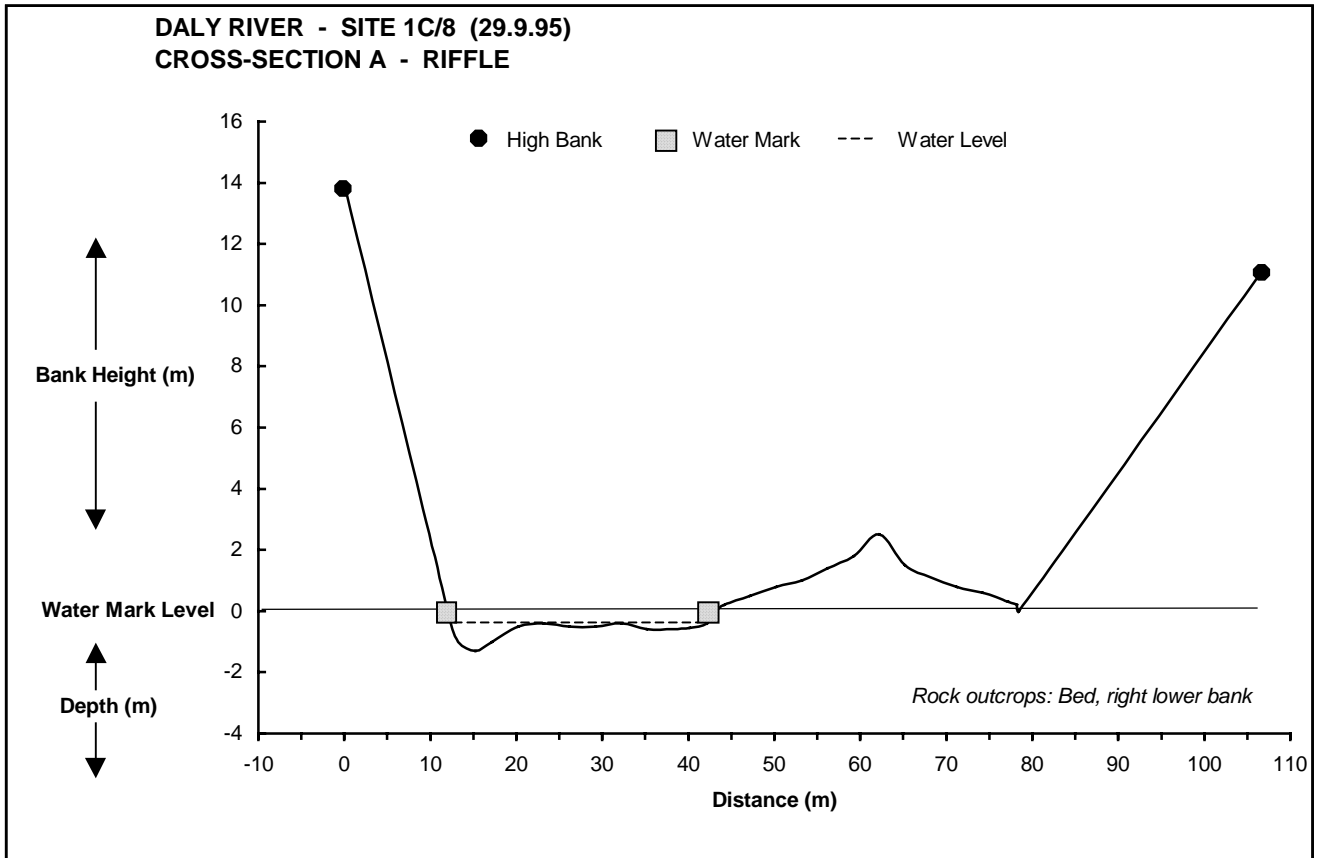


Figure 10.34 Cross-section Survey for Site 1c/8 – Daly River



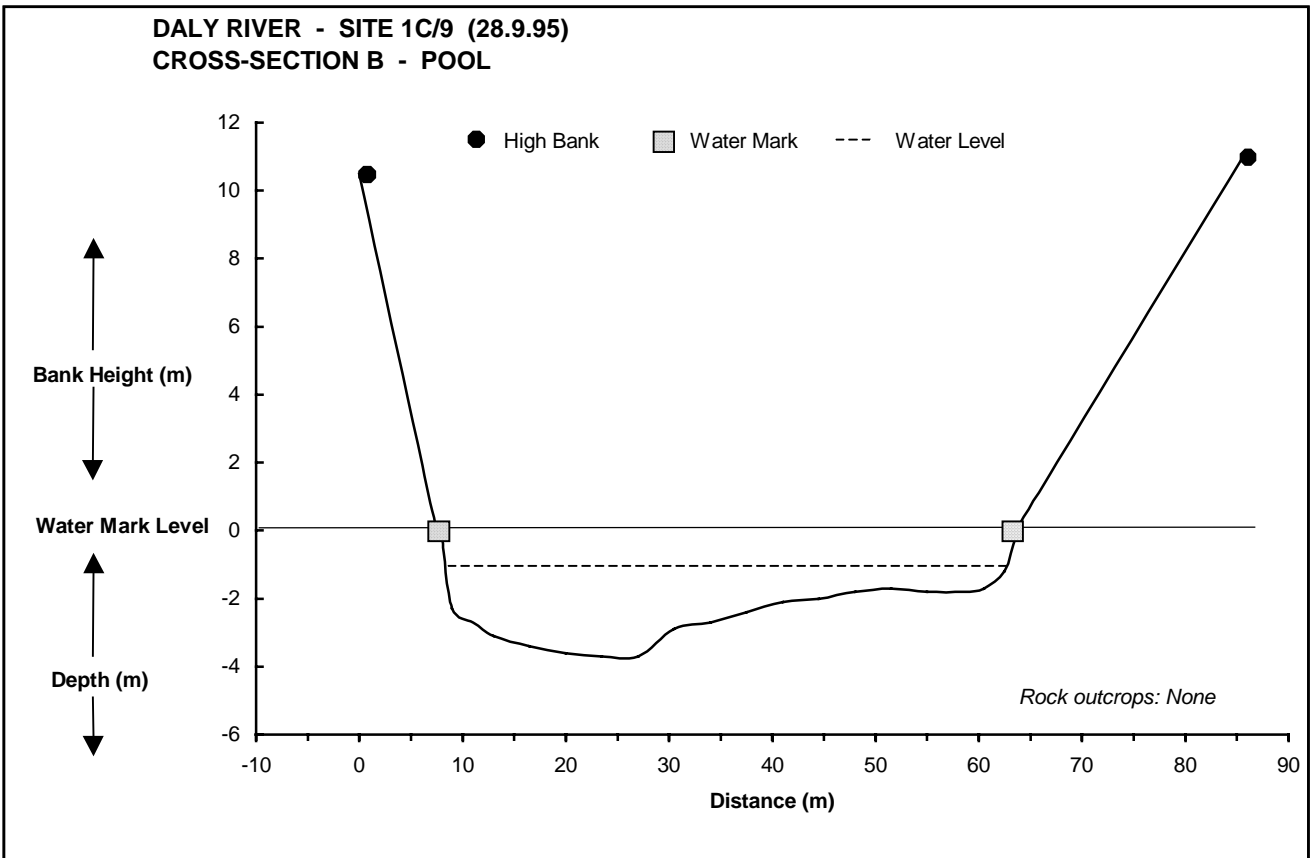
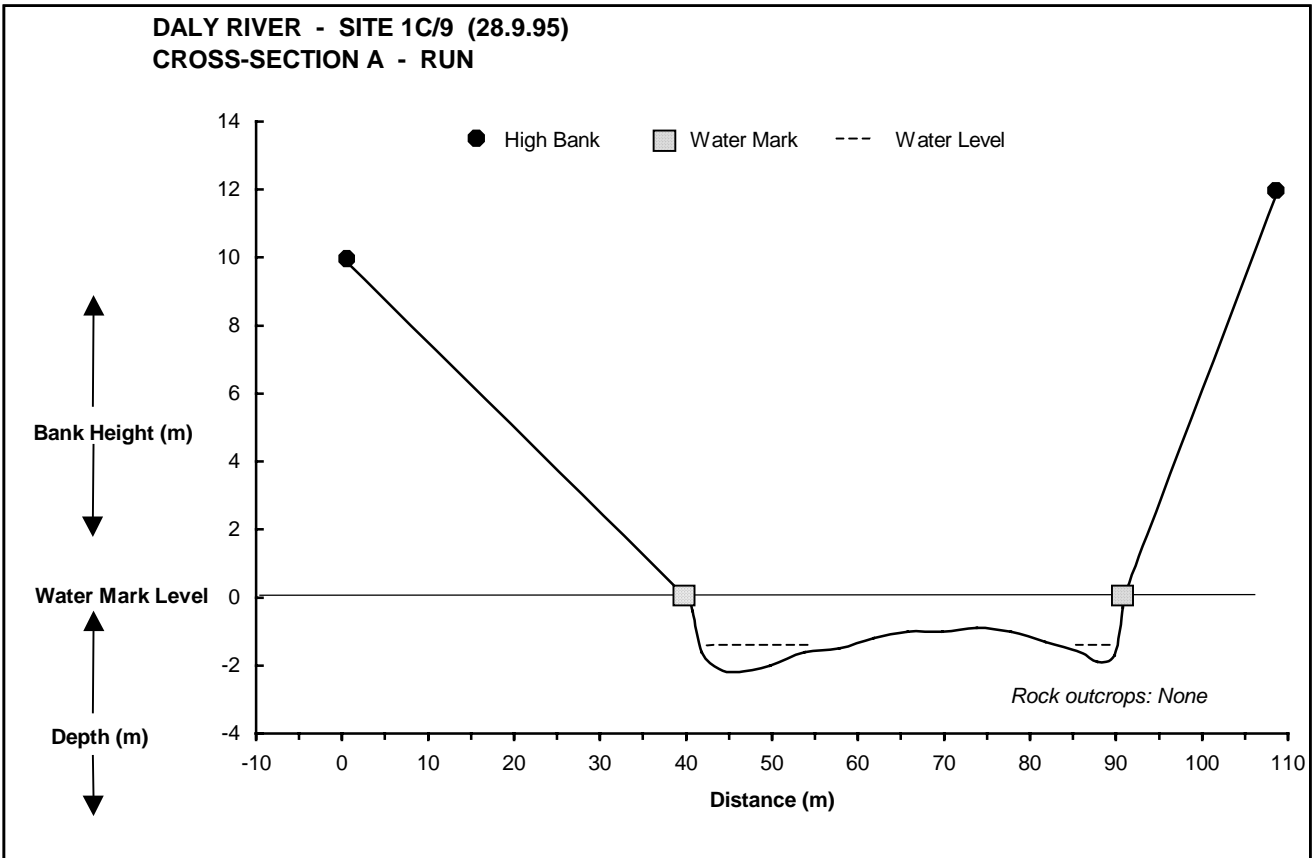


Figure 10.35 Cross-section Surveys for Site 1c/9 – Daly River

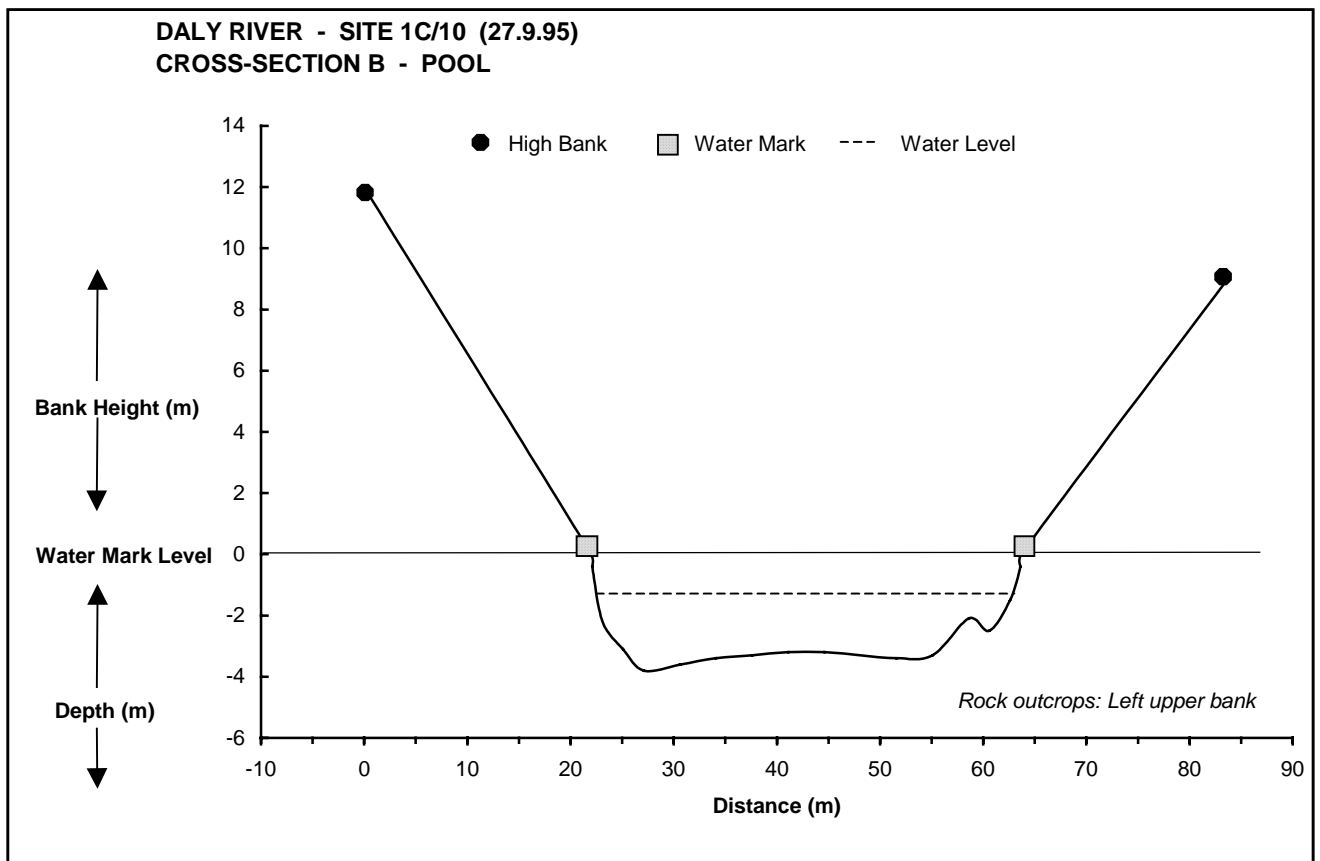
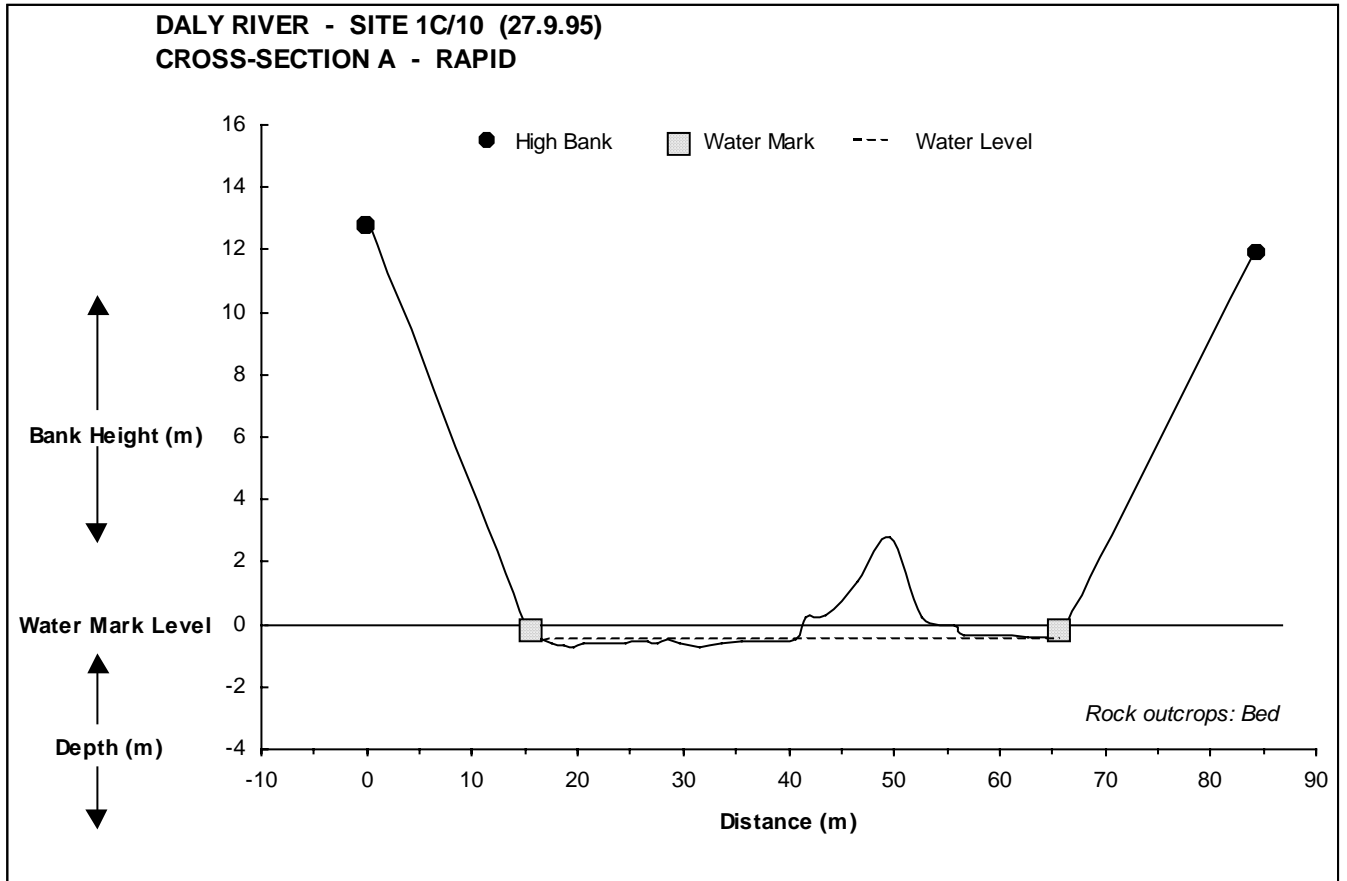


Figure 10.36 Cross-section Surveys for Site 1c/10 – Daly River (cont o/p)

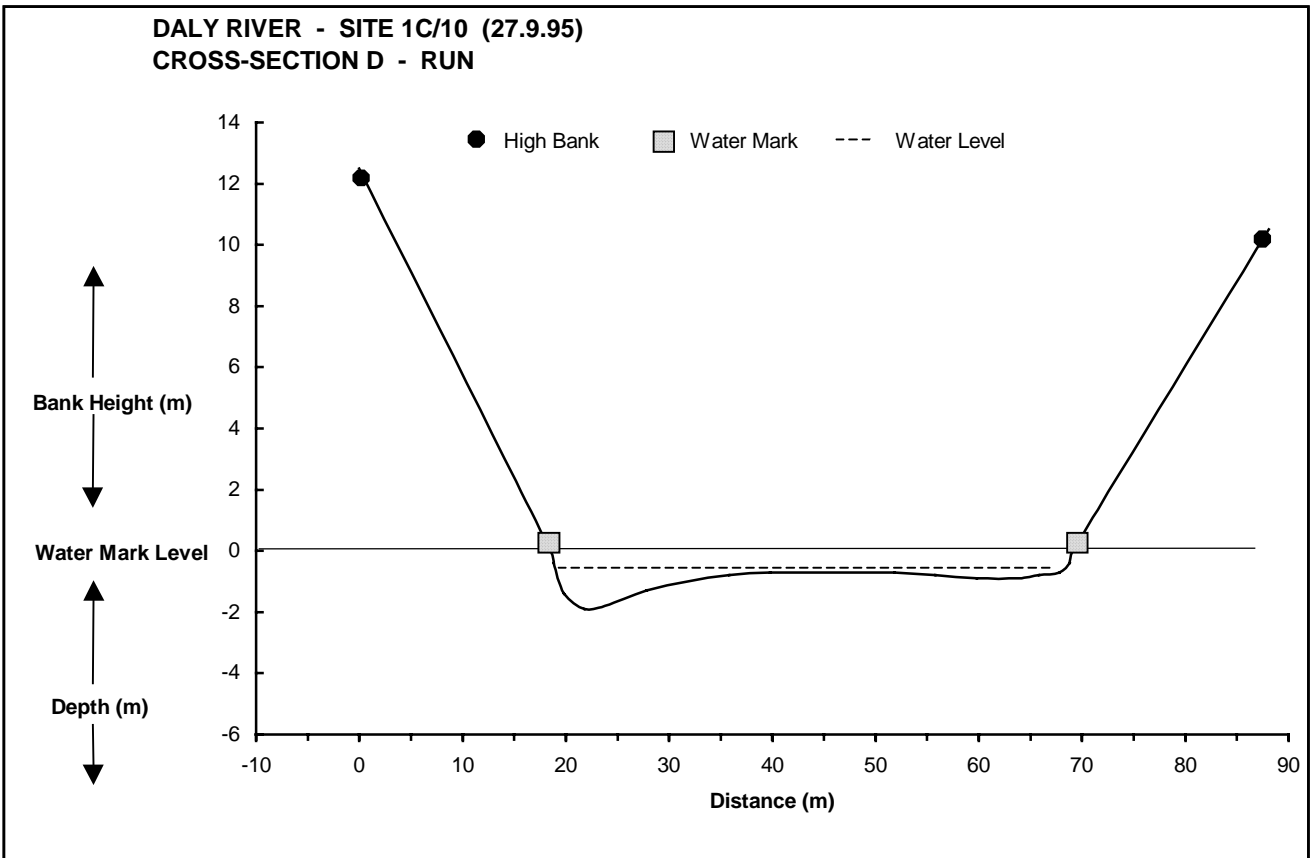
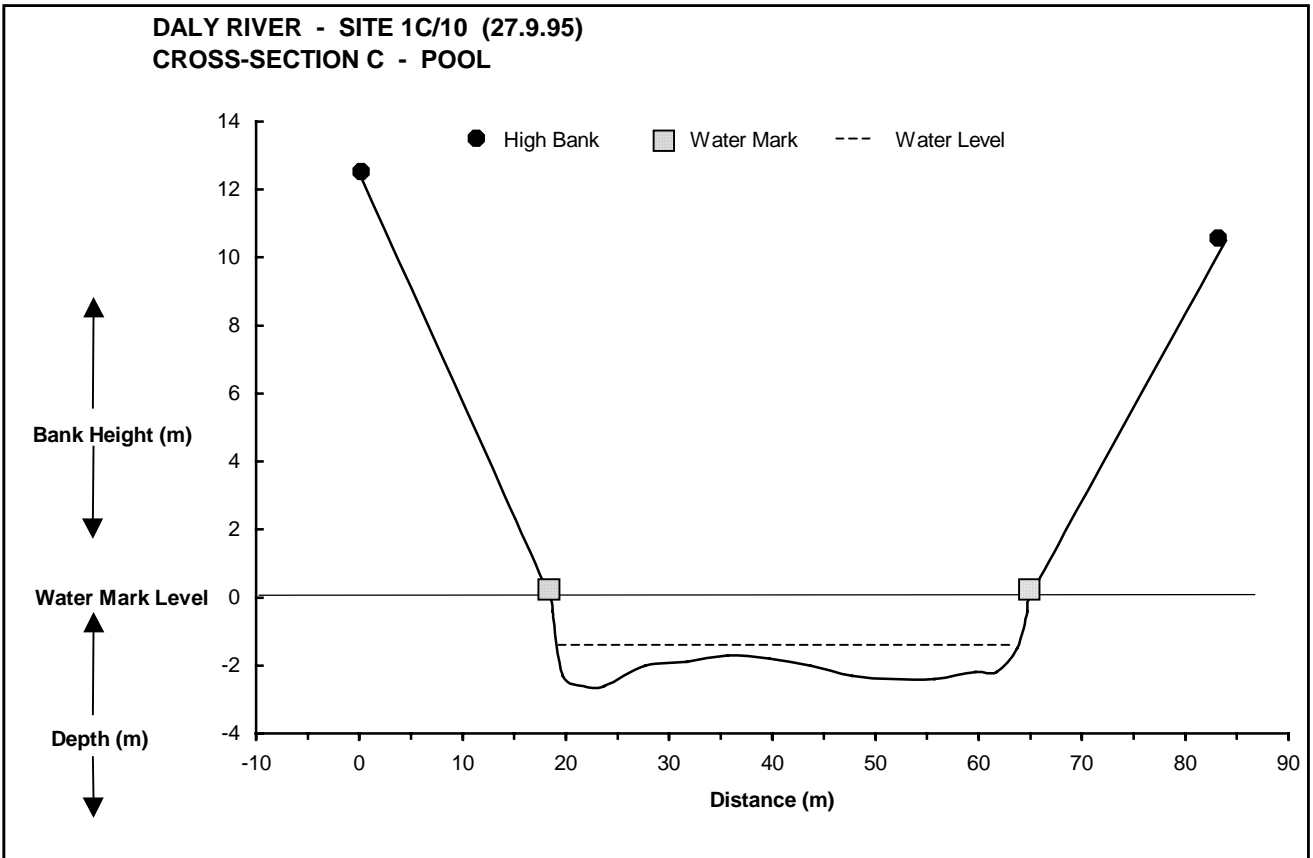
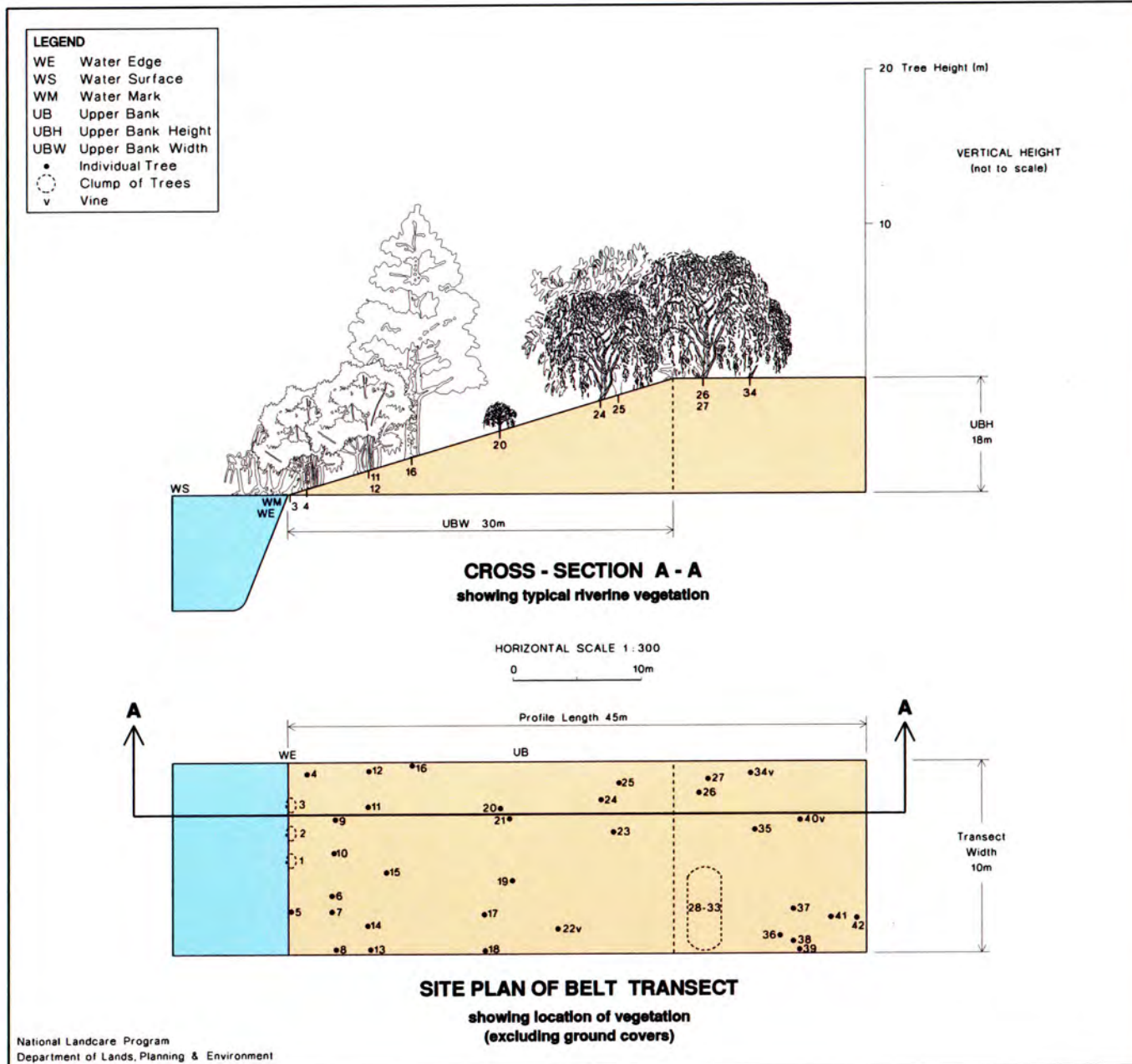


Figure 10.36 Cross-section Surveys for Site 1c/10 – Daly River



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1-3 (32 trees)	1-6	<i>Pandanus aquaticus</i>
4, 8, 10-12, 15, 17, 18, 22	6.5-17	<i>Barringtonia acutangula</i>
5-7	15-19	<i>Melaleuca argentea</i> or <i>Melaleuca leucadendra</i>
9, 14, 16	11-17	<i>Nauclea orientalis</i>
13, 39	8-11	<i>Ficus racemosa</i>
19, 20, 24, 26-38	2-8.5	<i>Flueggea virosa</i>
21, 25	10	<i>Cathormion umbellatum</i>
23	12	<i>Acacia</i> sp.
40-41	2-3.5	<i>Atalaya hemiglauca</i>
42	17.5	<i>Eucalyptus papuana</i>

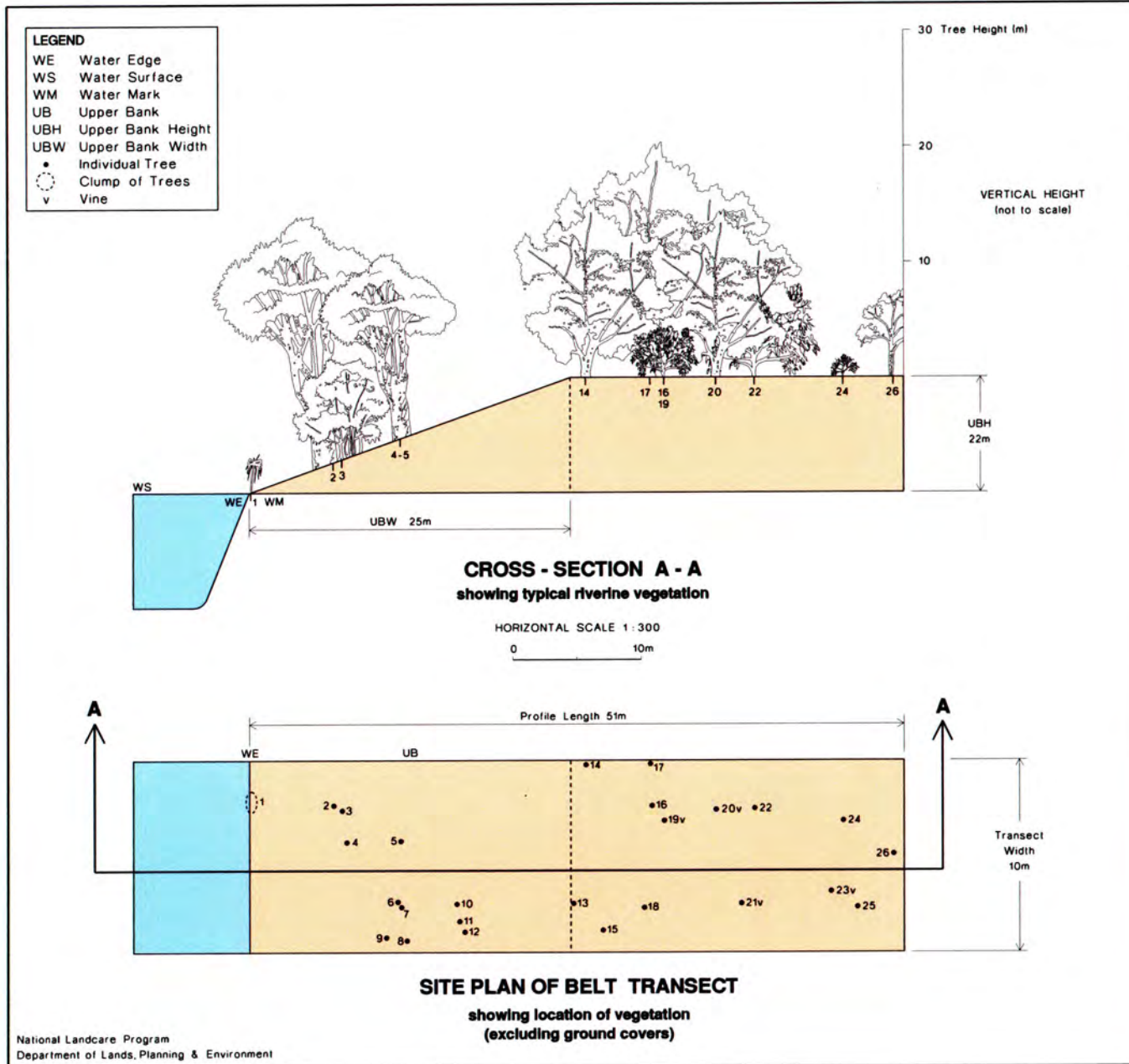
- OTHER SPECIES LOCATED AT SITE:**
- Grasses:** *Bambusa arnhemica*
Cynodon dactylon
Opismenus burmannii
Phragmites karka
- Shrubs:** *Capparis separia*
Gymnanthera oblonga
- Tree/shrub:** *Ficus scobina*
- Trees:** *Casuarina cunninghamiana*
Strychnos lucida
Syzygium lorte
- Vines:** **Passiflora foetida*
- Weeds:** **Xanthium occidentale* (Noxious)
- *Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 - Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

DALY RIVER	Date 5.7.95
Sub-section 1C Site 1	Figure 10.37



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1 (2 trees)	0.1-3.5	<i>Pandanus aquaticus</i>
2, 4-6	17-23	<i>Melaleuca argentea</i> or <i>Melaleuca leucadendra</i>
3, 7-12	6-9	<i>Barringtonia acutangula</i>
13, 14, 17, 20	15-21	<i>Casuarina cunninghamiana</i>
15, 16, 18, 19, 22	3-8.5	<i>Strychnos lucida</i>
21	2	<i>Diospyros calycantha</i>
23, 24	2-3	<i>Milusa traceyi</i>
25	13	<i>Ptilostigma malabaricum</i>
26	8	<i>Eucalyptus papuana</i>

OTHER SPECIES LOCATED AT SITE:

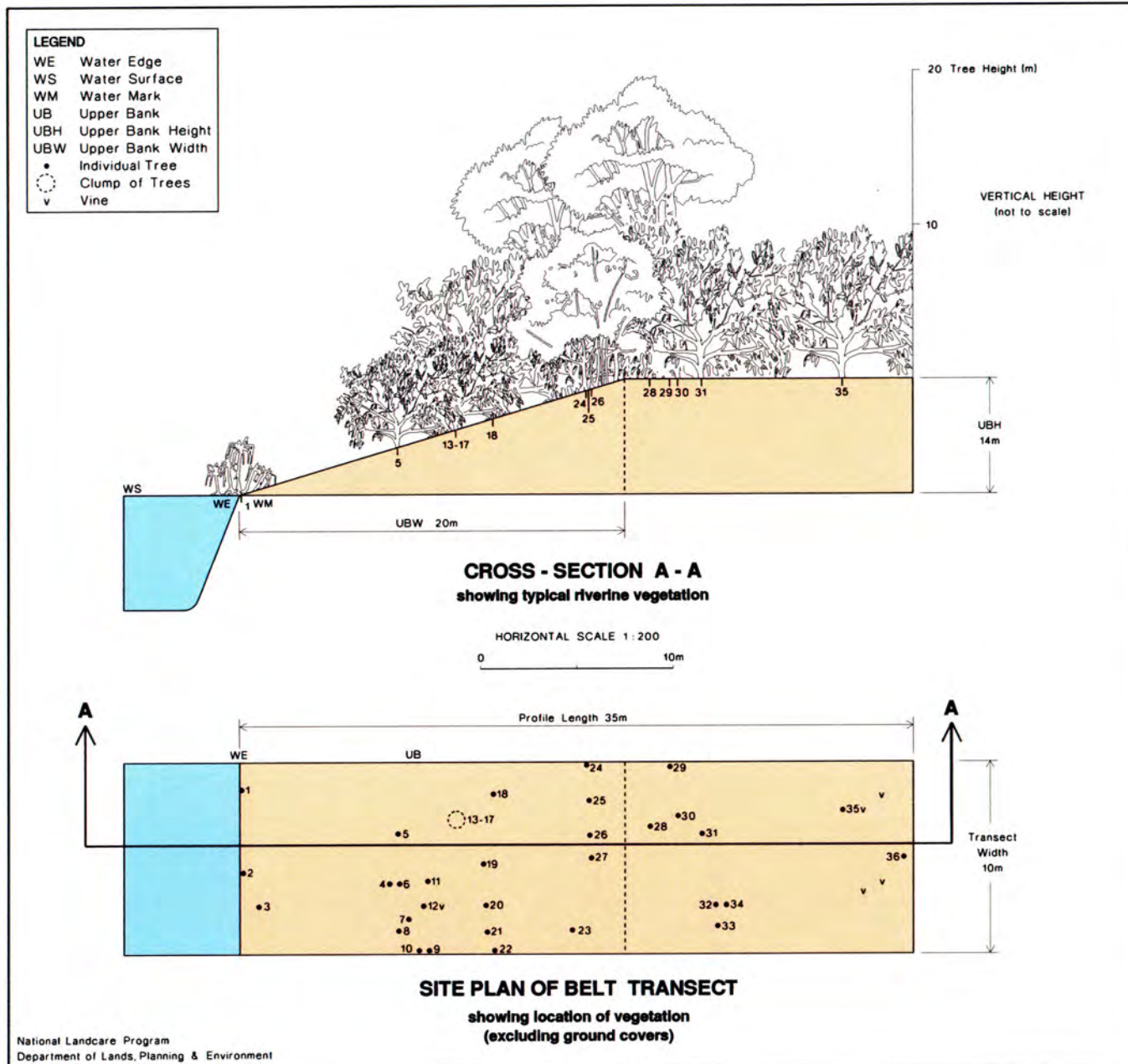
- Ferns:** *Ampelopteris proliferata*
- Grasses:** *Cynodon dactylon*
- Shrubs:** *Phyllanthus reticulatus*
- Trees:** *Canarium australianum*
- Vines:** *Ichnocarpus frutescens*
- Weeds:** **Xanthium occidentale* (Noxious)

* Exotic species

NOTES

- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
- Cross-section A-A includes all vegetation above the line marked through the belt transect.
- The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
- Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT DALY RIVER CATCHMENT	
RIVERINE VEGETATION PROFILE	
DALY RIVER	Date 3.7.95
Sub-section 1C Site 2	Figure 10.38



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1 (4 trees)	4.5	<i>Pandanus aquaticus</i>
2, 3, 24, 29	9.5-20	<i>Melaleuca argentea</i> or <i>Melaleuca leucadendra</i>
4, 5, 7, 12-18, 23, 25, 27, 28, 30, 31, 34-36	4-11	<i>Diospyros calycaniba</i>
6, 8, 26, 33	8-11	<i>Barringtonia acutangula</i>
9, 10, 32	8-16	<i>Ficus racemosa</i>
11, 19-22	9-18	<i>Nauclea orientalis</i>

OTHER SPECIES LOCATED AT SITE:

- Fern:** *Ampelopteris prolifera*
- Forbs:** *Dentella repens*, *Eleocharis geniculata*, *Goodenia purpureascens*, *Hypoestes floribunda*, *Schoenoplectus litoralis*
- Grasses:** *Phragmites karka*
- Shrub:** *Phyllanthus reticulatus*
- Trees:** *Casuarina cunninghamiana*, *Eucalyptus camaldulensis*
- Weeds:** **Xanthium occidentale* (Noxious)

* Exotic species

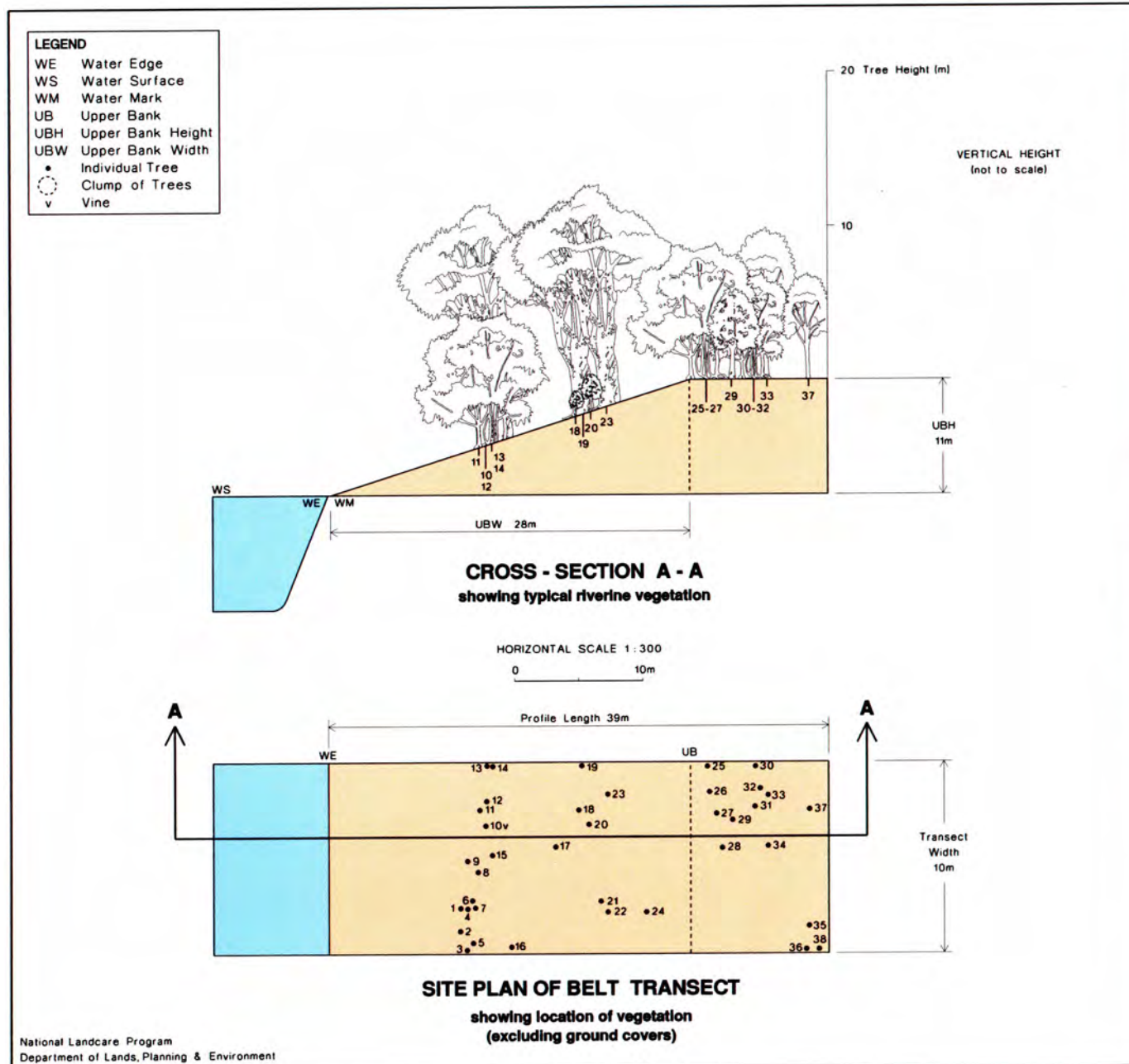
NOTES

- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
- Cross-section A-A includes all vegetation above the line marked through the belt transect.
- The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
- Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

DALY RIVER		Date 12.7.95
Sub-section 1C	Site 5	Figure 10.39



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1-8,10,12,15, 25-28,30-32	3-10	<i>Barringtonia acutangula</i>
9,11	5.8-7	<i>Diospyros calycantha</i>
13,14,19,23	14.5-16	<i>Melaleuca argentea</i>
16	4	<i>Acacia auriculiformis</i>
17	1.8	<i>Casuarina cunninghamiana</i>
18,20-22, 24,29,38	1.7-6	<i>Antidesma ghaesembilla</i>
33,34,37	7-10.5	<i>Alatalaya hemiglauca</i>
35,36	5	<i>Ficus scobina</i>

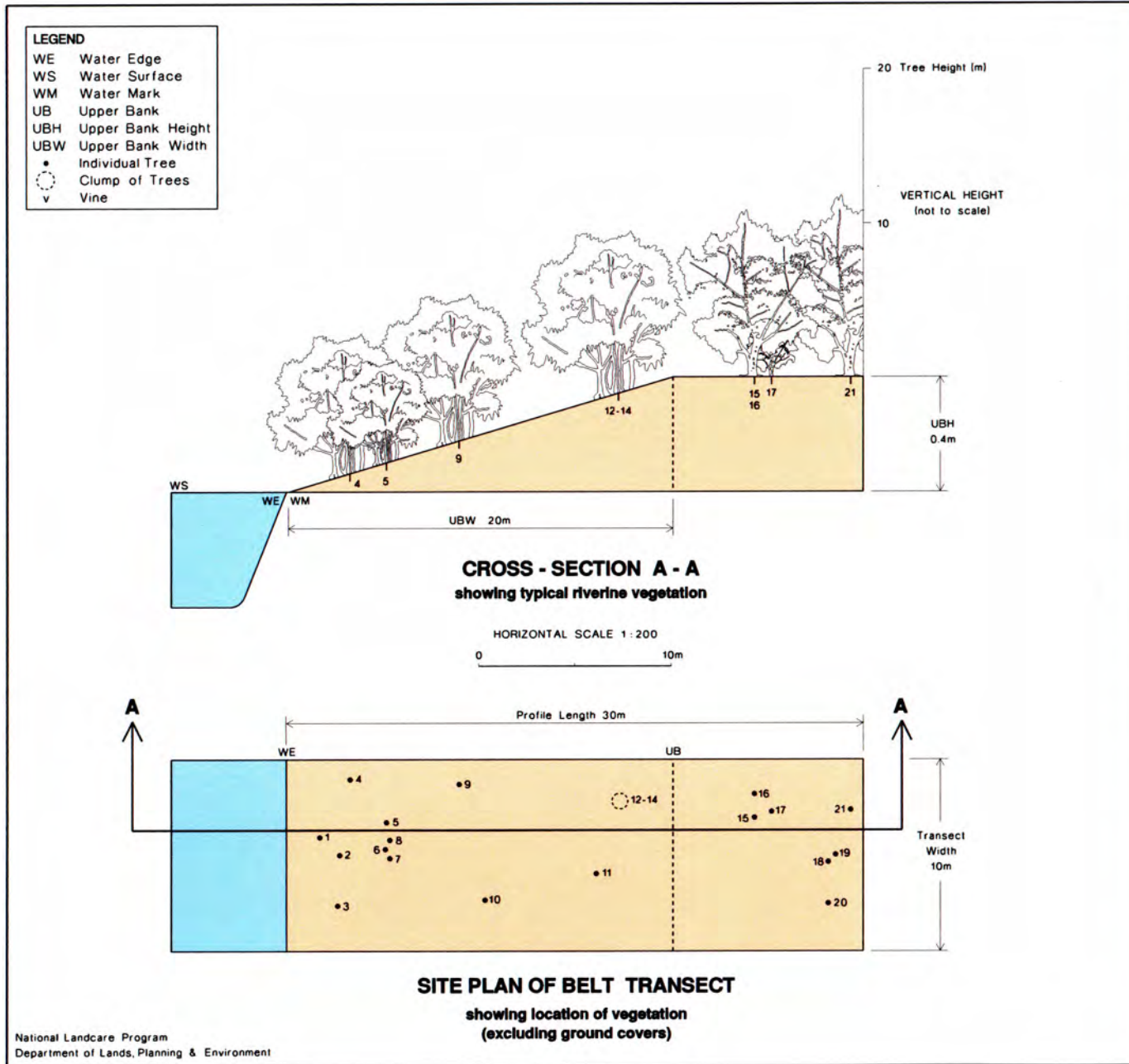
- OTHER SPECIES LOCATED AT SITE:**
- Ferns:** *Ampelopteris prolifera*
 - Forbs:** *Achyranthes aspera*
Alternanthera nodiflora
 - Grasses:** *Cynodon dactylon*
Panicum trichoides
 - Tree/Shrub:** *Exocarpos latifolius*
 - Trees:** *Eucalyptus camaldulensis*
Pandanus aquaticus
 - Vines:** **Cardiospermum halicacabum*
**Passiflora foetida*
 - Weeds:** **Xanthium occidentale* (Noxious)
- * Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 - Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

DALY RIVER	Date 29.9.95
Sub-section 1C Site 8	Figure 10.40



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1-3	12-14	<i>Mealeuca leucadendra</i>
4-9, 12-14	3-11	<i>Barringtonia acutangula</i>
10, 11, 15-17, 21	1.8-12	<i>Casuarina cunninghamiana</i>
18, 19	14-15	<i>Eucalyptus camaldulensis</i>
20	3.3	<i>Antidesma ghaesembilla</i>

OTHER SPECIES LOCATED AT SITE:

- Ferns: *Ampelopteris prolifera*
- Forbs: *Alternanthera nodiflora*
Chara sp. (Aquatic)
Coldenia procumbens
Glinus oppositifolius
- Grasses: *Cynodon dactylon*
Paspalidium distans
Phragmites karka
- Tree/Shrub: *Flacourtia territorialis*
- Vines: **Passiflora foetida*
- Weeds: **Xanthium occidentale* (Noxious)

* Exotic species

NOTES

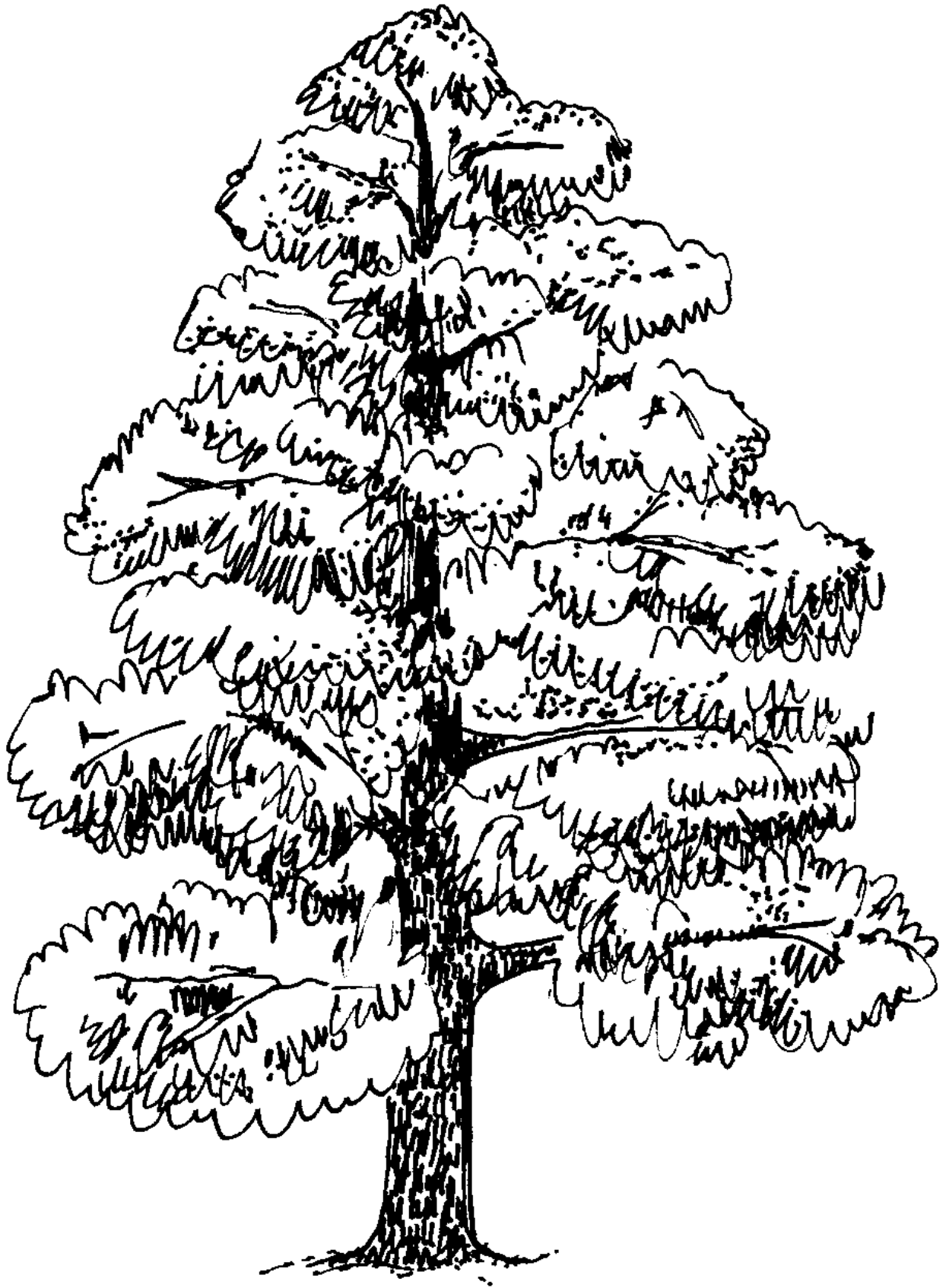
1. The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
2. Cross-section A-A includes all vegetation above the line marked through the belt transect.
3. The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
4. Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT DALY RIVER CATCHMENT	
RIVERINE VEGETATION PROFILE	
DALY RIVER	Date 27.9.95
Sub-section 1C Site 10	Figure 10.41

Table 10.7 Major Vegetation Species Recorded at Sites 4, 7 and 9 located on the Daly River within Sub-section 1c

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Sites Where Recorded (Sub-section No. / Site No.)
<i>Acacia auriculiformis</i>	Tree		1c/7
<i>Ampelopteris prolifera</i>	Fern		1c/4, 1c/7
<i>Antidesma ghaesembilla</i>	Low tree / shrub		1c/7
<i>Barringtonia acutangula</i>	Low tree / shrub		1c/4, 1c/7, 1c/9
<i>Cardiospermum halicacabum</i>	Vine	E	1c/9
<i>Casuarina cunninghamiana</i>	Tree		1c/4, 1c/7, 1c/9
<i>Cathormion umbellatum</i>	Low tree / shrub		1c/4
<i>Cynodon dactylon</i>	Grass		1c/7, 1c/9
<i>Diospyros calycantha</i>	Tree		1c/4, 1c/7
<i>Eucalyptus camaldulensis</i>	Tree		1c/4, 1c/7, 1c/9
<i>Ficus racemosa</i>	Tree		1c/4
<i>Ficus scobina</i>	Low tree / shrub		1c/4, 1c/7
<i>Hyptis suaveolens</i>	Forb	E/N	1c/4
<i>Melaleuca argentea</i>	Tree		1c/7, 1c/9
<i>Melaleuca leucadendra</i>	Tree		1c/7
<i>Melaleuca sp.</i>	Tree		1c/4
<i>Nauclea orientalis</i>	Tree		1c/4, 1c/7, 1c/9
<i>Pandanus aquaticus</i>	Tree		1c/4, 1c/7, 1c/9
<i>Passiflora foetida</i>	Vine	E	1c/9
<i>Phragmites karka</i>	Grass		1c/7, 1c/9
<i>Phyllanthus reticulatus</i>	Low tree / shrub		1c/7
<i>Schoenoplectus litoralis</i>	Forb		1c/4
<i>Strychnos lucida</i>	Tree		1c/7
<i>Syzygium forte</i>	Tree		1c/4, 1c/7, 1c/9
<i>Vallisneria spiralis</i>	Forb		1c/7
<i>Xanthium occidentale</i>	Forb	E/N	1c/4, 1c/7, 1c/9

* Declared Noxious Weed in the Northern Territory



Nauclea orientalis

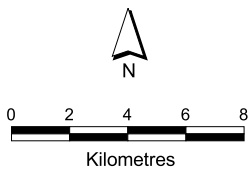
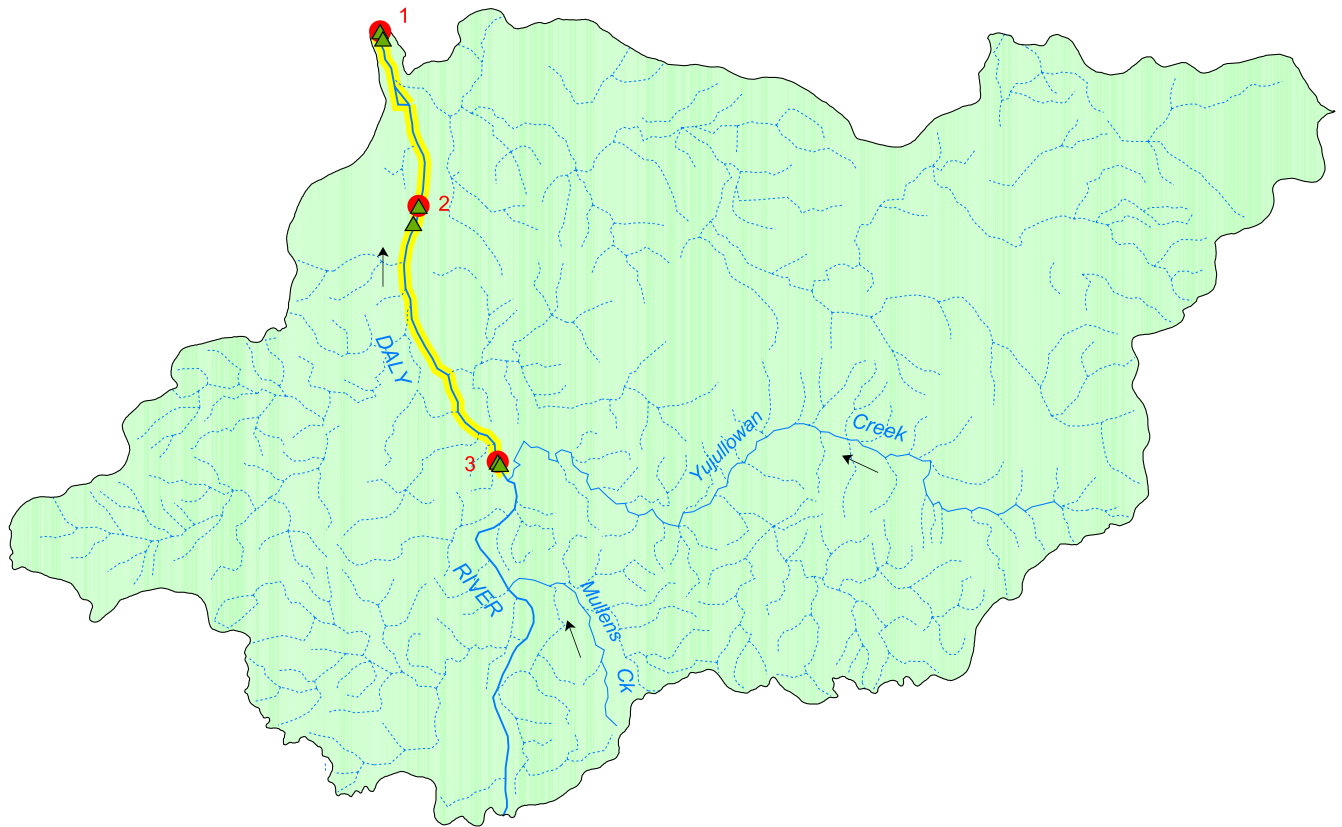
10.1.4 Daly River – Below Katherine River

Sub-section 1d encompasses the Daly River from Fergusson River junction upstream to the Katherine River junction. Of the 3 sites assessed in this sub-section, all of which are located on the Daly River, 2 were fully assessed (refer Table 10.8 and Map 30)

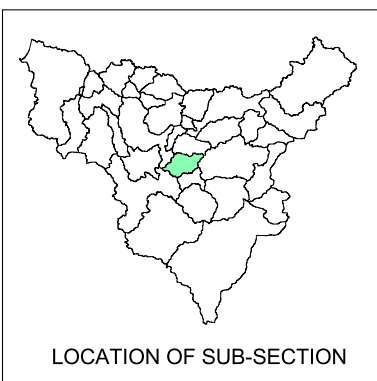
Table 10.8 Summary of Survey Information for Sub-section 1d – Daly River Below Katherine River

Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
1	Daly River	A	Rapid	√		
		B	Pool	√		
2	Daly River	A	Run	√		
		B	Pool	√		
3	Daly River	A	Rapid	√		
		B	Pool	√		





Area - 734 km²



LEGEND	
● 5	Site
▲	Sample Point
(VP)	Vegetation Profile
— (Yellow)	Longitudinal Profile Survey
— (Blue)	River
— (Light Blue)	Creek
←	Flow direction

 TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

DALY RIVER Below Katherine River

SUB-SECTION 1d

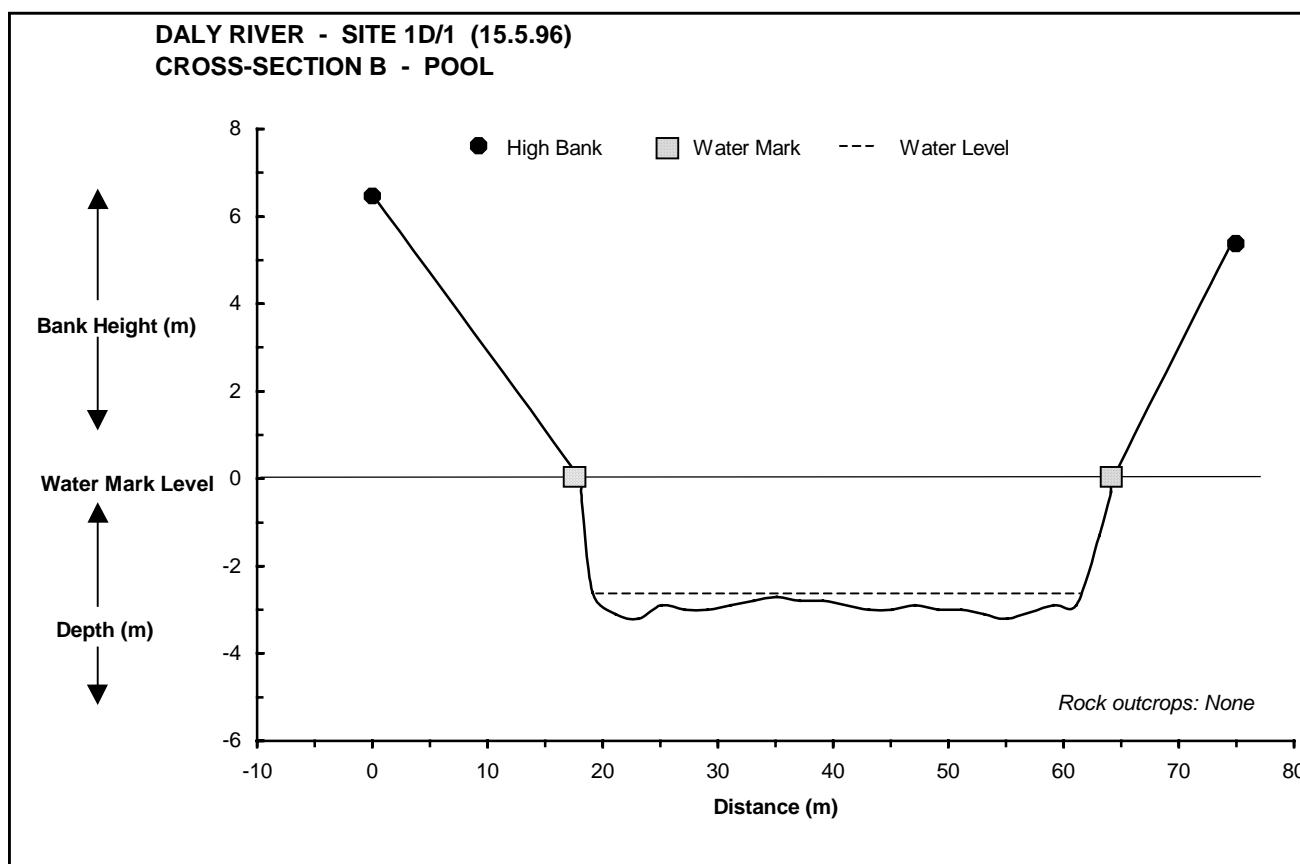
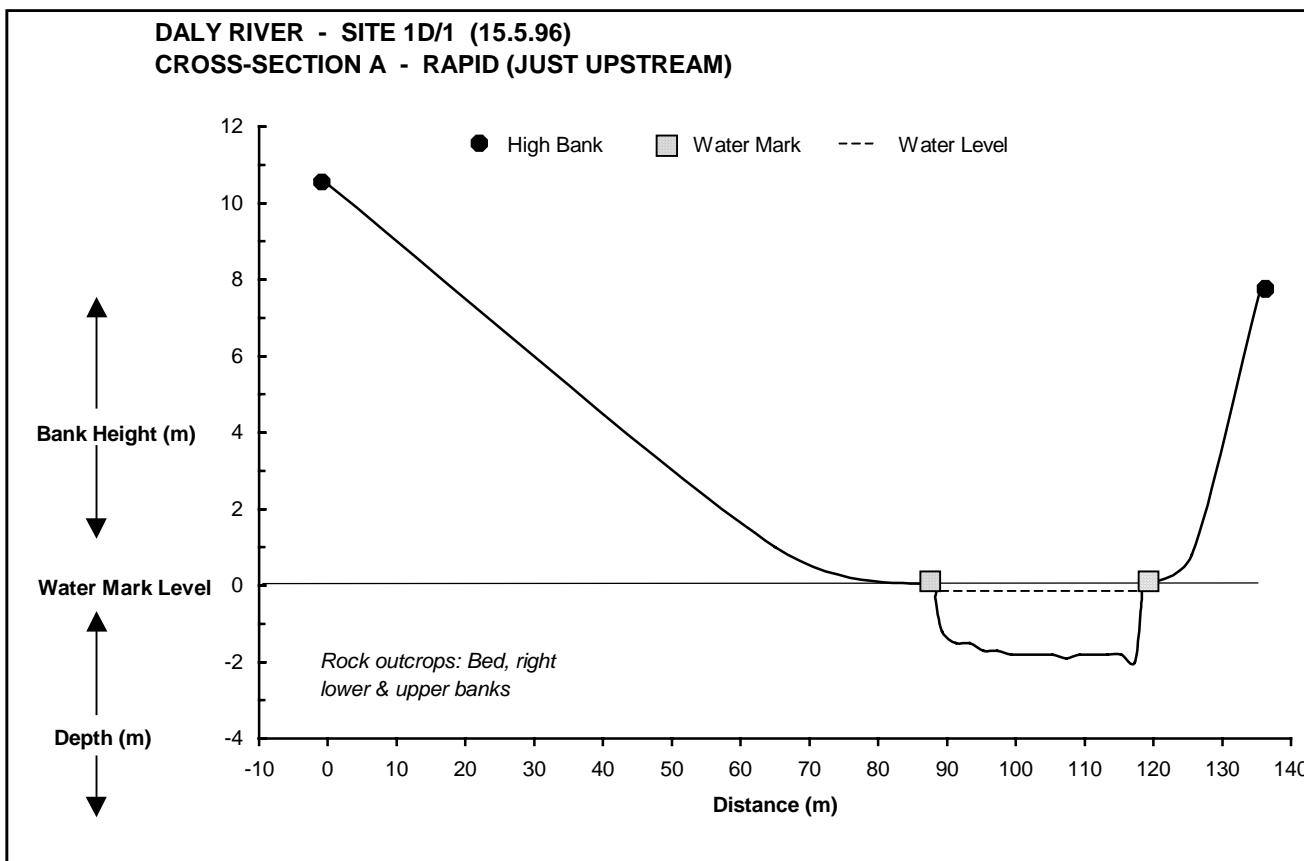


Figure 10.42 Cross-section Surveys for Site 1d/1 – Daly River

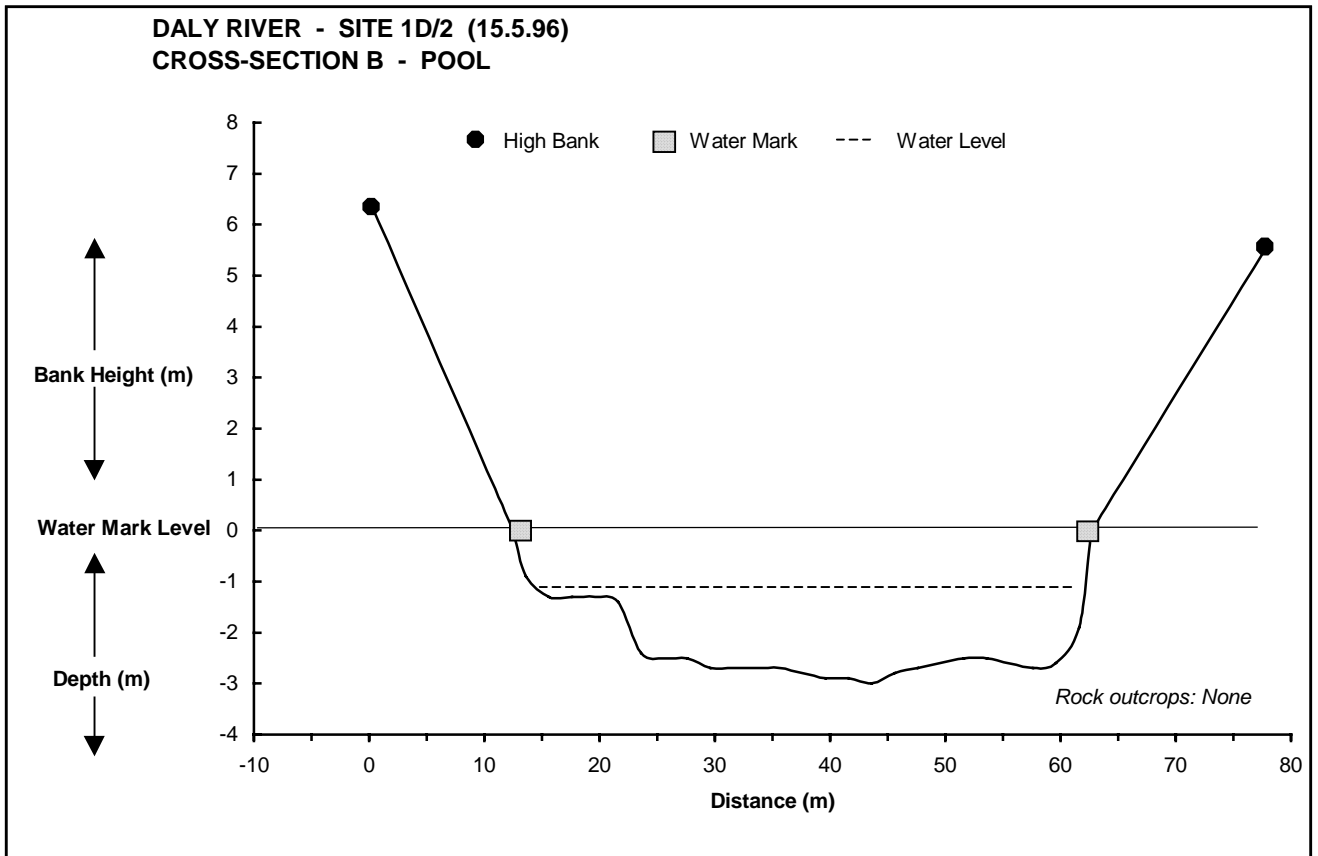
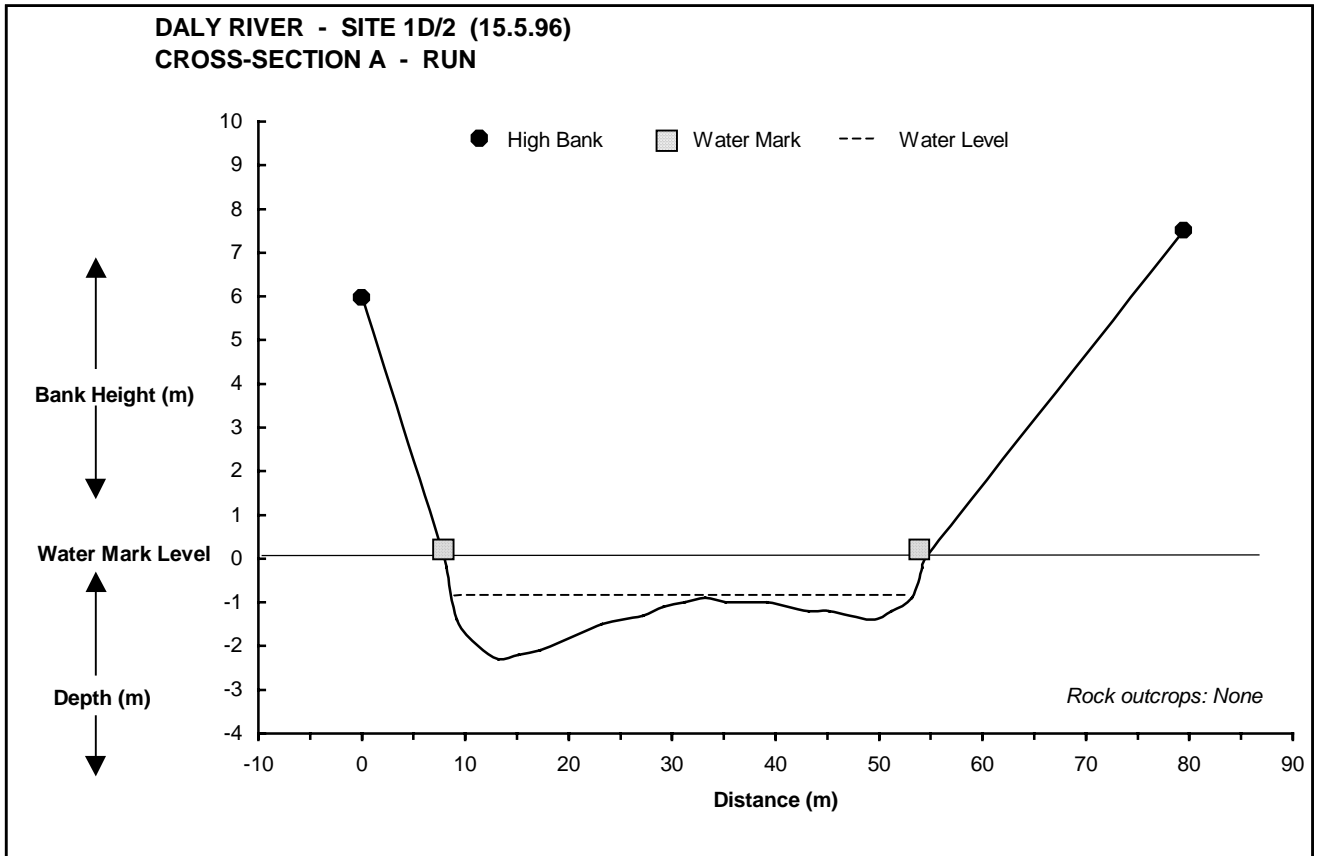


Figure 10.43 Cross-section Surveys for Site 1d/2 – Daly River

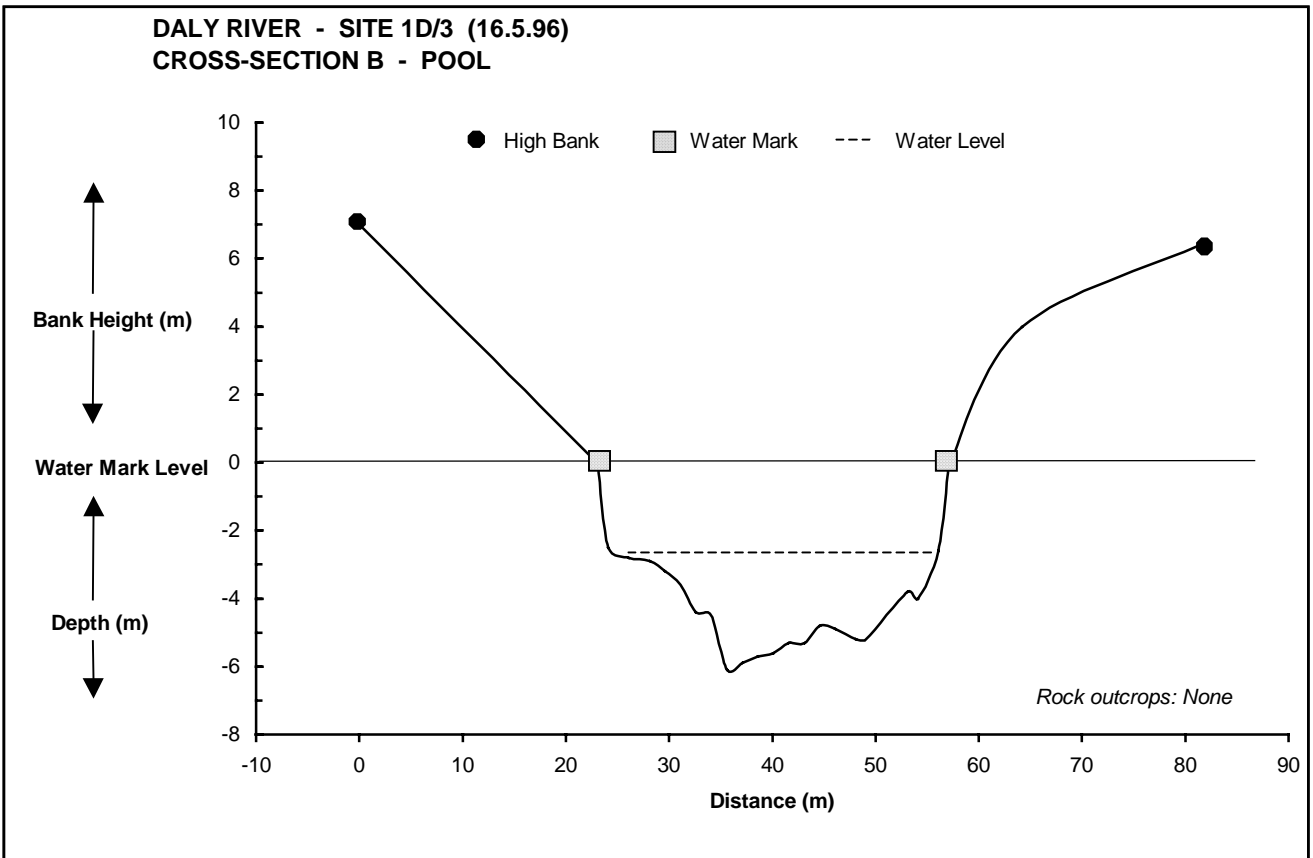
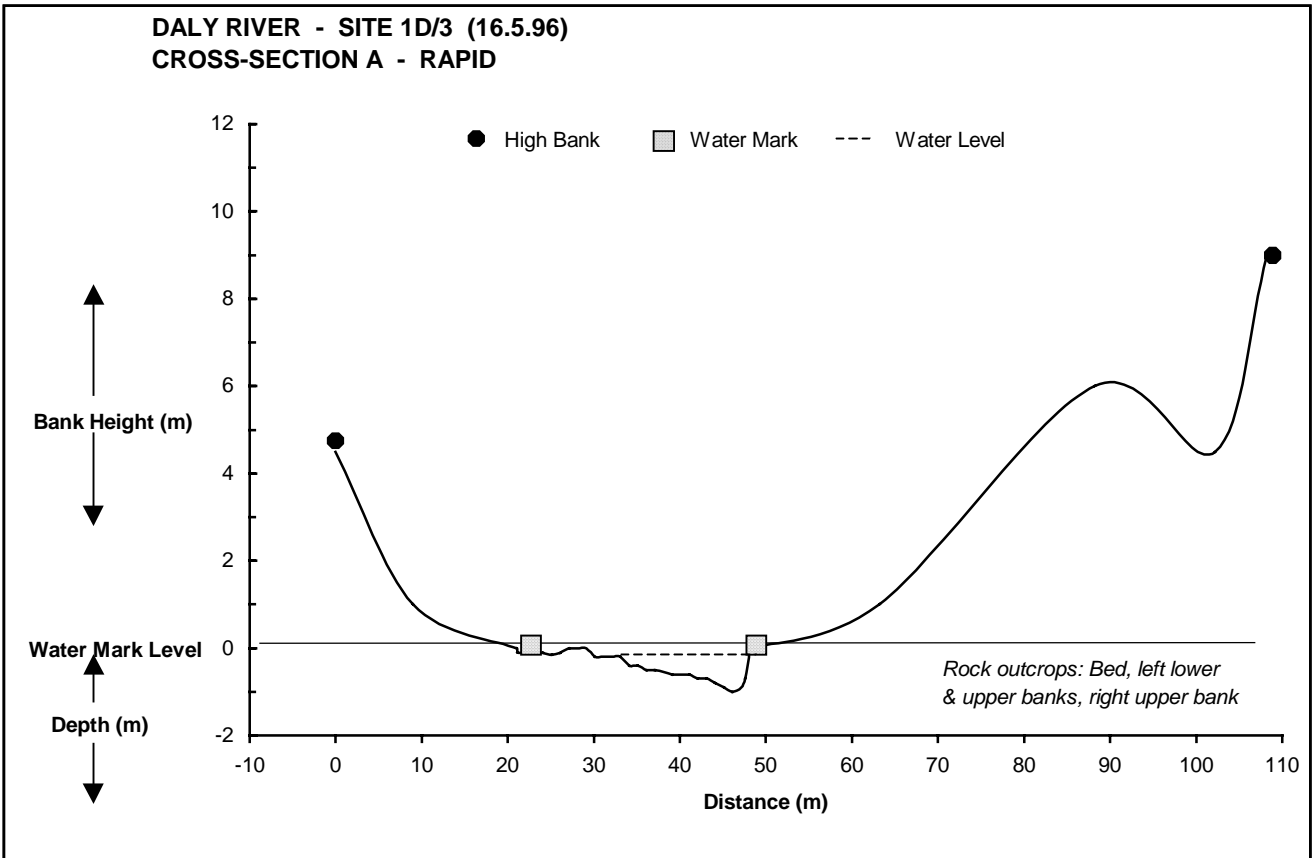
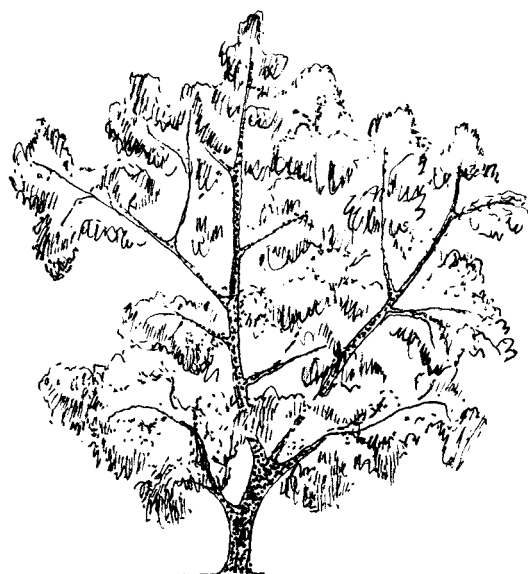


Figure 10.44 Cross-section Surveys for Site 1d/3 – Daly River

Table 10.9 Major Vegetation Species Recorded at Sites 1, 2 and 3 located on the Daly River within Sub-section 1d

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Sites Where Recorded (Sub-section No. / Site No.)
<i>Alternanthera nodiflora</i>	Forb		1d/2
<i>Ampelopteris prolifera</i>	Fern		1d/3
<i>Barringtonia acutangula</i>	Low tree / shrub		1d/1, 1d/2, 1d/3
<i>Casuarina cunninghamiana</i>	Tree		1d/1, 1d/2, 1d/3
<i>Cathormion umbellatum</i>	Low tree / shrub		1d/2, 1d/3
<i>Cynodon dactylon</i>	Grass		1d/1, 1d/2, 1d/3
<i>Cyanthillium cinereum</i>	Forb		1d/3
<i>Eucalyptus camaldulensis</i>	Tree		1d/1, 1d/2, 1d/3
<i>Euphorbia hirta</i>	Forb	E	1d/3
<i>Excoecaria parvifolia</i>	Tree		1d/3
<i>Ficus racemosa</i>	Tree		1d/3
<i>Ficus scobina</i>	Low tree / shrub		1d/3
<i>Melochia pyramidata</i>	Forb	E	1d/3
<i>Melaleuca argentea</i>	Tree		1d/1, 1d/2, 1d/3
<i>Melaleuca leucadendra</i>	Tree		1d/1, 1d/2, 1d/3
<i>Nauclea orientalis</i>	Tree		1d/1, 1d/2, 1d/3
<i>Pandanus aquaticus</i>	Tree		1d/1, 1d/2, 1d/3
<i>Passiflora foetida</i>	Vine	E	1d/2, 1d/3
<i>Phragmites karka</i>	Grass		1d/2, 1d/3
<i>Strychnos lucida</i>	Tree		1d/3
<i>Syzygium forte</i>	Tree		1d/3
<i>Xanthium occidentale</i>	Forb	E/N	1d/1, 1d/2, 1d/3

* Declared Noxious Weed within the Northern Territory



Casuarina cunninghamiana

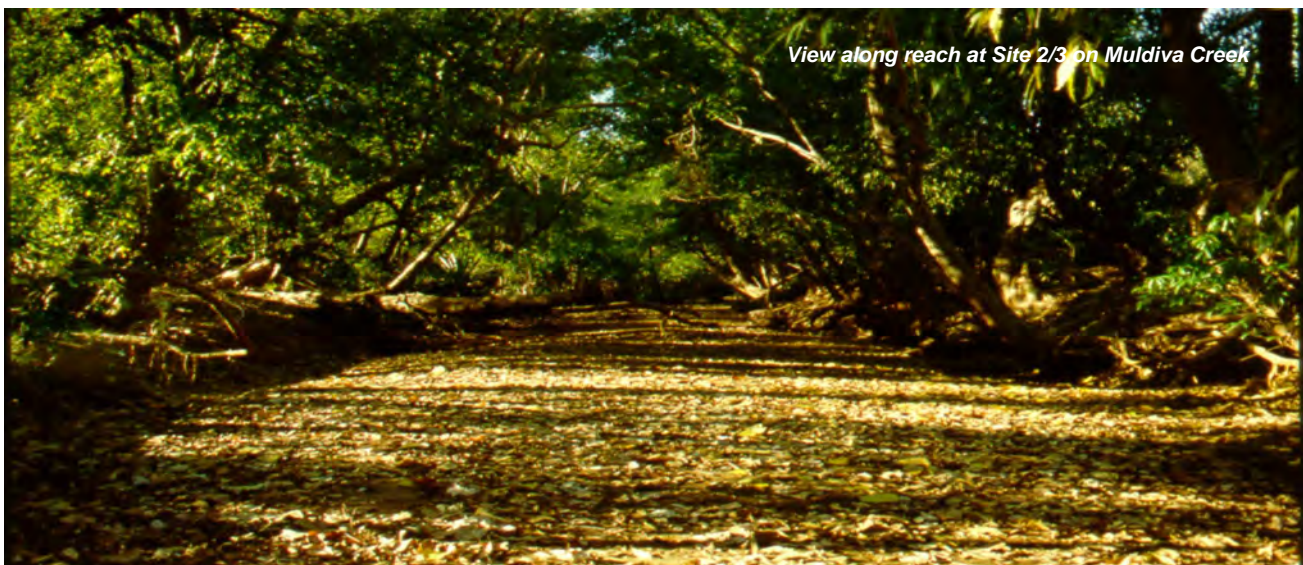


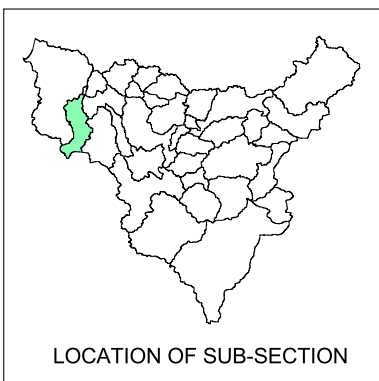
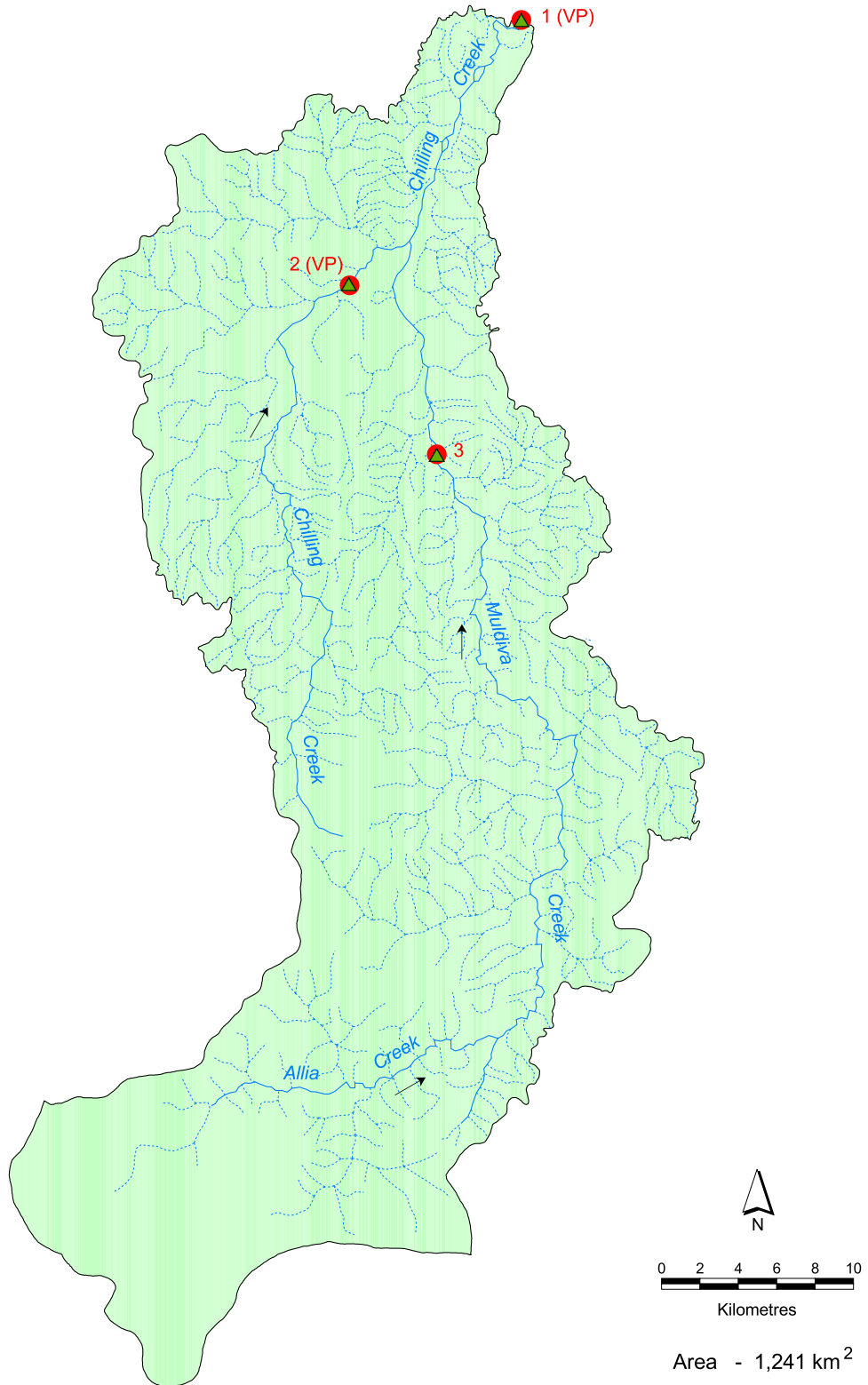
10.2 Chilling Creek

Sub-section 2 includes the catchment area of Chilling and Muldiva Creeks. Three sites, located on both creeks, were fully assessed (refer Table 10.10 and Map 31).

Table 10.10 Summary of Survey Information for Sub-section 2 – Chilling Creek

Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
1	Chilling Creek	A	Run	√	√	
		B	Pool	√		
2	Chilling Creek	A	Riffle	√	√	
		B	Pool	√		
3	Muldiva Creek	A	Riffle	√		
		B	Pool	√		





LEGEND	
● 5	Site
▲	Sample Point
(VP)	Vegetation Profile
—	Longitudinal Profile Survey
—	River
—	Creek
←	Flow direction

 TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

CHILLING AND MULDIVA CREEKS

SUB-SECTION 2

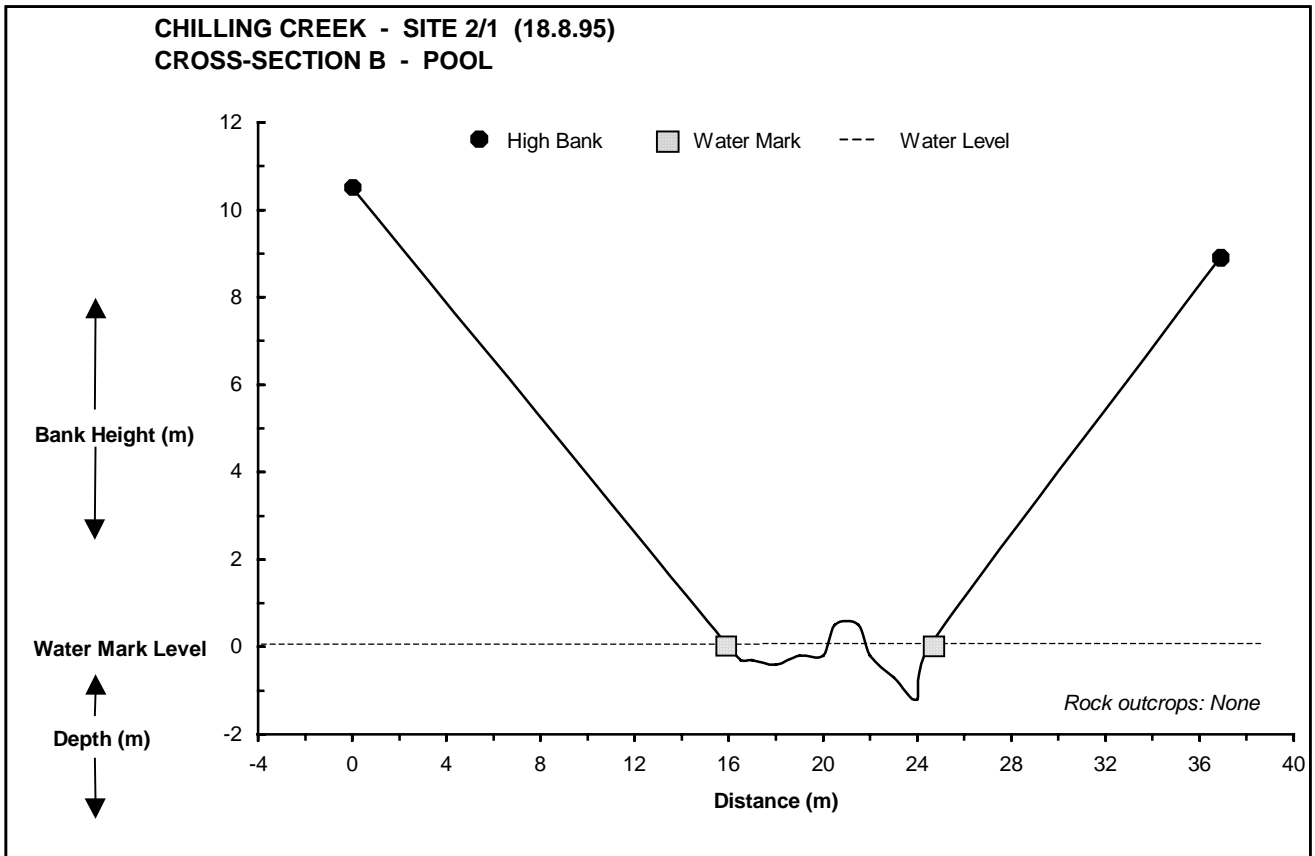
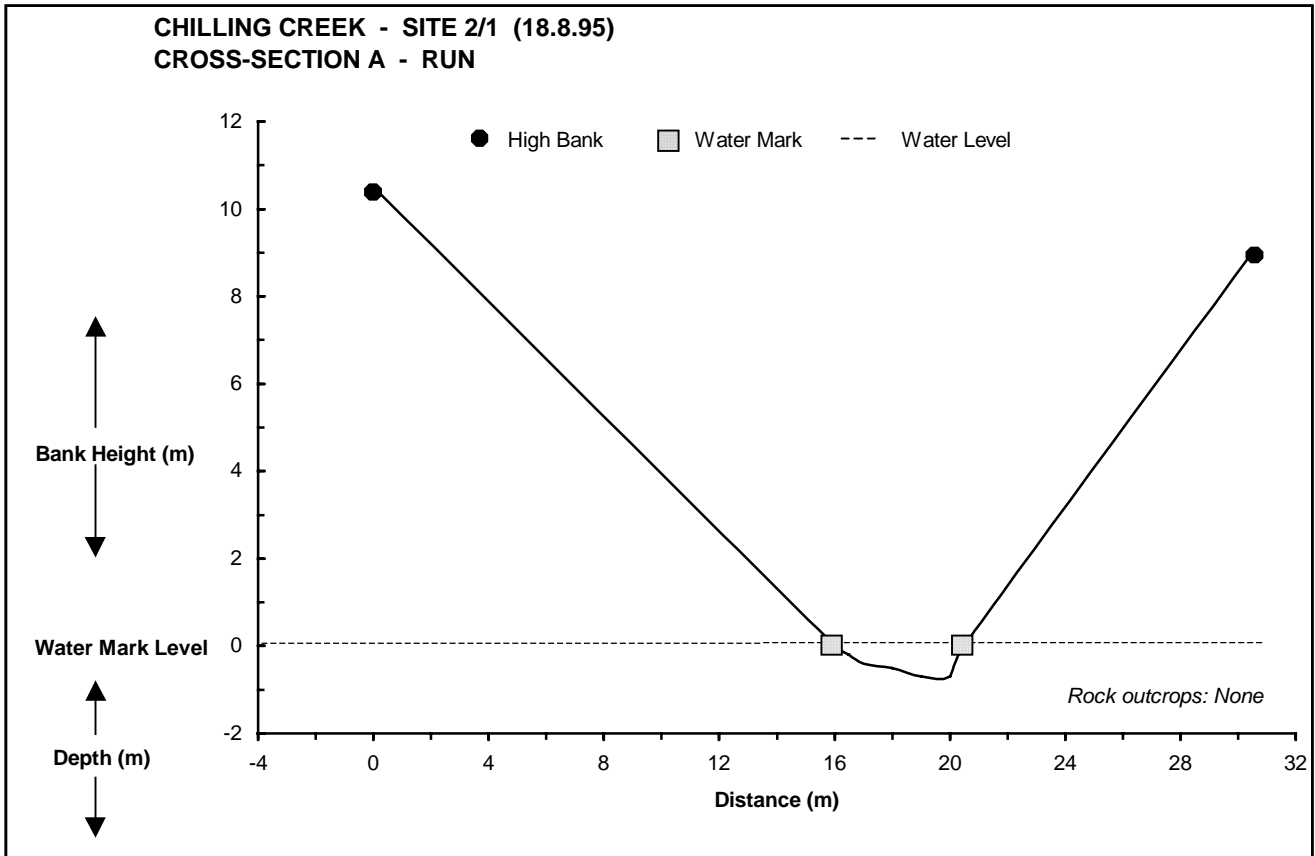


Figure 10.45 Cross-section Surveys for Site 2/1 – Chilling Creek

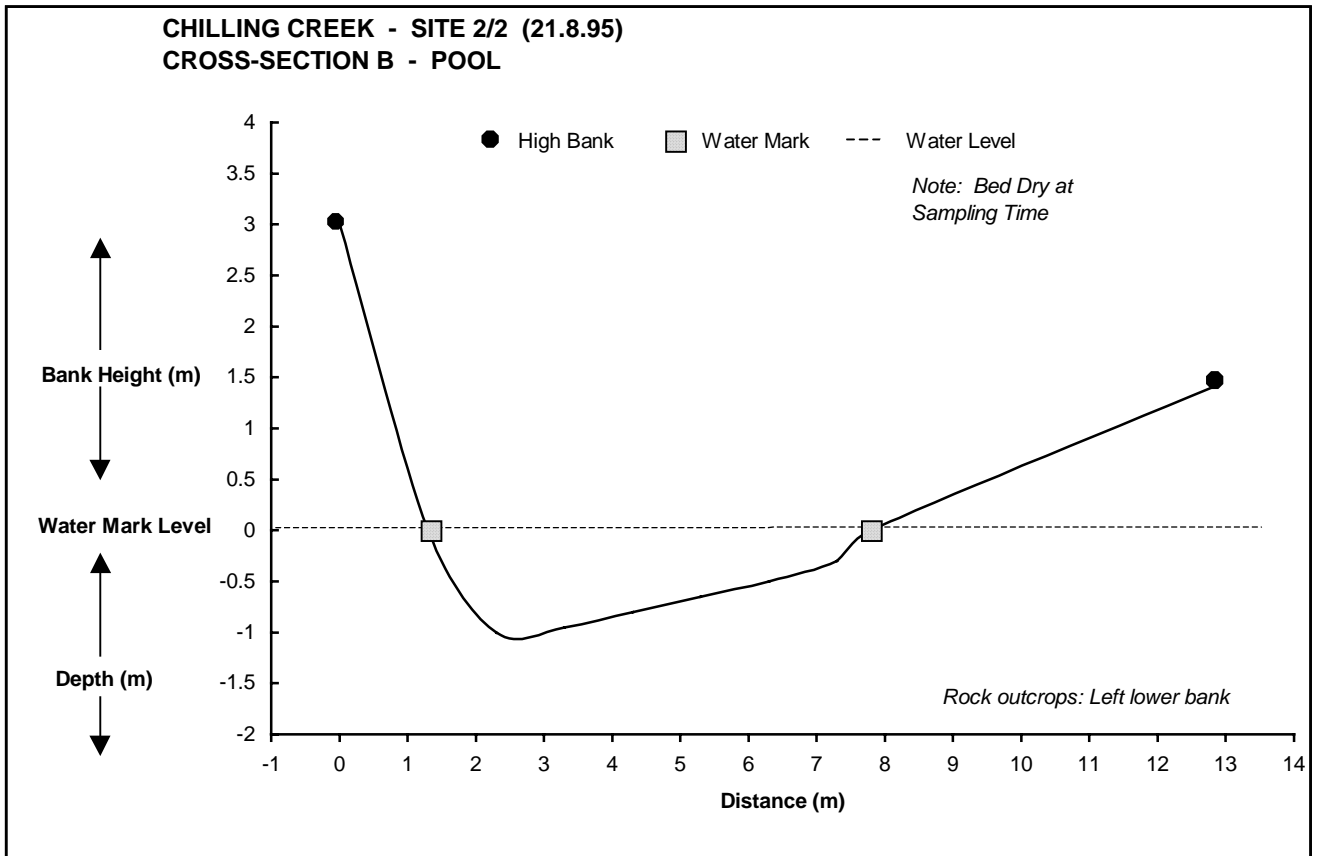
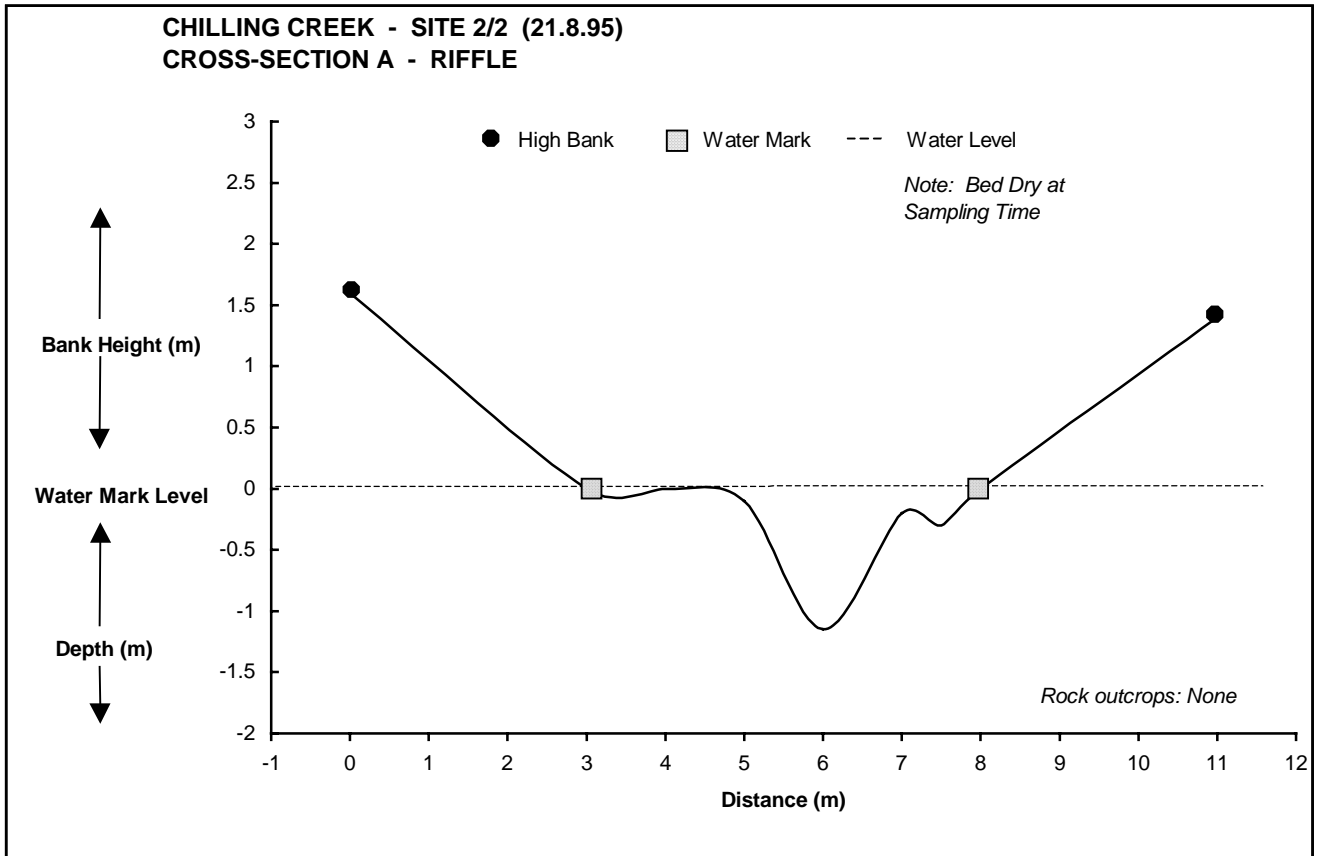


Figure 10.46 Cross-section Surveys for Site 2/2 – Chilling Creek

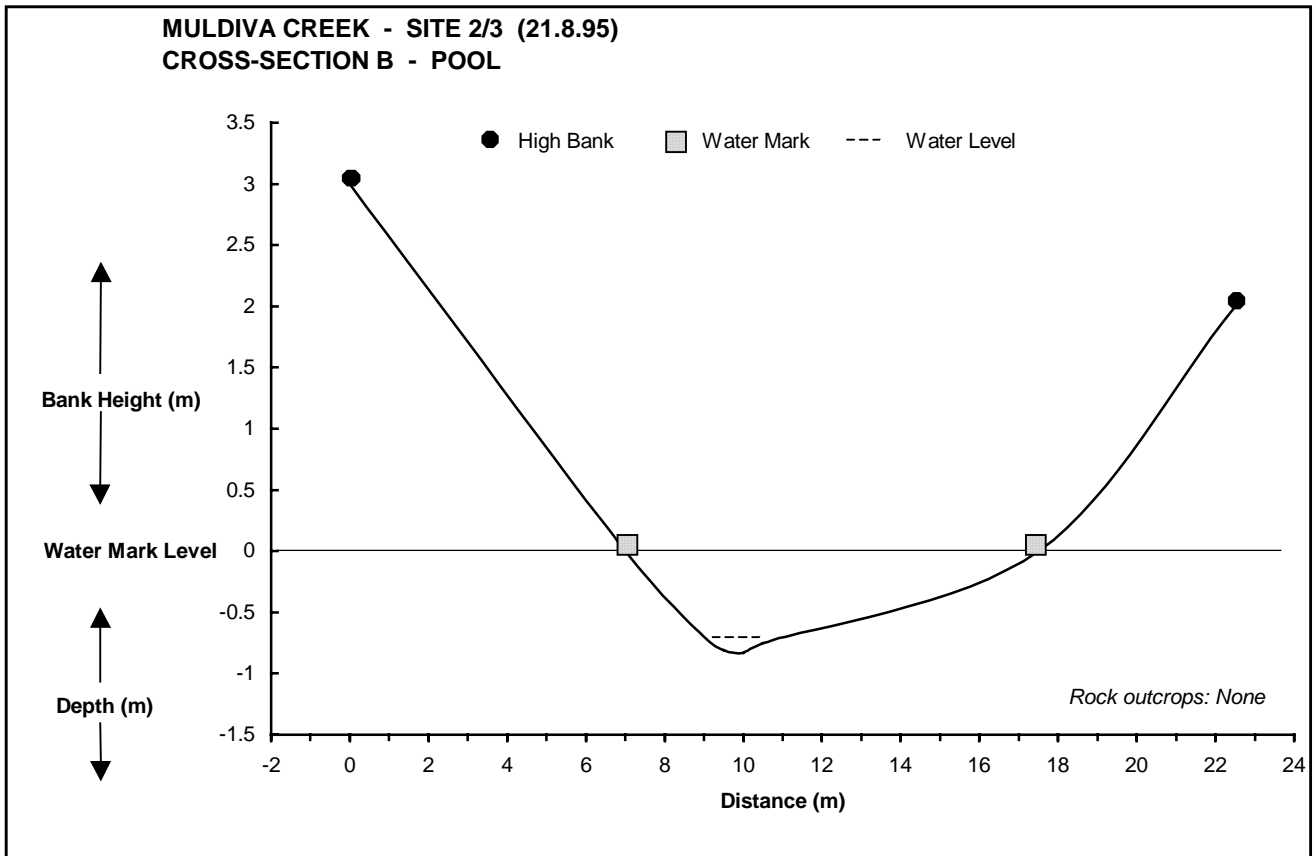
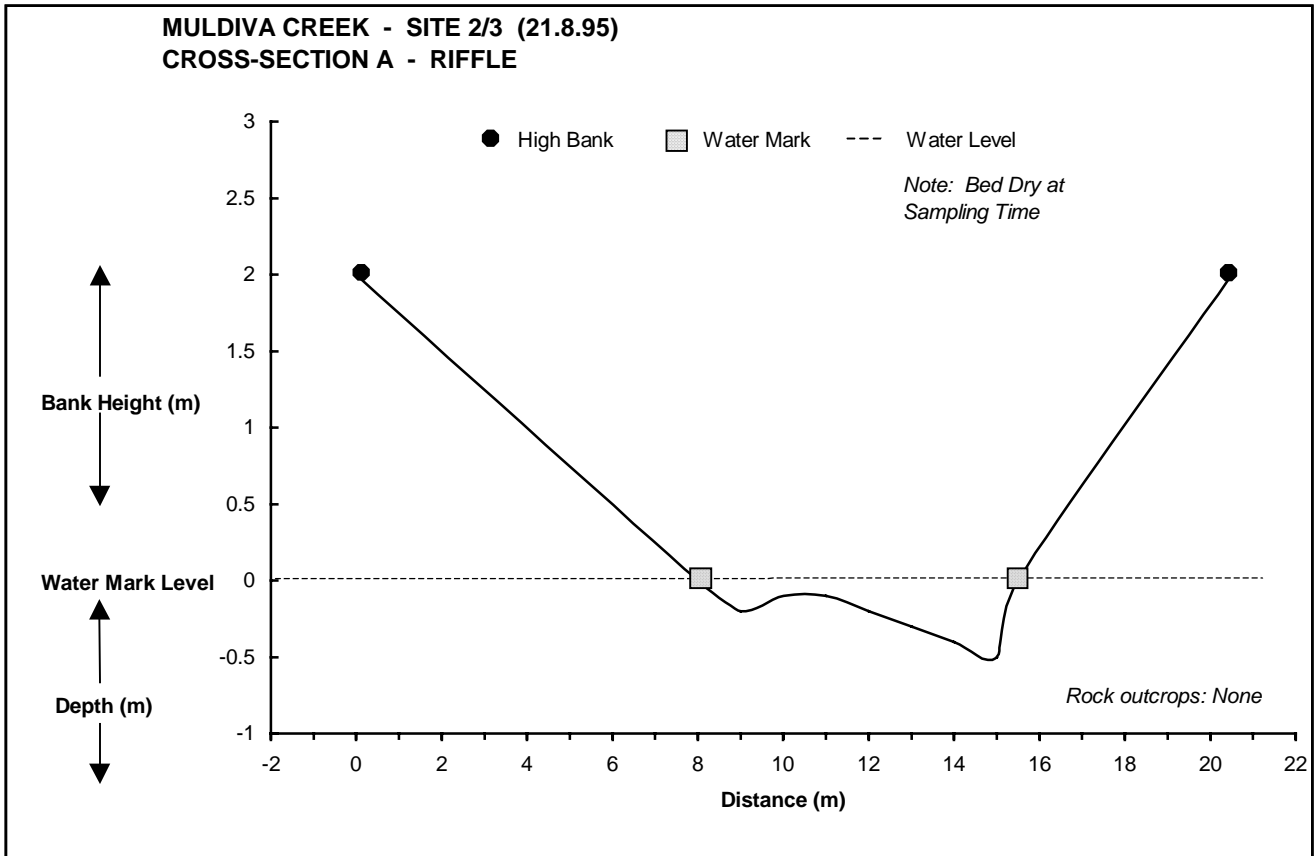
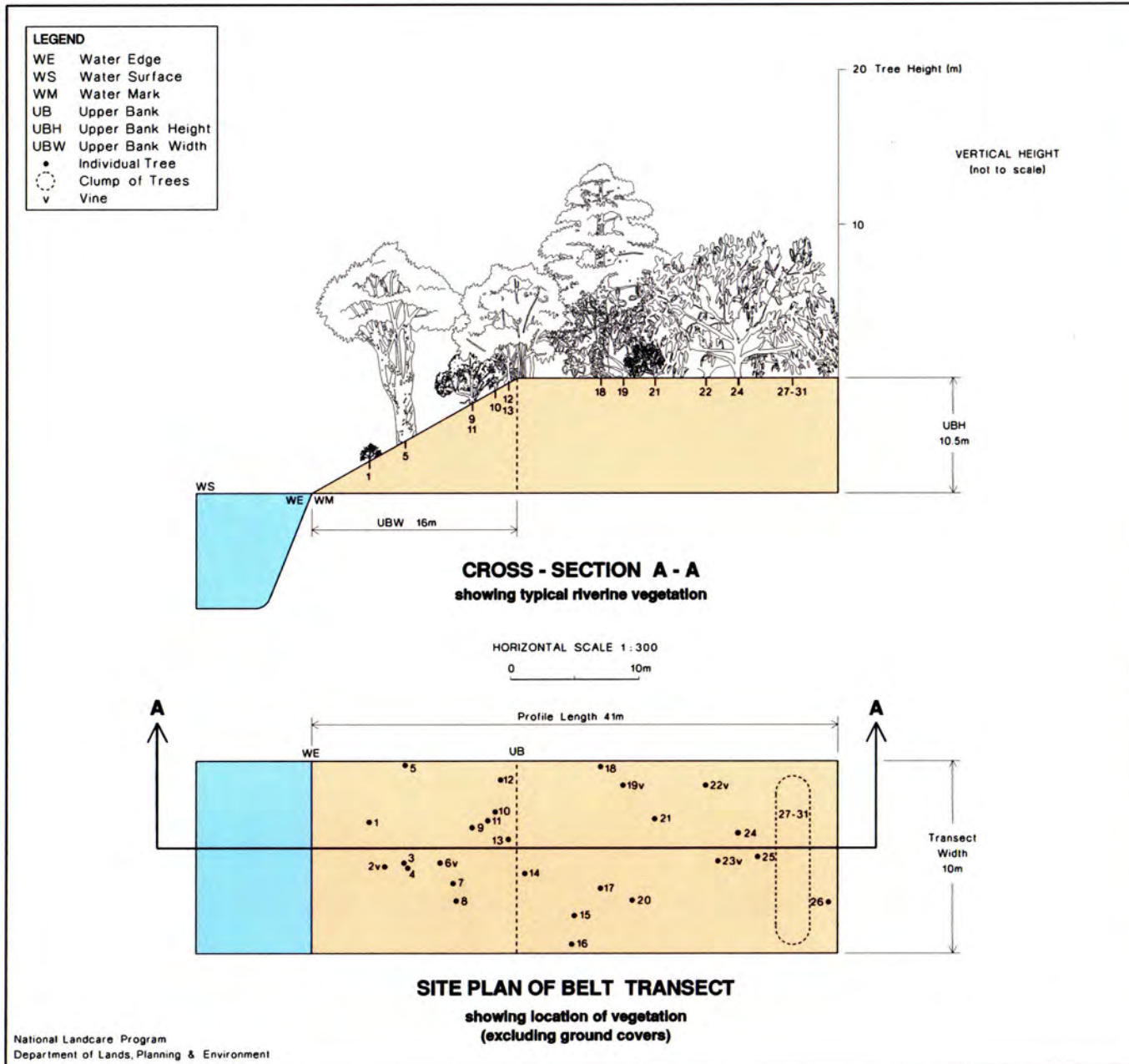


Figure 10.47 Cross-section Surveys for Site 2/3 – Muldiva Creek



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1, 4, 6, 8, 10	12-5	<i>Phyllanthus reticulatus</i>
2, 17, 19, 21-23	2.5-8	<i>Croton habrophyllus</i>
3, 5, 7	14-15	<i>Metaleuca argentea</i>
9, 11-16	2-8	<i>Barringtonia acutangula</i>
18	14	<i>Nauclea orientalis</i>
20	11	<i>Cathormion umbellatum</i>
24, 27-31	3.5-5.5	<i>Antidesma ghaesembilla</i>
25	2.5	<i>Ficus scobina</i>
26	9	<i>Cupaniopsis anacardioides</i>

OTHER SPECIES LOCATED AT SITE:

Forbs: *Hypoestes floribunda*

Grasses: *Cynodon dactylon*

Tree/Shrub: *Alatalaya hemiglauca*

Trees: *Ficus virens*
Litsea glutinosa

Vines: **Passiflora foetida*

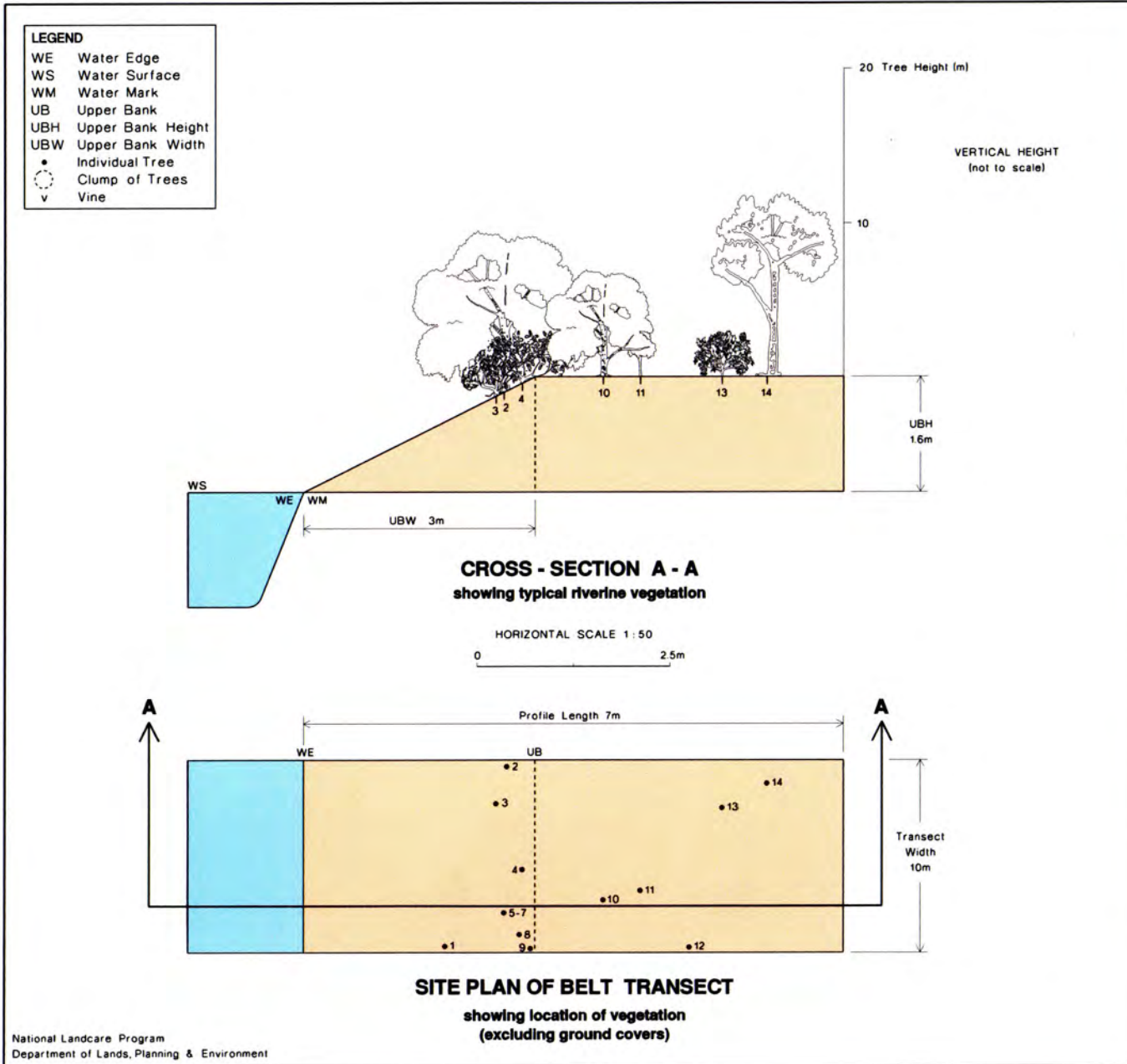
Weeds: **Xanthium occidentale* (Noxious)

*Exotic species

NOTES

- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
- Cross-section A-A includes all vegetation above the line marked through the belt transect.
- The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
- Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT DALY RIVER CATCHMENT	
RIVERINE VEGETATION PROFILE	
CHILLING CREEK	Date 18.8.95
Sub-section 2 Site 1	Figure 10.48



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1, 8, 9	9-12	<i>Metaleuca argentea</i>
2, 10	7-11	<i>Lophostemon latifolius</i>
3, 5-7	3-3.5	<i>Barringtonia acutangula</i>
4	3.5	<i>Canthium schultzei</i>
11	3.5	<i>Cupaniopsis anacardioides</i>
12	2.5	<i>Acacia holosericea</i>
13	3	<i>Alphitonia excelsa</i>
14	12	<i>Erythrophleum chlorostachys</i>

OTHER SPECIES LOCATED AT SITE:

Grasses: *Aristida latifolia*

Trees: *Carallia brachiata*
Elaeocarpus arnhemicus
Eucalyptus polycarpa
Pandanus spiralis
Syzygium armstrongii

* Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 - Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

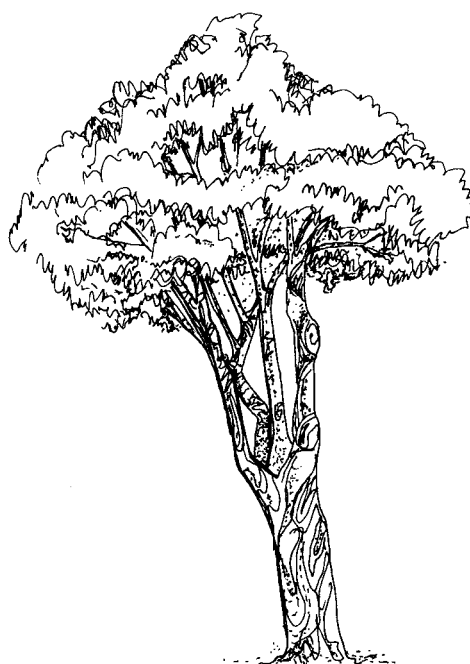
RIVERINE VEGETATION PROFILE

CHILLING CREEK		Date 21.8.95
Sub-section 2	Site 2	Figure 10.49

Table 10.11 Major Vegetation Species Recorded at Site 3 located on Muldiva Creek within Sub-section 2 – Chilling Creek

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Site Where Recorded (Sub-section No. / Site No.)
<i>Acacia auriculiformis</i>	Tree		2/3
<i>Acacia holosericea</i>	Low tree / shrub		2/3
<i>Alphitonia excelsa</i>	Low tree / shrub		2/3
<i>Barringtonia acutangula</i>	Low tree / shrub		2/3
<i>Canthium schultzei</i>	Low tree / shrub		2/3
<i>Cupaniopsis anacardioides</i>	Low tree / shrub		2/3
<i>Diospyros calycantha</i>	Tree		2/3
<i>Erythrophleum chlorostachys</i>	Tree		2/3
<i>Eucalyptus polycarpa</i>	Tree		2/3
<i>Ficus coronulata</i>	Tree		2/3
<i>Glinus oppositifolius</i>	Forb		2/3
<i>Melaleuca argentea</i>	Tree		2/3
<i>Nauclea orientalis</i>	Tree		2/3
<i>Pandanus aquaticus</i>	Tree		2/3
<i>Pandanus spiralis</i>	Tree		2/3
<i>Panicum trichoides</i>	Grass		2/3
<i>Paspalidium distans</i>	Grass		2/3
<i>Syzygium armstrongii</i>	Tree		2/3

* Declared Noxious Weed within the Northern Territory



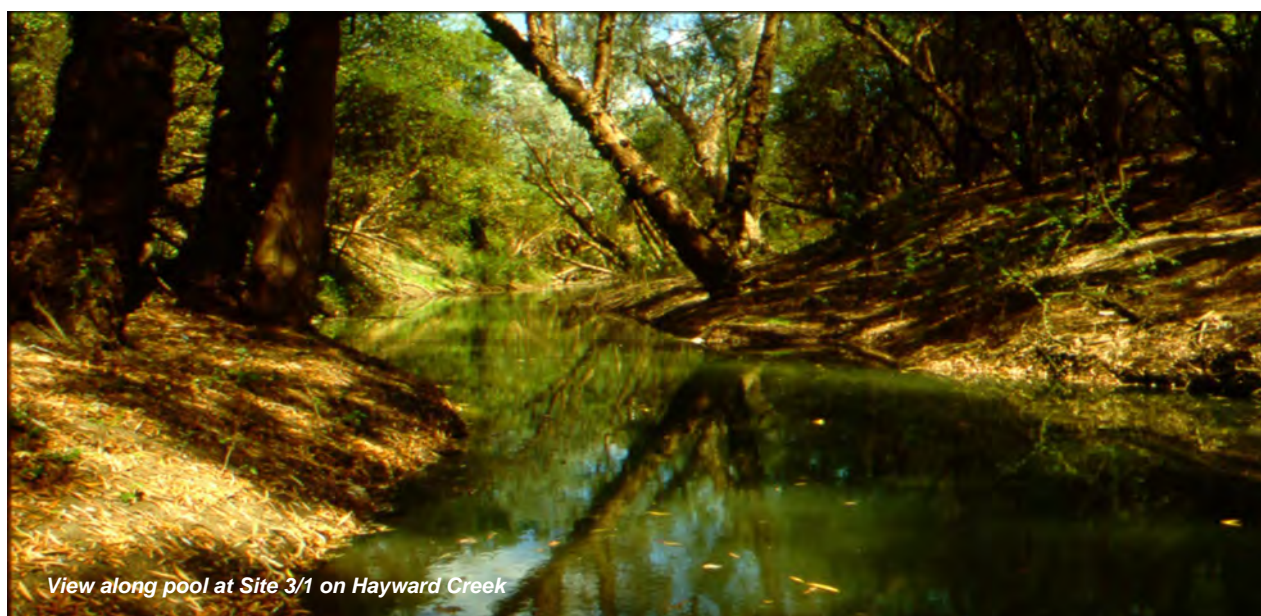
Melaleuca argentea

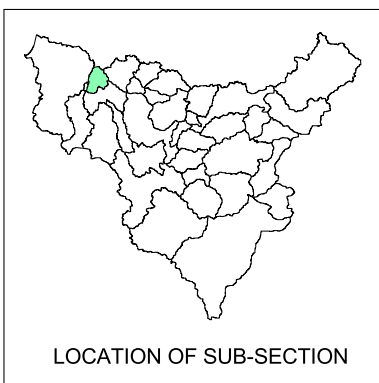
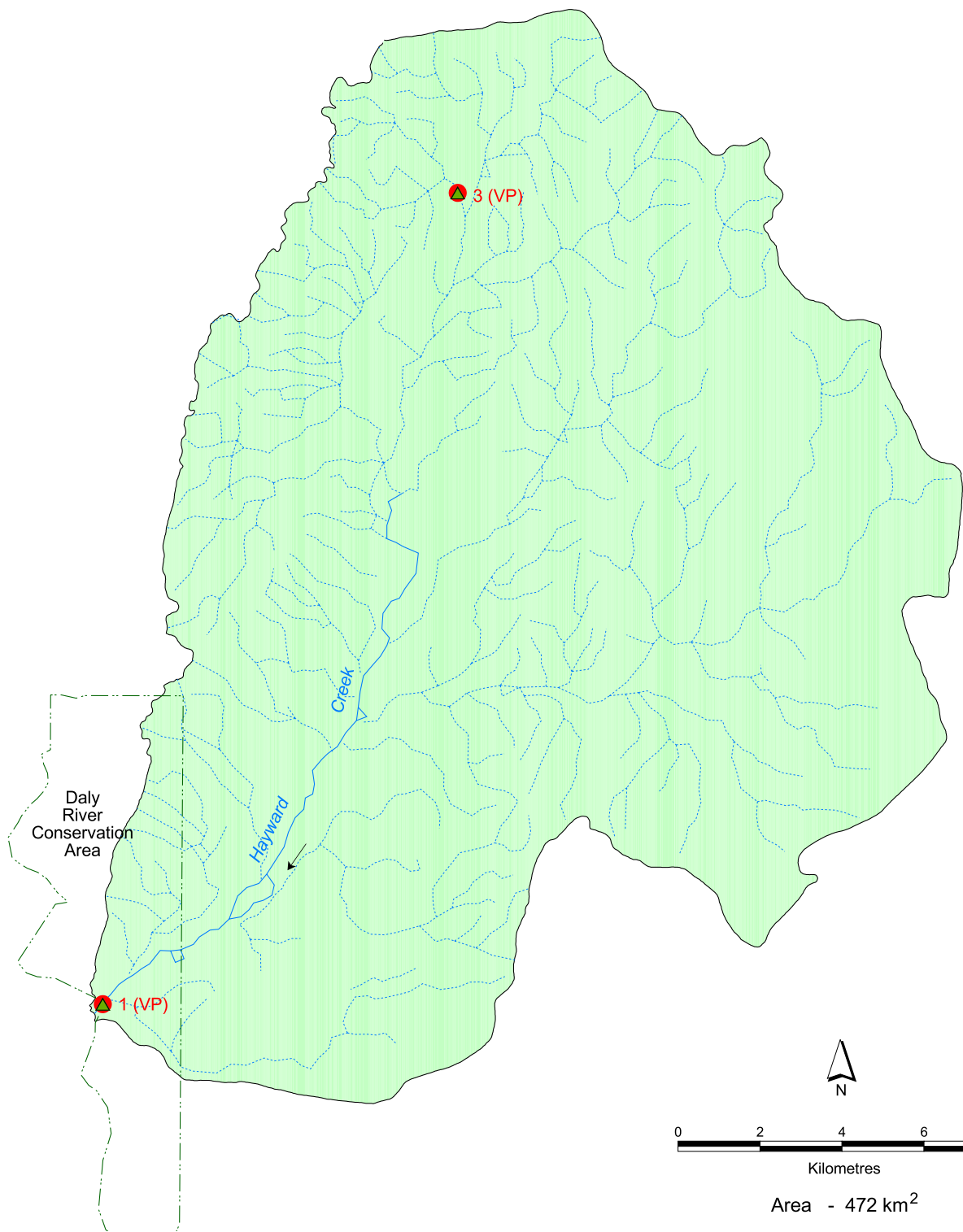
10.3 Hayward Creek

Sub-section 3 includes the catchment of Hayward Creek. Two sites were fully assessed in this sub-section (refer Table 10.12 and Map 32).

Table 10.12 Summary of Survey Information for Sub-section 3 – Hayward Creek

Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
1	Hayward Creek	A	Run	√	√	
		B	Pool	√		
3	Hayward Creek	A	Riffle	√	√	
		B	Pool	√		





LEGEND	
● 5	Site
▲	Sample Point
(VP)	Vegetation Profile
—	Longitudinal Profile Survey
—	River
—	Creek
←	Flow direction

 TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

HAYWARD CREEK

SUB-SECTION 3

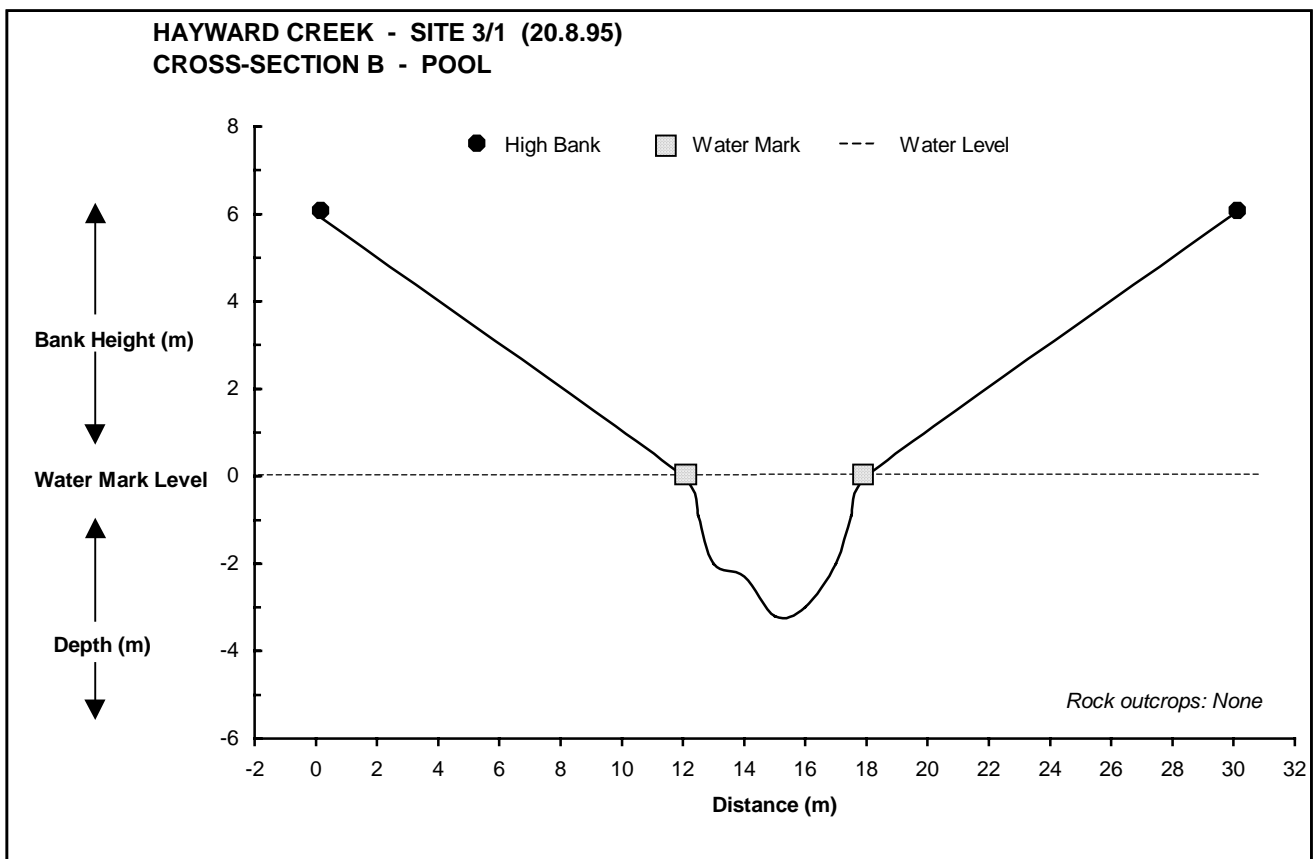
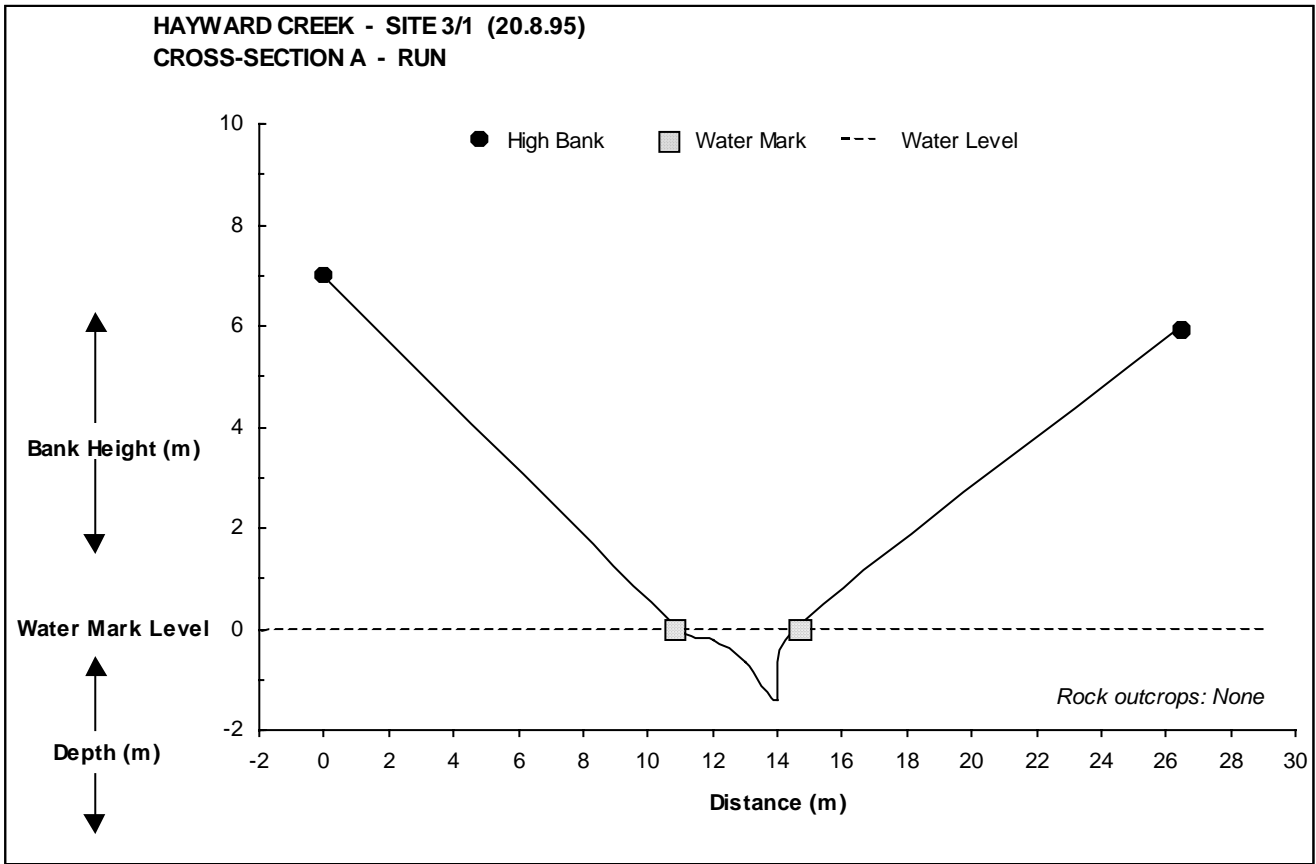


Figure 10.50 Cross-section Surveys for Site 3/1 – Hayward Creek

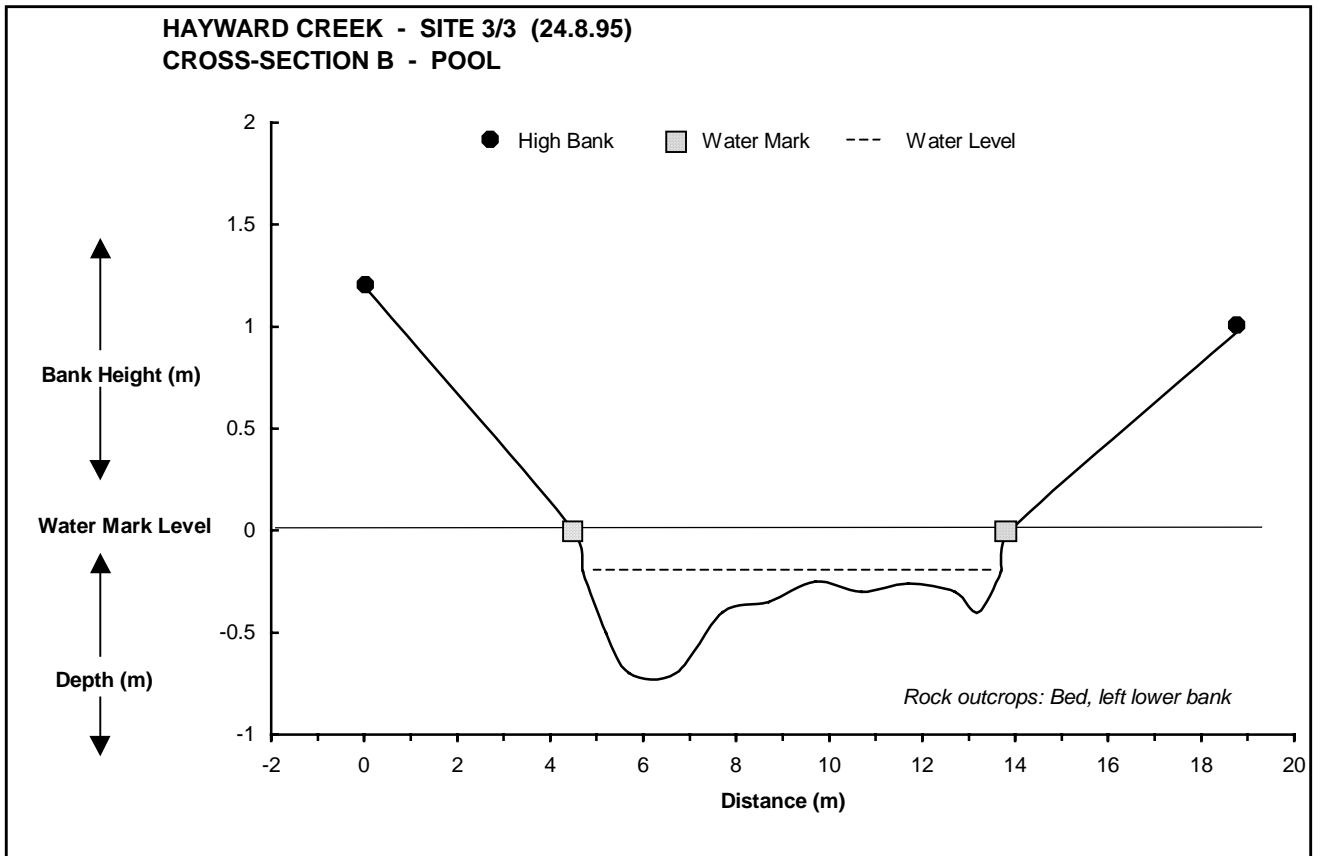
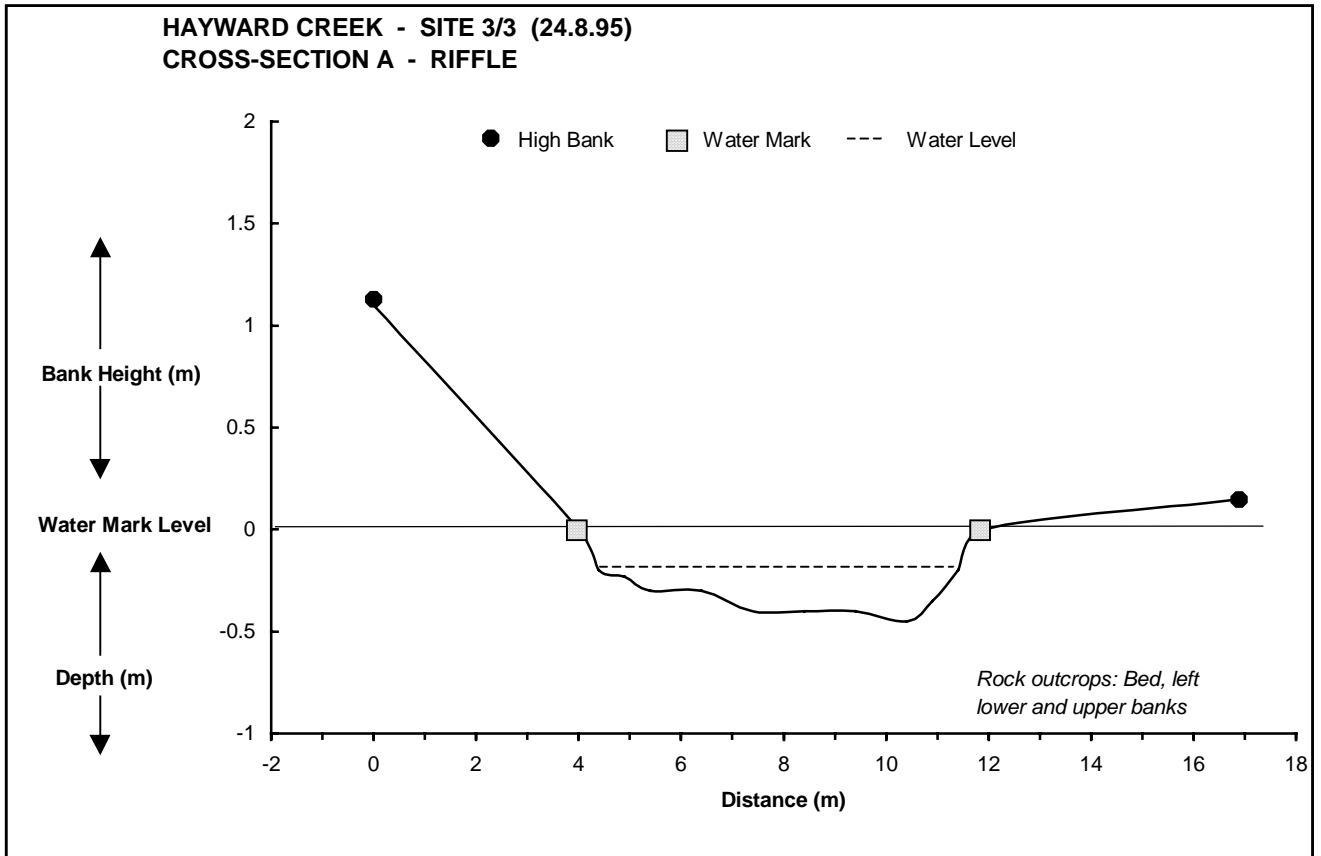
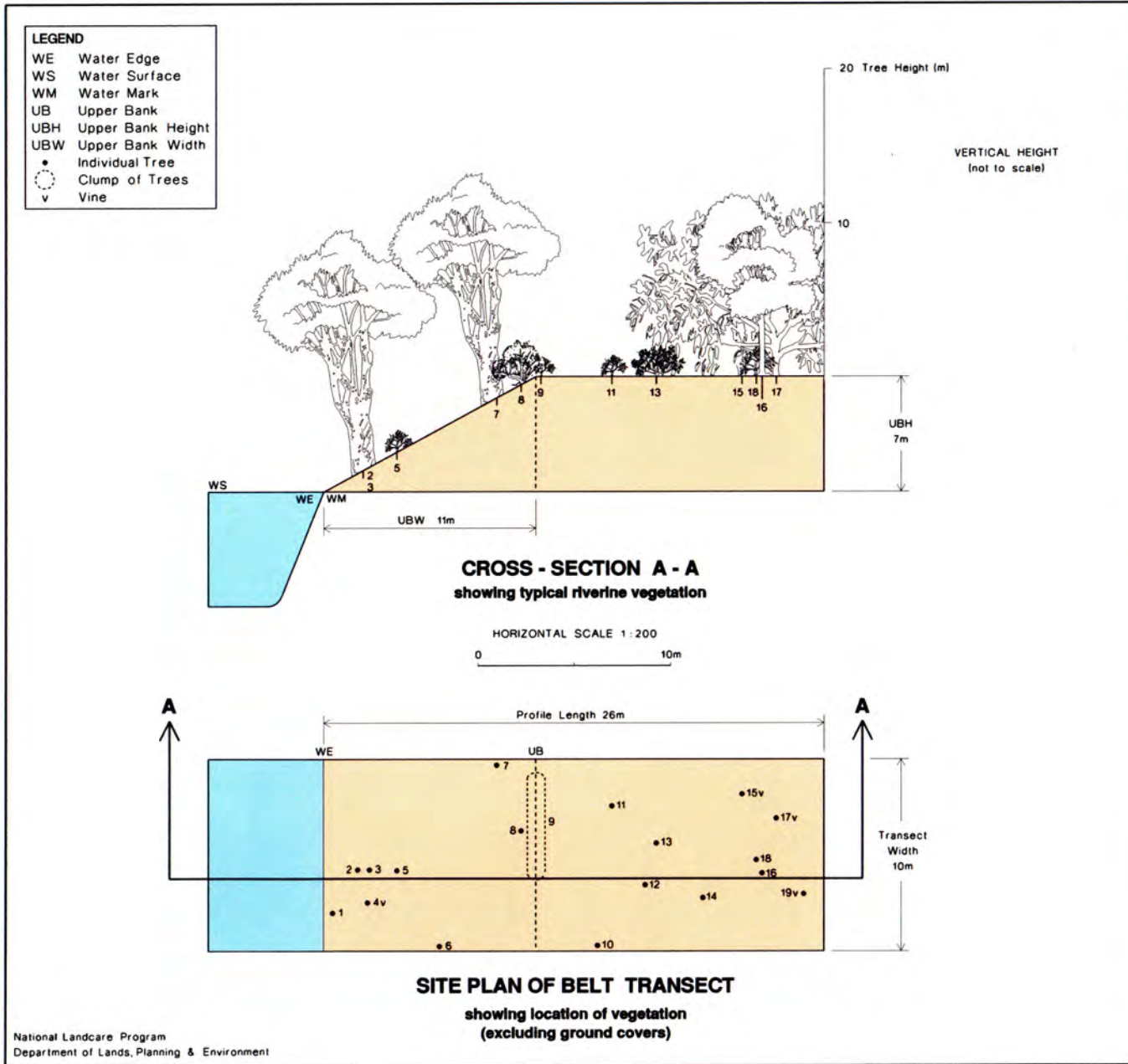


Figure 10.51 Cross-section Surveys for Site 3/3 – Hayward Creek



National Landcare Program
Department of Lands, Planning & Environment

TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1-3, 7	16-17	<i>Melaleuca argentea</i>
4, 5, 9 (12 shrubs), 11, 14, 18	1.3-15	<i>Phyllanthus reticulatus</i>
6, 8	3-6	<i>Barringtonia scutangula</i>
10	1.3	<i>Ficus scobina</i>
12, 15, 17, 19	11-12	<i>Cathormion umbellatum</i>
13	2	<i>Croton habrophyllus</i>
16	12	<i>Atalaya hemiglauca</i>


OTHER SPECIES LOCATED AT SITE:

- Ferns: *Ampelopteris prolifera*
- Forbs: *Basilicum polystachyon*
- Grasses: *Bambusa arnhemica*
- Shrubs: *Capparis sepiaria*
Gymnanthera oblonga
- Tree/shrub: *Flacourtia territorialis*
Strychnos lucida
- Trees: *Casuarina cunninghamiana*
Eucalyptus camadulensis
Excoecaria parvifolia
Ptilostigma malabaricum
- Vines: **Cardiospermum halicacabum*
Flagellaria indica
**Passiflora foetida*
- Weeds: **Xanthium occidentale* (Noxious)

*Exotic species

NOTES

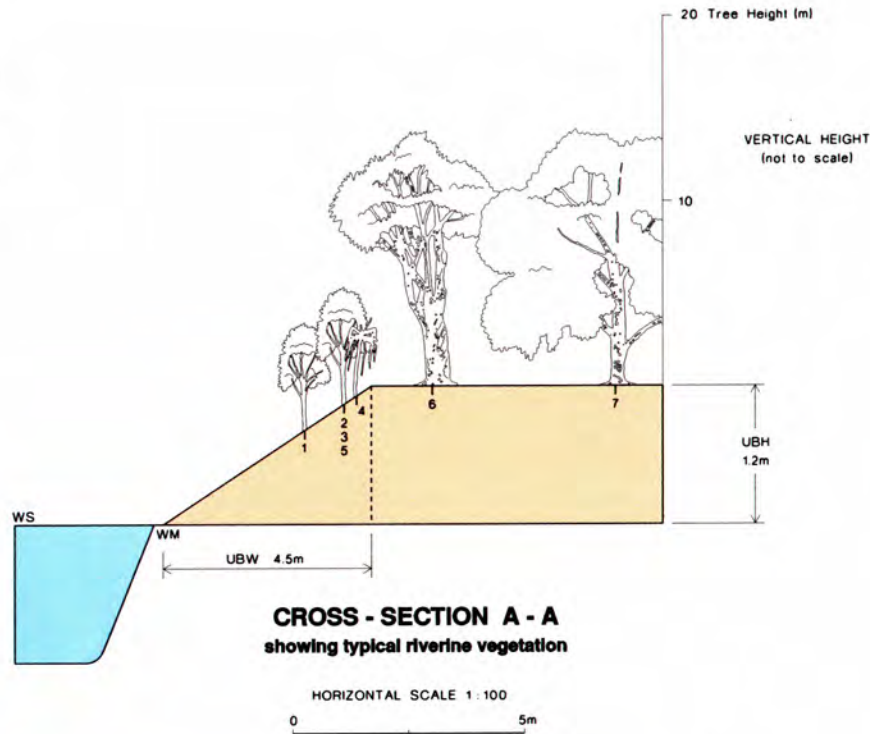
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
- Cross-section A-A includes all vegetation above the line marked through the belt transect.
- The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
- Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

 **TOP END WATERWAYS PROJECT**
DALY RIVER CATCHMENT

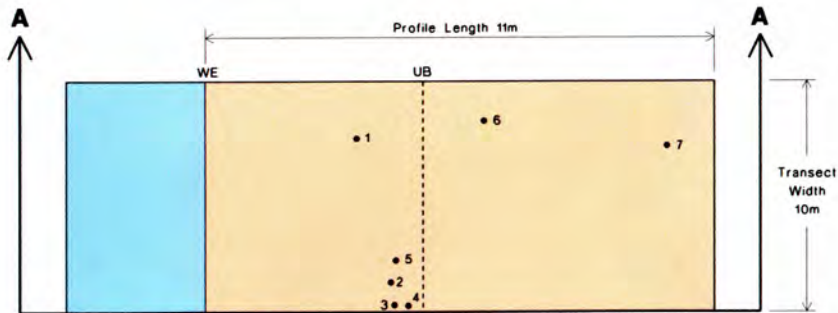
RIVERINE VEGETATION PROFILE

HAYWARD CREEK		Date 20.8.95
Sub-section 3	Site 1	Figure 10.52

LEGEND	
WE	Water Edge
WS	Water Surface
WM	Water Mark
UB	Upper Bank
UBH	Upper Bank Height
UBW	Upper Bank Width
•	Individual Tree
○	Clump of Trees
v	Vine



CROSS - SECTION A - A
showing typical riverine vegetation



SITE PLAN OF BELT TRANSECT
showing location of vegetation
(excluding ground covers)

National Landcare Program
Department of Lands, Planning & Environment

TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1-3, 5	3.8-6.5	<i>Xanthostemon eucalyptoides</i>
4	4.5	<i>Pandanus aquaticus</i>
6	14	<i>Melaleuca argentea</i> or <i>Melaleuca leucadendra</i>
7	14	<i>Lophostemon latifolius</i>

OTHER SPECIES LOCATED AT SITE:

- Forbs:** *Cyperus haspan*
Fimbristylis pauciflora
Ludwigia hyssopifolia
Phyllanthus minutillorus
Triumfetta sp.
- Grasses:** *Eriachne trisetia*
Panicum mindanaense
Panicum trichoides
- Shrubs:** *Melastoma affine*
- Trees:** *Acacia auriculiformis*
Erythrophleum chlorostachys
Ficus coronulata
Melaleuca leucadendra
Naucleria orientalis
Syzygium armstrongii
- Weeds:** **Hyptis suaveolens* (Noxious)
**Pennisetum polystachion* (Noxious)

* Exotic species

NOTES

- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
- Cross-section A-A includes all vegetation above the line marked through the belt transect.
- The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
- Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT DALY RIVER CATCHMENT			
RIVERINE VEGETATION PROFILE			
HAYWARD CREEK		Date 24.8.95	
Sub-section 3	Site 3	Figure 10.53	

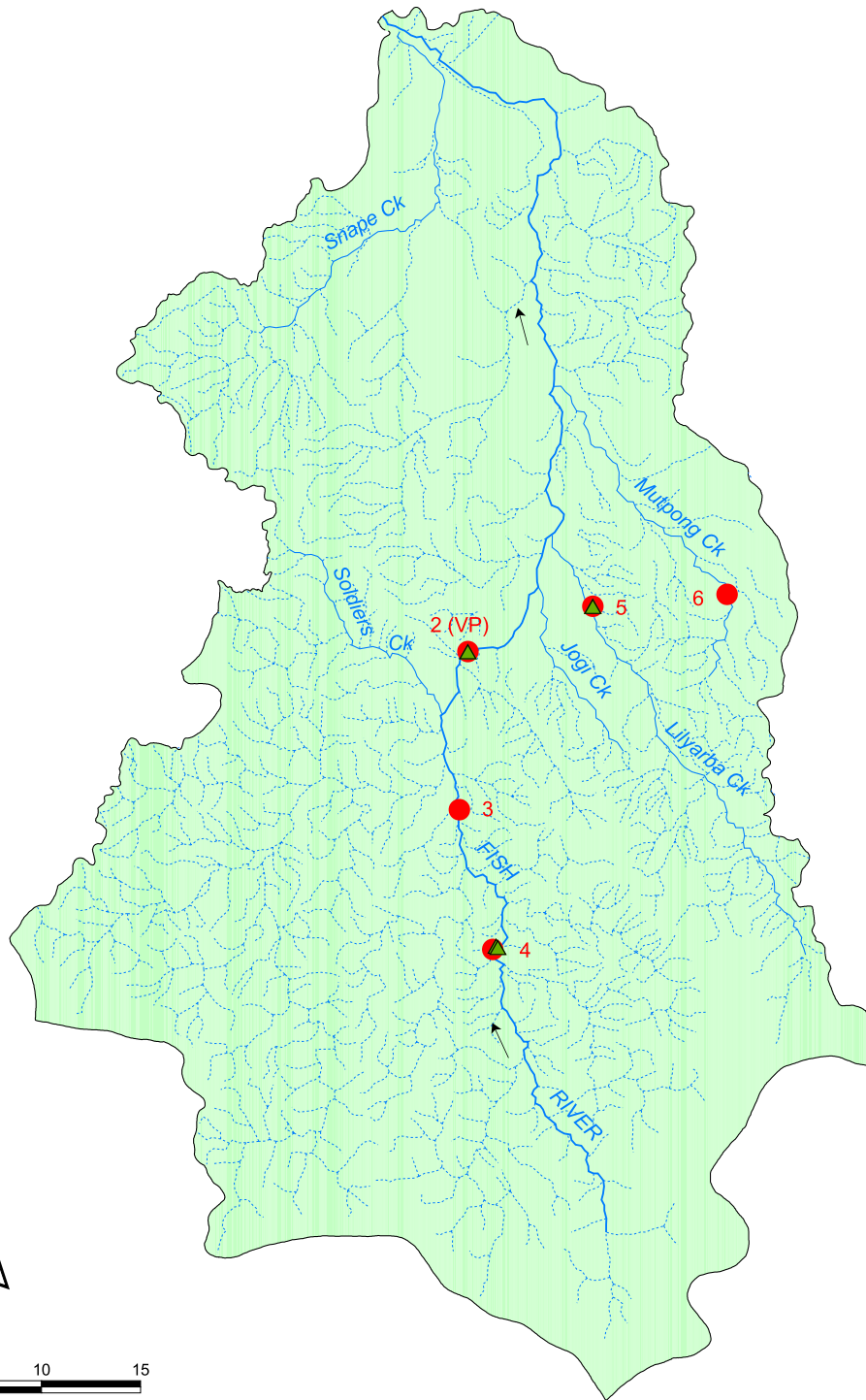
10.4 Fish River

Sub-section 4 includes the catchment of Fish River. Of the 5 sites located in this sub-section, 3 of these were fully assessed (refer Table 10.13 and Map 33).

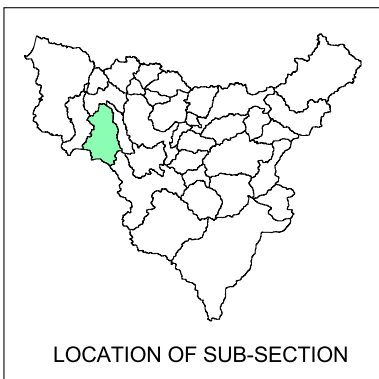
Table 10.13 Summary of Survey Information for Sub-section 4 – Fish River

Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
2	Fish River	A	Run	√	√	
		B	Pool			
3	Fish River					√
4	Fish River	A	Pool	√		
		B	Riffle	√		
5	Lilyarba Creek	A	Riffle	√		
		B	Pool	√		
6	Mut Pong Creek					√





Area - 1,748 km²



LEGEND	
● 5	Site
▲	Sample Point
(VP)	Vegetation Profile
—	Longitudinal Profile Survey
—	River
—	Creek
←	Flow direction

 TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

FISH RIVER

SUB-SECTION 4

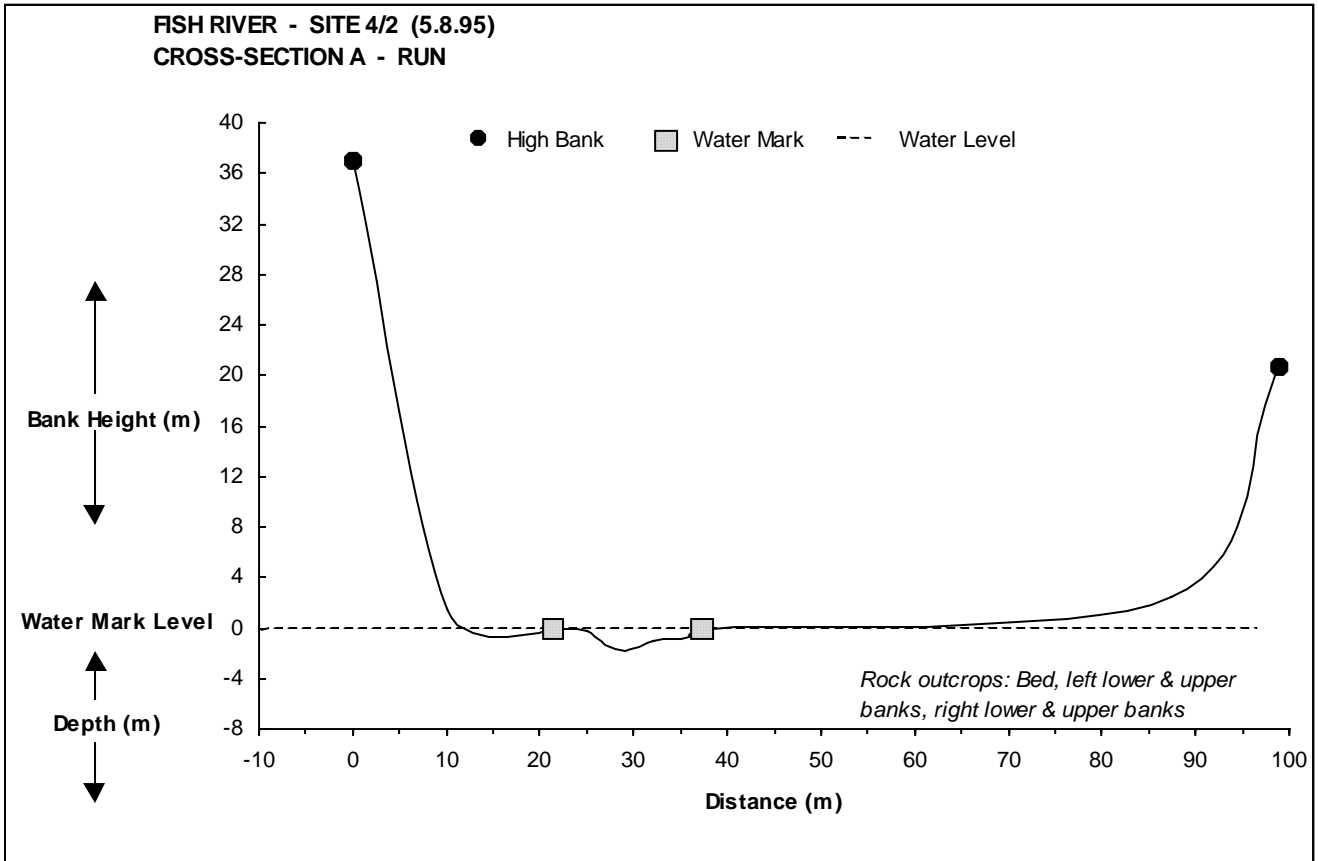


Figure 10.54 Cross-section Survey for Site 4/2 – Fish River



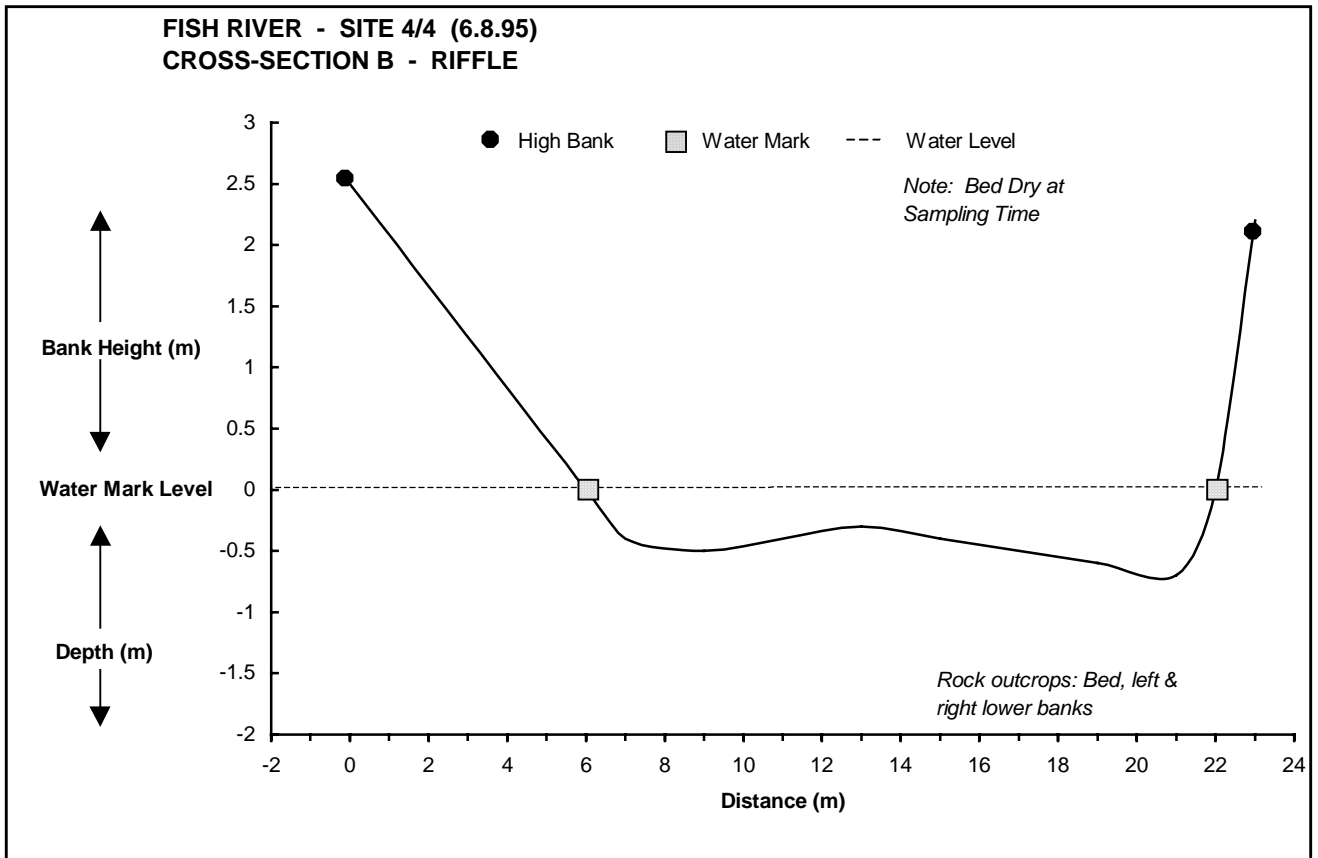
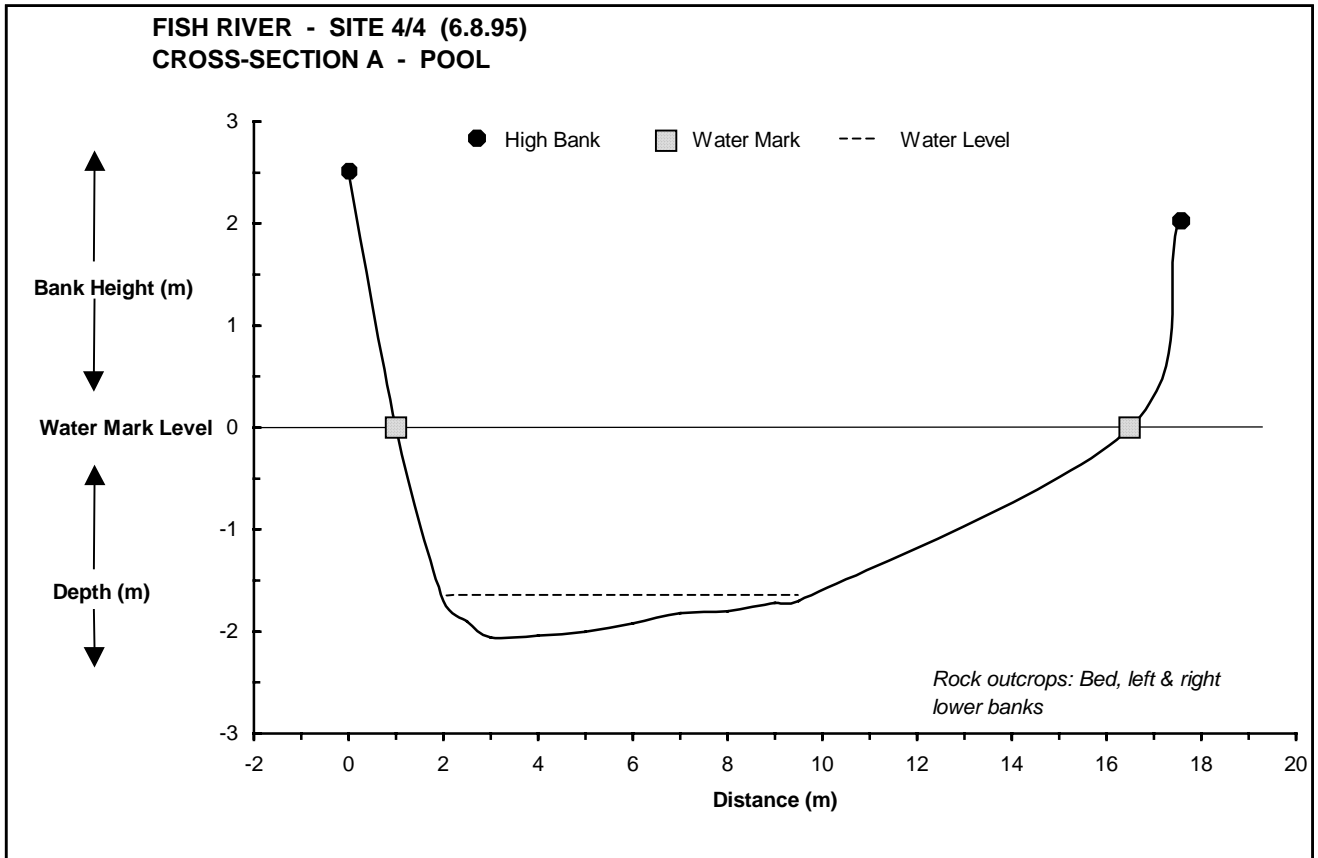


Figure 10.55 Cross-section Surveys for Site 4/4 – Fish River

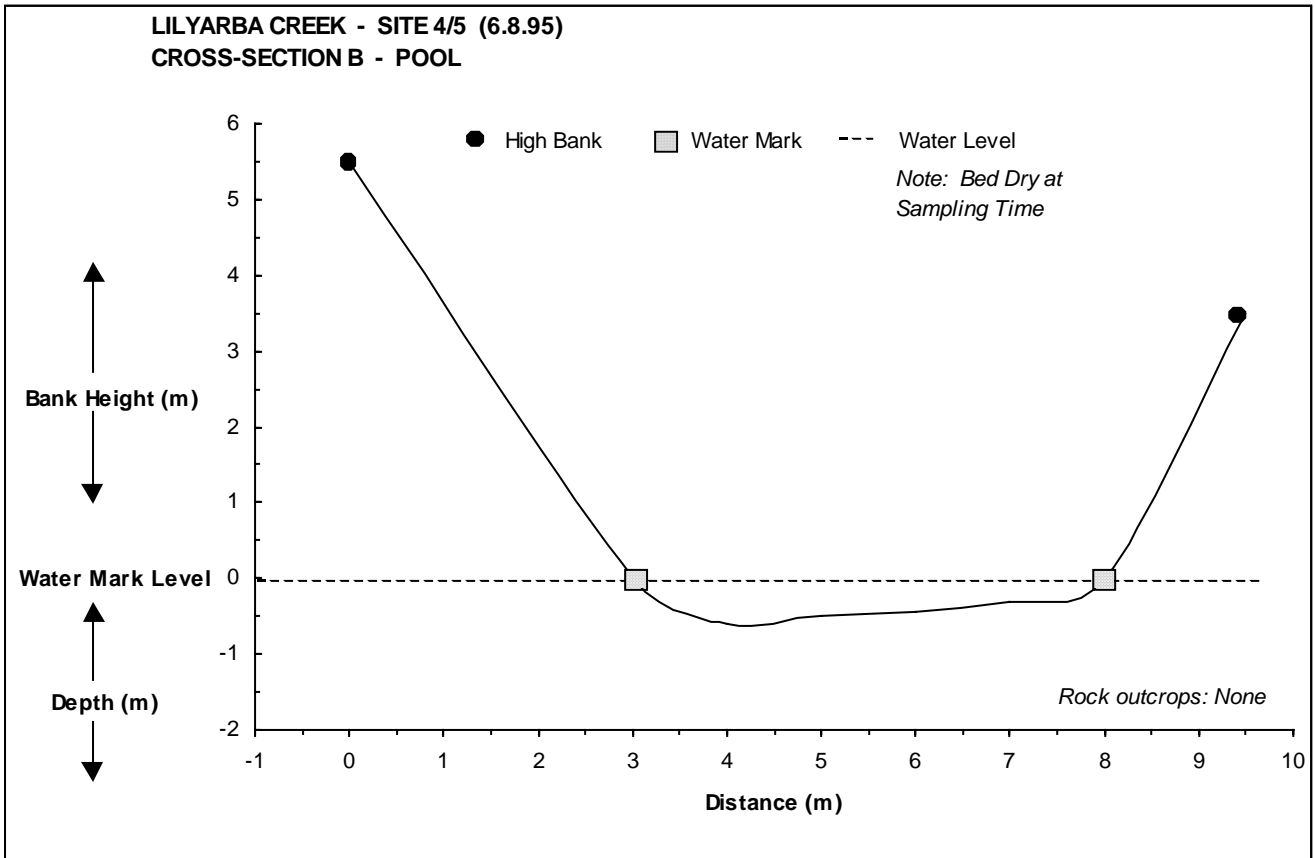
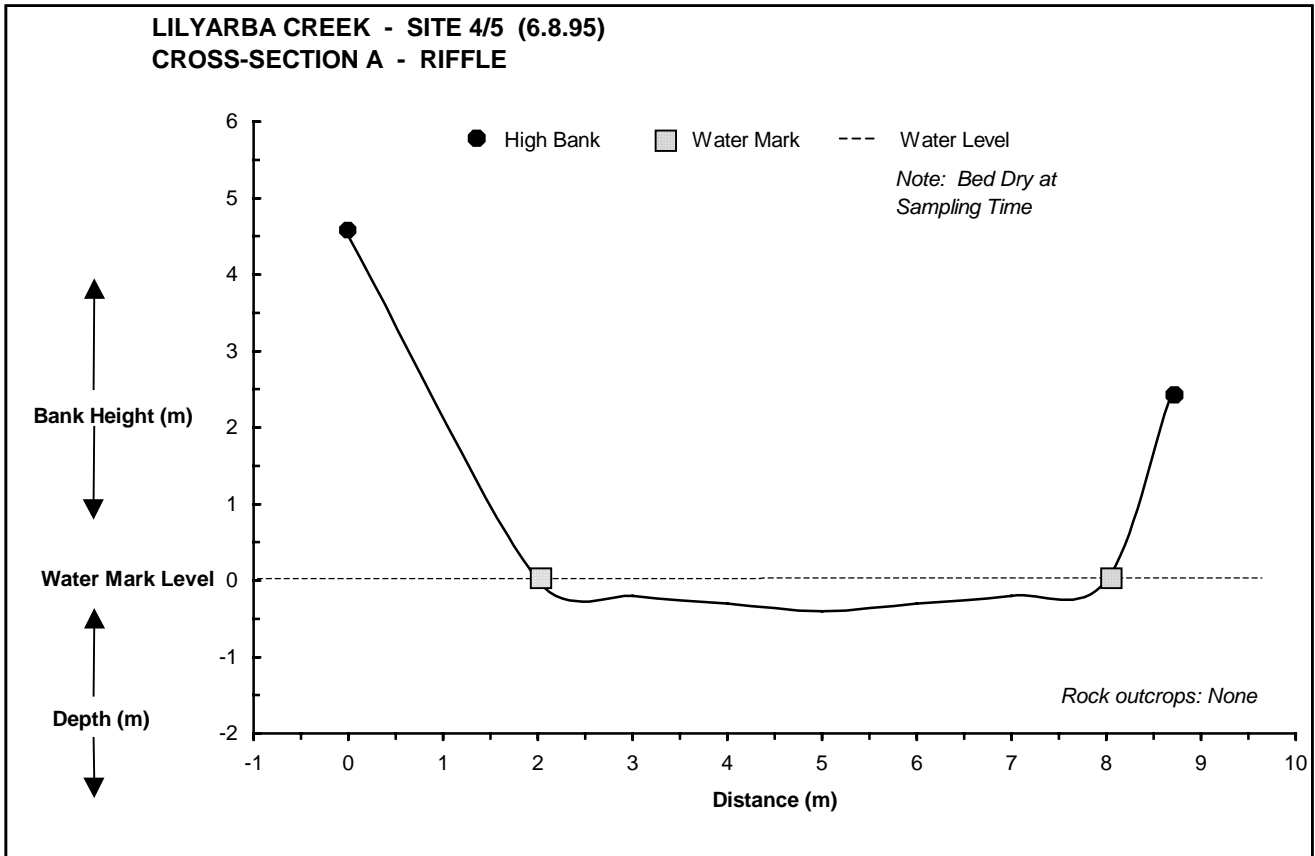
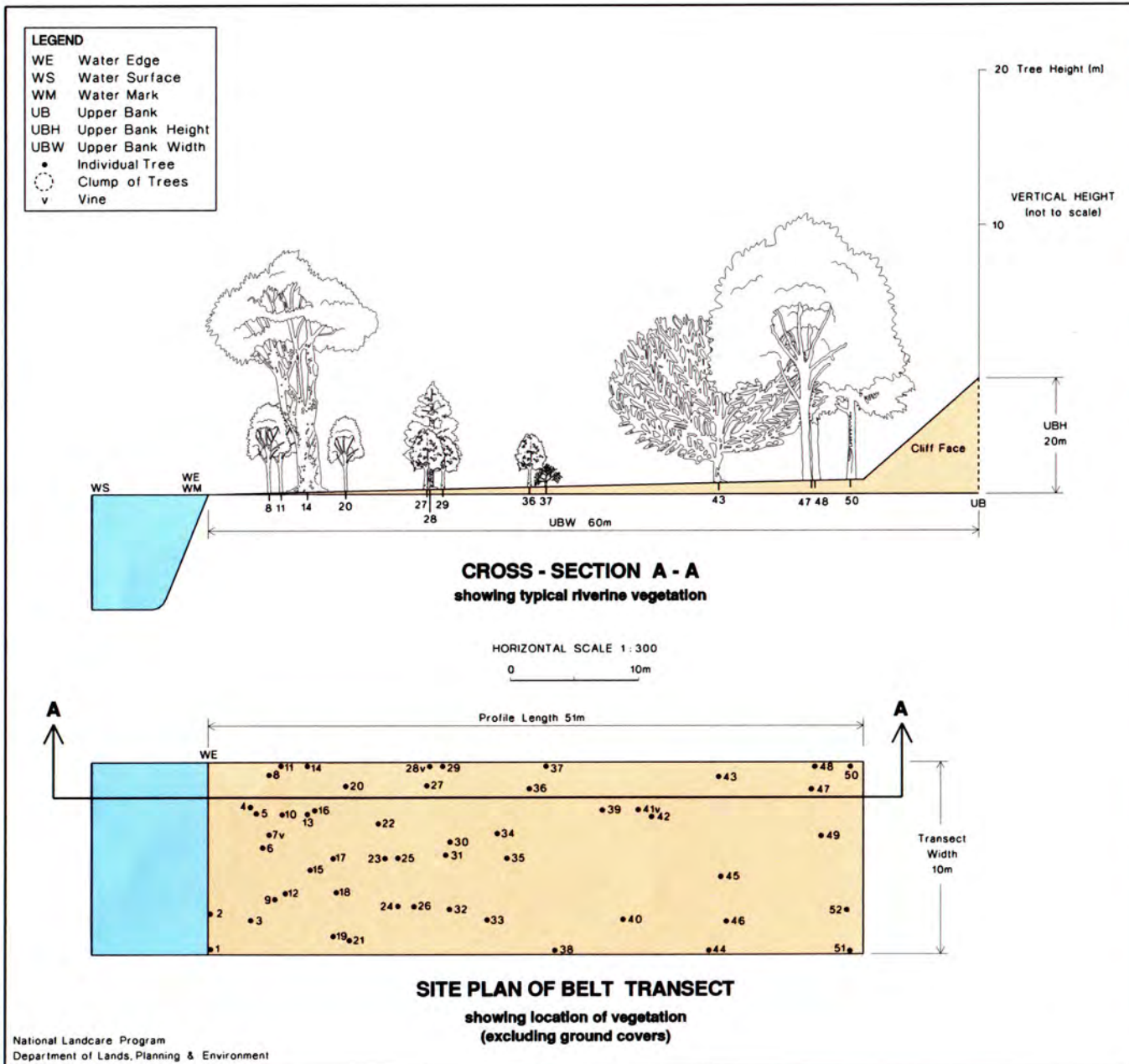


Figure 10.56 Cross-section Surveys for Site 4/5 – Lilyarba Creek



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1	1.5	<i>Pandanus aquaticus</i>
2	2.2	<i>Barringtonia acutangula</i>
3-6, 13, 15, 17-19, 22, 24, 31	1.8-5.5	<i>Canthium schultzei</i>
7, 8, 11, 16, 20, 32, 34, 37, 47-49	1.5-16	<i>Xanthostemon eucalyptoides</i>
9, 23, 25, 27, 29, 33, 36	1.3-8	<i>Lophostemon grandiflorus</i>
10, 12, 14, 30	14.5-17	<i>Melaleuca argentea</i>
21, 42, 46	3-6	<i>Syzygium eucalyptoides</i> ssp. <i>eucalyptoides</i>
26	1.5	Unidentified small tree or shrub
28	7	<i>Nauclea orientalis</i>
35	6	<i>Eucalyptus</i> sp.
38	2.5	<i>Terminalia platyphylla</i>
39-41, 43-45	9-13	<i>Acacia difficilis</i>
50	11	<i>Canarium australianum</i>
51, 52	3.5-10	<i>Pandanus spiralis</i>

OTHER SPECIES LOCATED AT SITE:

- Grasses:** *Aristida latifolia*, *Arundinella nepalensis*, *Eriachne festucacea*, *Germinia truncatiligium*
- Shrubs:** *Waltheria indica*
- Tree/Shrub:** *Acacia holosericea*, *Ficus platypoda*
- Trees:** *Adansonia gregorii*, *Erythrophileum chlorostachys*, *Eucalyptus camaldulensis*, *Eucalyptus ptychocarpa* ssp. *ptychocarpa*, *Grevillea pteridifolia*
- Vines:** **Passiflora foetida*
- Weeds:** **Hyptis suaveolens* (Noxious)

* Exotic species

NOTES

- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
- Cross-section A-A includes all vegetation above the line marked through the belt transect.
- The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
- Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

<p>TOP END WATERWAYS PROJECT DALY RIVER CATCHMENT</p>	
RIVERINE VEGETATION PROFILE	
FISH RIVER	Date 5.8.95
Sub-section 4 Site 2	Figure 10.57

Table 10.14 Major Vegetation Species Recorded at Sites 3, 4, 5 and 6 located within Sub-section 4 – Fish River

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Sites Where Recorded (Sub-section No. / Site No.)
<i>Acacia auriculiformis</i>	Tree		4/5
<i>Acacia holosericea</i>	Low tree / shrub		4/3, 4/4
<i>Ammannia baccifera</i>	Forb		4/6
<i>Antidesma ghaesembilla</i>	Low tree / shrub		4/4
<i>Arundinella nepalensis</i>	Grass		4/3, 4/4, 4/6
<i>Barringtonia acutangula</i>	Low tree / shrub		4/5
<i>Buchanania obovata</i>	Tree		4/4
<i>Cyperus conicus or javanicus</i>	Forb		4/4
<i>Diospyros calycantha</i>	Tree		4/5
<i>Eucalyptus camaldulensis</i>	Tree		4/3
<i>Ficus coronulata</i>	Tree		4/4, 4/5
<i>Ficus racemosa</i>	Tree		4/4, 4/5, 4/6
<i>Ficus virens</i>	Tree		4/4
<i>Flacourtia territorialis</i>	Low tree / shrub		4/3, 4/4, 4/5
<i>Hibiscus sabdariffa</i>	Forb	E	4/4
<i>Hyptis suaveolens</i>	Forb	E/N	4/4, 4/5, 4/6
<i>Lophostemon grandiflorus</i>	Tree		4/3, 4/4, 4/5, 4/6
<i>Melaleuca leucadendra</i>	Tree		4/3, 4/4, 4/5
<i>Nauclea orientalis</i>	Tree		4/4, 4/5, 4/6
<i>Nelsonia campestris</i>	Forb		4/4, 4/6
<i>Pandanus aquaticus</i>	Tree		4/3, 4/4
<i>Pandanus spiralis</i>	Tree		4/3, 4/6
<i>Tephrosia brachyodon</i>	Forb		4/3
<i>Terminalia microcarpa</i>	Tree		4/6
<i>Terminalia platyphylla</i>	Tree		4/4, 4/5, 4/6
<i>Timonius timon</i>	Tree		4/6

* Declared Noxious Weed within the Northern Territory



10.5 Bamboo (Moon Boon) Creek

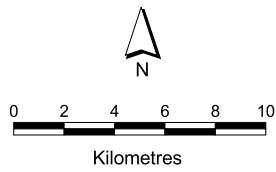
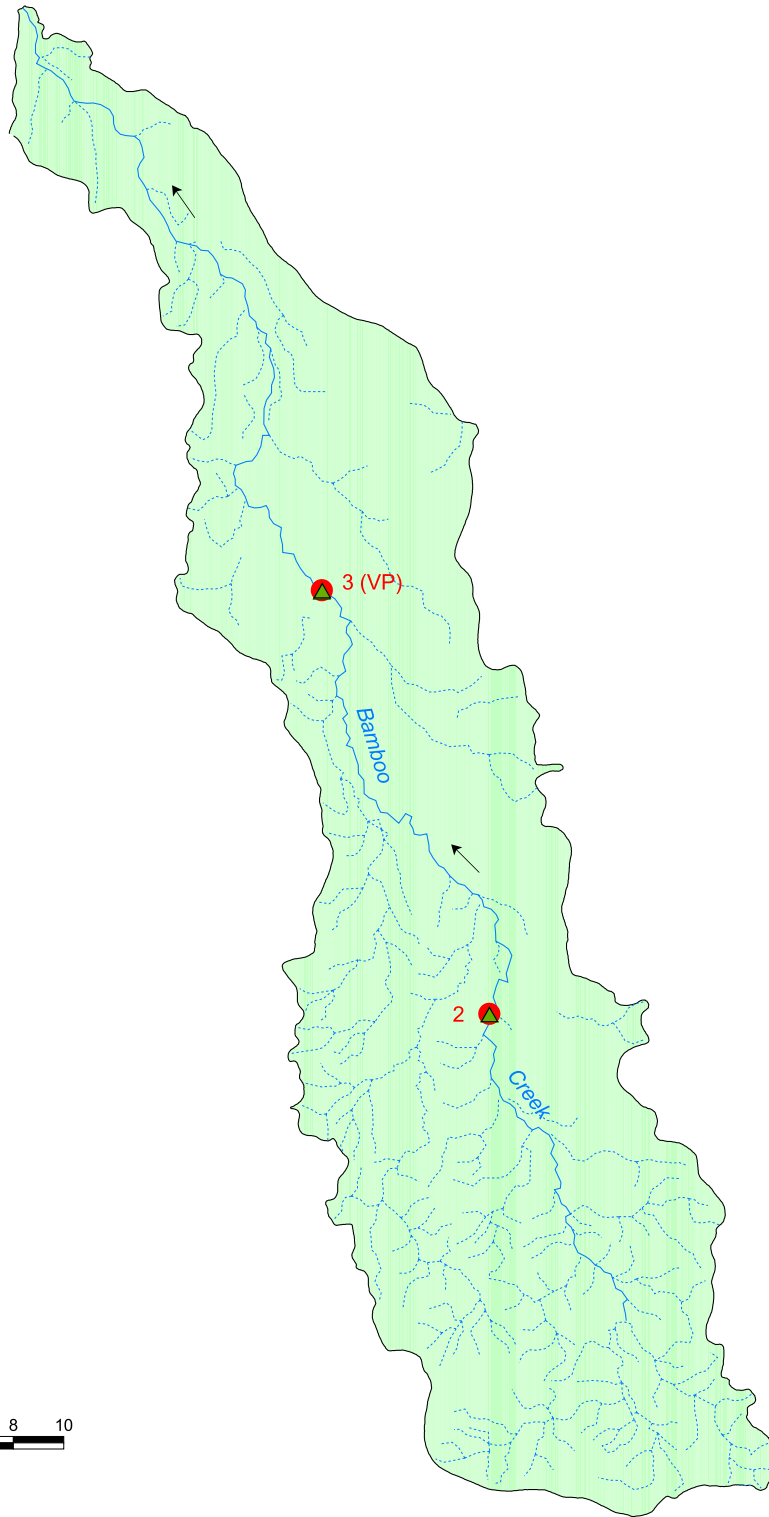
Sub-section 5 includes the catchment of Bamboo (Moon Boon) Creek. Two sites were fully assessed in this sub-section (refer Table 10.15 and Map 34).

Table 10.15 Summary of Survey Information for Sub-section 5 – Bamboo (Moon Boon) Creek

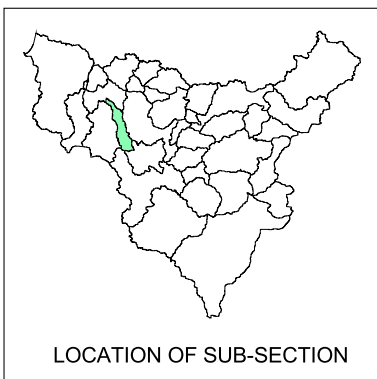
Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
2	Bamboo (Moon Boon) Creek	A	Riffle	√		
		B	Pool	√		
3	Bamboo (Moon Boon) Creek	A	Riffle	√	√	
		B	Pool	√		



View along reach at Site 5/3 on Bamboo (Moon Boon) Creek



Area - 602 km²



LEGEND	
● 5	Site
▲	Sample Point
(VP)	Vegetation Profile
—	Longitudinal Profile Survey
—	River
—	Creek
←	Flow direction

 TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

BAMBOO (MOON BOON) CREEK

SUB-SECTION 5

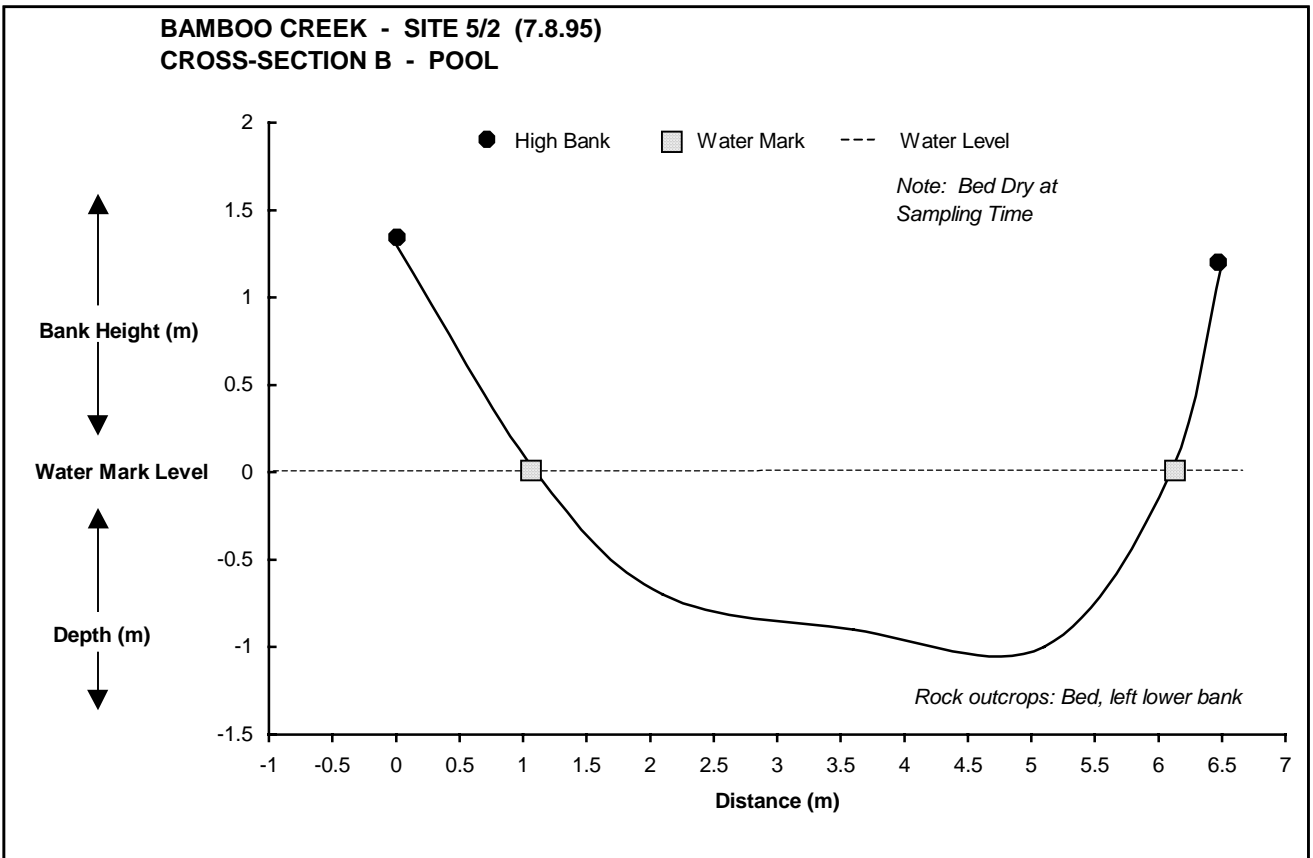
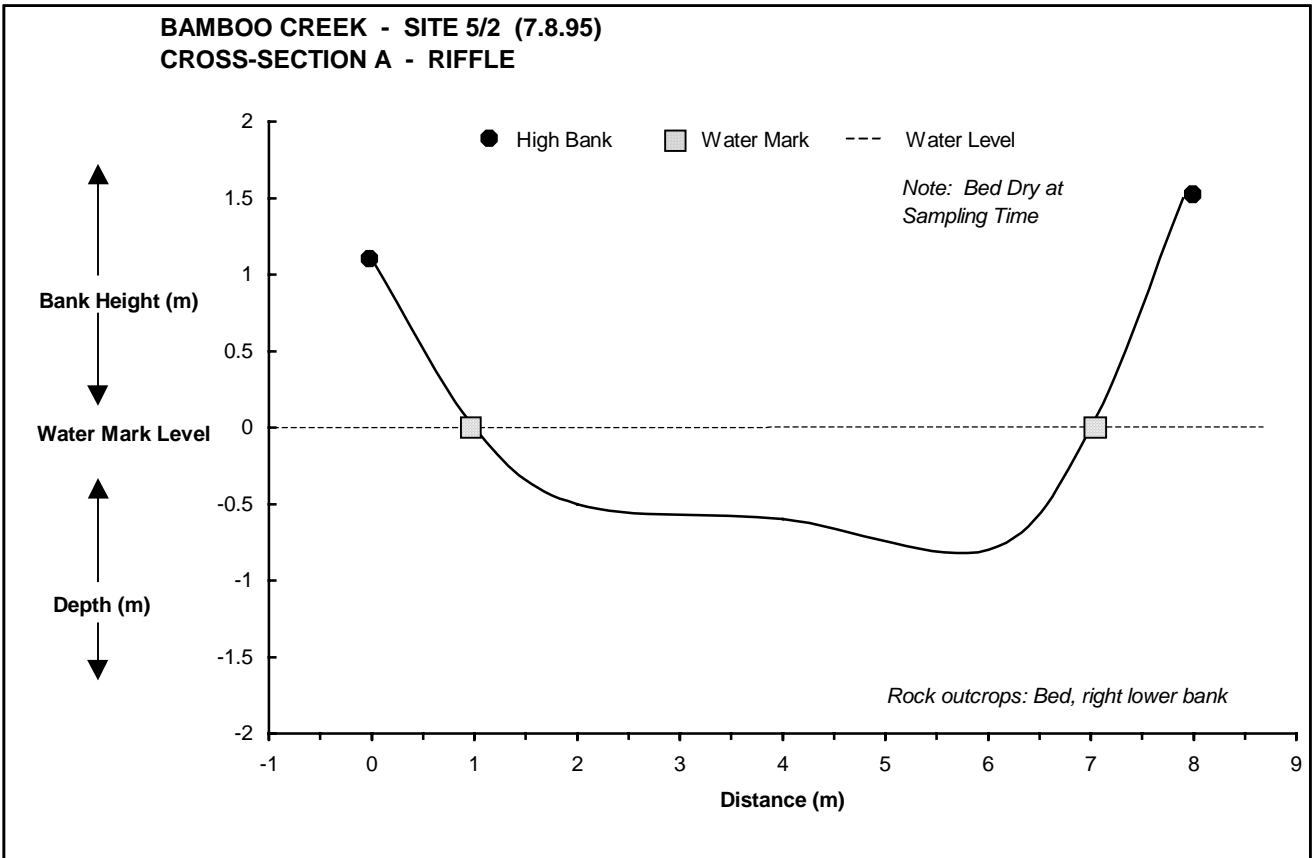


Figure 10.58 Cross-section Surveys for Site 5/2 – Bamboo (Moon Boon) Creek

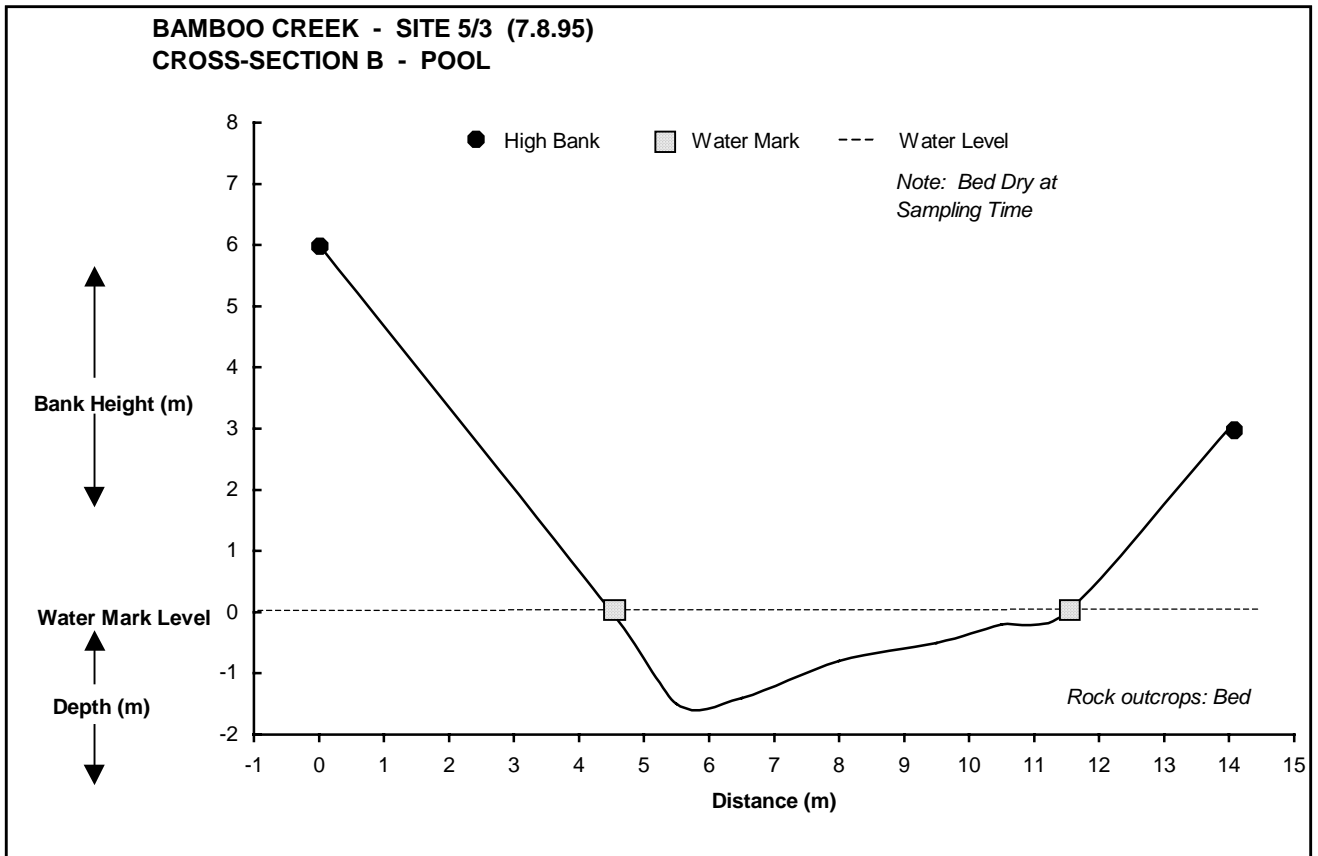
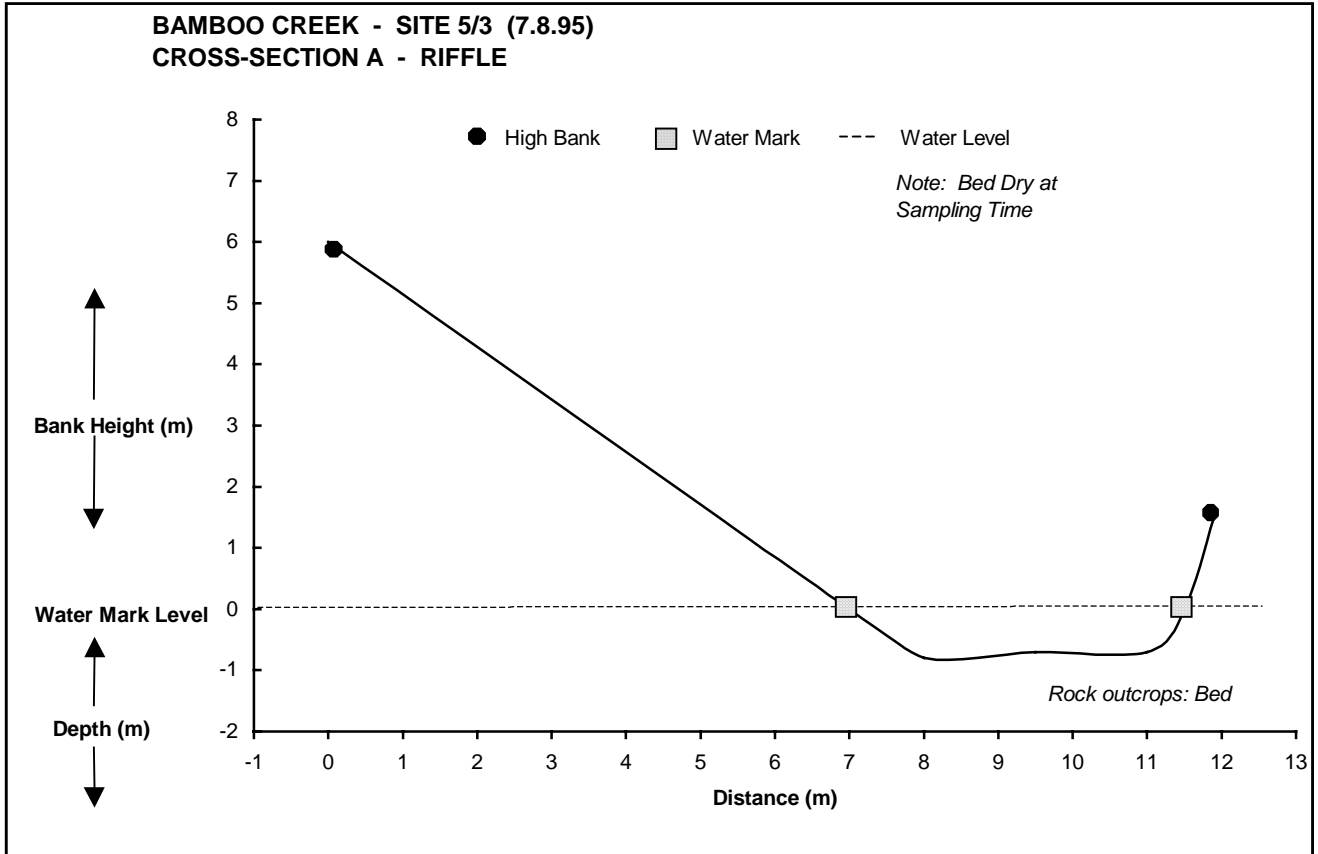
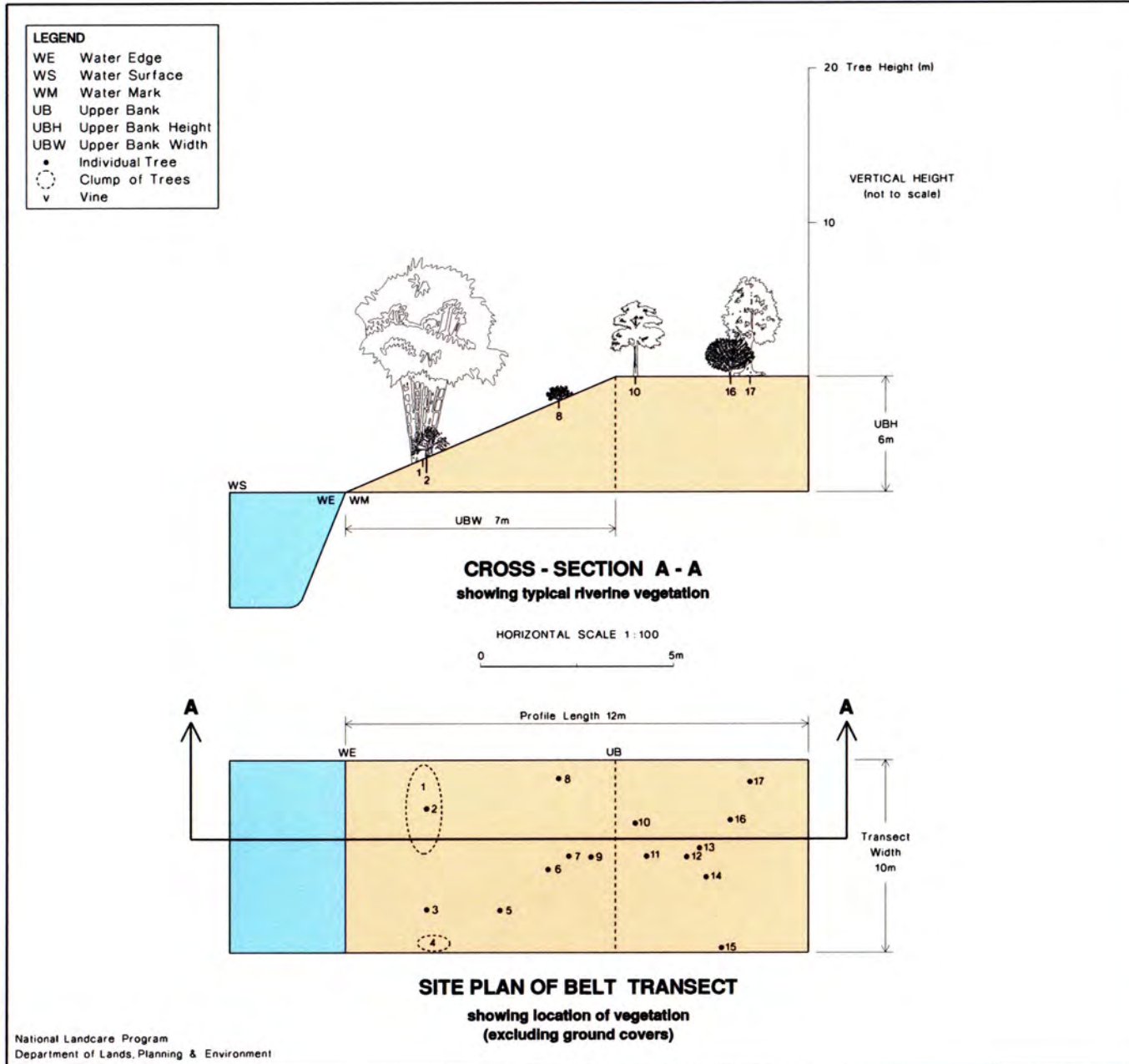


Figure 10.59 Cross-section Surveys for Site 5/3 – Bamboo (Moon Boon) Creek



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1, 4	12-14	<i>Bambusa arnhemica</i>
2, 7	1.3-2	<i>Ixora klanderana</i>
3, 12-14	3.5-12	<i>Acacia auriculiformis</i>
5, 6, 8, 11, 15	0.5-1.5	<i>Flacourtia territorialis</i>
9, 10	5-12	<i>Canarium australianum</i>
16	2.5	<i>Acacia "Douglas River"</i>
17	6.5	<i>Terminalia volucris</i>

OTHER SPECIES LOCATED AT SITE:

- Shrub/Tree: *Micromelum minutum*
- Trees: *Eucalyptus papuana*
Ficus coronata
Lophostemon grandiflorus
Pongamia pinnata
Strychnos lucida
Terminalia platyphylla
- Weeds: **Hyptis suaveolens* (Noxious)

* Exotic species

NOTES

- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
- Cross-section A-A includes all vegetation above the line marked through the belt transect.
- The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
- Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

BAMBOO CREEK	Date 7.8.95
Sub-section 5 Site 3	Figure 10.60

Table 10.16 Major Vegetation Species Recorded at Site 2 on Bamboo (Moon Boon) Creek located within Sub-section 5

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Site Where Recorded (Sub-section No. / Site No.)
<i>Acacia auriculiformis</i>	Tree		5/2
<i>Arundinella nepalensis</i>	Grass		5/2
<i>Dodonaea platyptera</i>	Low tree / shrub		5/2
<i>Flacourtia territorialis</i>	Low tree / shrub		5/2
<i>Hyptis suaveolens</i>	Forb	E/N	5/2
<i>Ixora klanderana</i>	Low tree / shrub		5/2
<i>Litsea glutinosa</i>	Tree		5/2
<i>Micromelum minutum</i>	Low tree / shrub		5/2
<i>Pandanus spiralis</i>	Tree		5/2
<i>Terminalia platyphylla</i>	Tree		5/2

* Declared Noxious Weed within the Northern Territory



View along reach at Site 5/2 on Bamboo (Moon Boon) Creek

10.6 Green Ant Creek

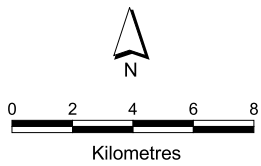
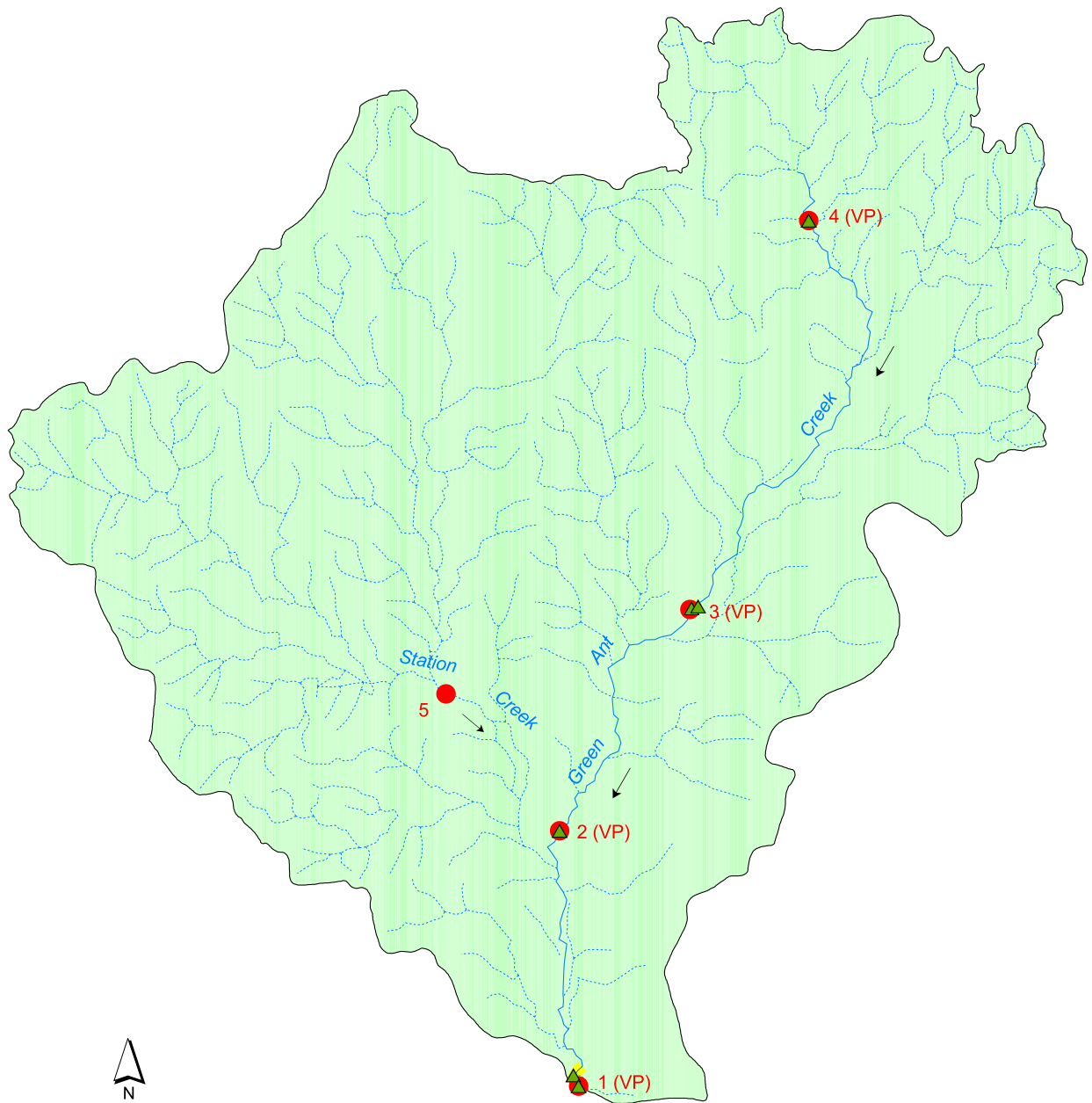
Sub-section 6 includes the catchment of Green Ant Creek. Of the 5 sites located in this sub-section, 4 of these were fully assessed (refer Table 10.17 and Map 35).

Table 10.17 Summary of Survey Information for Sub-section 6 – Green Ant Creek

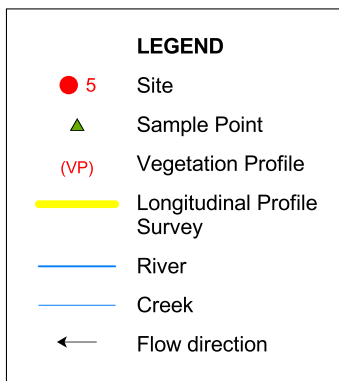
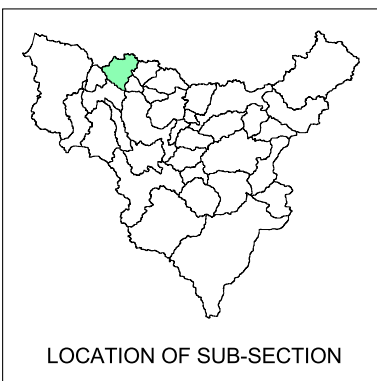
Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
1	Green Ant Creek	A	Pool	√	√	
		B	Run	√		
2	Green Ant Creek	A	Pool	√	√	
		B	Riffle	√		
3	Green Ant Creek	A	Pool	√	√	
		B	Run	√		
4	Green Ant Creek	A	Pool	√	√	
		B	Riffle	√		
5	Station Creek					√



View upstream along reach at Site 6/3 on Green Ant Creek



Area - 914 km²



GREEN ANT CREEK

SUB-SECTION 6

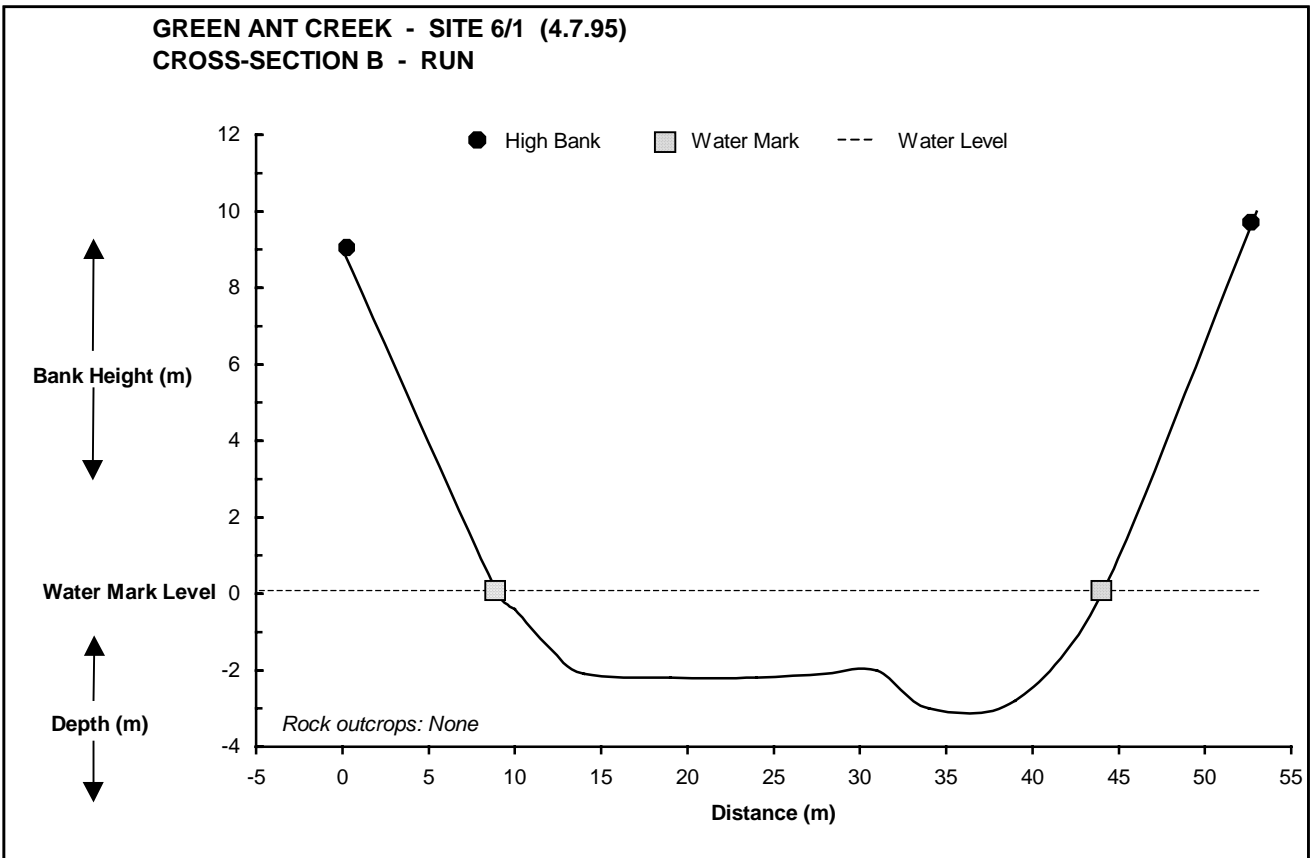
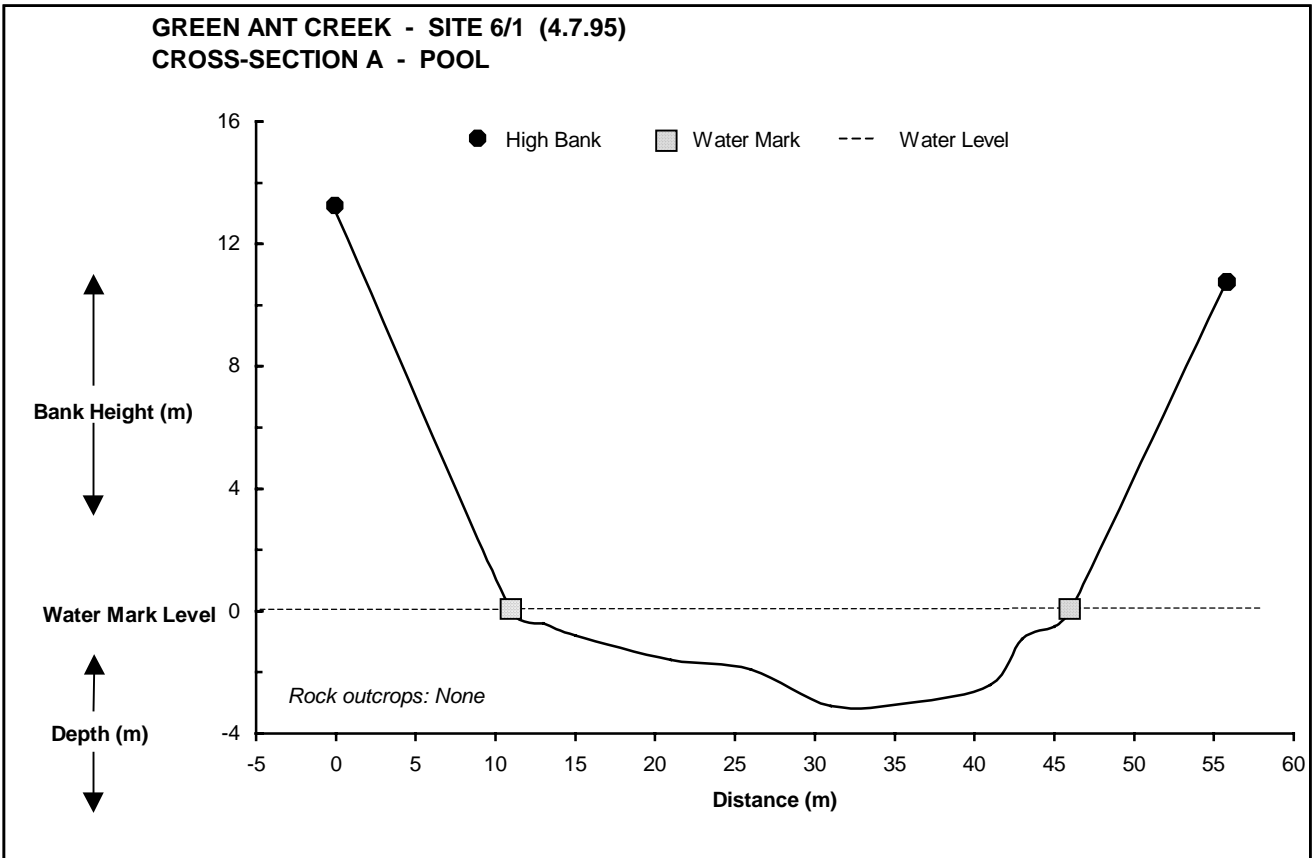


Figure 10.61 Cross-section Surveys for Site 6/1 – Green Ant Creek

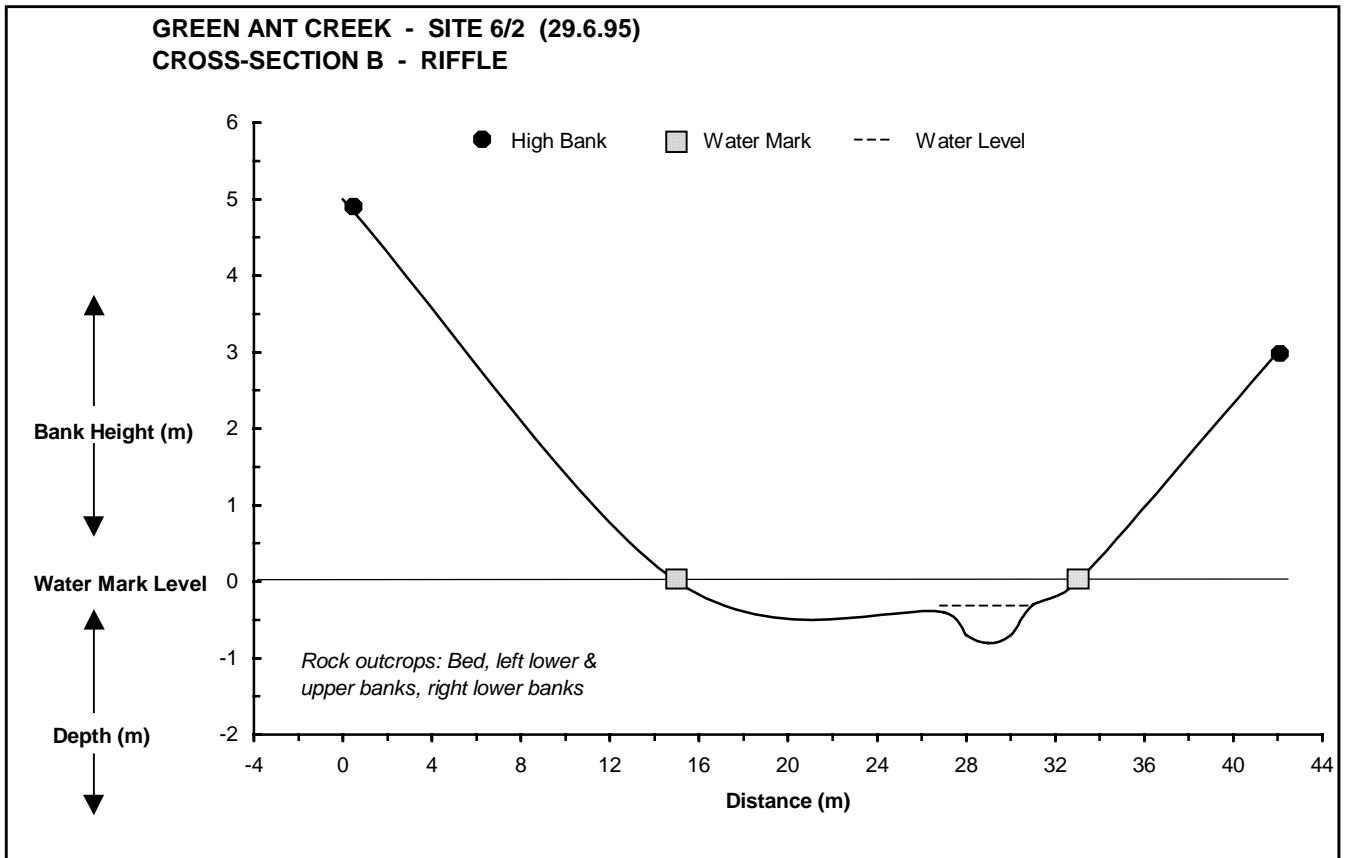
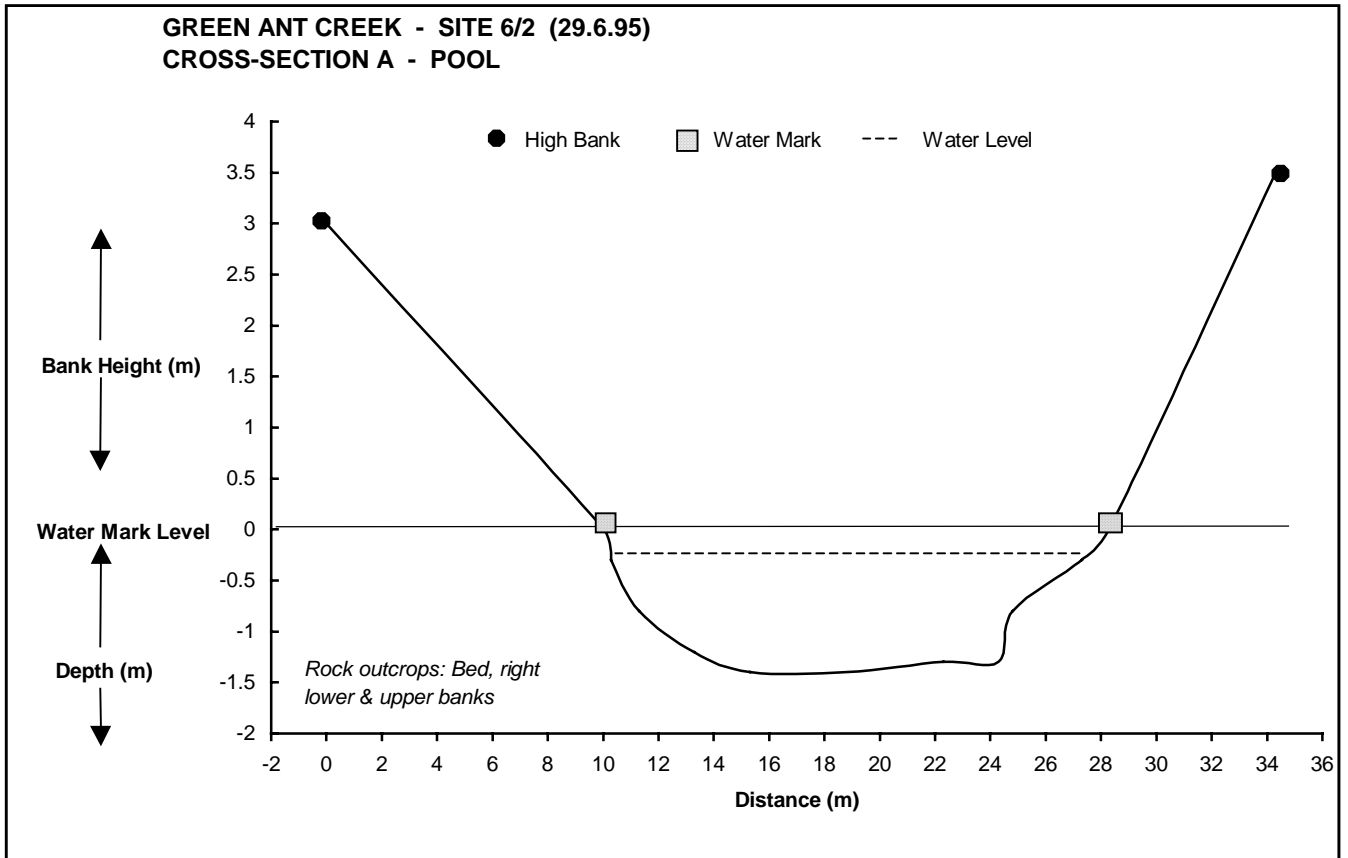


Figure 10.62 Cross-section Surveys for Site 6/2 – Green Ant Creek

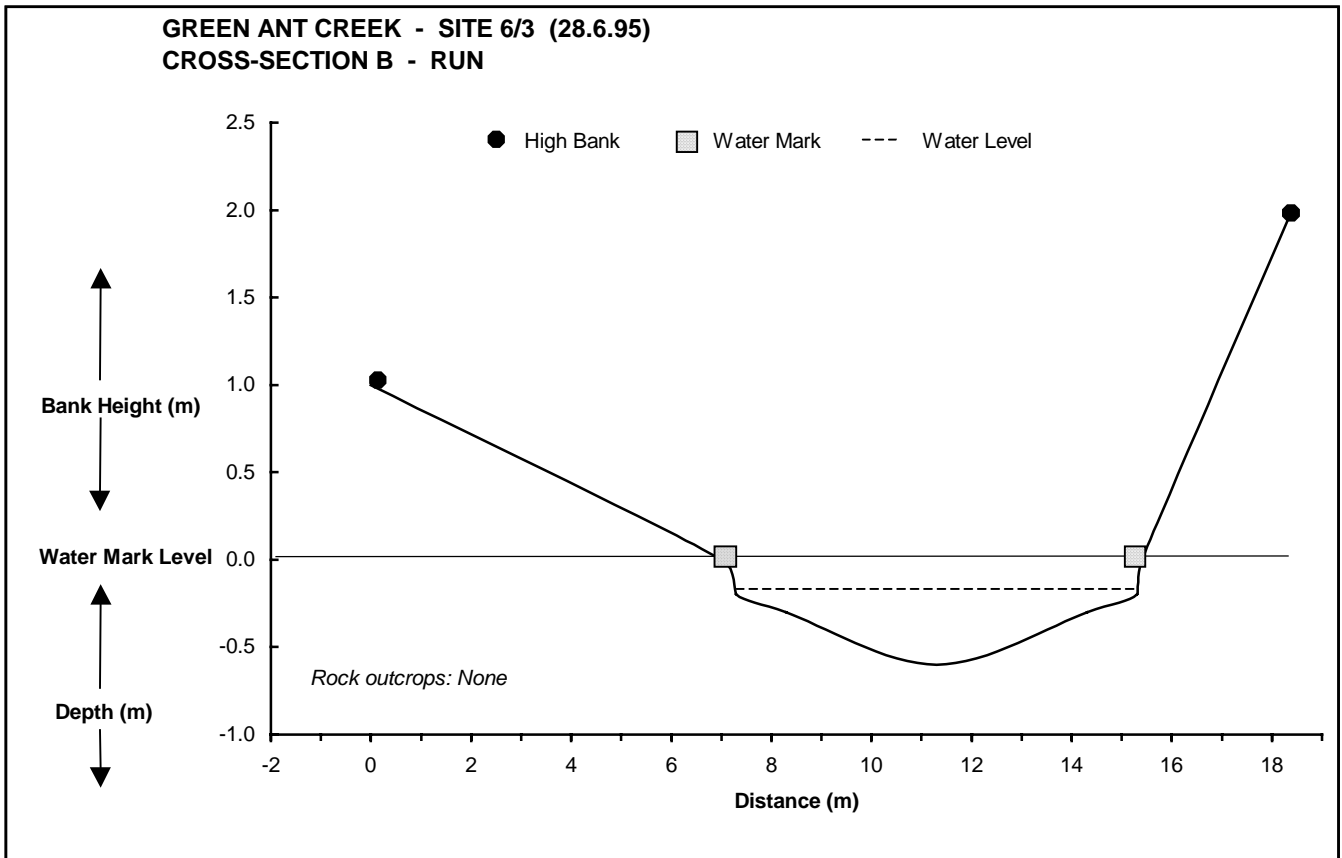
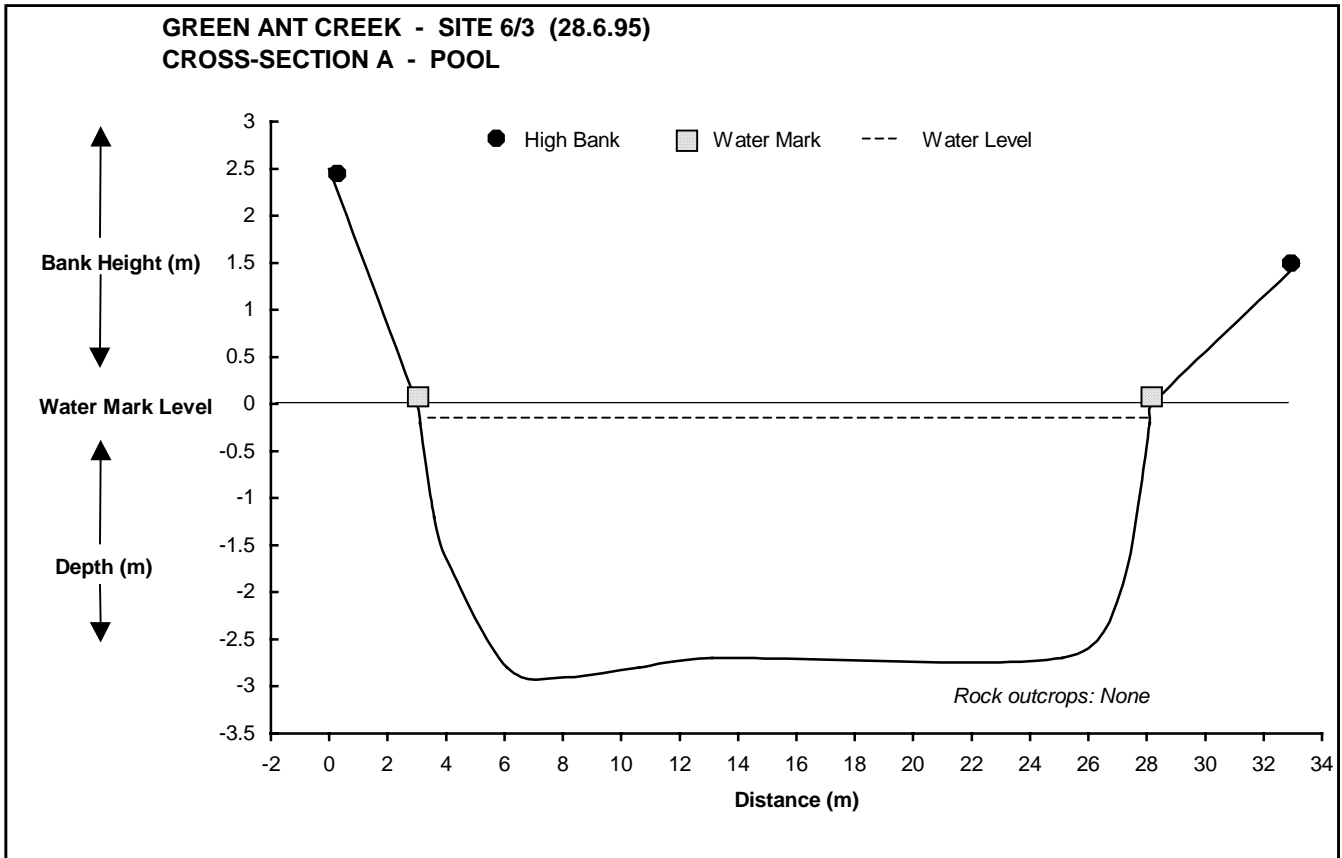


Figure 10.63 Cross-section Surveys for Site 6/3 – Green Ant Creek

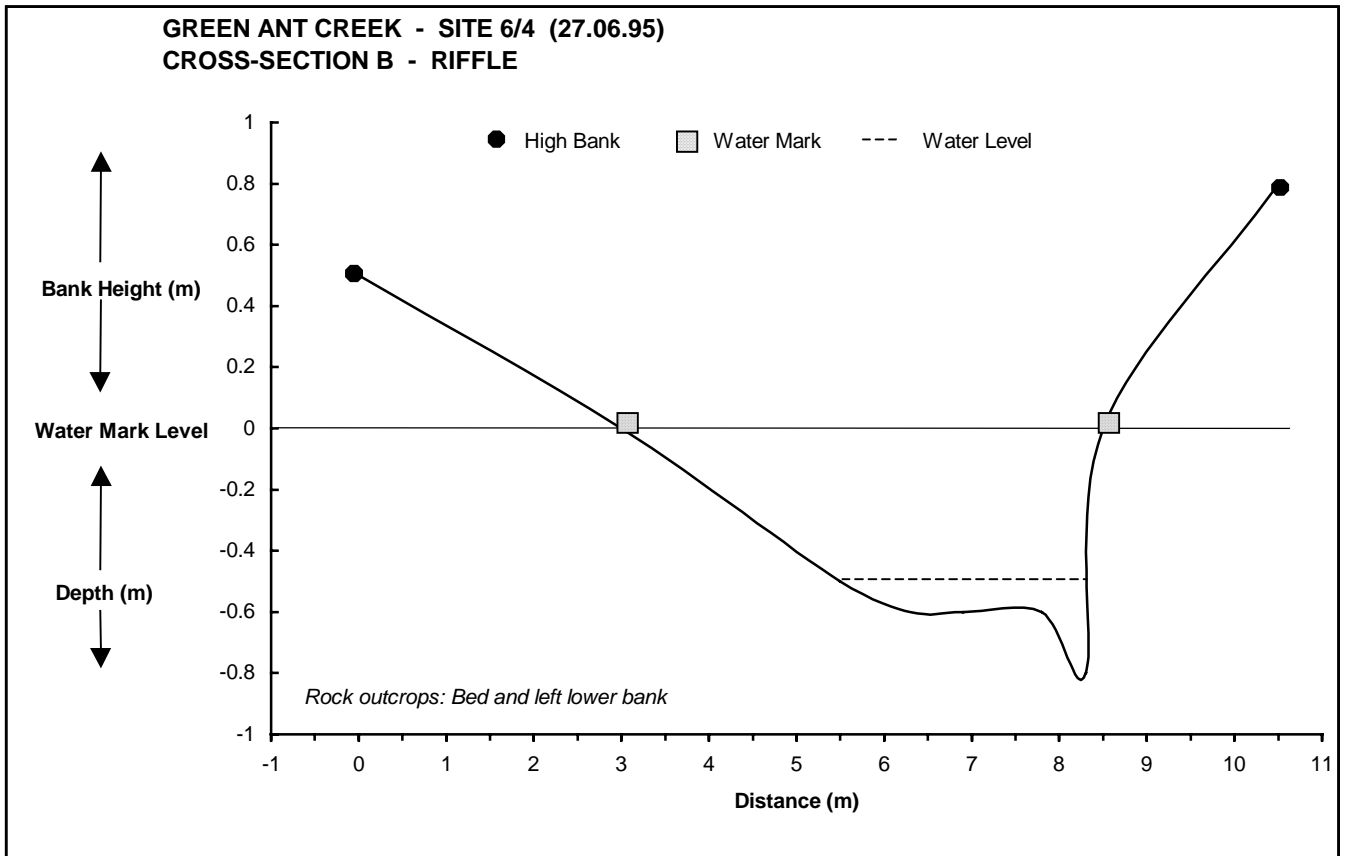
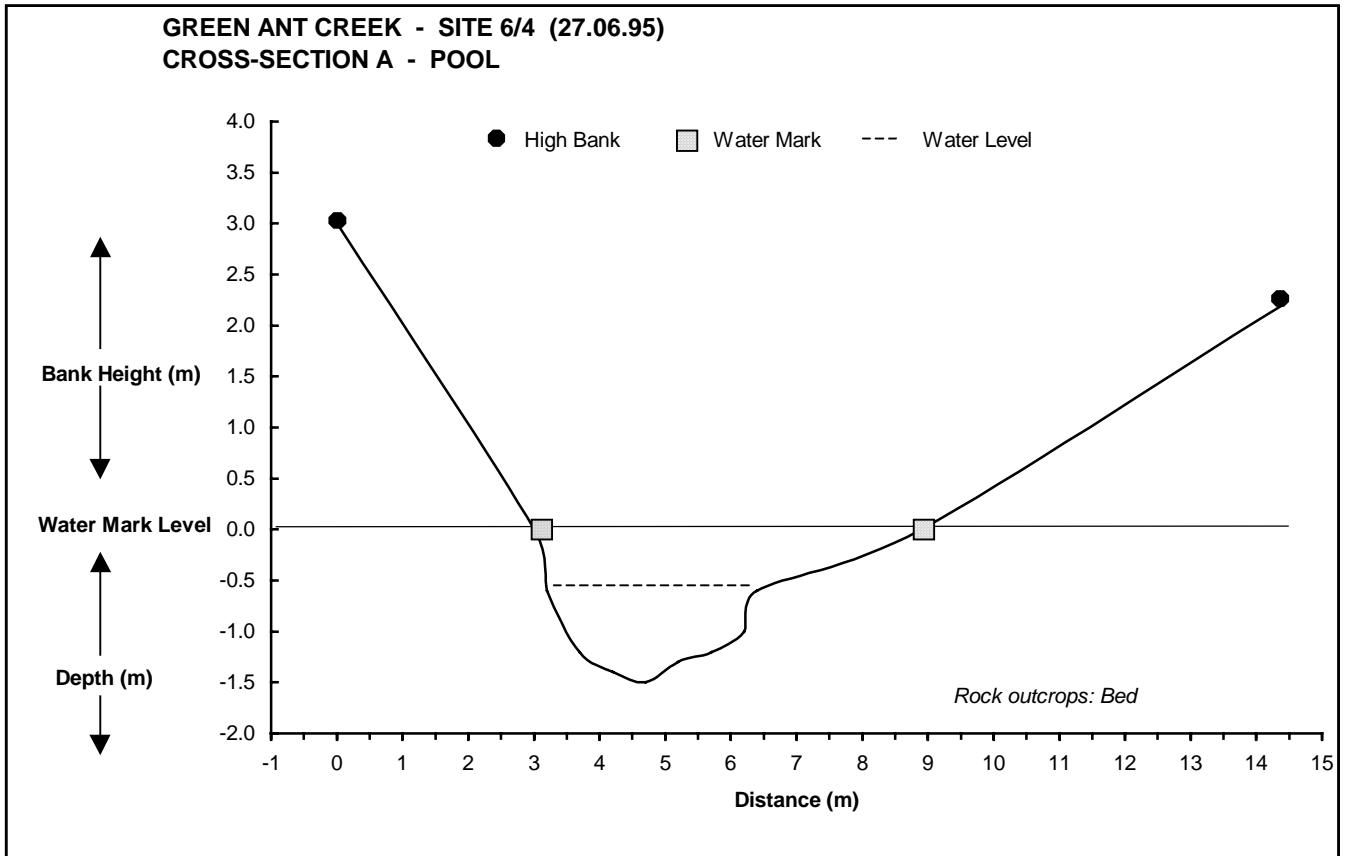
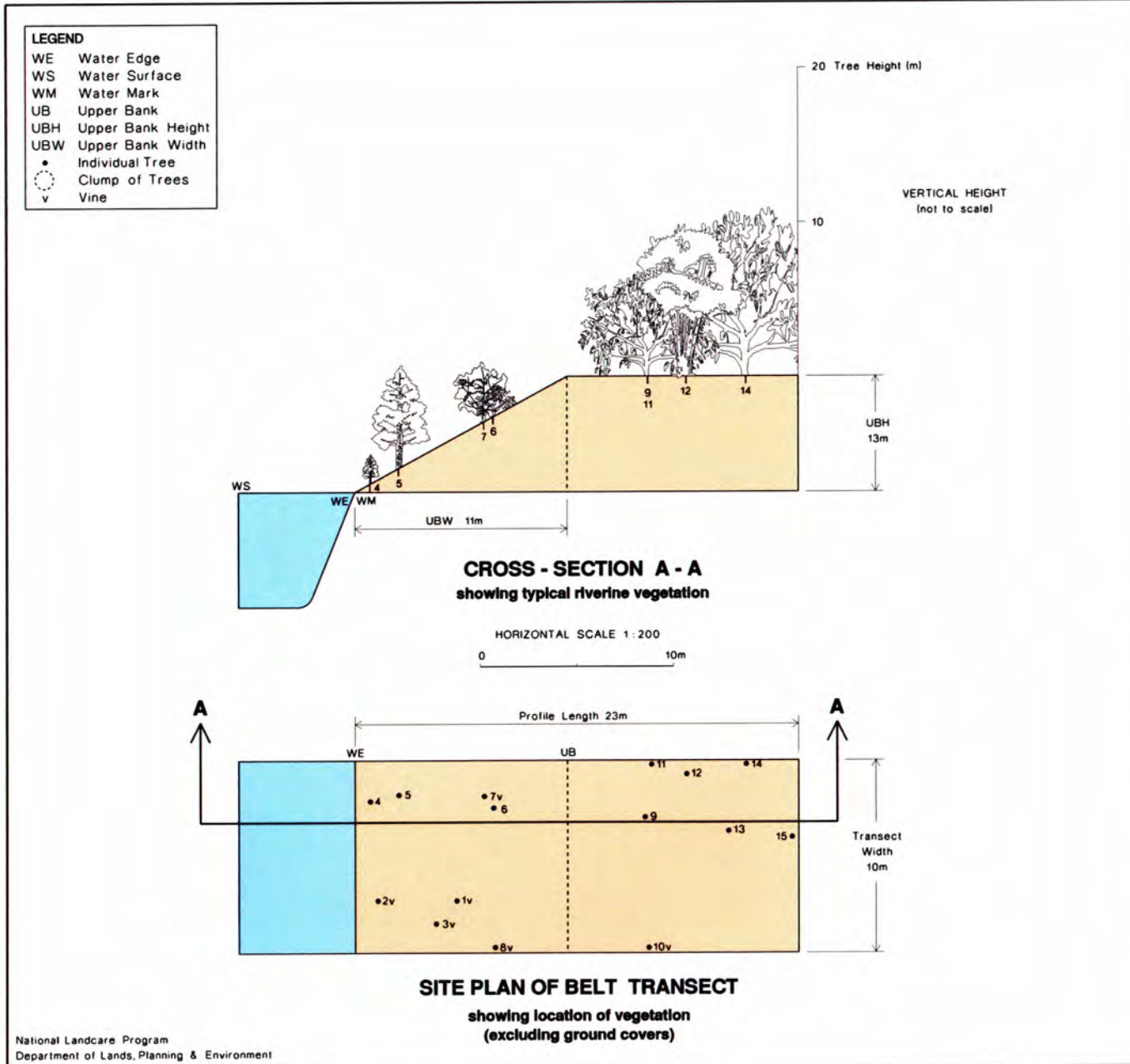


Figure 10.64 Cross-section Surveys for Site 6/4 – Green Ant Creek



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1, 7	4-19	<i>Casuarina cunninghamiana</i>
2	3	<i>Melaleuca argentea</i> or <i>Melaleuca leucadendra</i>
3, 8	8-9	<i>Barringtonia acutangula</i>
4, 5	2-7	<i>Nauclea orientalis</i>
6, 9-11	2.2-11	<i>Cathormion umbellatum</i>
12	10	<i>Bambusa arnhemica</i>
13	12	<i>Eucalyptus papuana</i>
14, 15	11	<i>Strychnos lucida</i>

OTHER SPECIES LOCATED AT SITE:

Tree/Shrub: *Flacourtia territorialis*

Trees: *Pandanus aquaticus*

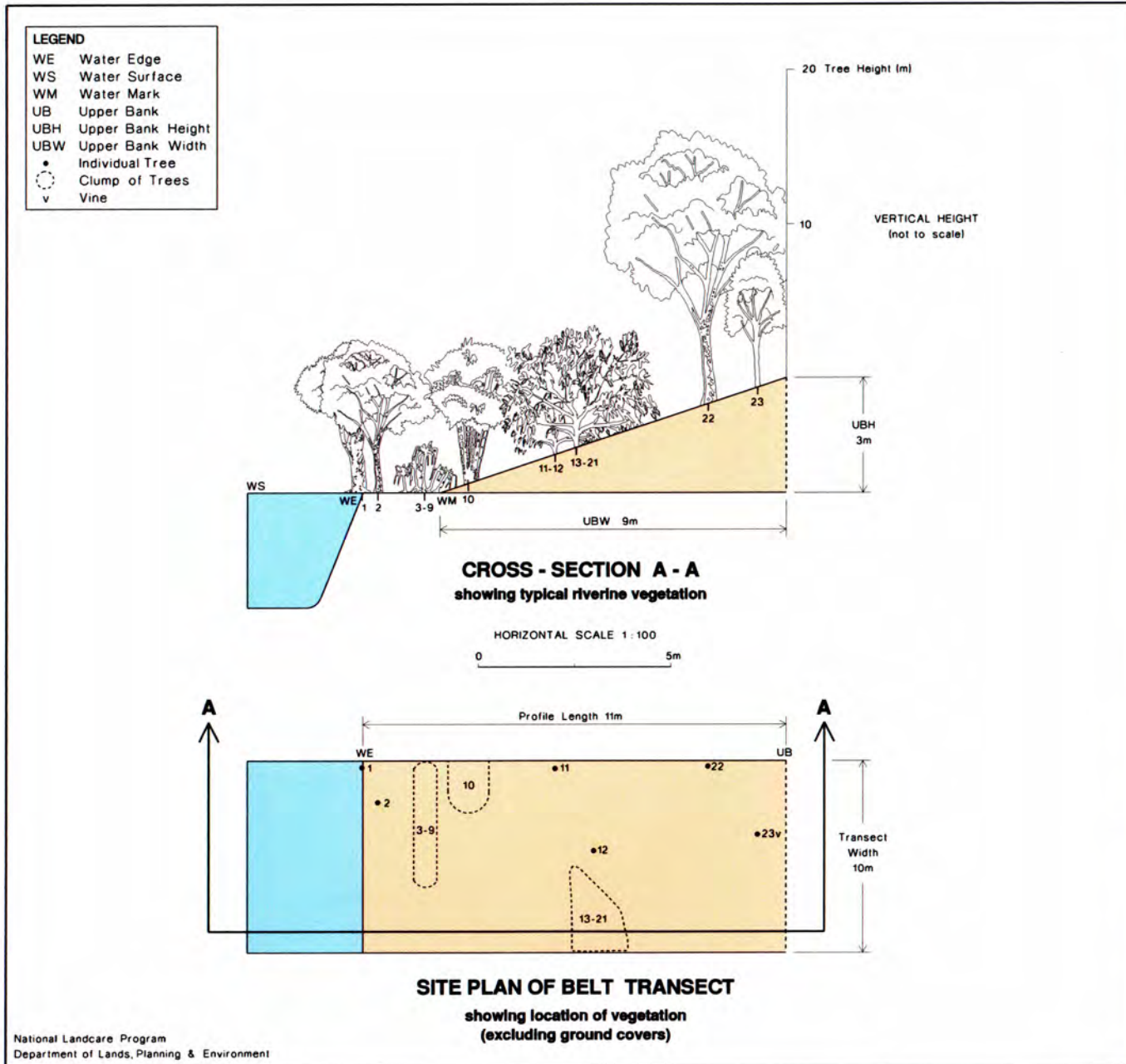
*Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 - Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

GREEN ANT CREEK		Date 4.7.95
Sub-section 6	Site 1	Figure 10.65



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1	10	<i>Melaleuca argentea</i>
2, 22	10-18	<i>Acacia auriculiformis</i>
3-9	2.5-4	<i>Pandanus aquaticus</i>
10	10	<i>Bambusa arnhemica</i>
11-21	4-8	<i>Strychnos lucida</i>
23	9	<i>Polyalthia nitidissima</i>

OTHER SPECIES LOCATED AT SITE:

Forbs: *Cyperus conicus* or *Cyperus javanicus*

Grasses: *Aristida latifolia*

Shrub/Tree: *Ficus scobina*, *Flacourtia territorialis*

Trees: *Maranthes corymbosa*, *Nauclea orientalis*, *Terminalia macrocarpa*

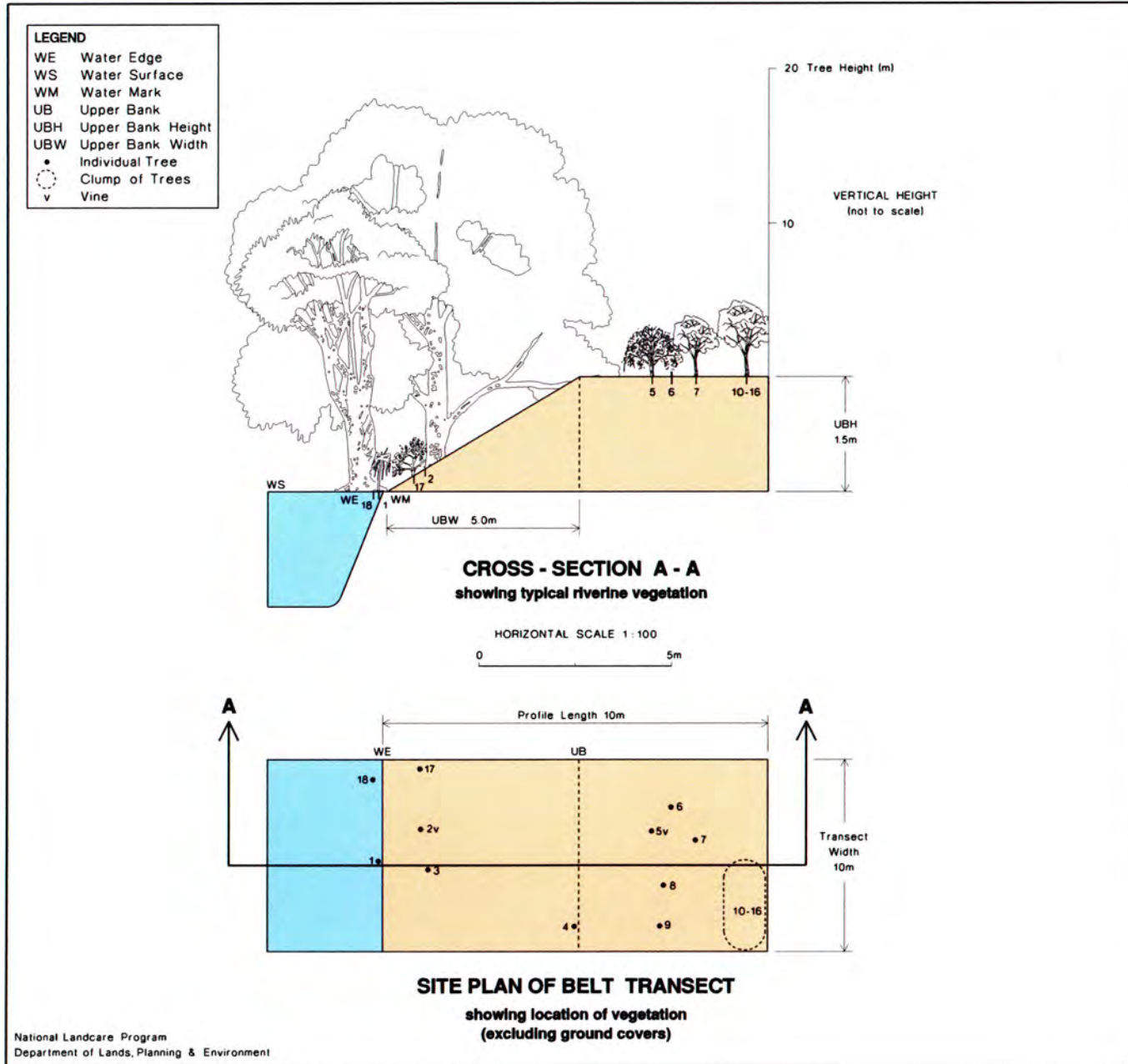
* Exotic species

- NOTES**
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 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
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TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

GREEN ANT CREEK	Date 29.6.95
Sub-section 6 Site 2	Figure 10.66



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1	3	<i>Pandanus aquaticus</i>
2	25	<i>Lophostemon grandiflorus</i>
3	9	<i>Canarium australianum</i>
4, 6-16	2-5	<i>Acacia auriculiformis</i>
5	3.5	<i>Denhamia obscura</i>
17	3	<i>Glochidion xerocarpum</i>
18	20	<i>Melaleuca viridiflora</i>

OTHER SPECIES LOCATED AT SITE:

Grasses: *Aristida latifolia*
Chrysopogon fallax

Trees: *Litsea glutinosa*
Strychnos lucida

Weeds: **Pennisetum polystachion* (Noxious)
**Hyptis suaveolens* (Noxious)

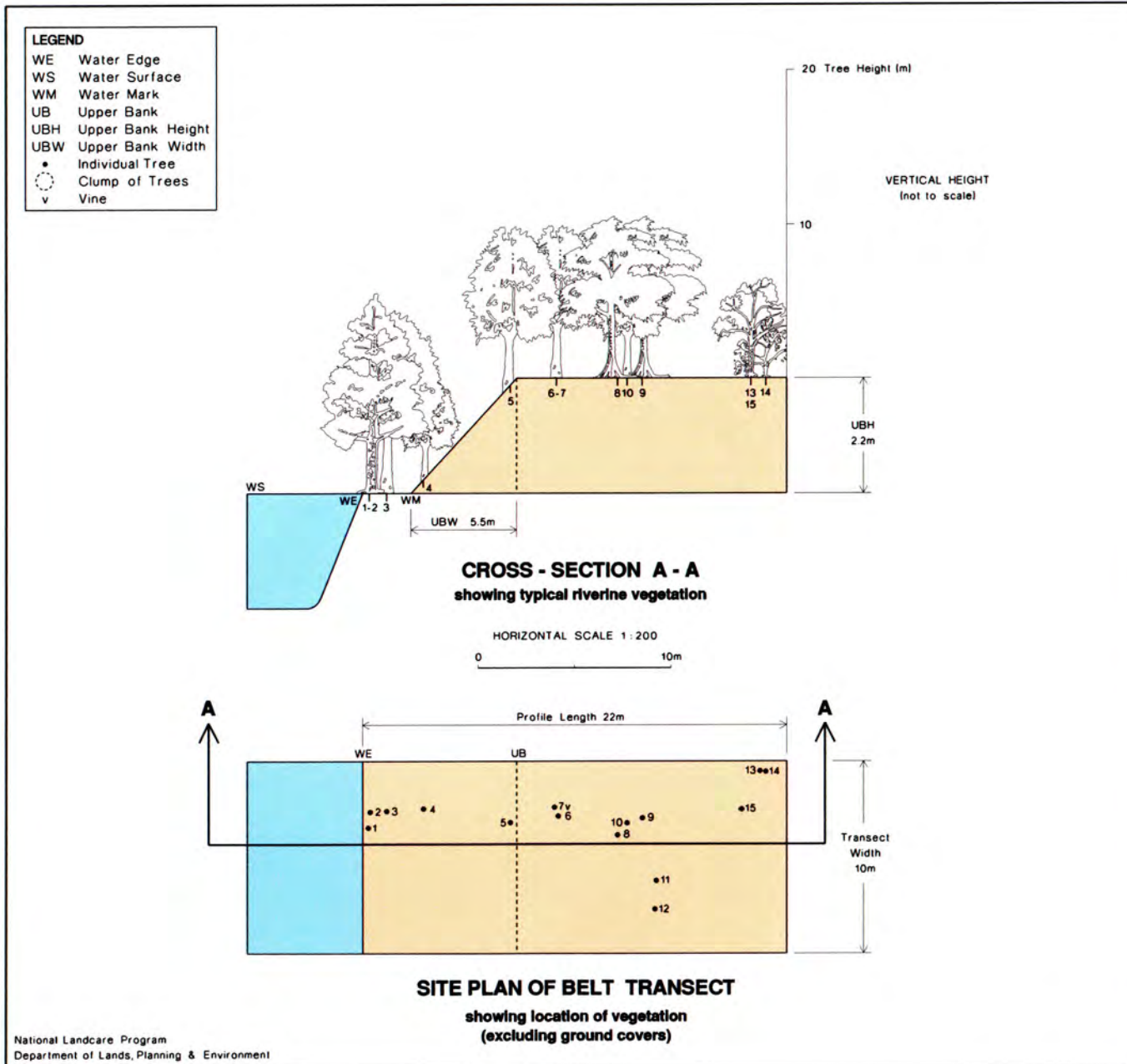
*Exotic species

- NOTES**
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 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 - Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

GREEN ANT CREEK	Date 29.6.95
Sub-section 6 Site 3	Figure 10.67



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1, 2	10-13	<i>Nauclea orientalis</i>
3-7, 10	7-12	<i>Terminalia macrocarpa</i>
8, 9, 11, 12	7-11	<i>Ficus racemosa</i>
13, 15	5-6.5	<i>Eucalyptus bigalerita</i>
14	4	<i>Bridelia tomentosa</i>

OTHER SPECIES LOCATED AT SITE:

- Forbs:** *Triumfetta* sp.
- Grasses:** *Bambusa arnhemica*
Heteropogon contortus
- Weeds:** **Hyptis suaveolens* (Noxious)
**Sida acuta* (Noxious)

*Exotic species

NOTES

- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
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- The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
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TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

GREEN ANT CREEK		Date 27.6.95
Sub-section 6	Site 4	Figure 10.68

Table 10.18 Major Vegetation Species Recorded at Site 5 on Station Creek located within Sub-section 6 – Green Ant Creek

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Site Where Recorded (Sub-section No. / Site No.)
<i>Acacia auriculiformis</i>	Tree		6/5
<i>Bambusa arnhemica</i>	Grass (Bamboo)		6/5
<i>Cynodon dactylon</i>	Grass		6/5
<i>Eleocharis geniculata</i>	Forb		6/5
<i>Melaleuca leucadendra</i>	Tree		6/5
<i>Nauclea orientalis</i>	Tree		6/5
<i>Pandanus aquaticus</i>	Tree		6/5
<i>Terminalia erythrocarpa</i>	Tree		6/5

* Declared Noxious Weed within the Northern Territory



Barringtonia acutangula



View along reach on Green Ant Creek (Site 6/2)



View along reach at Site 6/1 on Green Ant Creek near the junction with Daly River

10.7 Douglas River

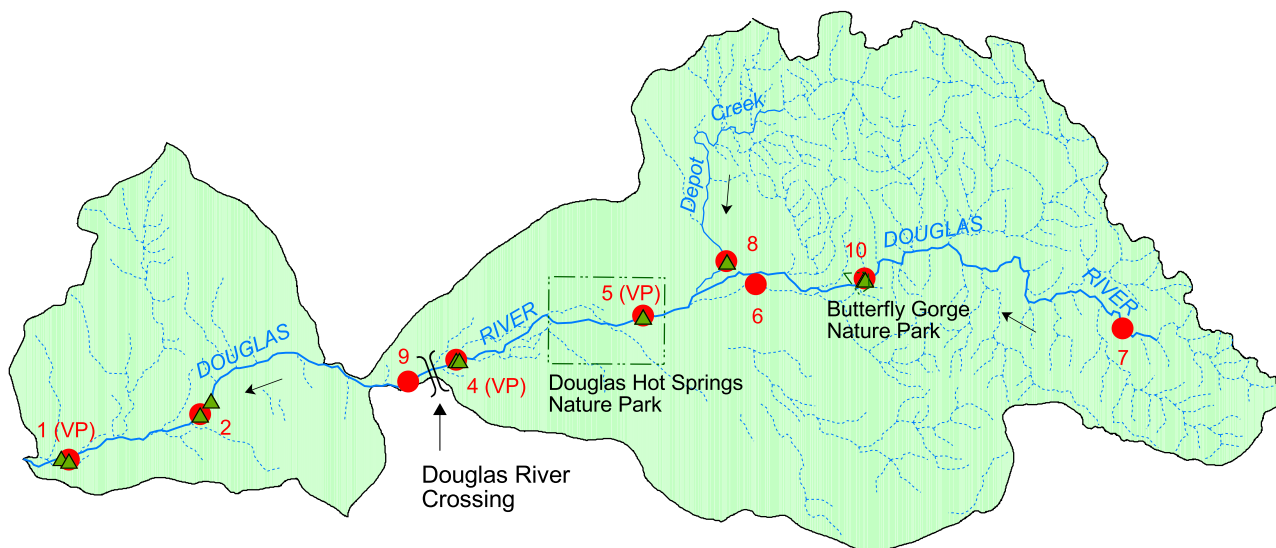
10.7.1 Douglas River

Sub-section 7 encompasses the Douglas River, excluding the catchment area of Hayes and Middle Creeks. Of the 9 sites located in this sub-section, 7 were fully assessed (refer Table 10.19 and Map 36).

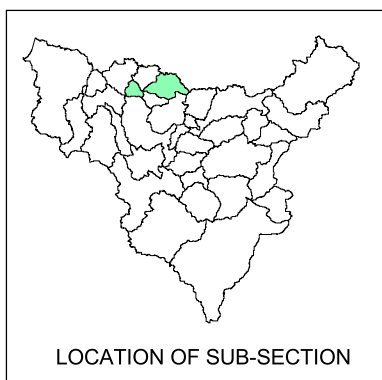
Table 10.19 Summary of Survey Information for Sub-section 7 – Douglas River

Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
1	Douglas River	A	Rapid	√	√	
		B	Pool	√		
2	Douglas River	A	Pool	√		
		B	Riffle	√		
4	Douglas River	A	Pool	√	√	
		B	Riffle	√		
5	Douglas River	A	Riffle	√	√	
		B	Pool	√		
6	Douglas River					√
7	Douglas River					√
8	Depot Creek	A	Glide	√		
		B	Pool	√		
9	Douglas River					√
10	Daly River	A	Pool	√		
		B	Waterfall	√		
		C	Run	√		





Area - 1,116 km²



LEGEND	
● 5	Site
▲	Sample Point
(VP)	Vegetation Profile
—	Longitudinal Profile Survey
—	River
—	Creek
←	Flow direction

DOUGLAS RIVER

SUB-SECTION 7

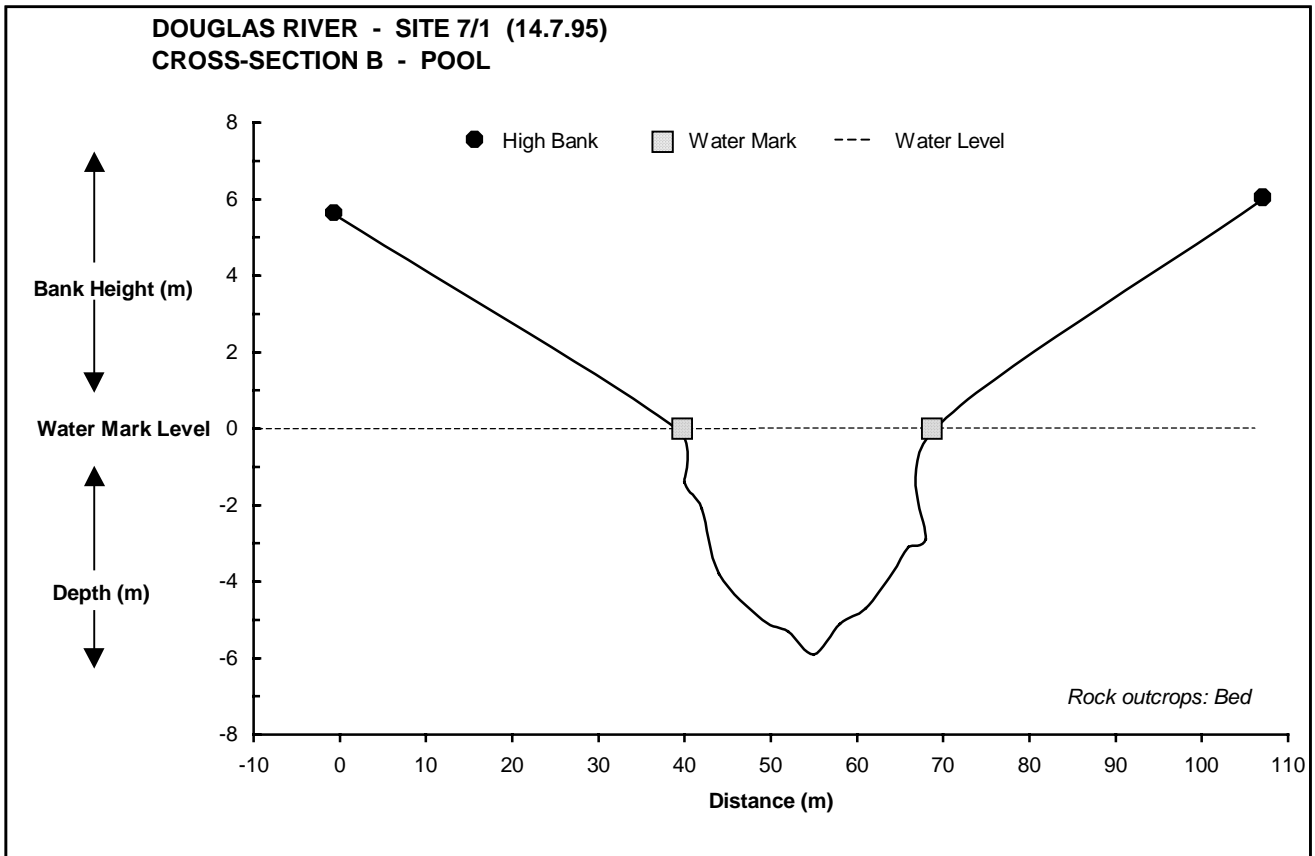
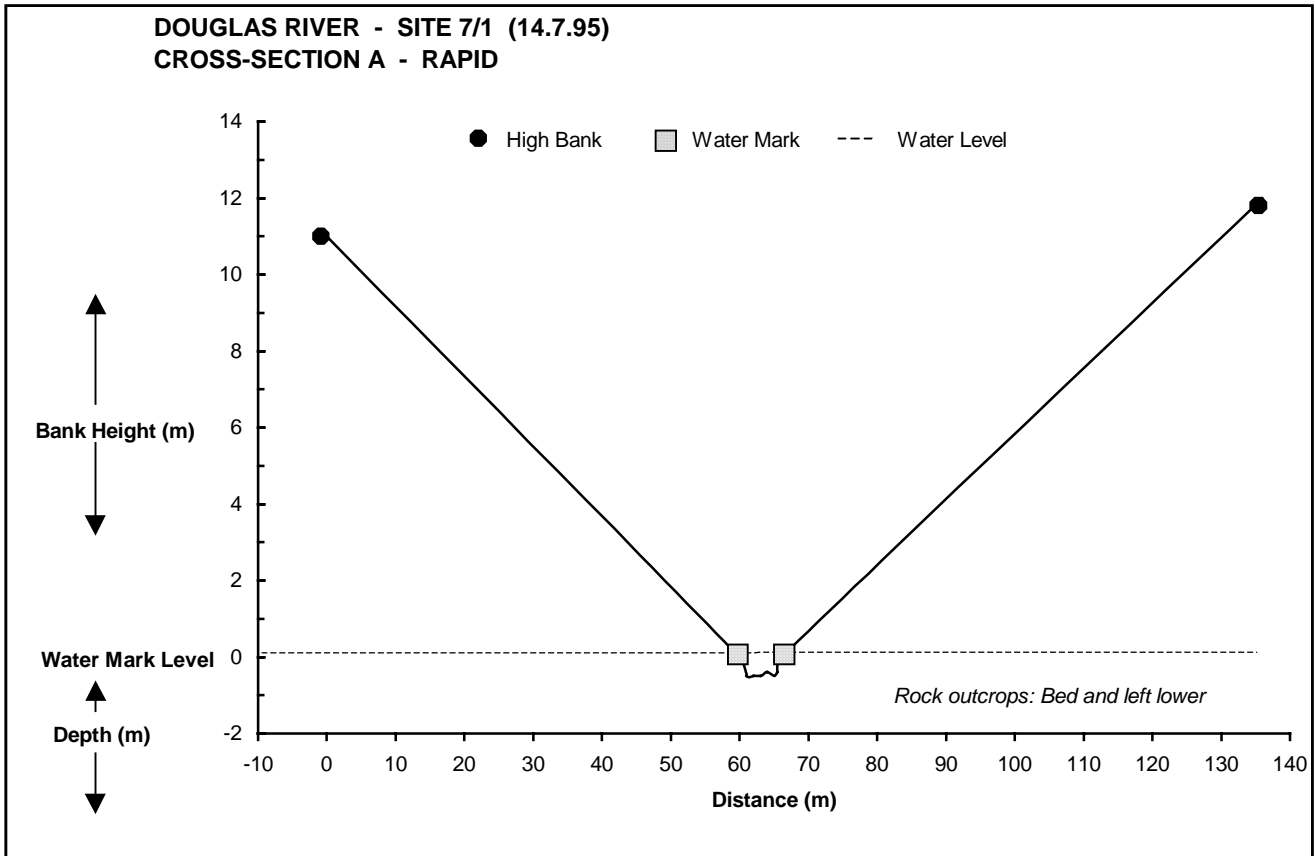


Figure 10.69 Cross-section Surveys for Site 7/1 – Douglas River

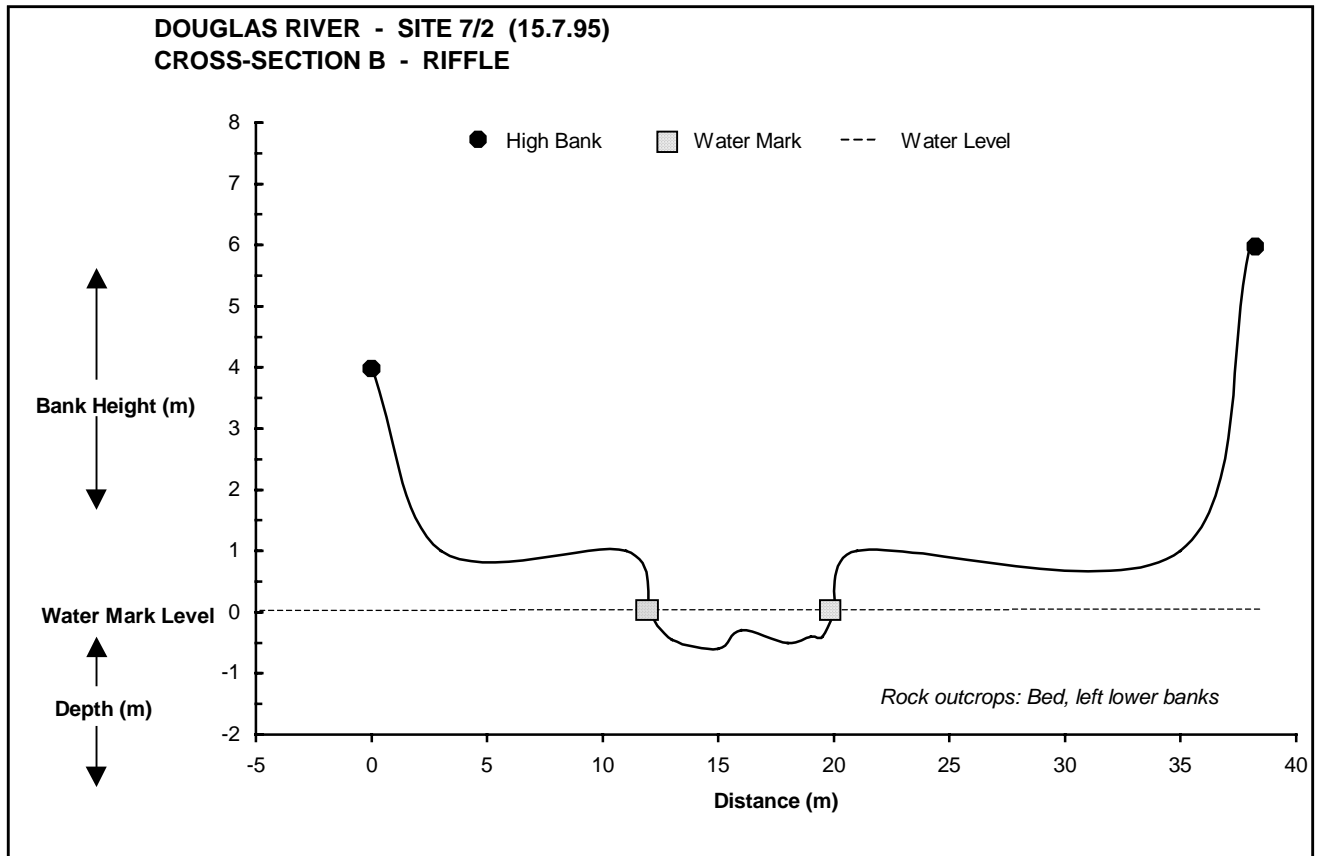
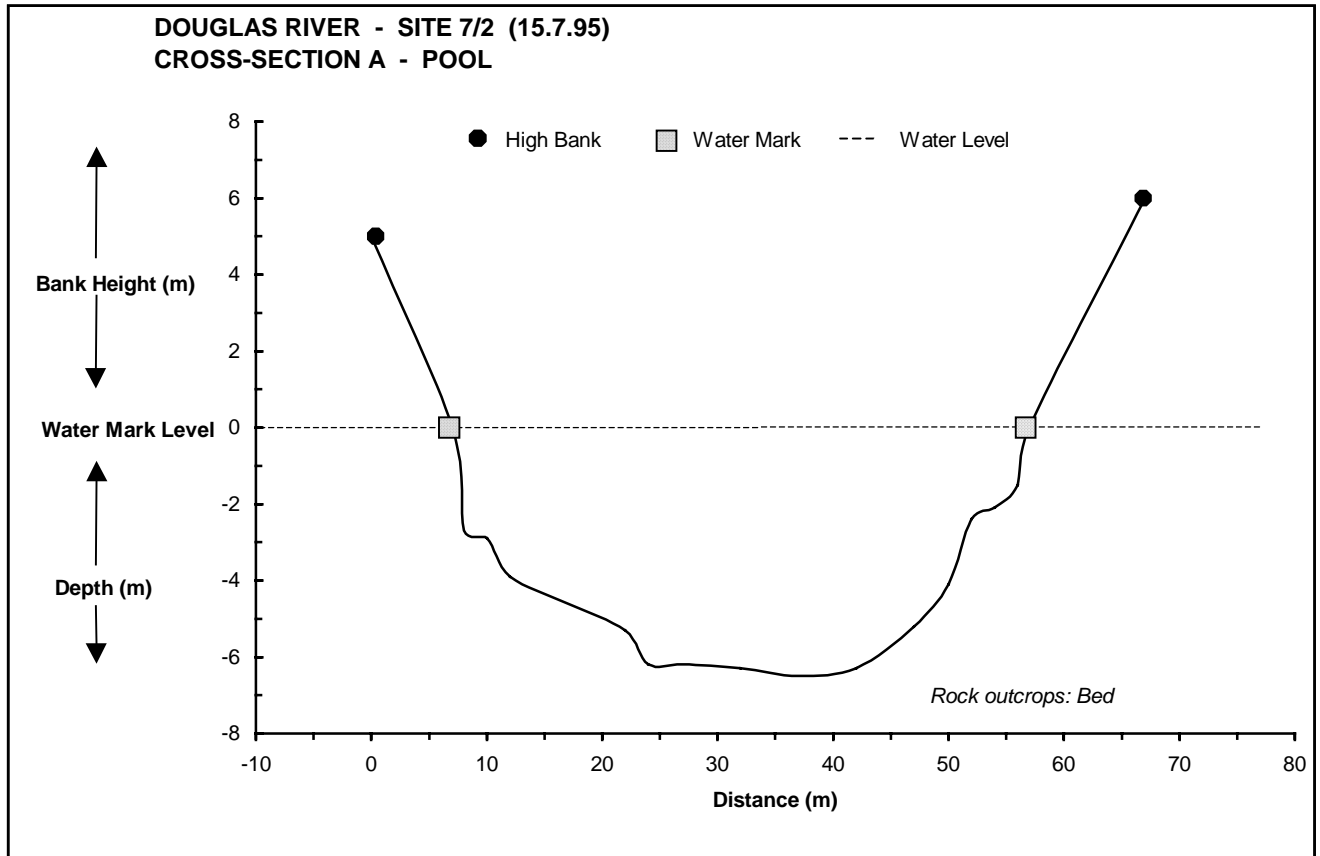


Figure 10.70 Cross-section Surveys for Site 7/2 – Douglas River

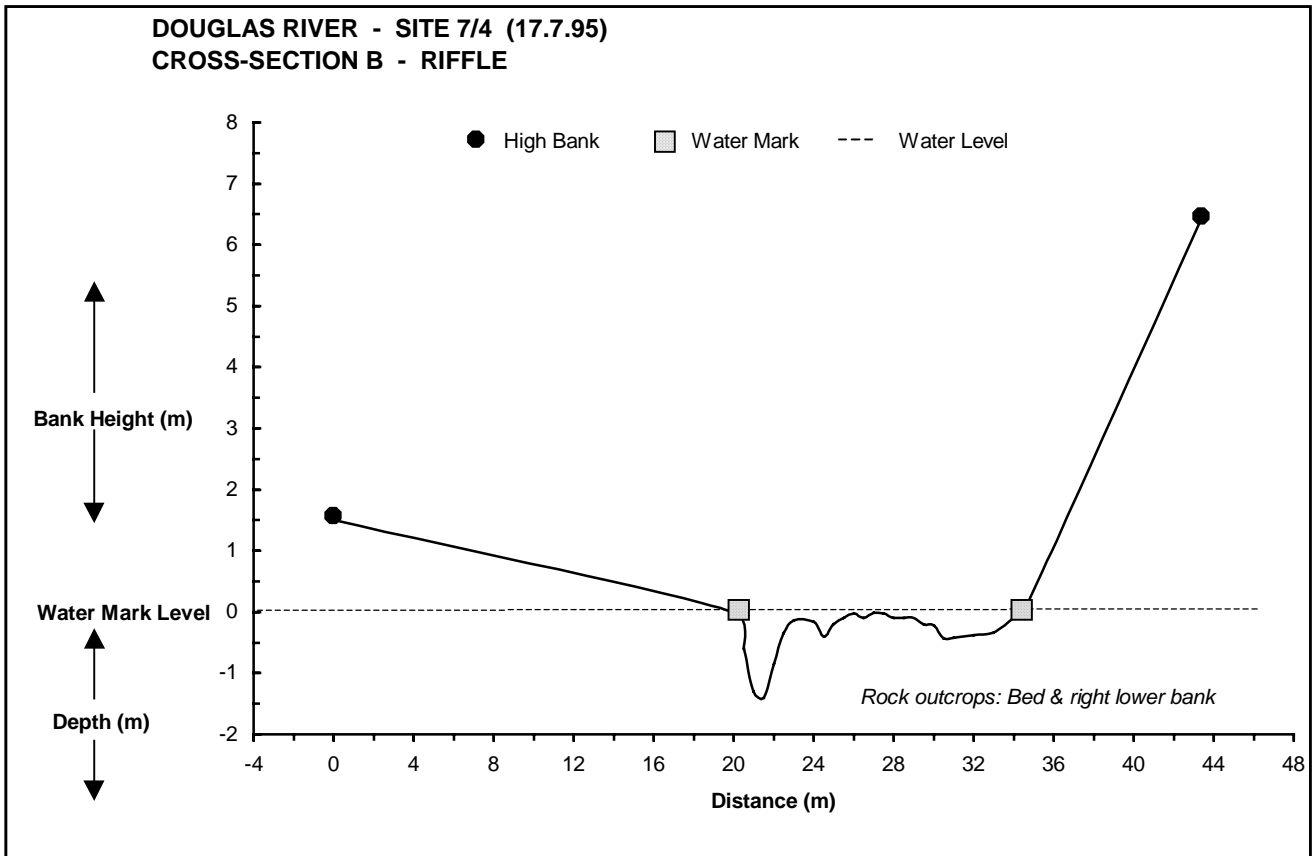
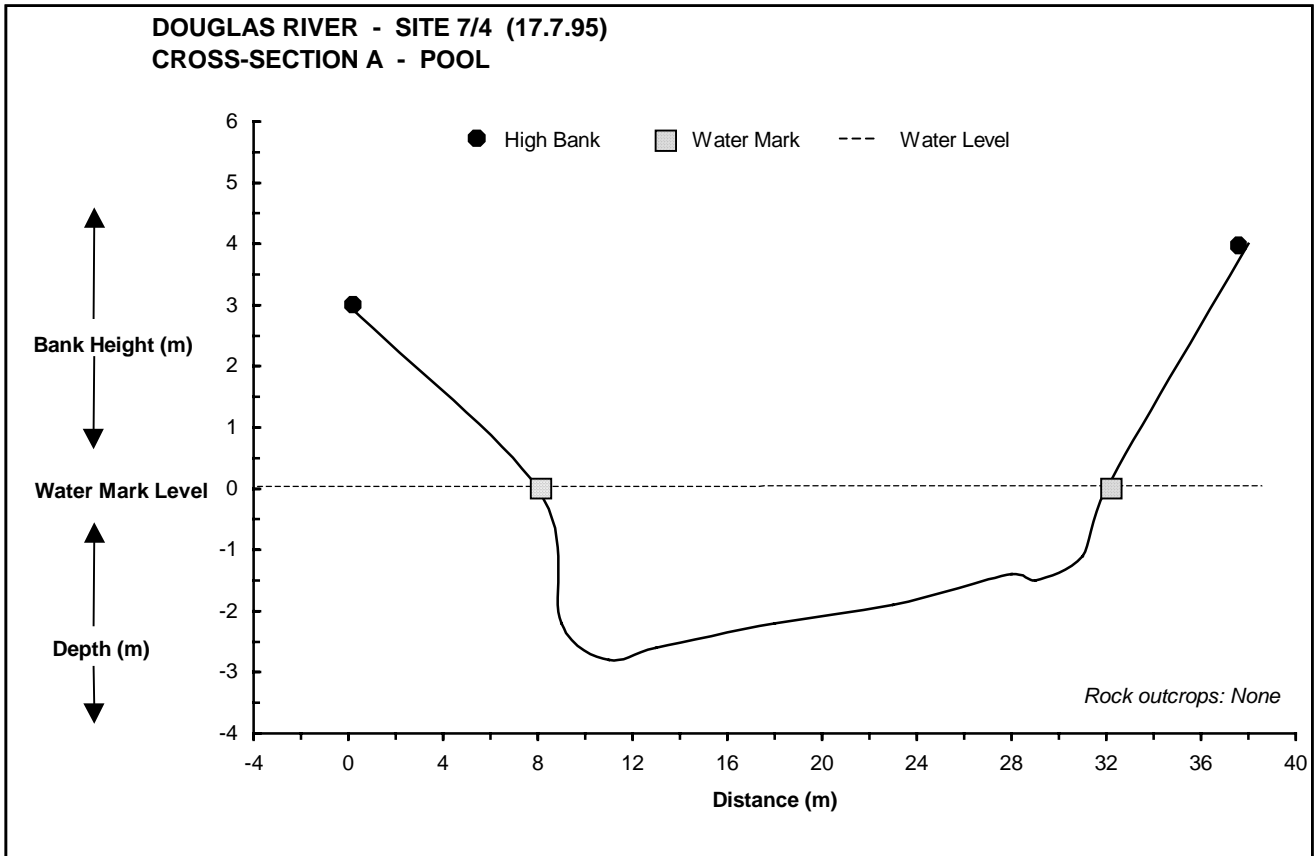


Figure 10.71 Cross-section Surveys for Site 7/4 – Douglas River

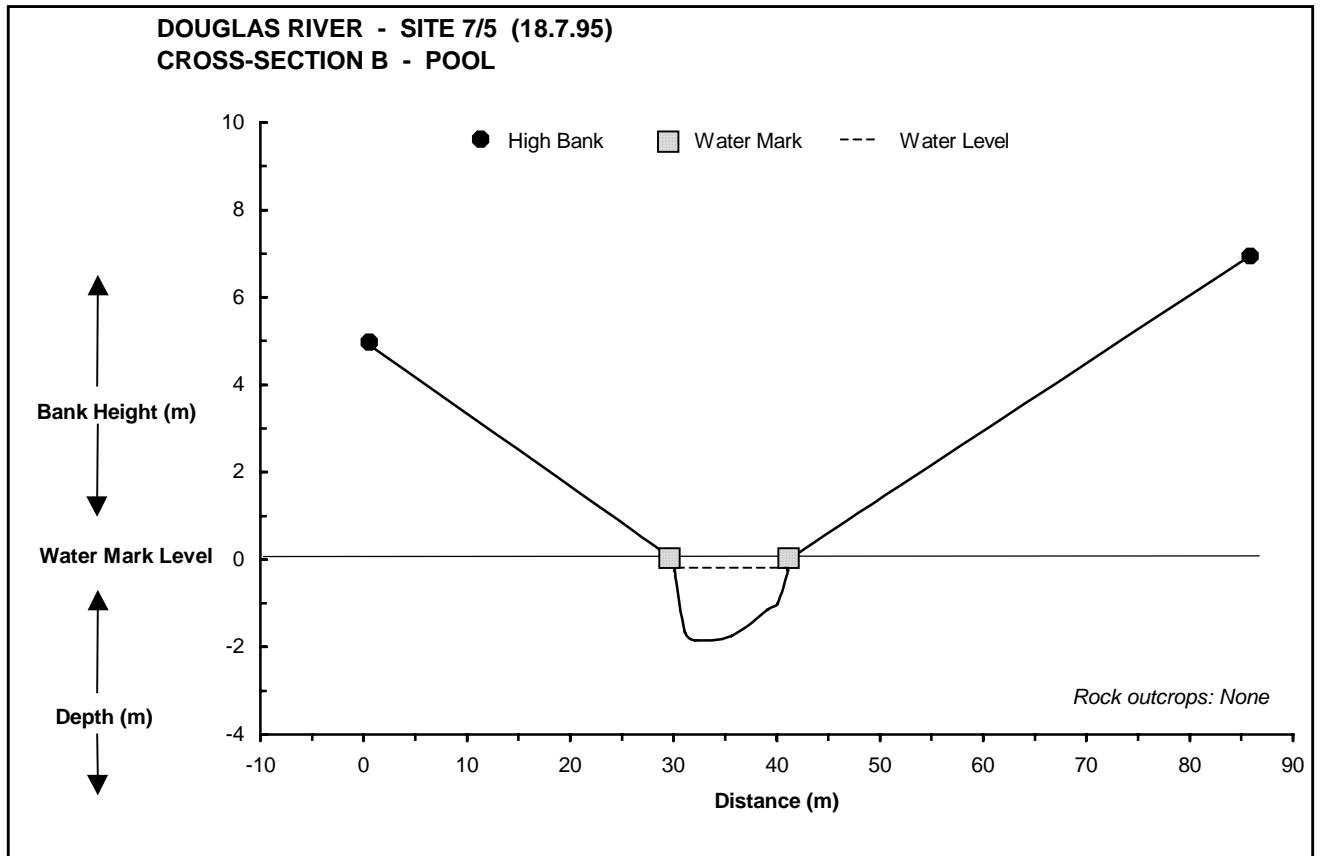
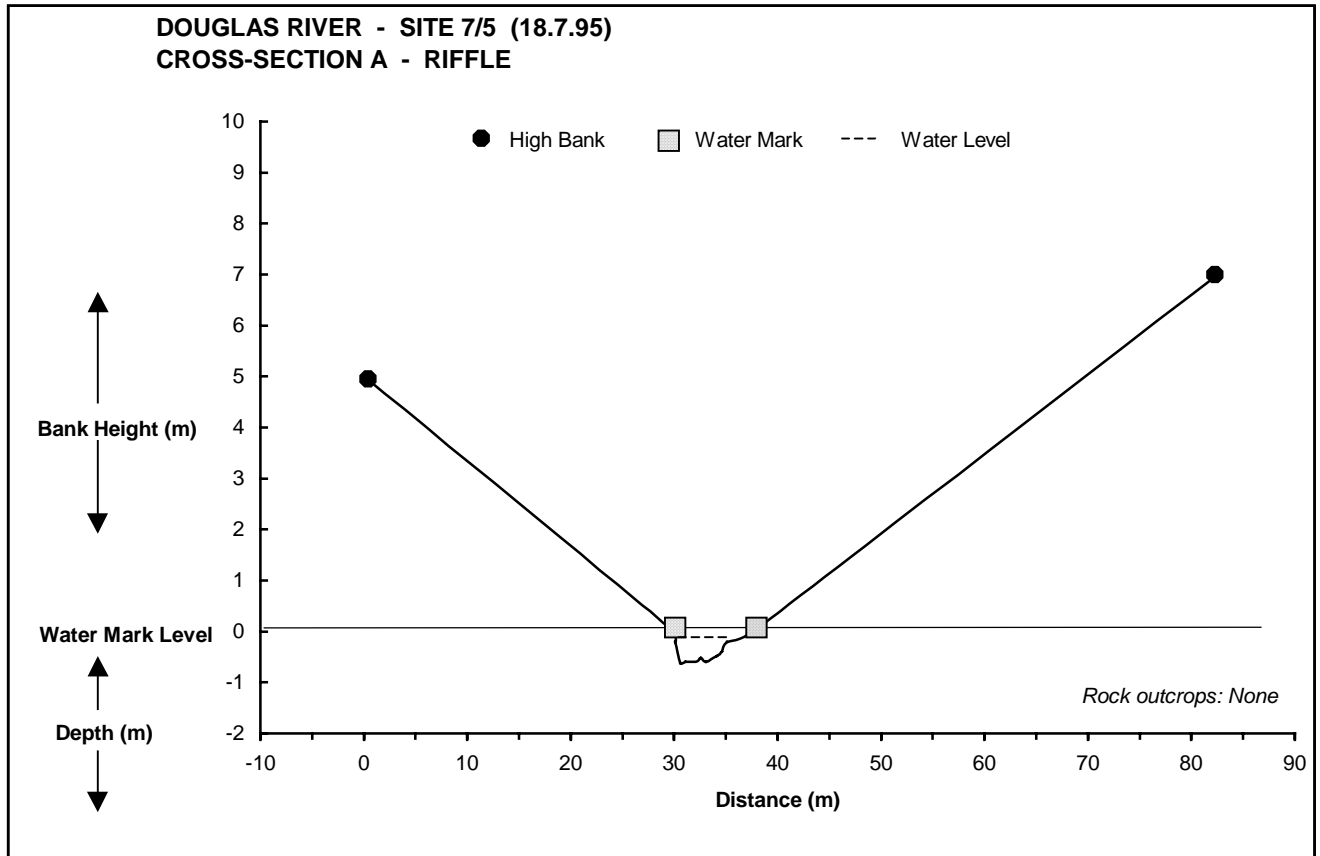


Figure 10.72 Cross-section Surveys for Site 7/5 – Douglas River

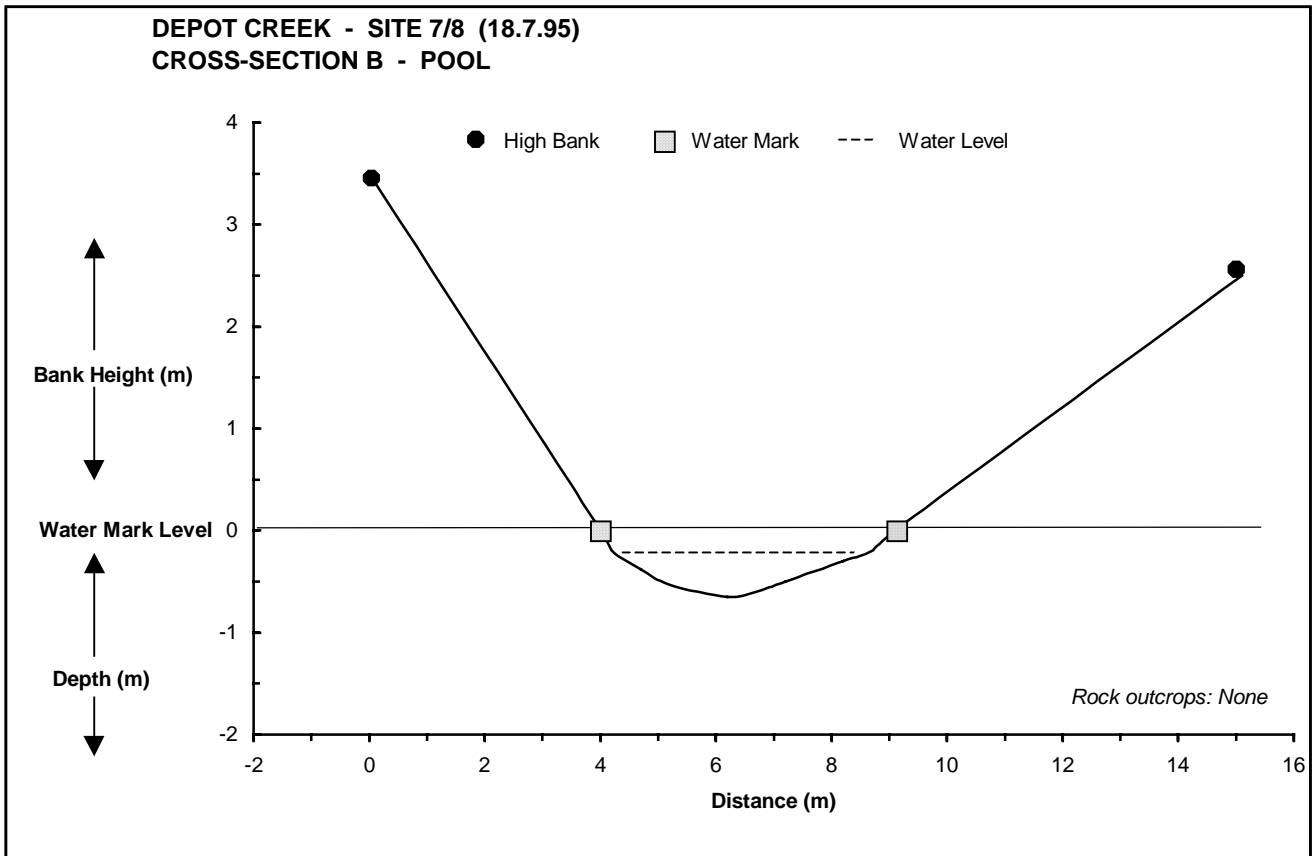
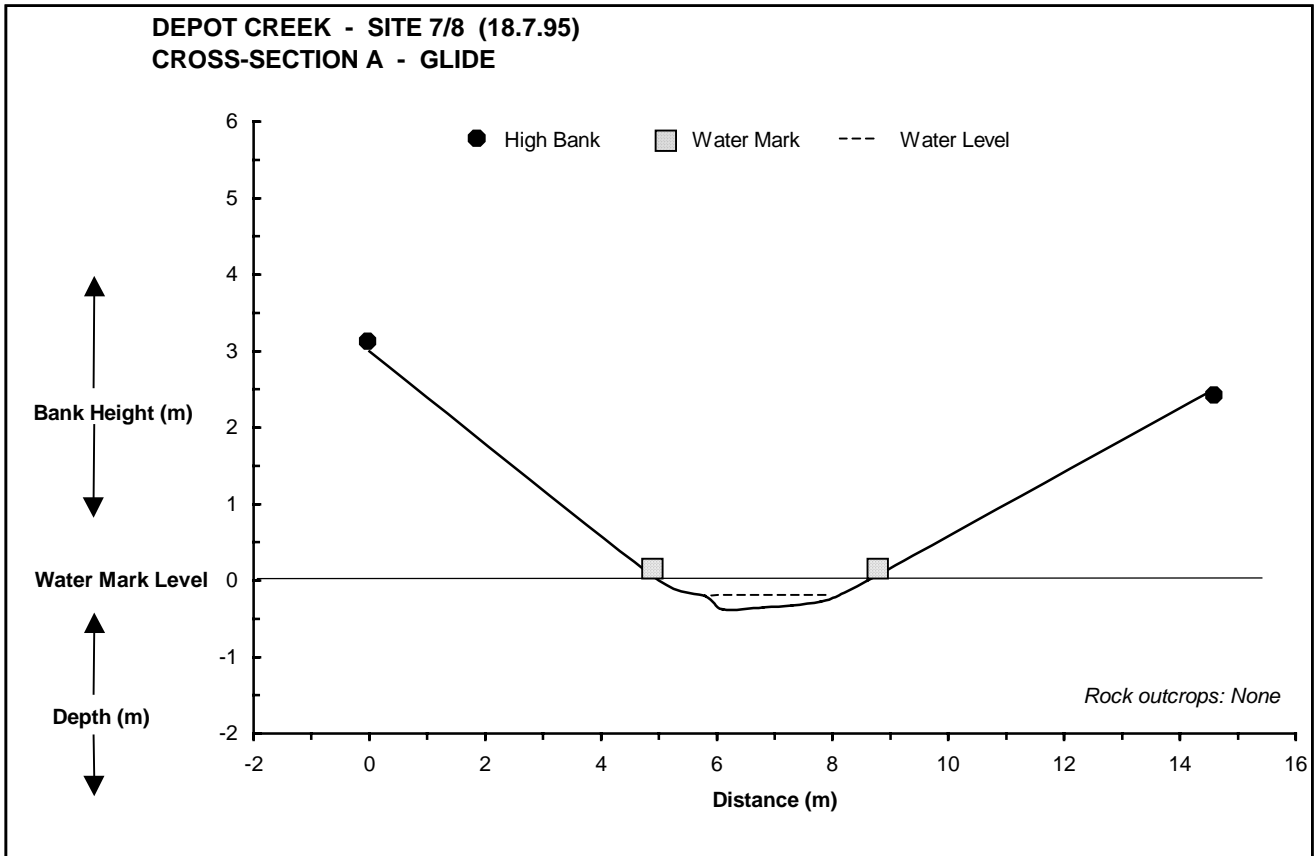


Figure 10.73 Cross-section Surveys for Site 7/8 – Depot Creek

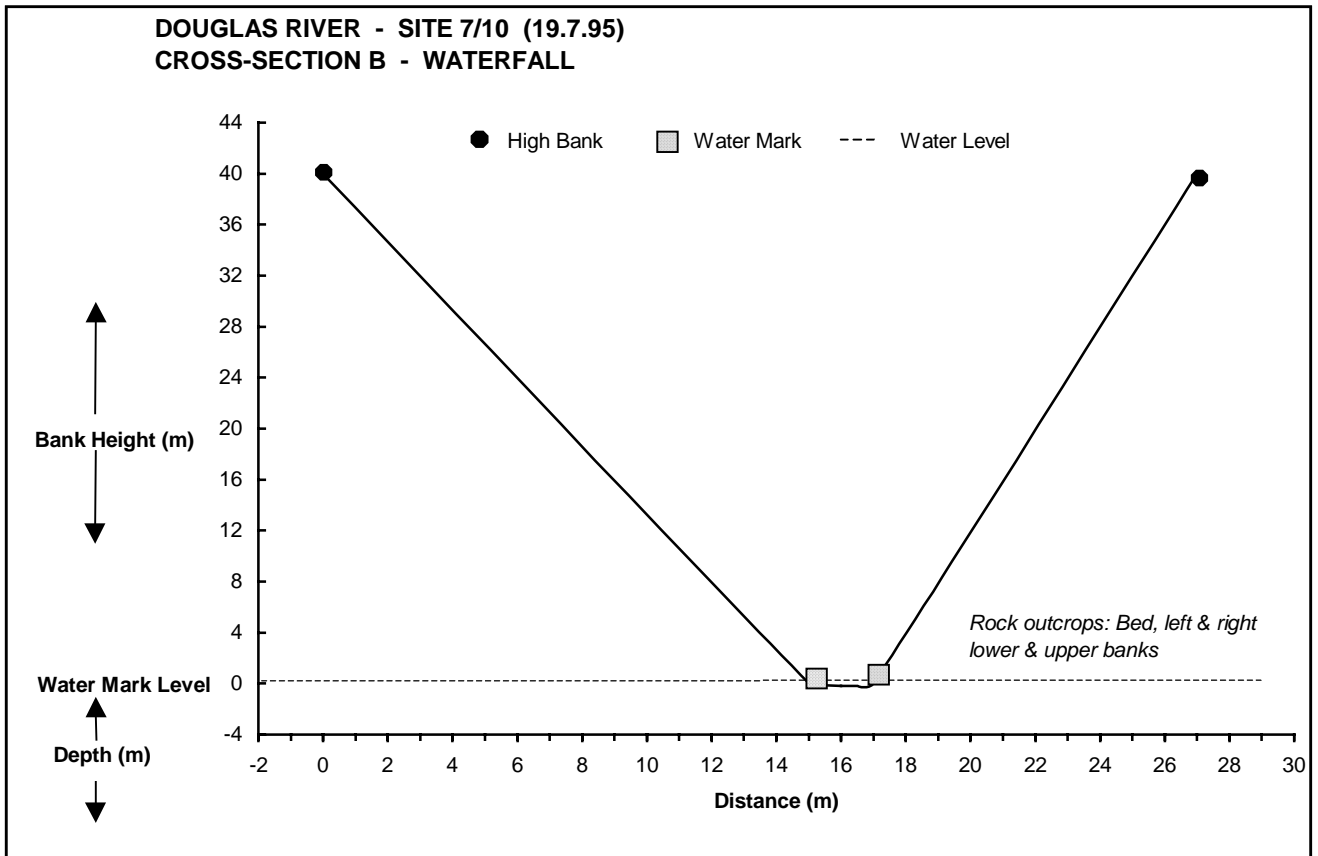
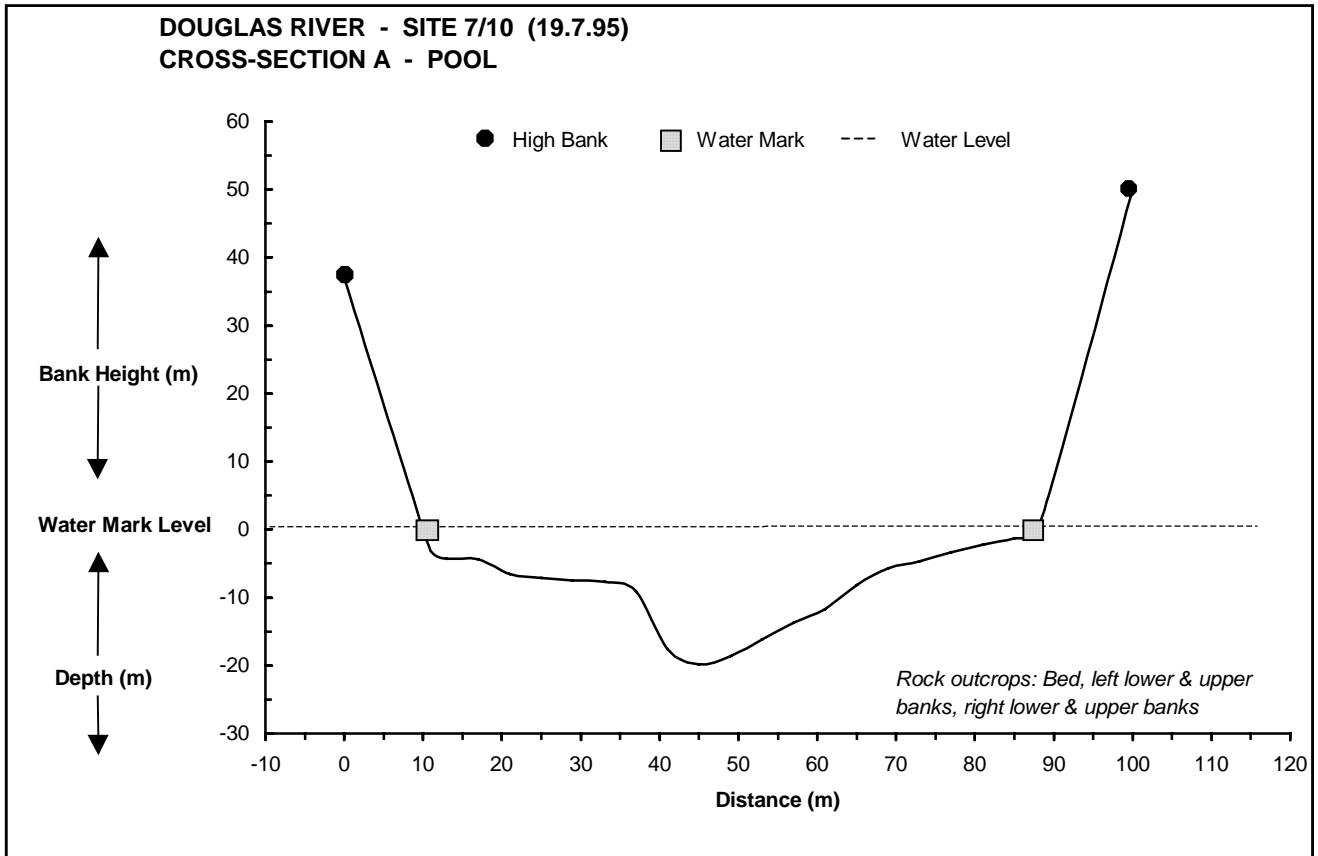
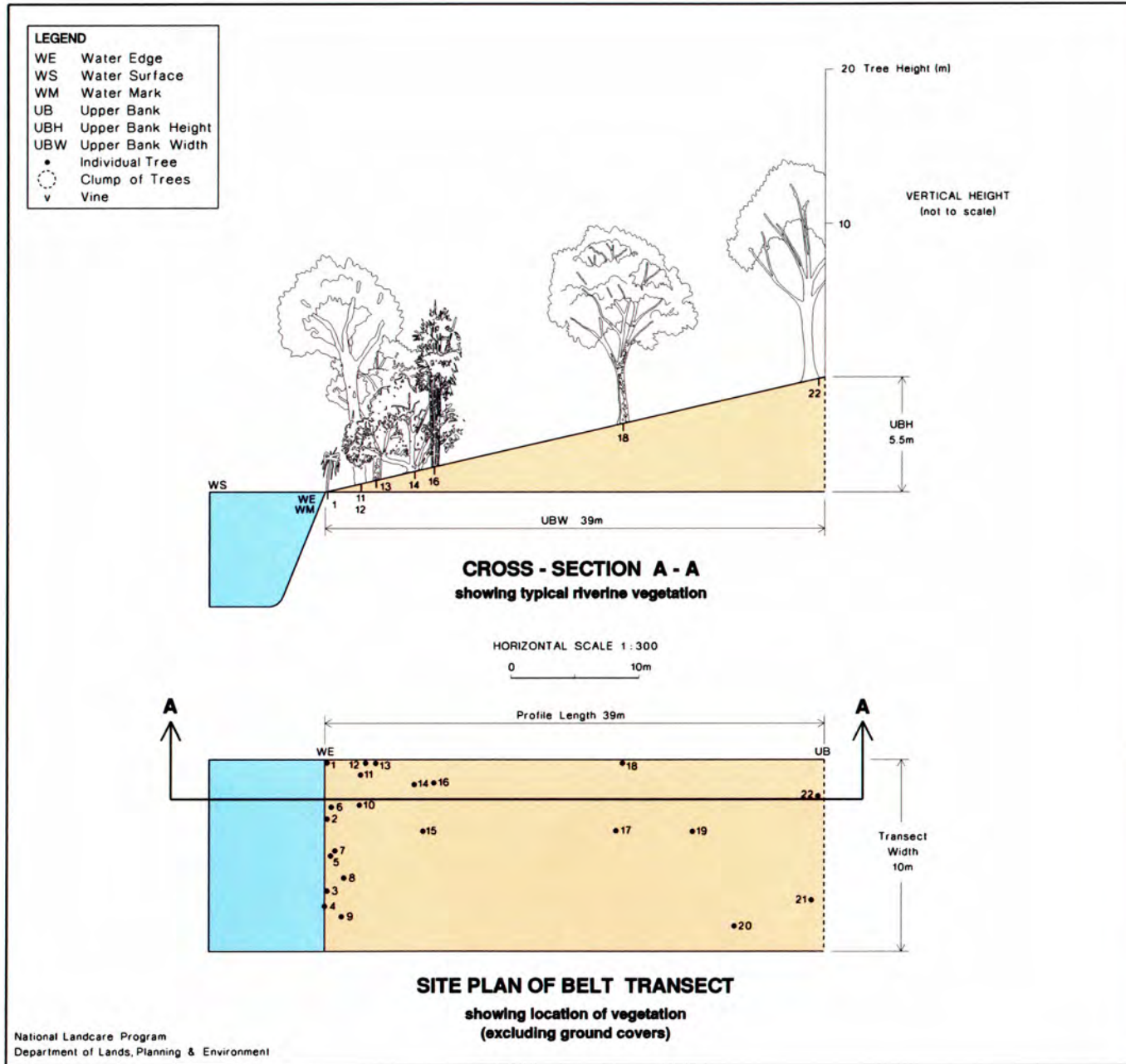


Figure 10.74 Cross-section Surveys for Site 7/10 – Douglas River



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1 (2 trees)	3	<i>Pandanus aquaticus</i>
2-3, 6, 8, 10, 14	6-11	<i>Barringtonia acutangula</i>
4, 11, 12	13-15	<i>Melaleuca argentea</i> or <i>Melaleuca leucadendra</i>
5, 7	4-14	<i>Ficus racemosa</i>
9	4.5	<i>Lophostemon grandiflorus</i>
13	10	Unidentified tree species
15, 20	16-18	<i>Carallia brachiata</i>
16	11	<i>Bambusa arnhemica</i>
17-19, 21	13-19	<i>Acacia auriculiformis</i>
22	15	<i>Eucalyptus papuana</i>

OTHER SPECIES LOCATED AT SITE:

Ferns: *Ampelopteris prolifera*

Grasses: *Phragmites karka*

Trees: *Neuclea orientalis*
Strychnos lucida
Syzygium forte

Vines: *Flagellaria indica*

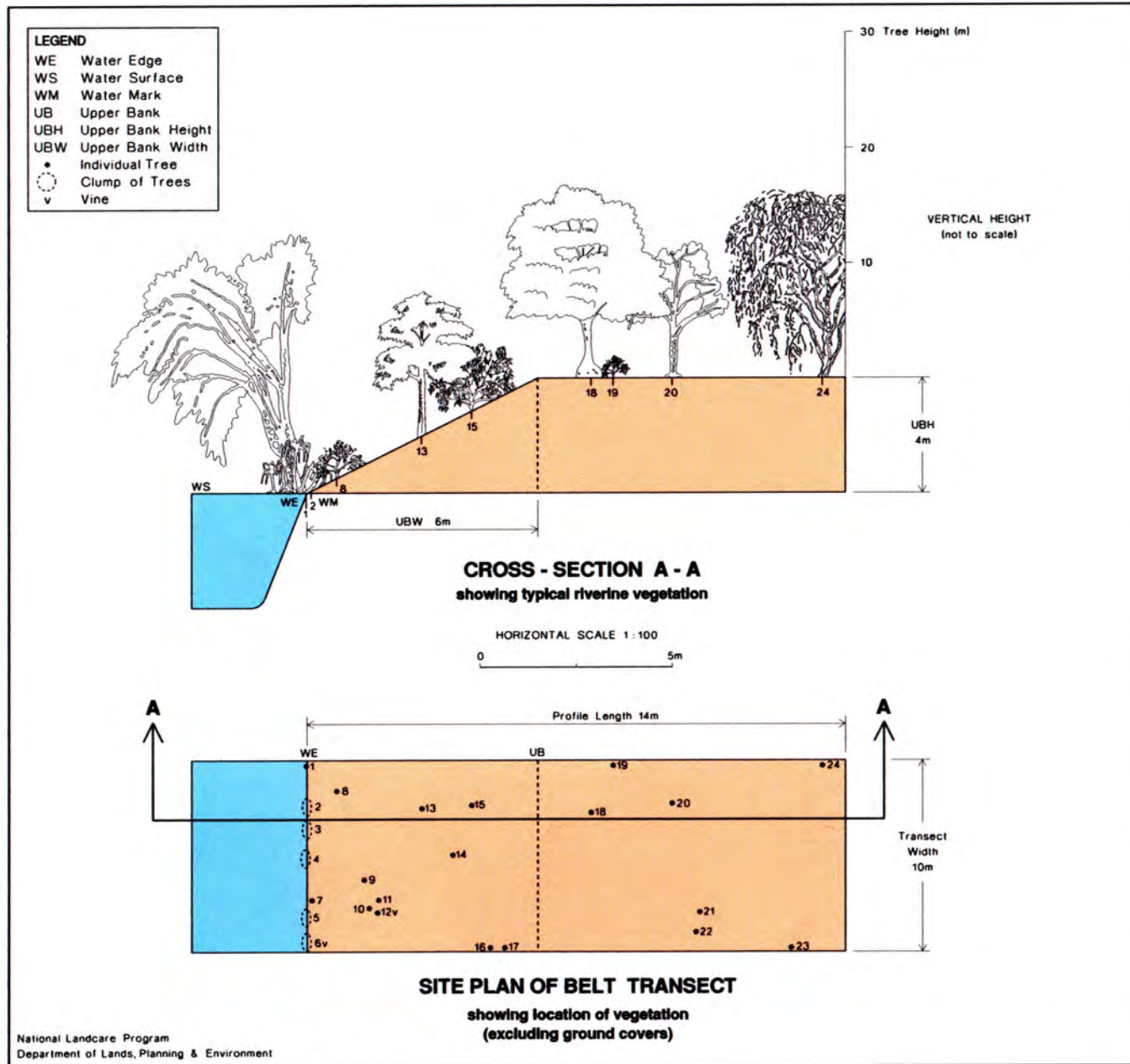
* Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
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TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

DOUGLAS RIVER	Date 14.7.95
Sub-section 7 Site 1	Figure 10.75



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1	23	<i>Mealeuca leucadendra</i>
2-6 (22 trees)	2.5-6	<i>Pandanus aquaticus</i>
7	6	<i>Barringtonia acutangula</i>
8-12	2-3.5	<i>Nauclea orientalis</i>
13	13	<i>Carallia brachiata</i>
14, 16	5.5-7	<i>Pouteria sericea</i>
15	6	<i>Diospyros calycantha</i>
17, 24	17-20	<i>Meranthes corymbosa</i>
18	18	<i>Terminalia macrocarpa</i>
19	2	<i>Syzygium</i> sp.
20	12	<i>Eucalyptus papuana</i>
21	1.5	<i>Flacourtia territorialis</i>
22	1.5	<i>Acacia auriculiformis</i>
23	18	<i>Eucalyptus polycarpa</i>

OTHER SPECIES LOCATED AT SITE:

- Forbs:** *Eleocharis geniculata*
- Grasses:** *Aristida latifolia*
- Tree/Shrub:** *Exocarpos latifolius*
- Trees:** *Brachychiton diversifolius*, *Canarium australianum*, *Denhamia obscura*, *Elaeocarpus arnhemicus*
- Vines:** *Flagellaria indica*, *Smilax australis*
- Weeds:** **Hyptis suaveolens* (Noxious)

*Exotic species

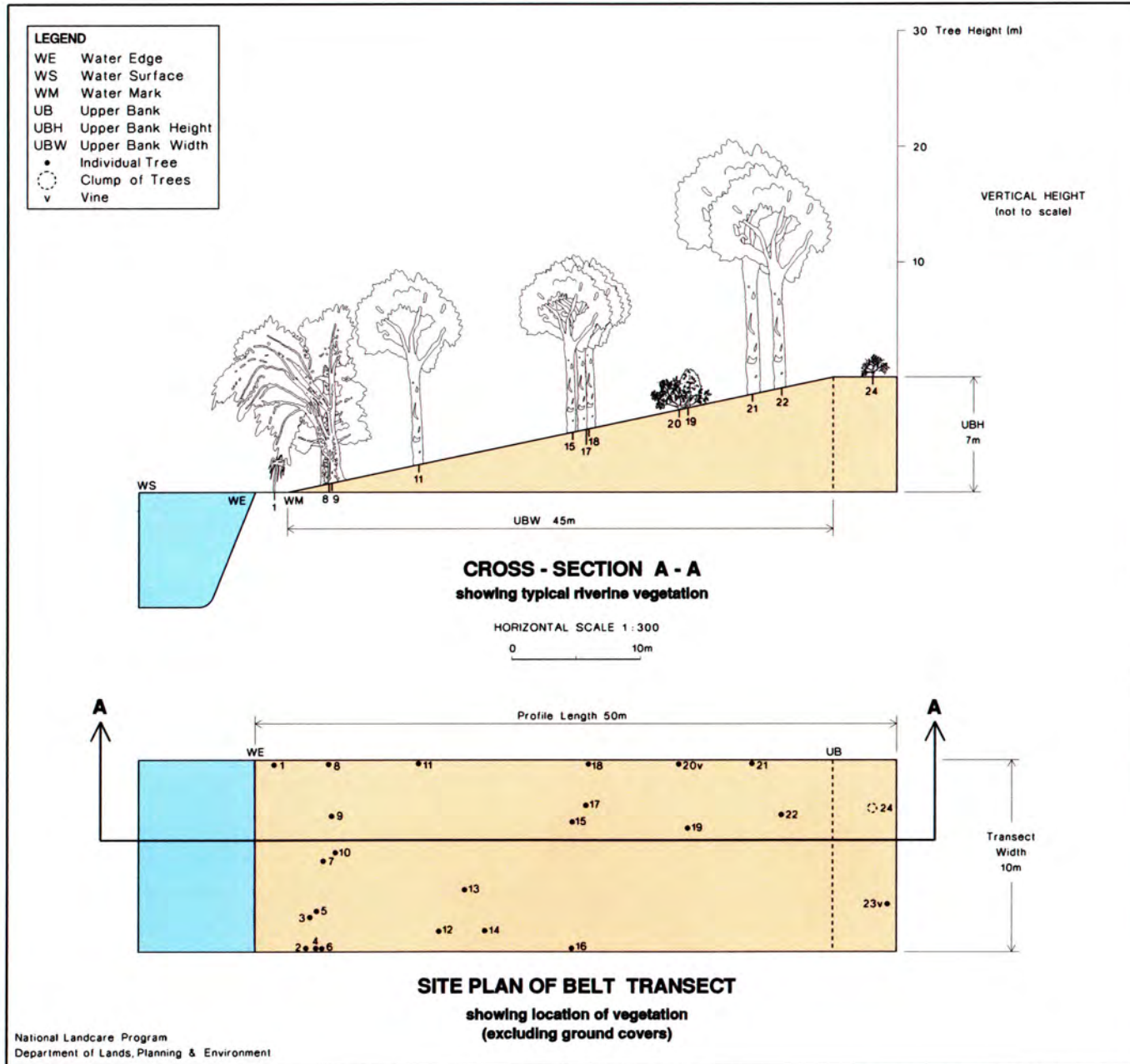
NOTES

- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
- Cross-section A-A includes all vegetation above the line marked through the belt transect.
- The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
- Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

DOUGLAS RIVER	Date 10.76
Sub-section 7 Site 4	Figure 10.76



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1-3	2-3.5	<i>Pandanus aquaticus</i>
4-7, 9-18, 21, 22	12-22	<i>Melaleuca leucadendra</i>
8	14	<i>Nauclea orientalis</i>
19, 23	3.5-11	<i>Timonius timon</i>
20	2.8	<i>Breynia cernua</i>
24 (10 trees)	2	<i>Glochidion xerocarpum</i>

OTHER SPECIES LOCATED AT SITE:

Forbs: *Blumea saxatilis*, *Nelsonia campestris*, *Staurogyne leptocaulis*

Grasses: *Cynodon dactylon*, *Cynodon radialis*, *Eragrostis cumingii*, *Germainia truncatiglumis*, *Heteropogon contortus*

Tree/Shrub: *Acacia holosericea*

Vines: *Passiflora foetida*

* Exotic species

NOTES

- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
- Cross-section A-A includes all vegetation above the line marked through the belt transect.
- The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
- Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT DALY RIVER CATCHMENT	
RIVERINE VEGETATION PROFILE	
DOUGLAS RIVER	Date 18.7.95
Sub-section 7 Site 5	Figure 10.77

Table 10.20 Major Vegetation Species Recorded at Sites 2, 6, 7, 8 and 10 located within Sub-section 7 – Douglas River

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Sites Where Recorded (Sub-section No. / Site No.)
<i>Acacia auriculiformis</i>	Tree		7/2, 7/7
<i>Acacia holosericea</i>	Low tree / shrub		7/6, 7/8
<i>Allophylus cobbe</i>	Low tree / shrub		7/2
<i>Alphitonia excelsa</i>	Low tree / shrub		7/7, 7/10
<i>Ampelopteris prolifera</i>	Fern		7/2, 7/10
<i>Bambusa arnhemica</i>	Grass (Bamboo)		7/2
<i>Barringtonia acutangula</i>	Low tree / shrub		7/2
<i>Bridelia tomentosa</i>	Low tree / shrub		7/8
<i>Calytrix brownii</i>	Low tree / shrub		7/10
<i>Canarium australianum</i>	Tree		7/8, 7/10
<i>Canthium schultzei</i>	Low tree / shrub		7/2
<i>Carallia brachiata</i>	Tree		7/2, 7/10
<i>Cupaniopsis anacardioides</i>	Low tree / shrub		7/2
<i>Cynodon radiatus</i>	Grass		7/10
<i>Cyperus holoschoenus</i>	Forb		7/7
<i>Eleocharis geniculata</i>	Forb		7/2
<i>Erythrophleum chlorostachys</i>	Tree		7/7
<i>Eucalyptus papuana</i>	Tree		7/2, 7/8, 7/10
<i>Eucalyptus ptychocarpa</i>	Tree		7/7
<i>Ficus hispida</i>	Tree		7/10
<i>Ficus platypoda</i>	Low tree / shrub		7/10
<i>Ficus racemosa</i>	Tree		7/2
<i>Ficus scobina</i>	Low tree / shrub		7/2
<i>Ficus virens</i>	Tree		7/2
<i>Flacourtia territorialis</i>	Low tree / shrub		7/2
<i>Flagellaria indica</i>	Vine		7/2
<i>Glochidion xerocarpum</i>	Tree		7/8
<i>Grevillea pteridifolia</i>	Tree		7/7
<i>Grewia breviflora</i>	Low tree / shrub		7/2
<i>Hyptis suaveolens</i>	Forb	E/N	7/2, 7/7
<i>Ixora klanderana</i>	Low tree / shrub		7/2
<i>Litsea glutinosa</i>	Tree		7/2
<i>Lophostemon grandiflorus</i>	Tree		7/8
<i>Maranthes corymbosa</i>	Tree		7/2

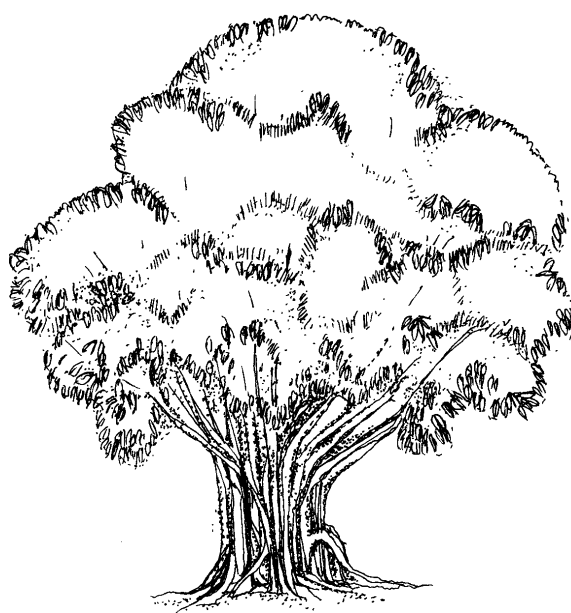
* Declared Noxious Weed within the Northern Territory

Continued

Table 10.20 Major Vegetation Species Recorded at Sites 2, 6, 7, 8 and 10 located within Sub-section 7 – Douglas River (continued)

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Sites Where Recorded (Sub-section No. / Site No.)
<i>Melaleuca leucadendra</i>	Tree		7/2, 7/7, 7/8, 7/10
<i>Melaleuca sp.</i>	Tree		7/6
<i>Melaleuca viridiflora</i>	Low tree / shrub		7/8
<i>Nuclea orientalis</i>	Tree		7/2, 7/6, 7/10
<i>Pandanus aquaticus</i>	Tree		7/2, 7/6, 7/8, 7/10
<i>Pandanus spiralis</i>	Tree		7/7
<i>Panicum trichoides</i>	Grass		7/10
<i>Passiflora foetida</i>	Vine	E	7/8, 7/10
<i>Pennisetum polystachion</i>	Grass	E/N	7/10
<i>Petalostigma pubescens</i>	Tree		7/8
<i>Polyalthia australis</i>	Tree		7/2
<i>Pongamia pinnata</i>	Tree		7/2
<i>Schoenoplectus litoralis</i>	Forb		7/2
<i>Scleria lingulata or levis</i>	Forb		7/10
<i>Sida acuta</i>	Forb	E/N	7/2
<i>Strychnos lucida</i>	Tree		7/2
<i>Syzygium angophoroides</i>	Tree		7/10
<i>Syzygium eucalyptoides</i>	Low tree / shrub		7/7
<i>Terminalia macrocarpa</i>	Tree		7/2
<i>Wedelia cunninghamii</i>	Forb		7/10

* Declared Noxious Weed within the Northern Territory



Ficus virens



View along Douglas River upstream of Site 7/2



Melaleucas at a riffle on Douglas River at Site 7/4



View across large pool towards waterfall and gorge within Butterfly Gorge Nature Park (Site 7/10)



Waterfall in Butterfly Gorge Nature Park (Site 7/10)



Upper Douglas River at Site 7/7



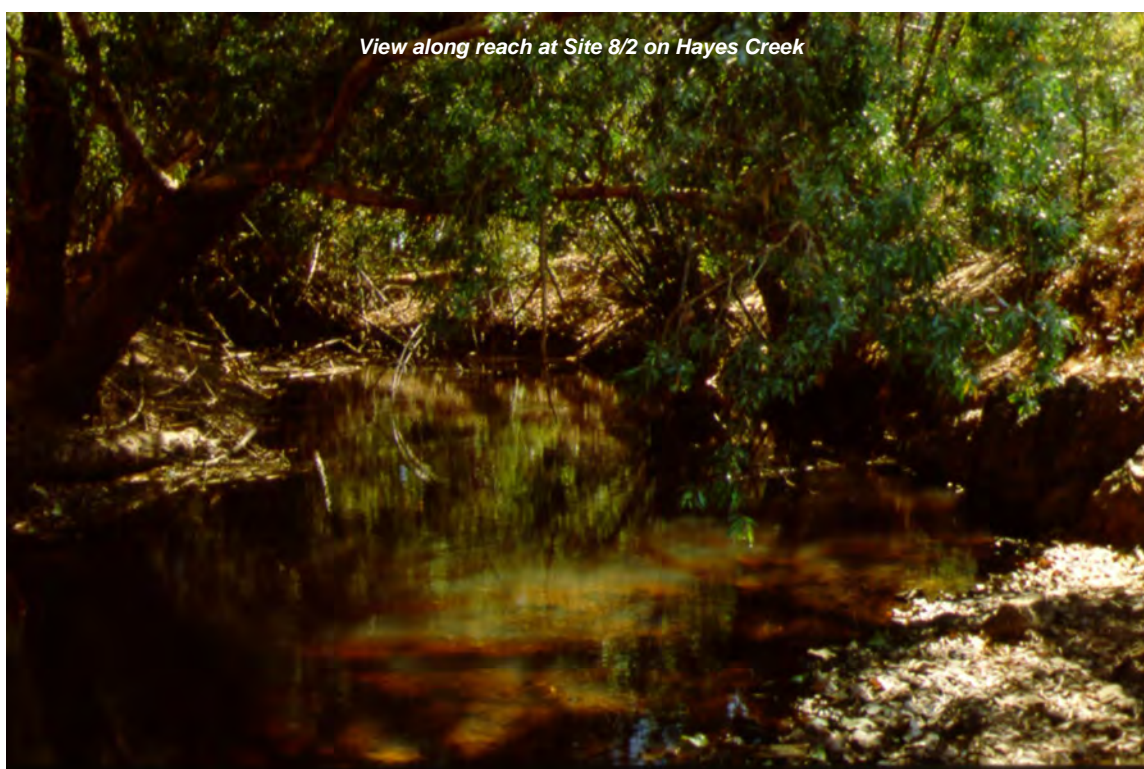
An eroding section of Depot Creek at Site 7/8

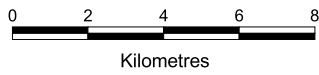
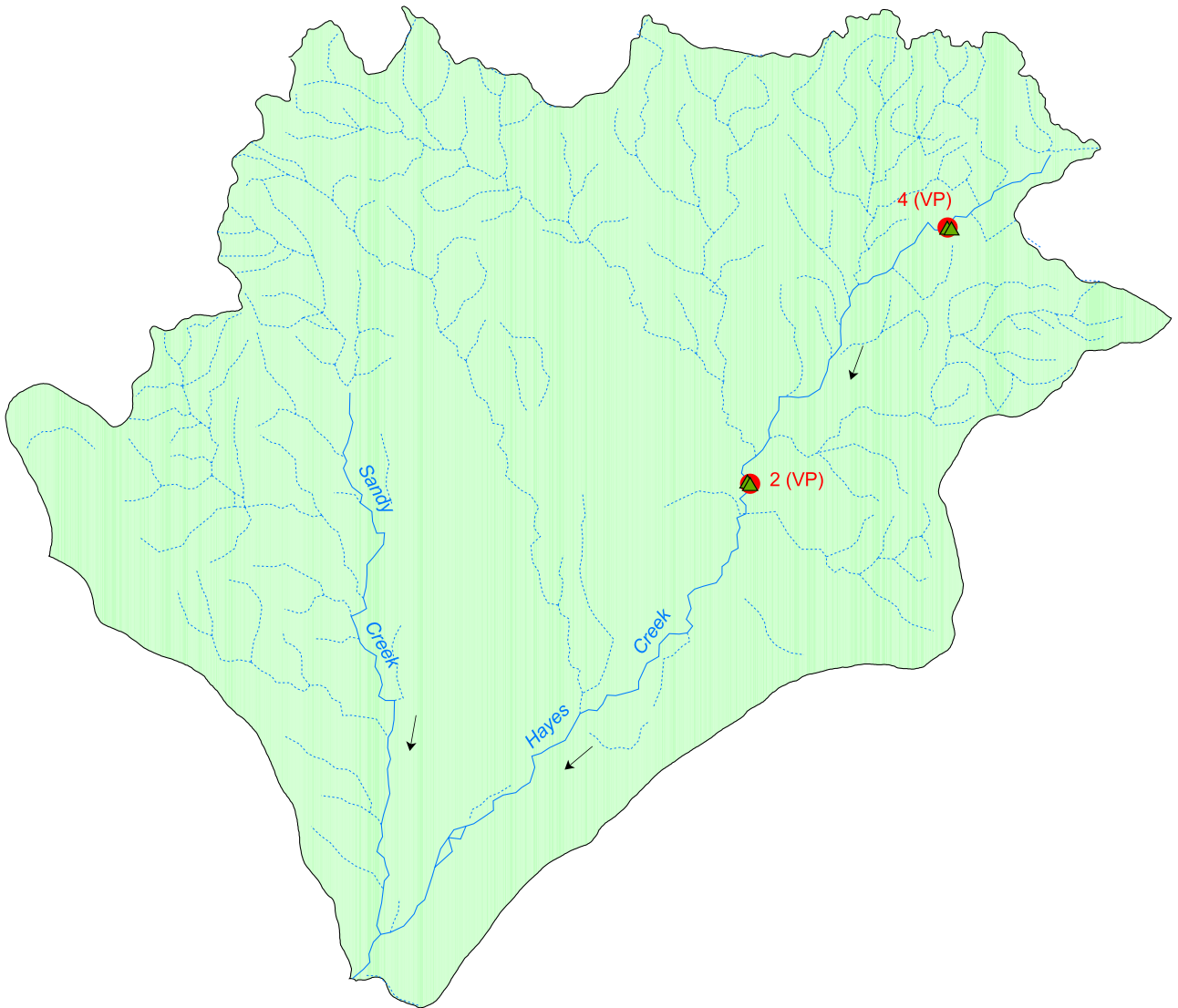
10.7.2 Hayes Creek

Sub-section 8 includes the catchment area of Hayes Creek. Two sites were fully assessed within this sub-section (refer Table 10.21 and Map 37).

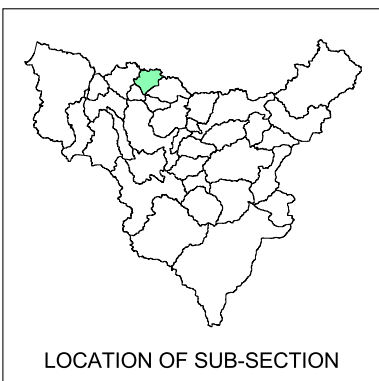
Table 10.21 Summary of Survey Information for Sub-section 8 – Hayes Creek

Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
2	Hayes Creek	A	Glide	√	√	
		B	Pool	√		
4	Hayes Creek	A	Pool	√	√	
		B	Glide	√		





Area - 535 km²



LEGEND	
● 5	Site
▲	Sample Point
(VP)	Vegetation Profile
—	Longitudinal Profile Survey
—	River
—	Creek
←	Flow direction

HAYES CREEK

SUB-SECTION 8

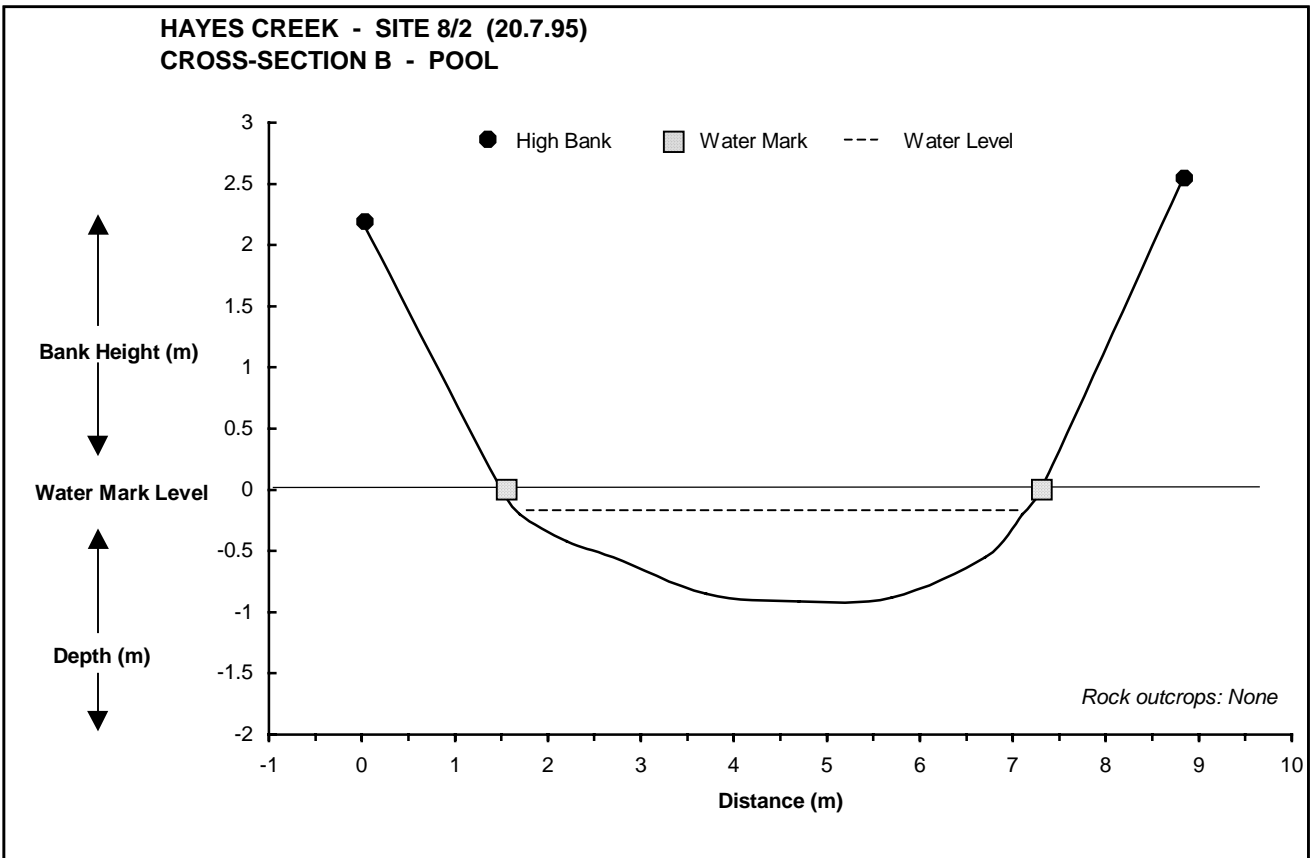
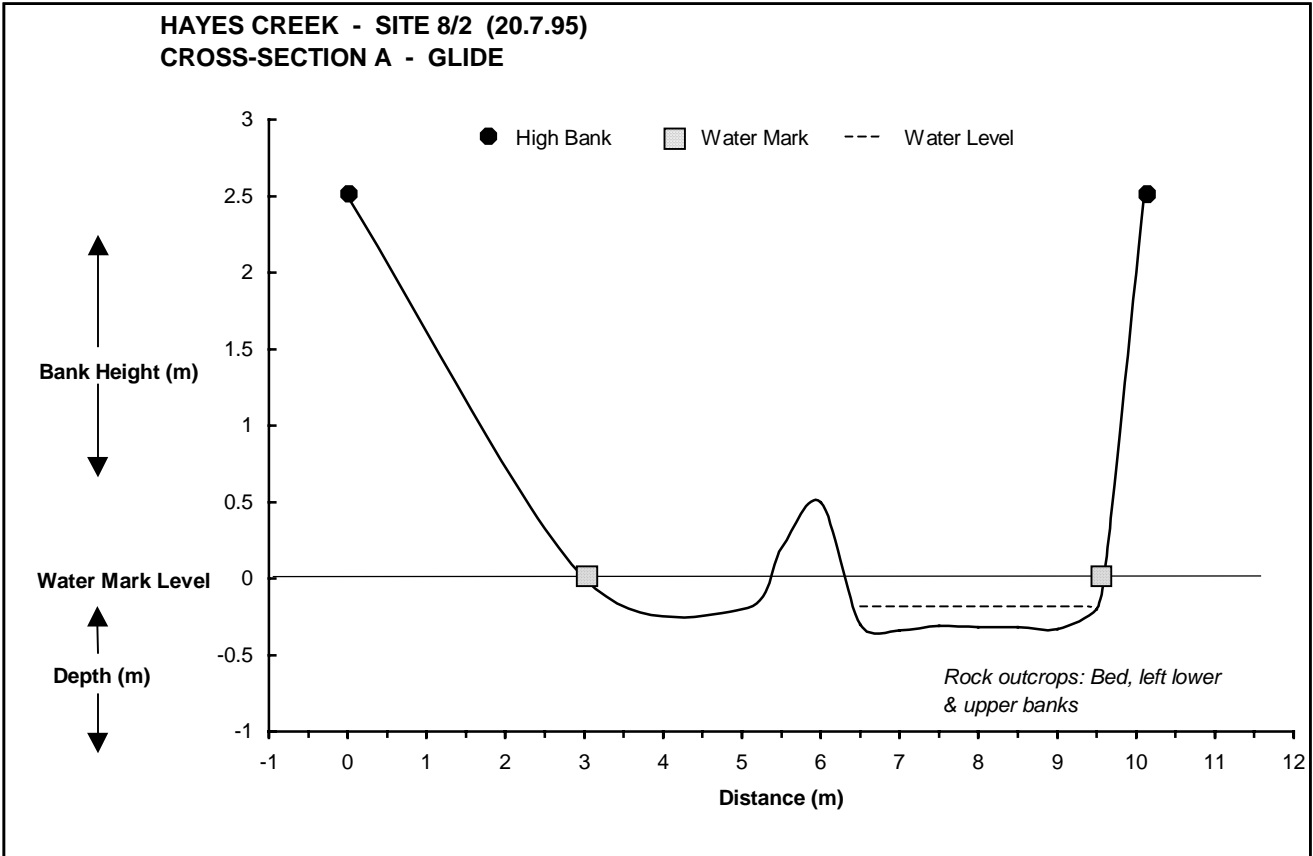


Figure 10.78 Cross-section Surveys for Site 8/2 – Hayes Creek

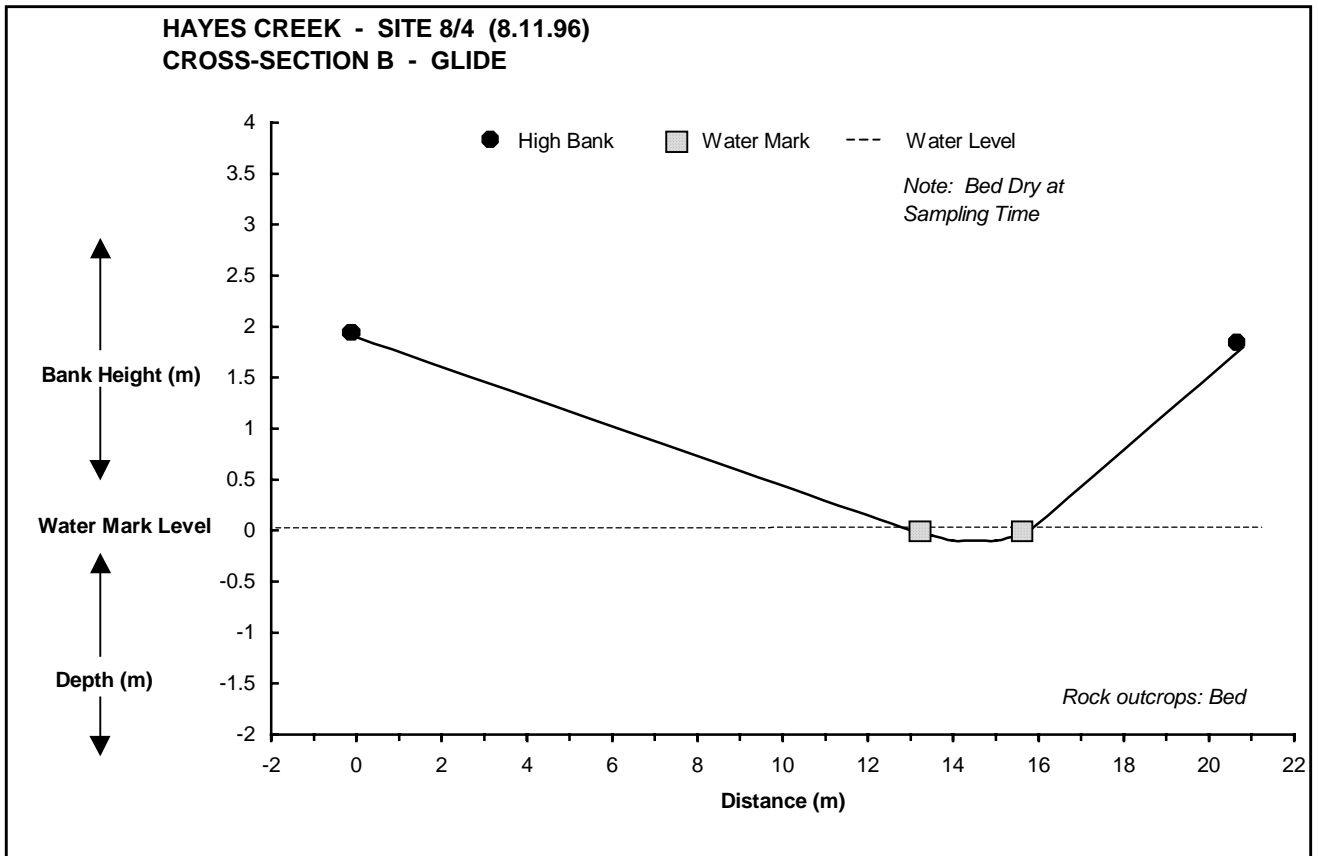
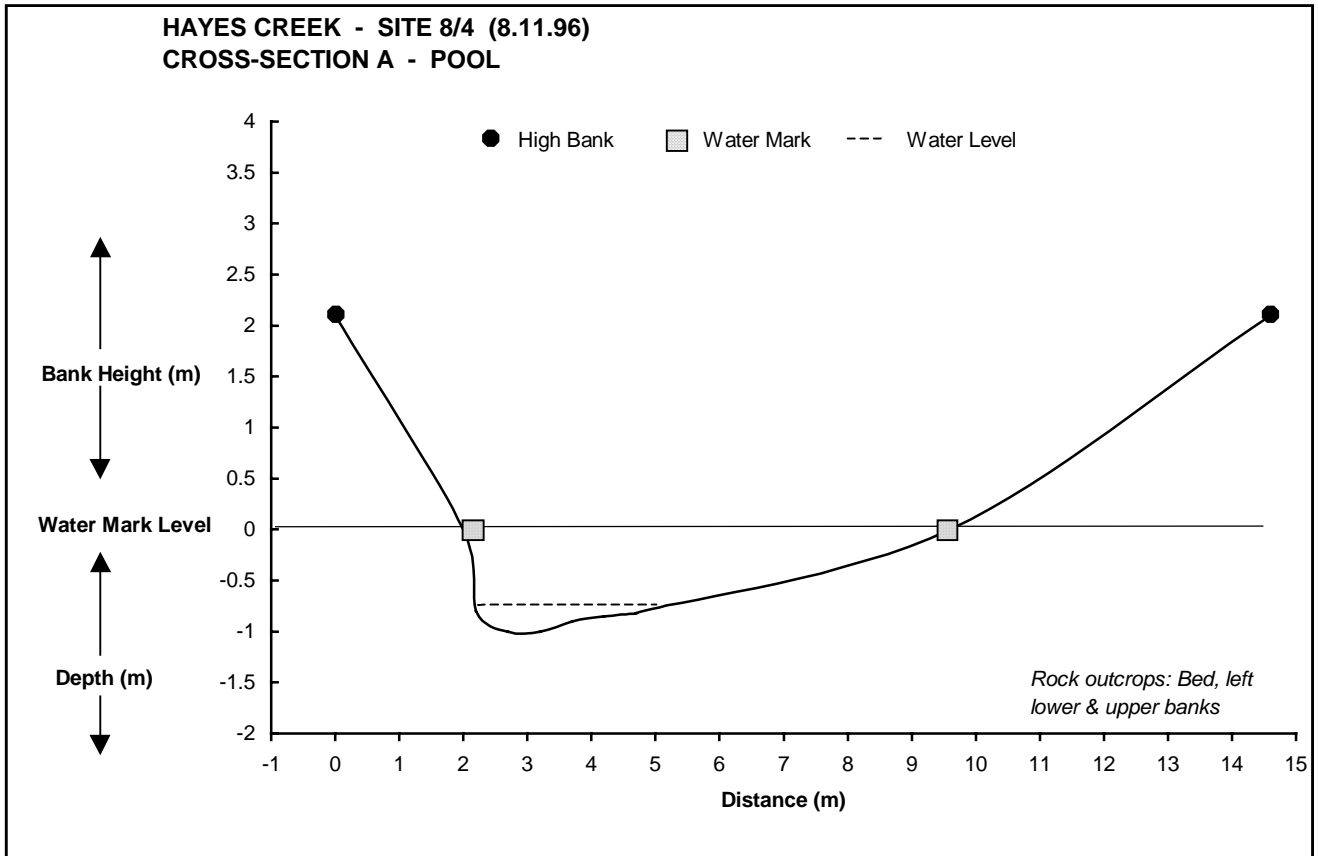
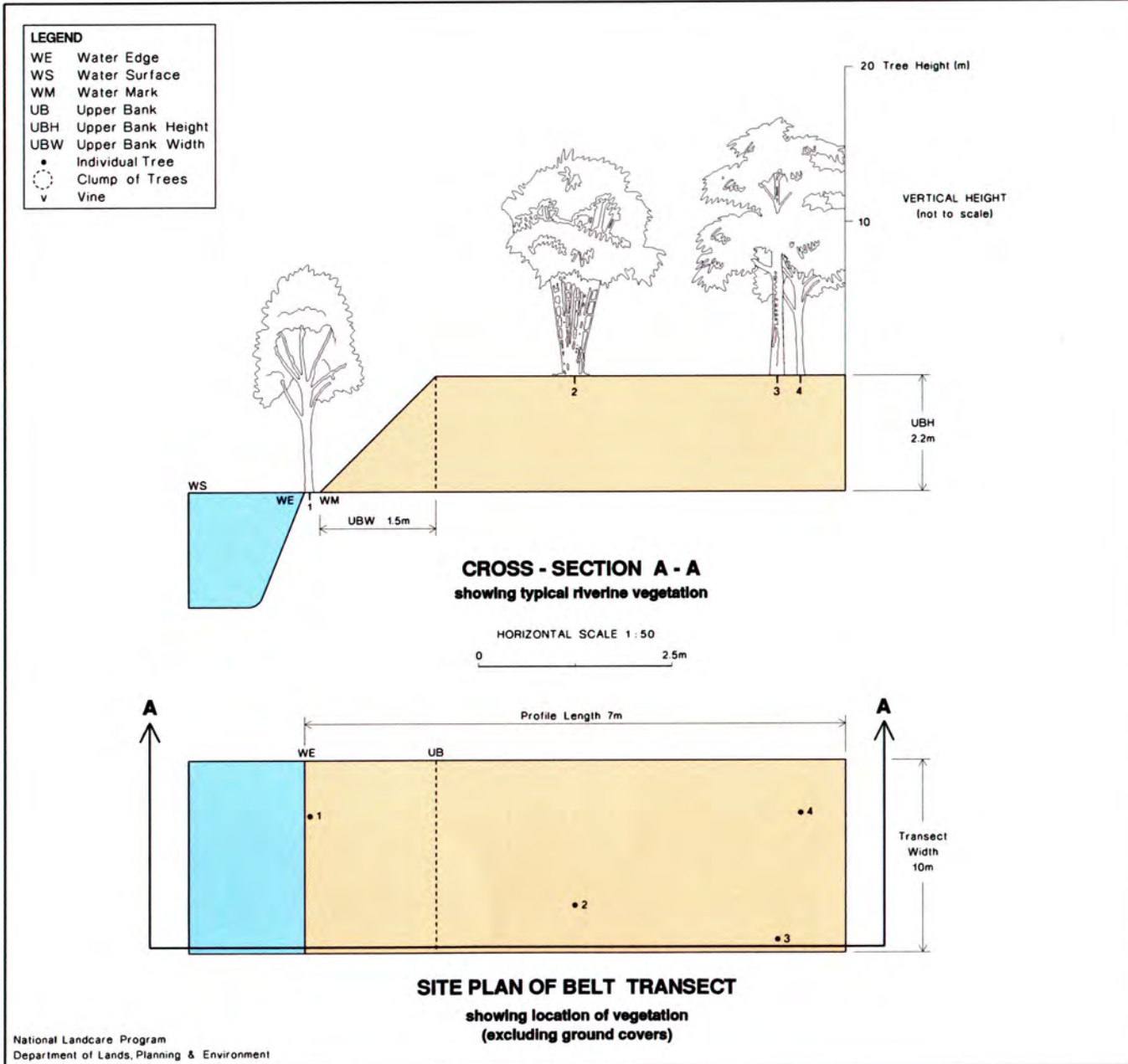


Figure 10.79 Cross-section Surveys for Site 8/4 – Hayes Creek



National Landcare Program
Department of Lands, Planning & Environment

TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1, 4	13-15	<i>Eucalyptus polycarpa</i>
2	15	<i>Bambusa arnhemica</i>
3	17	<i>Canarium australianum</i>

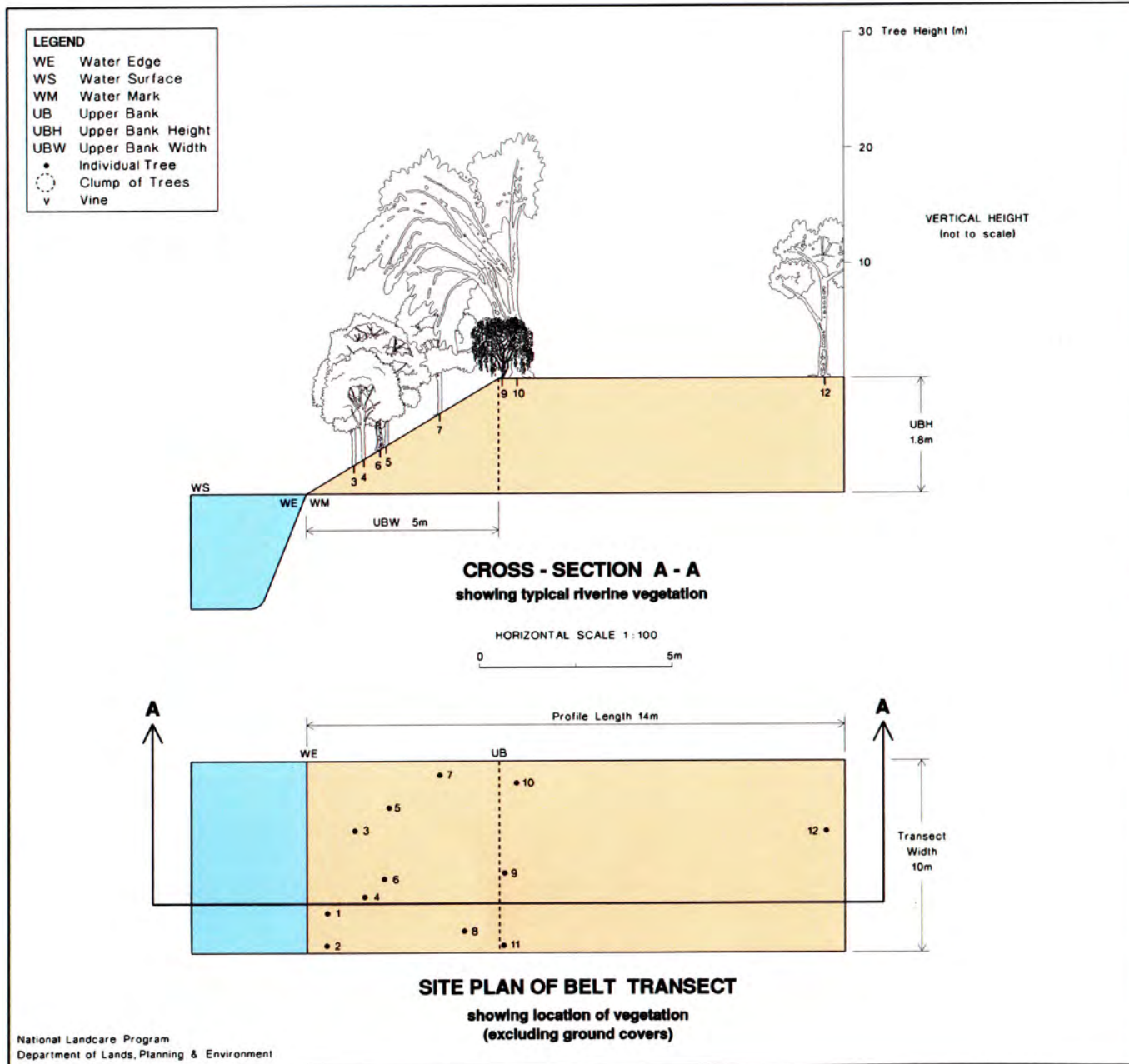
- OTHER SPECIES LOCATED AT SITE:**
- Forbs:** *Triumfetta* sp
 - Grasses:** *Bambusa arnhemica*
 - Shrub/Tree:** *Breynia cernua*, *Exocarpos latifolius*, *Ficocouria territorialis*
 - Trees:** *Acacia auriculiformis*, *Carallia brachiata*, *Elaeocarpus arnhemicus*, *Eucalyptus papuana*, *Melaleuca argentea* or *Melaleuca leucadendra*, *Nauclea orientalis*, *Pandanus aquaticus*, *Syzygium suborbiculare*
 - Vines:** *Passiflora foetida*
- *Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 - Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

HAYES CREEK	Date 20.7.95
Sub-section 8 Site 2	Figure 10.80



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1, 3, 5, 7	10-16	<i>Syzygium armstrongii</i>
2	2.5	<i>Pandanus spiralis</i>
4	9	* <i>Mangifera indica</i> (mango)
6	12	<i>Acacia auriculiformis</i>
8	11	<i>Carallia brachiata</i>
9, 11	5.5	<i>Flueggea virosa</i>
10	22	<i>Melaleuca leucadendra</i>
12	14	<i>Eucalyptus ptychocarpa</i> spp. <i>ptychocarpa</i>

OTHER SPECIES LOCATED AT SITE:

Forbs: *Cyperus javanicus*

Grasses: *Aristida latifolia*
Mnesithea rotiboellioides

Shrubs: *Calytrix exstipulata*
Urena lobata

Tree/Shrubs: *Breynia cernua*
Canthium schultzii

Trees: *Erythrophleum chlorostachys*
Lophostemon grandiflorus

Vines: **Passiflora foetida*

Weeds: **Hypitis suaveolens* (Noxious)

*Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 - Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

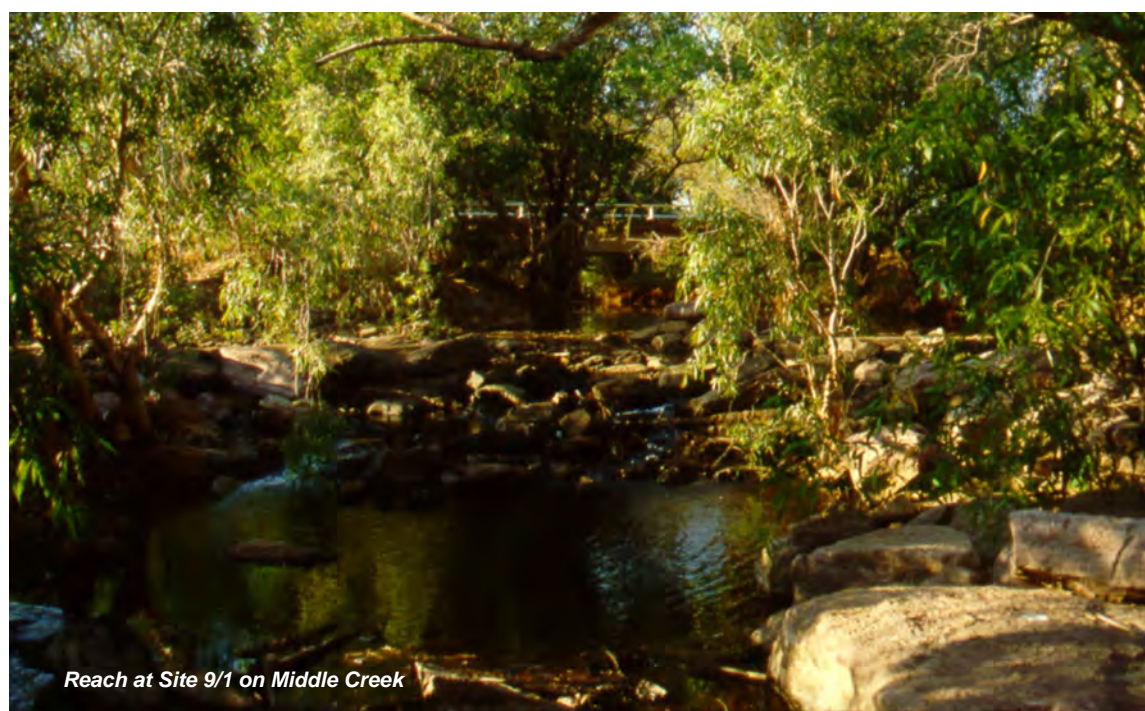
HAYES CREEK	Date 8.11.96
Sub-section 8 Site 4	Figure 10.81

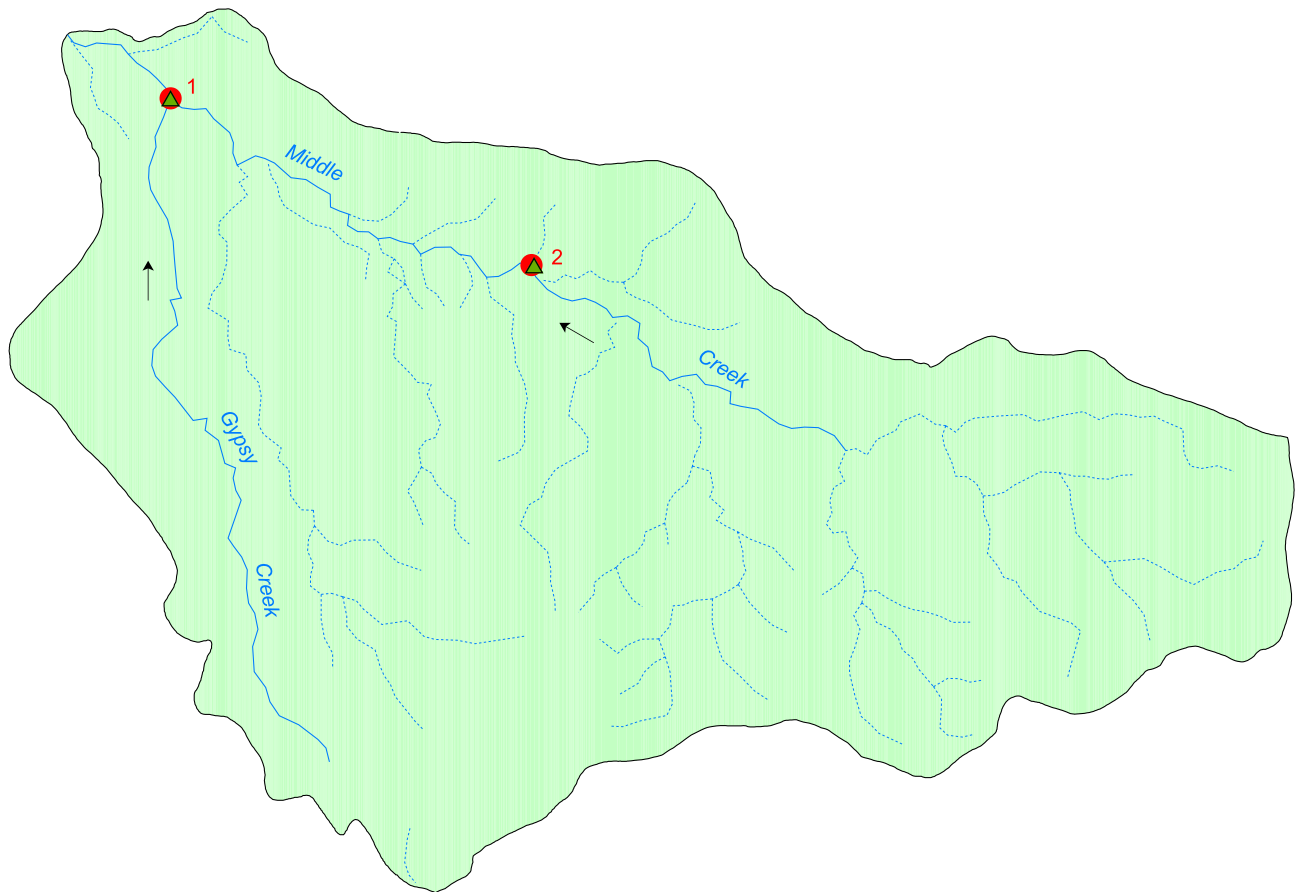
10.7.3 Middle Creek

Sub-section 9 includes the catchment area of Middle Creek. Two sites were fully assessed within this sub-section (refer Table 10.22 and Map 38).

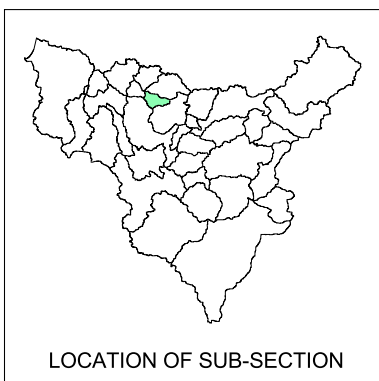
Table 10.22 Summary of Survey Information for Sub-section 9 – Middle Creek

Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
1	Middle Creek	A	Riffle	√		
		B	Pool	√		
2	Middle Creek	A	Riffle	√		
		B	Pool	√		





Area - 313 km²



LEGEND	
● 5	Site
▲	Sample Point
(VP)	Vegetation Profile
— (Yellow)	Longitudinal Profile Survey
— (Blue)	River
— (Light Blue)	Creek
←	Flow direction



TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

MIDDLE CREEK

SUB-SECTION 9

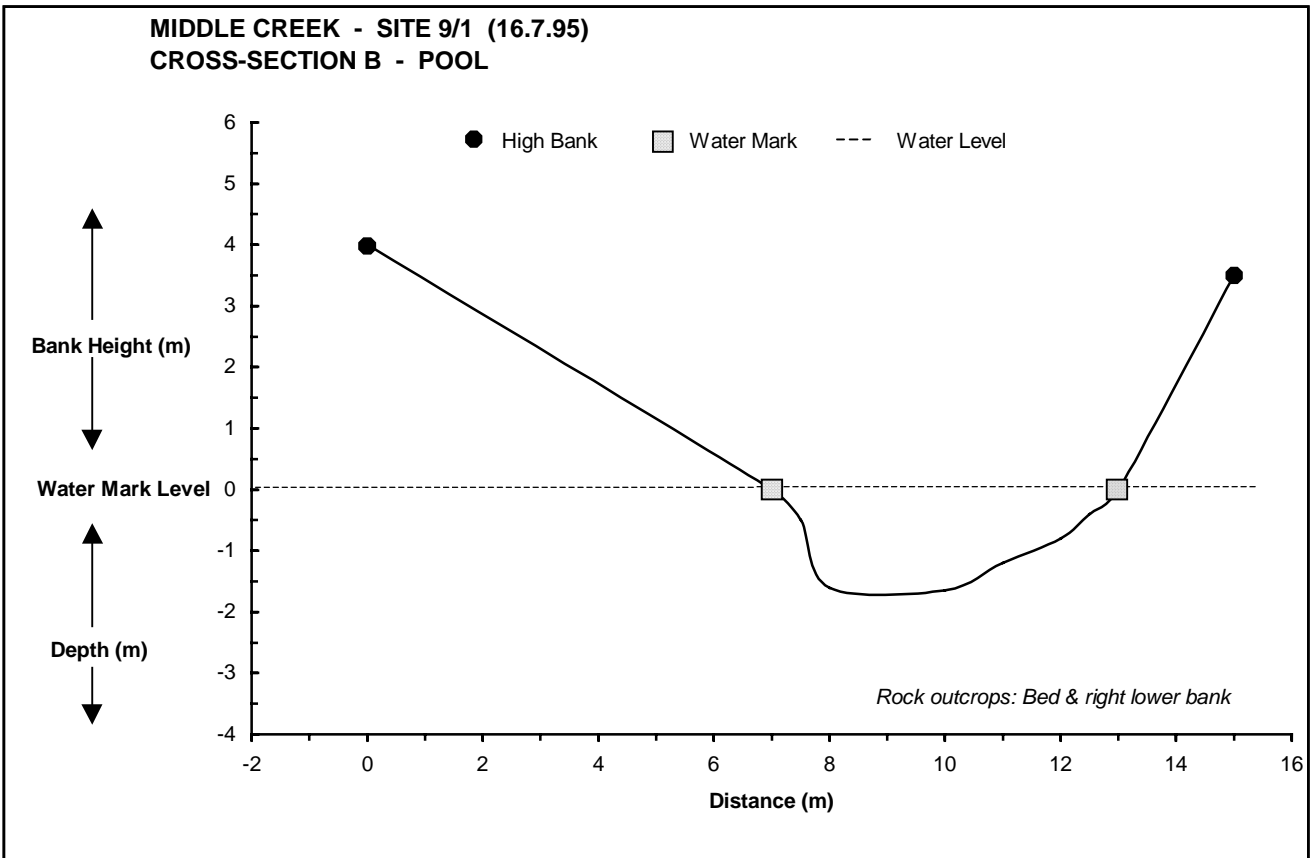
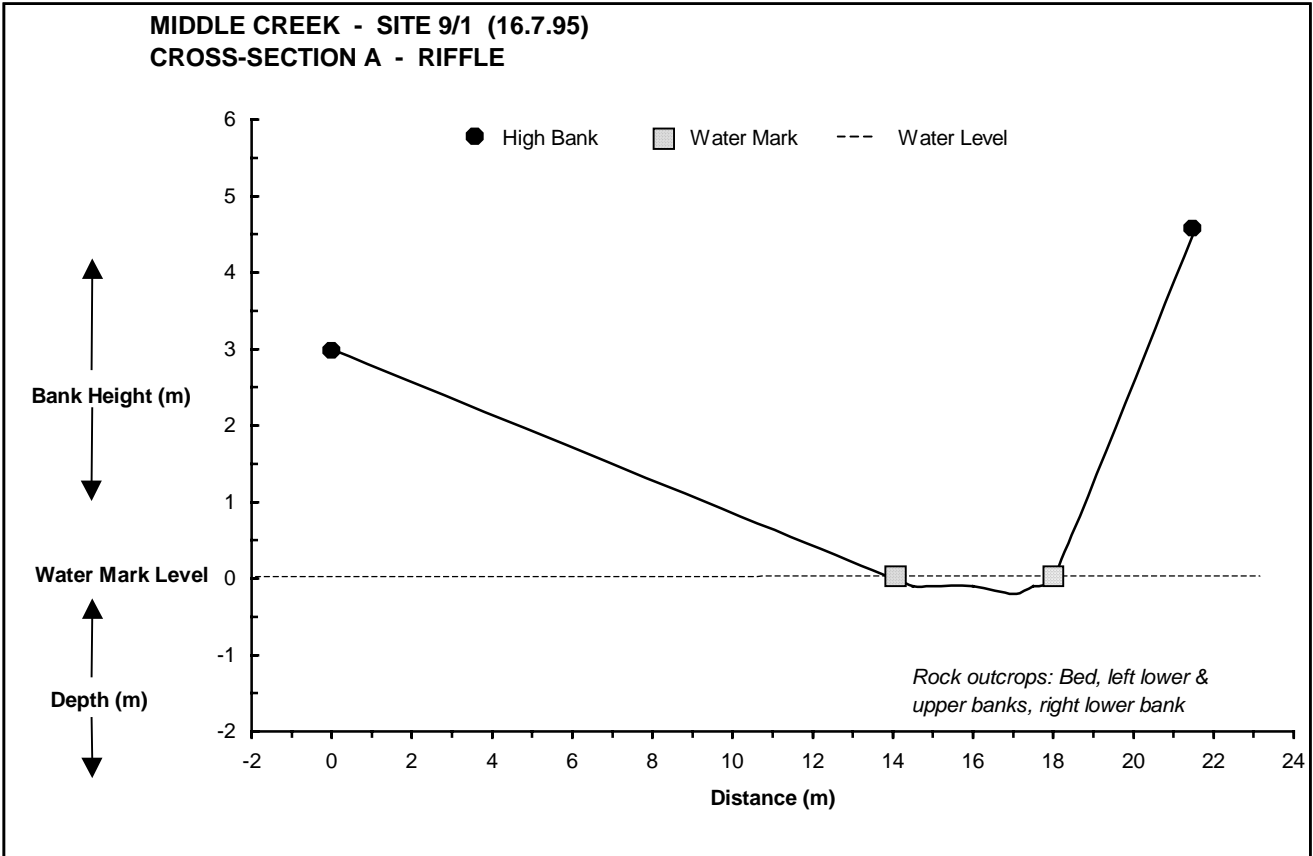


Figure 10.82 Cross-section Surveys for Site 9/1 – Middle Creek

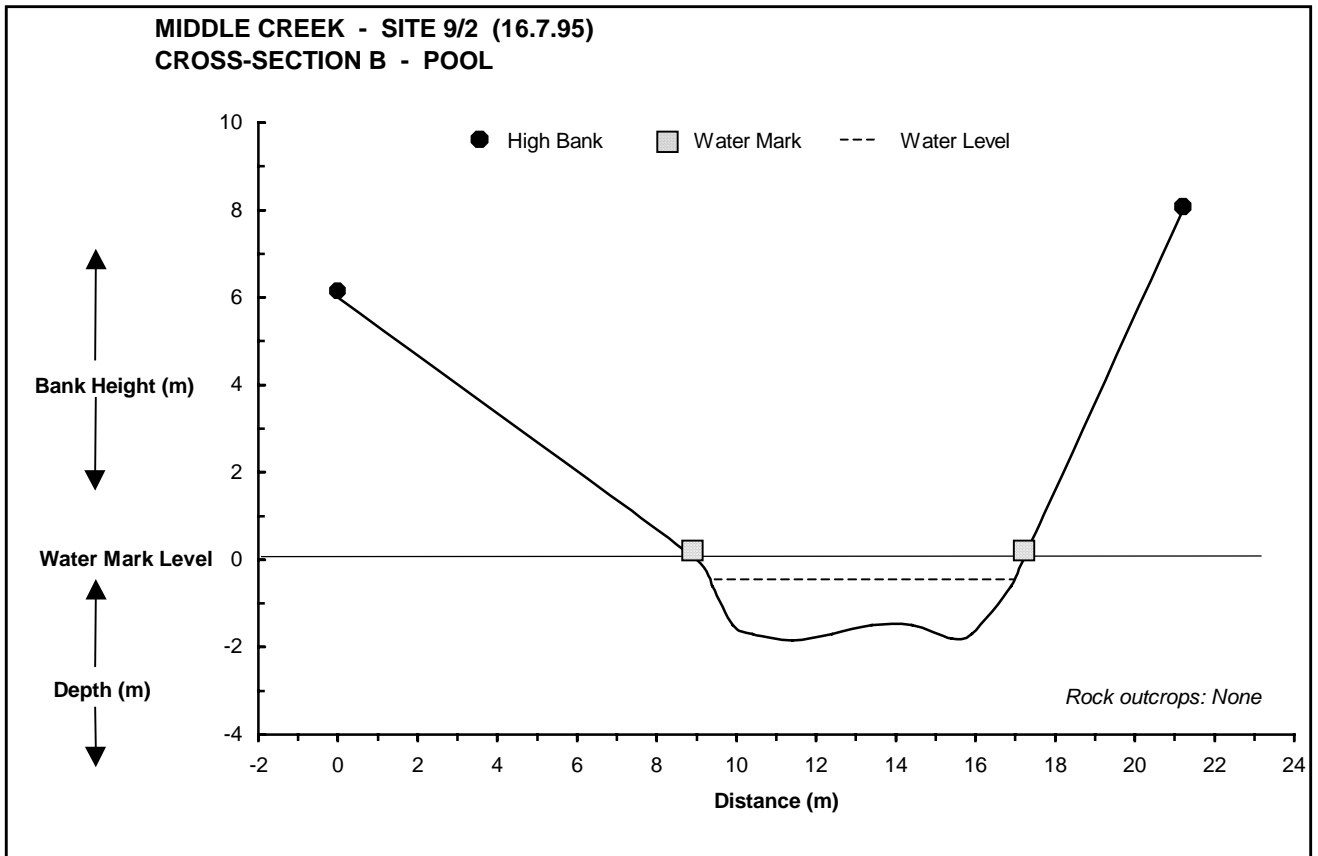
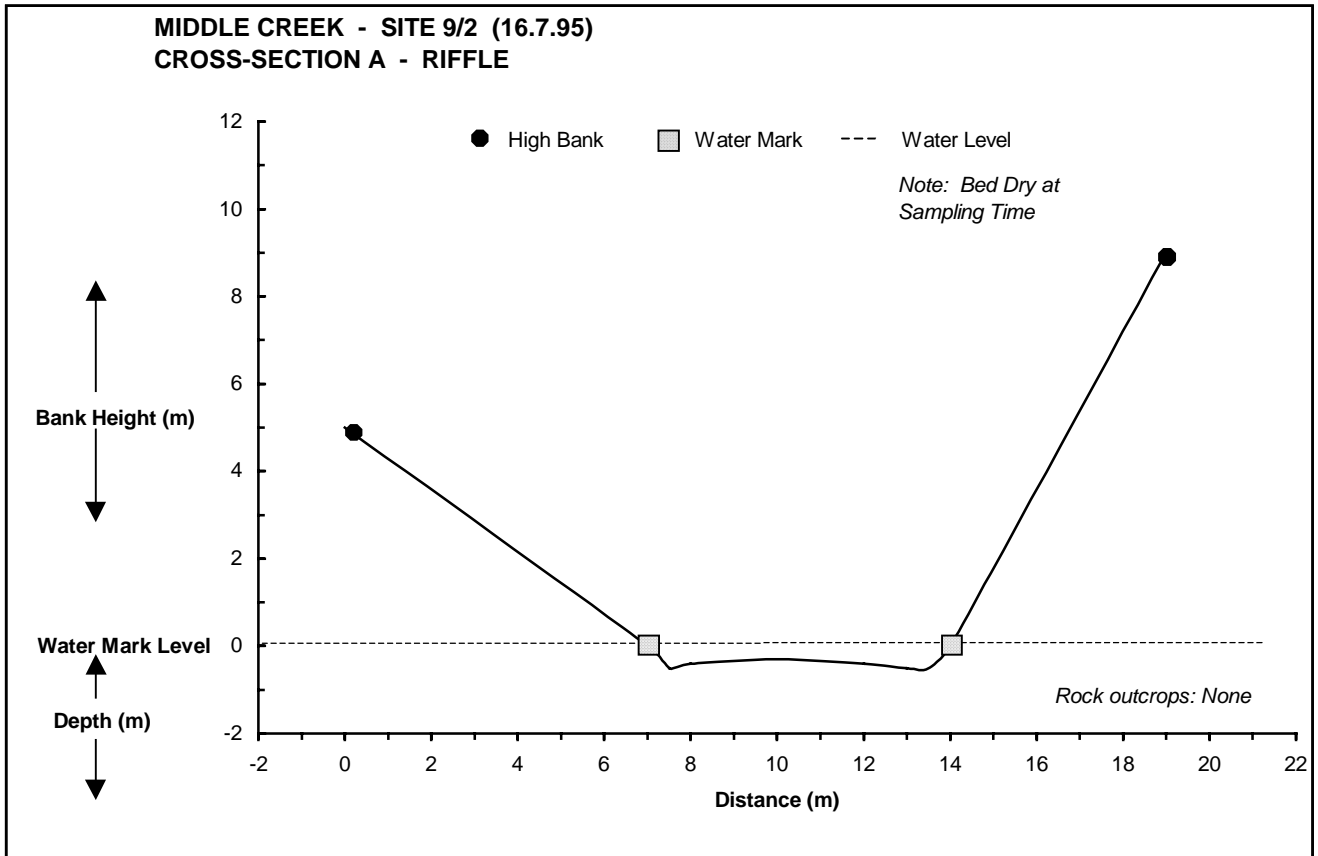


Figure 10.83 Cross-section Surveys for Site 9/2 – Middle Creek

Table 10.23 Major Vegetation Species Recorded at Sites 1 and 2 on Middle Creek located within Sub-section 9

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Sites Where Recorded (Sub-section No. / Site No.)
<i>Acacia auriculiformis</i>	Tree		9/1, 9/2
<i>Aristida latifolia</i>	Grass		9/1, 9/2
<i>Bambusa arnhemica</i>	Grass (Bamboo)		9/1
<i>Barringtonia acutangula</i>	Low tree / shrub		9/2
<i>Bothriochloa bladhii</i>	Grass		9/1
<i>Brachychiton diversifolius</i>	Tree		9/2
<i>Canarium australianum</i>	Tree		9/1, 9/2
<i>Carallia brachiata</i>	Tree		9/2
<i>Denhamia obscura</i>	Tree		9/1, 9/2
<i>Eucalyptus confertiflora</i>	Tree		9/1
<i>Eucalyptus papuana</i>	Tree		9/1, 9/2
<i>Exocarpos latifolius</i>	Low tree / shrub		9/2
<i>Ficus racemosa</i>	Tree		9/1
<i>Flacourtia territorialis</i>	Low tree / shrub		9/1
<i>Heteropogon contortus</i>	Grass		9/1
<i>Hibiscus meraukensis</i>	Forb		9/1, 9/2
<i>Hyptis suaveolens</i>	Forb	E/N	9/1, 9/2
<i>Ixora klanderana</i>	Low tree / shrub		9/1
<i>Litsea glutinosa</i>	Tree		9/2
<i>Lophostemon grandiflorus</i>	Tree		9/1, 9/2
<i>Maranthes corymbosa</i>	Tree		9/2
<i>Melaleuca leucadendra</i>	Tree		9/1, 9/2
<i>Nauclea orientalis</i>	Tree		9/1, 9/2
<i>Pandanus aquaticus</i>	Tree		9/1, 9/2
<i>Paspalidium distans</i>	Grass		9/1
<i>Passiflora foetida</i>	Vine	E	9/1
<i>Sida acuta</i>	Forb	E/N	9/1
<i>Syzygium eucalyptoides</i>	Low tree / shrub		9/2
<i>Strychnos lucida</i>	Tree		9/1, 9/2
<i>Terminalia erythrocarpa</i>	Tree		9/1
<i>Terminalia macrocarpa</i>	Tree		9/1
<i>Terminalia platyphylla</i>	Tree		9/1

* Declared Noxious Weed within the Northern Territory



Nauclea orientalis (Leichardt Tree) fruit



Ficus coronulata fruit



Ficus racemosa



Nauclea orientalis on Stray Creek



Ficus coronulata on Stray Creek

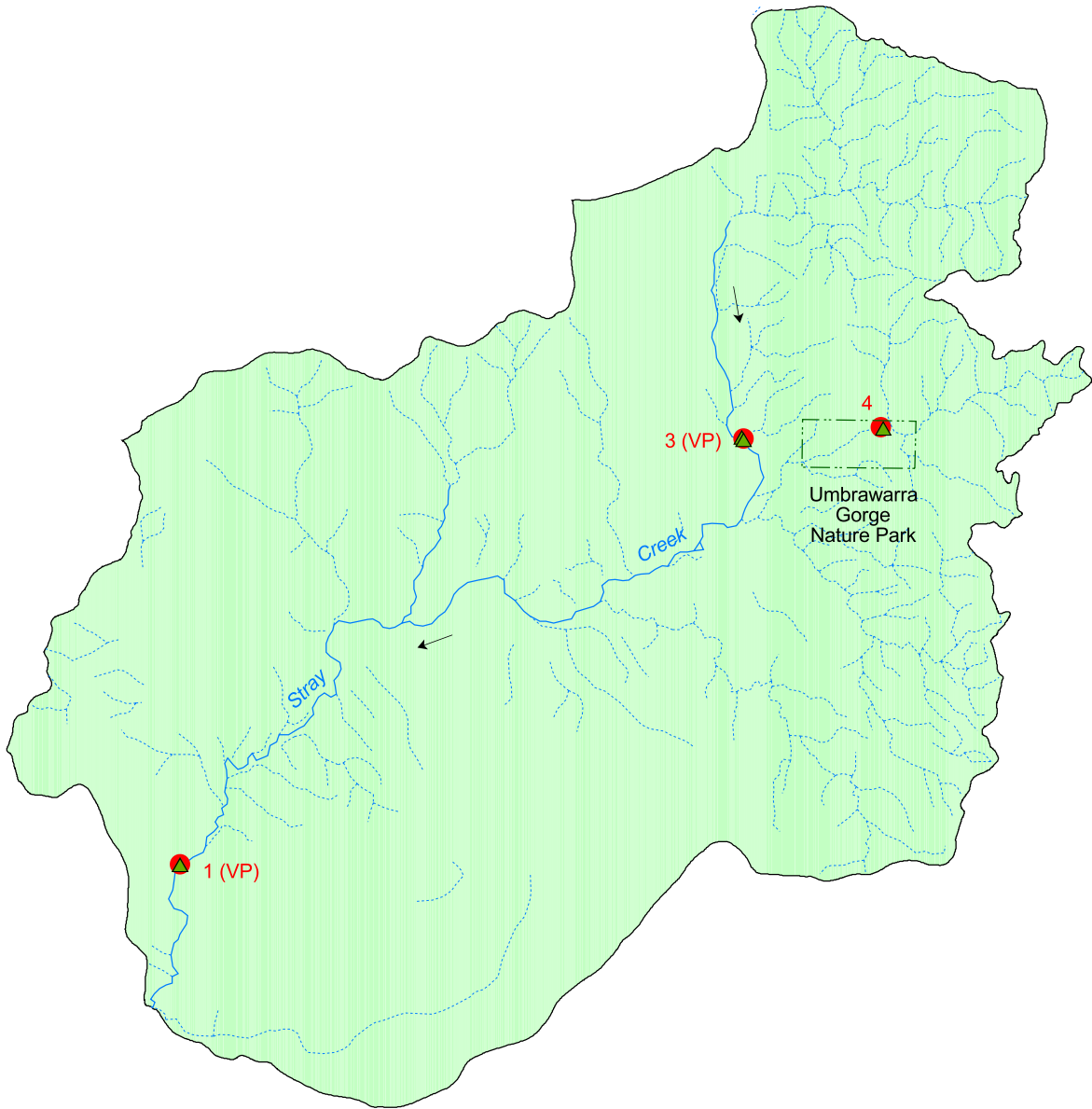
10.8 Stray Creek

Sub-section 10 includes the catchment area of Stray Creek. Three sites were fully assessed within this sub-section (refer Table 10.24 and Map 39).

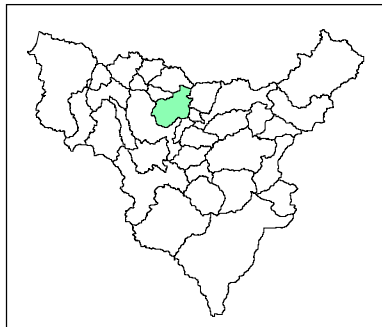
Table 10.24 Summary of Survey Information for Sub-section 10 – Stray Creek

Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
1	Stray Creek	A	Pool	√	√	
		B	Riffle	√		
3	Stray Creek	A	Riffle	√	√	
		B	Pool	√		
4	Unnamed Creek (Arm of Stray Creek)	A	Pool	√		





Area - 1,216 km²



LOCATION OF SUB-SECTION

LEGEND	
● 5	Site
▲	Sample Point
(VP)	Vegetation Profile
—	Longitudinal Profile Survey
—	River
—	Creek
←	Flow direction

 TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

STRAY CREEK
SUB-SECTION 10

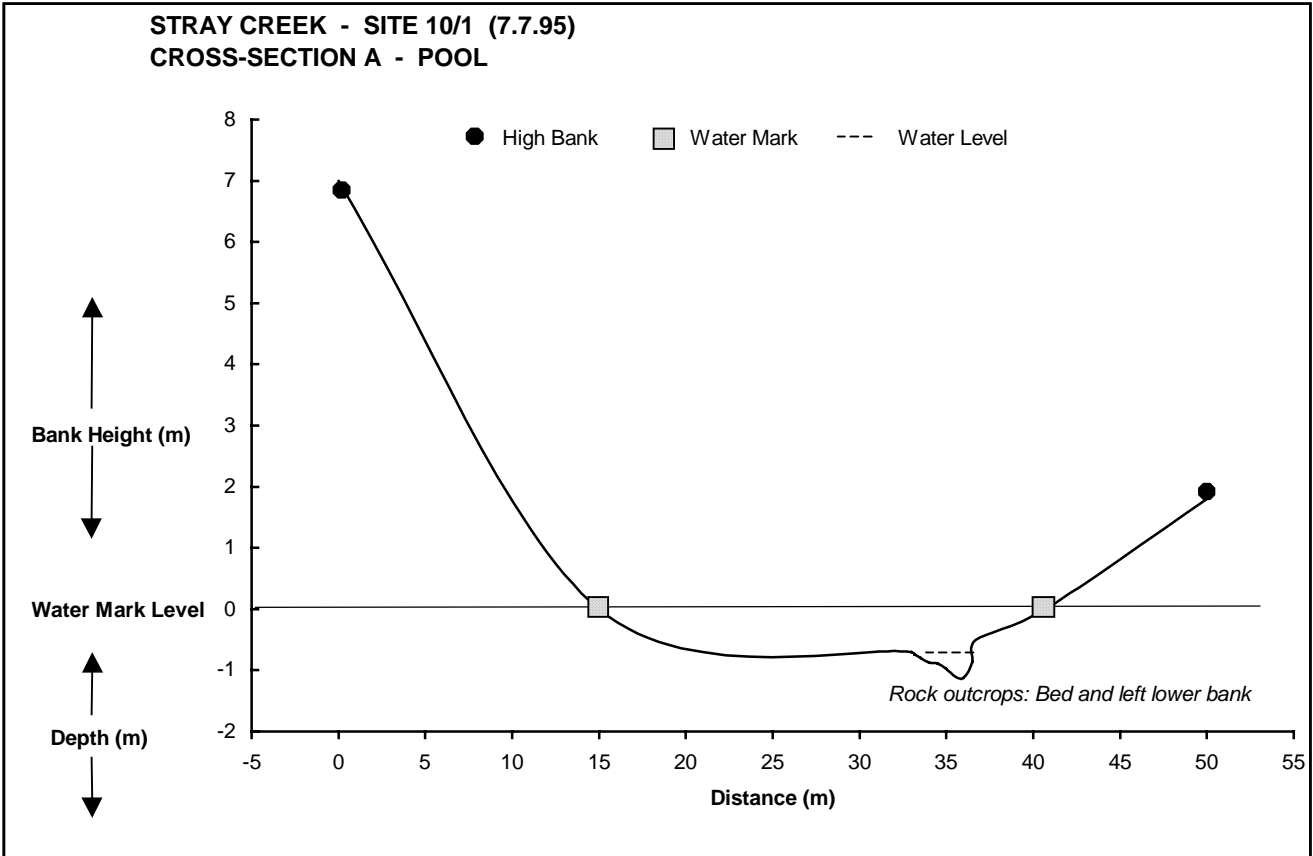
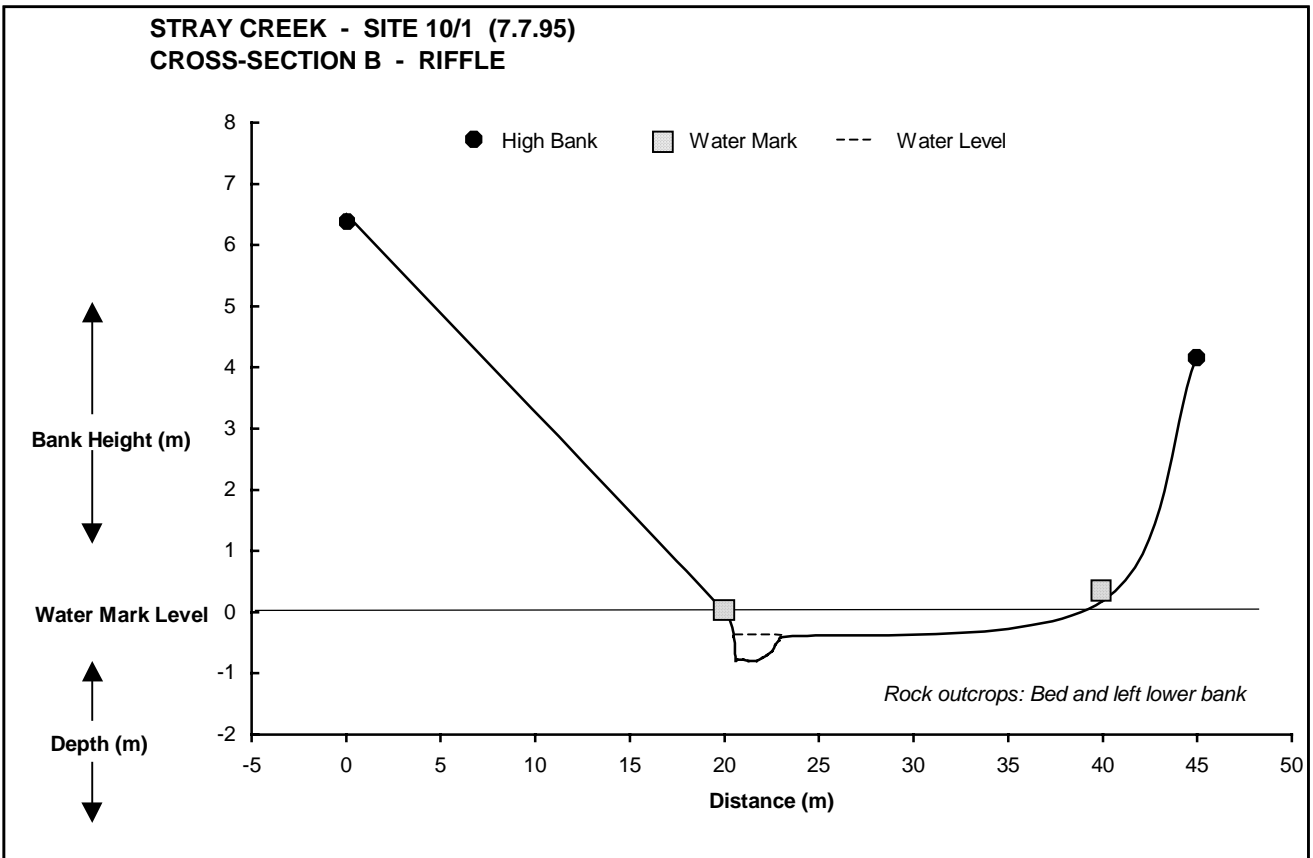


Figure 10.84 Cross-section Surveys for Site



10/1 – Stray Creek

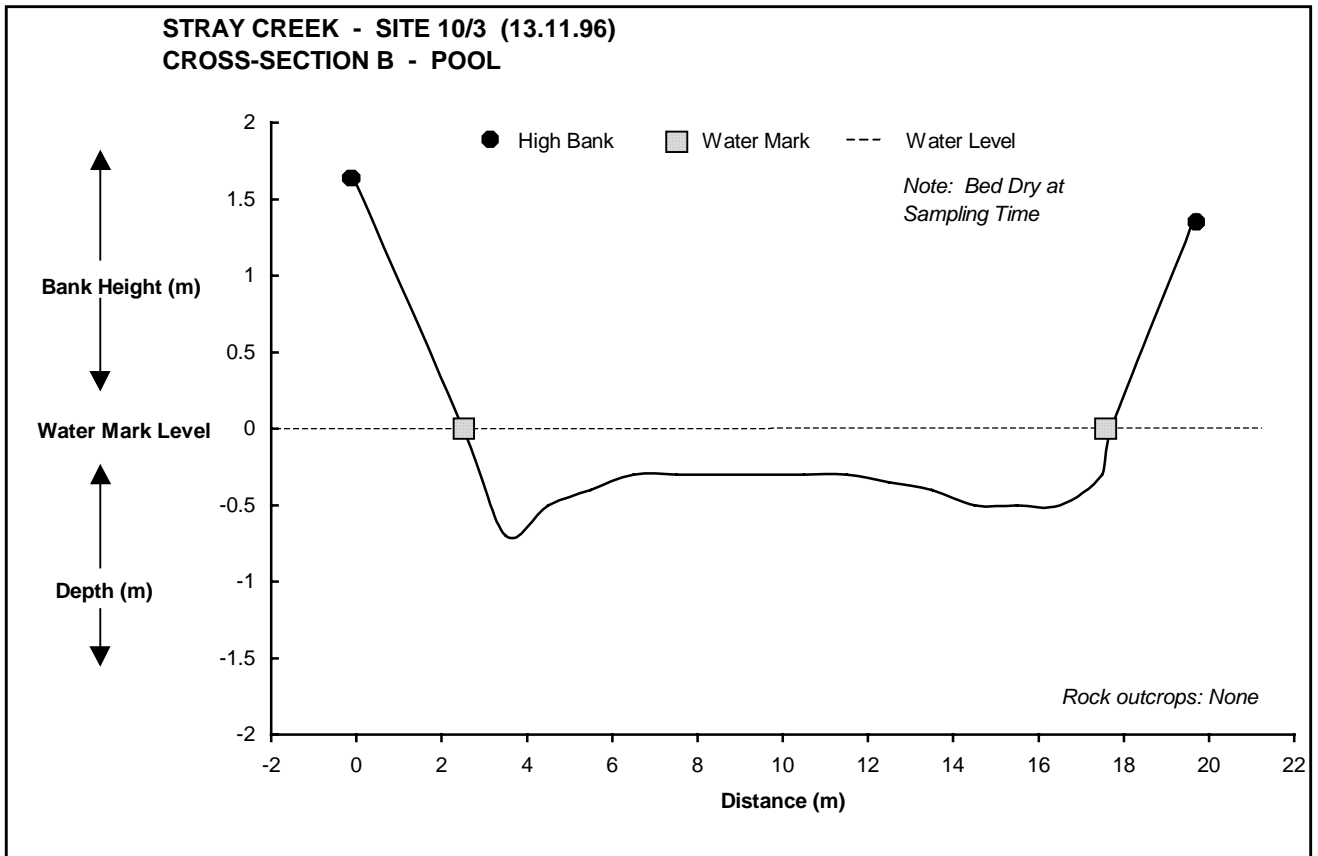
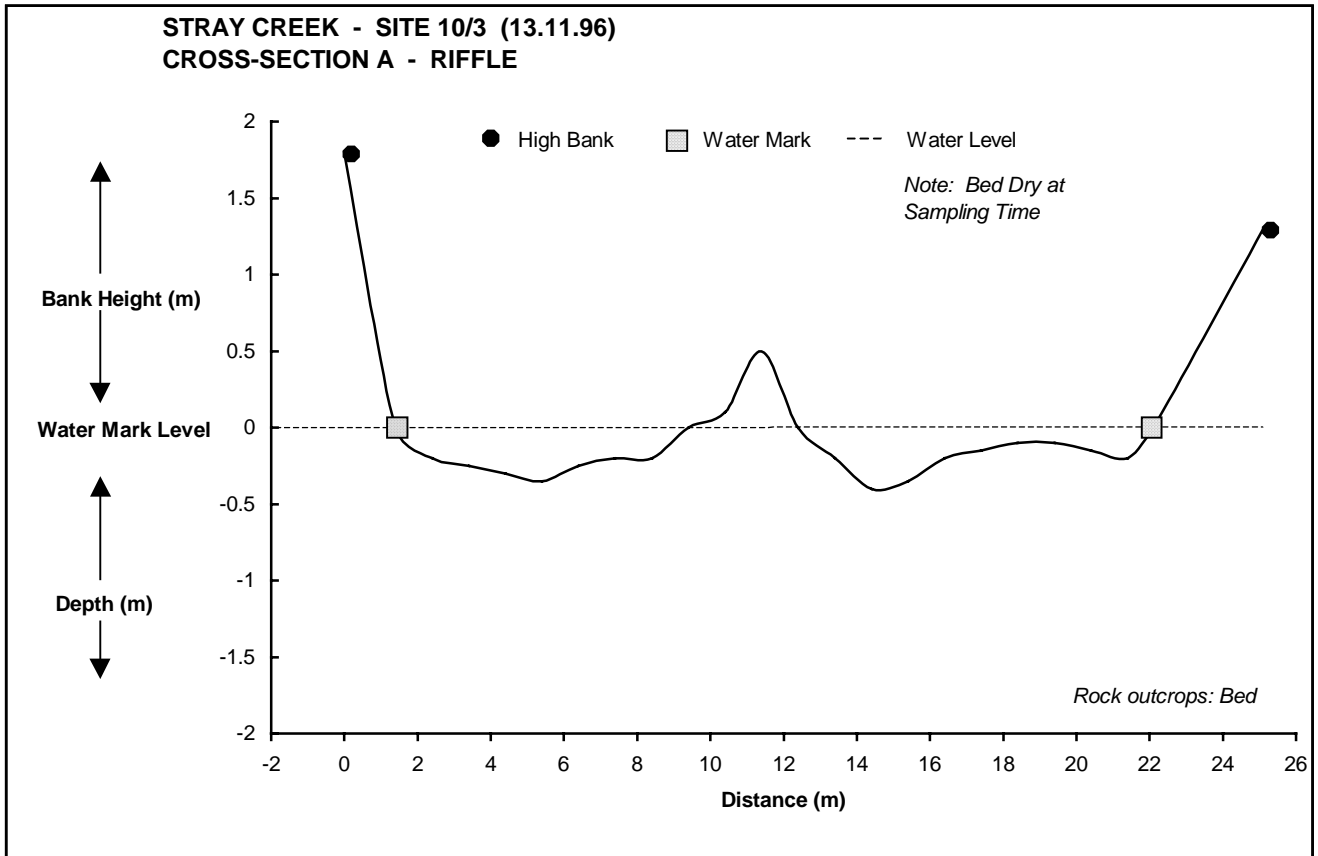


Figure 10.85 Cross-section Surveys for Site 10/3 – Stray Creek

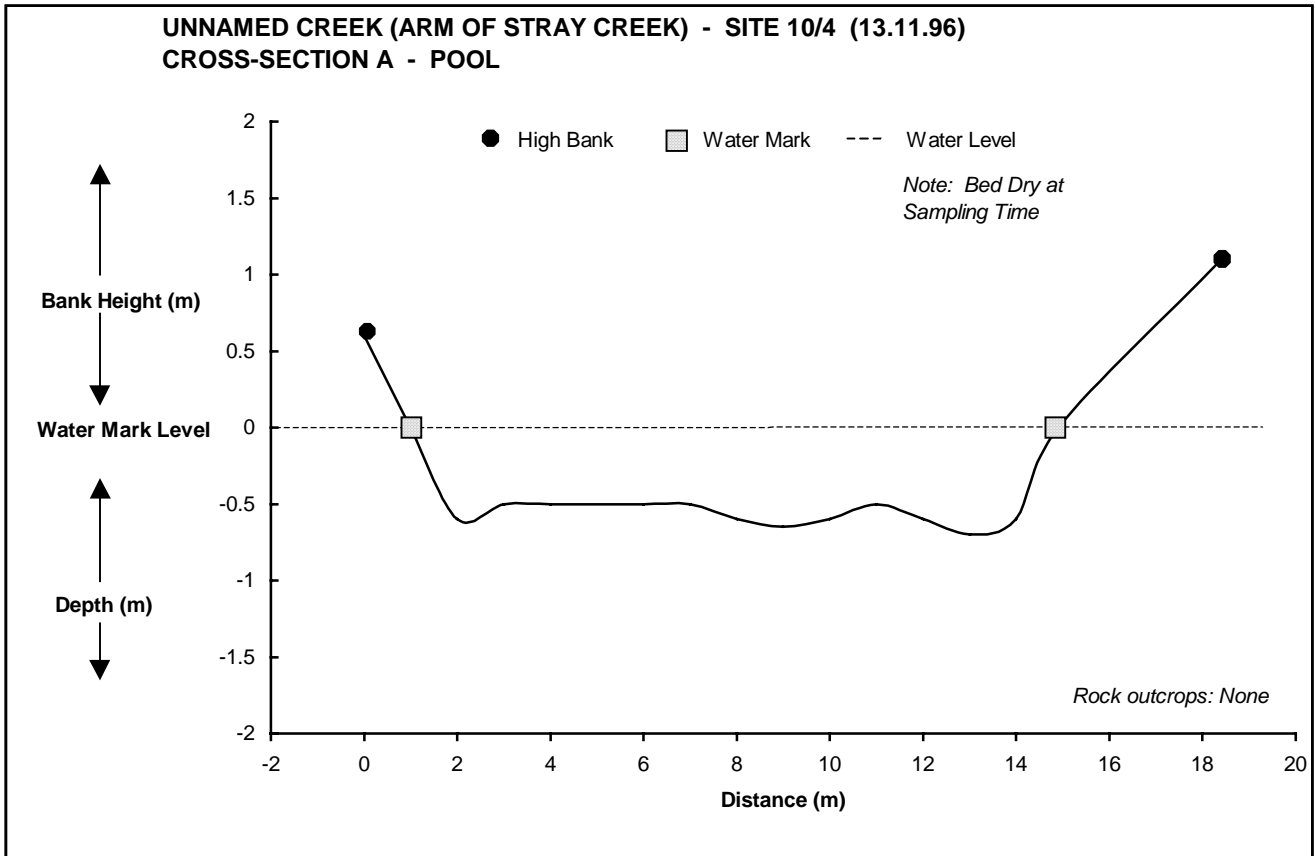
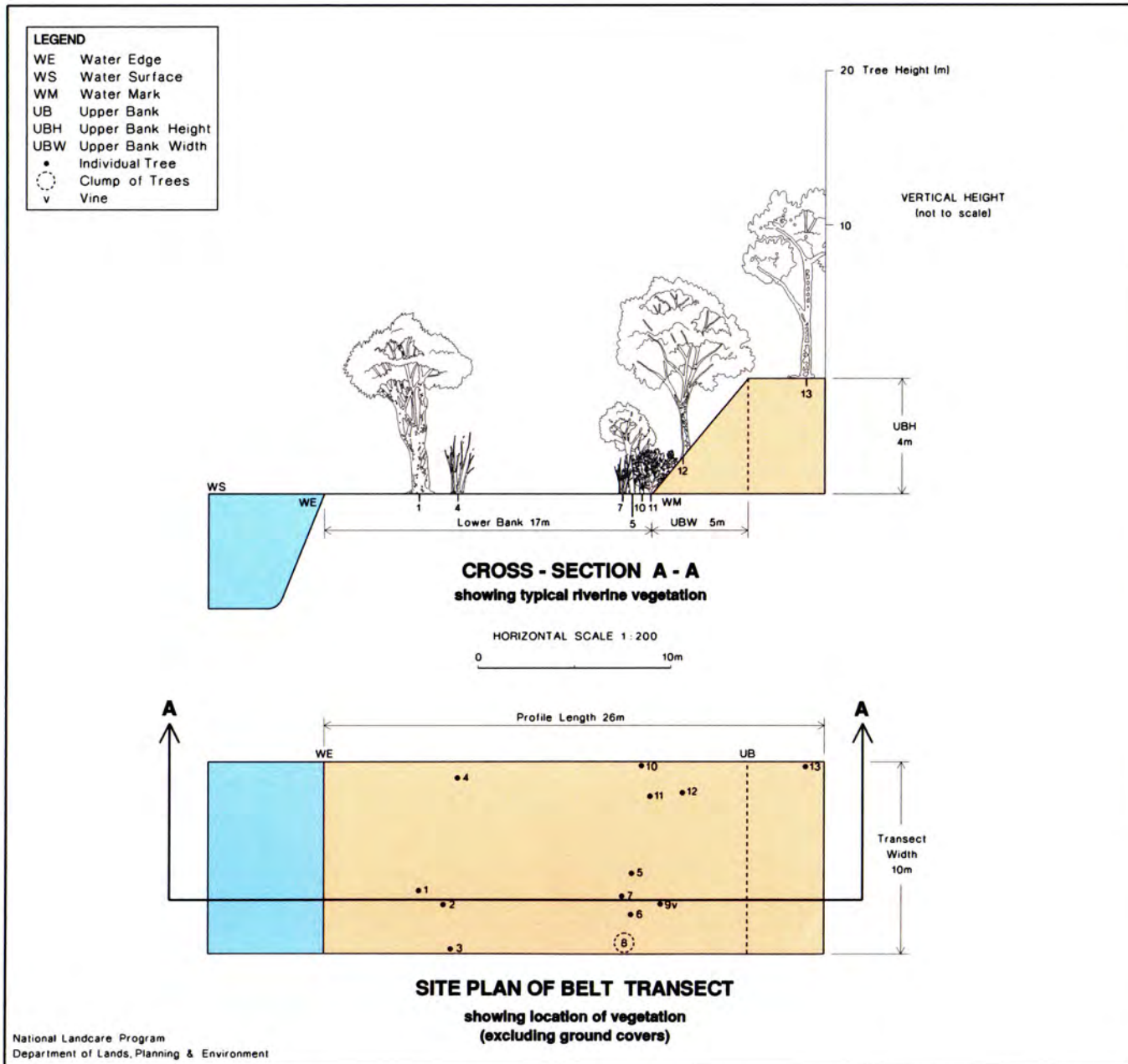


Figure 10.86 Cross-section Survey for Site 10/4 – Unnamed Creek (Arm of Stray Creek)





TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1,4-7,10	2.5-12	<i>Melaleuca argentea</i>
2,12	2.2-12	<i>Acacia auriculiformis</i>
3,8 (7 trees)	2.8-3.8	<i>Pandanus aquaticus</i>
9	3.8	<i>Strychnos lucida</i>
11	3	<i>Ficus scobina</i>
13	12.5	<i>Eucalyptus polycarpa</i>

OTHER SPECIES LOCATED AT SITE:

Grasses: *Cynodon dactylon*

Tree/Shrub: *Acacia holosericea*
Ficoultia territorialis

Trees: *Eucalyptus papuana*
Lophostemon grandiflorus
Nauclea orientalis
Timonius limon

Vines: **Passiflora foetida*

Weeds: **Hyptis suaveolens* (Noxious)

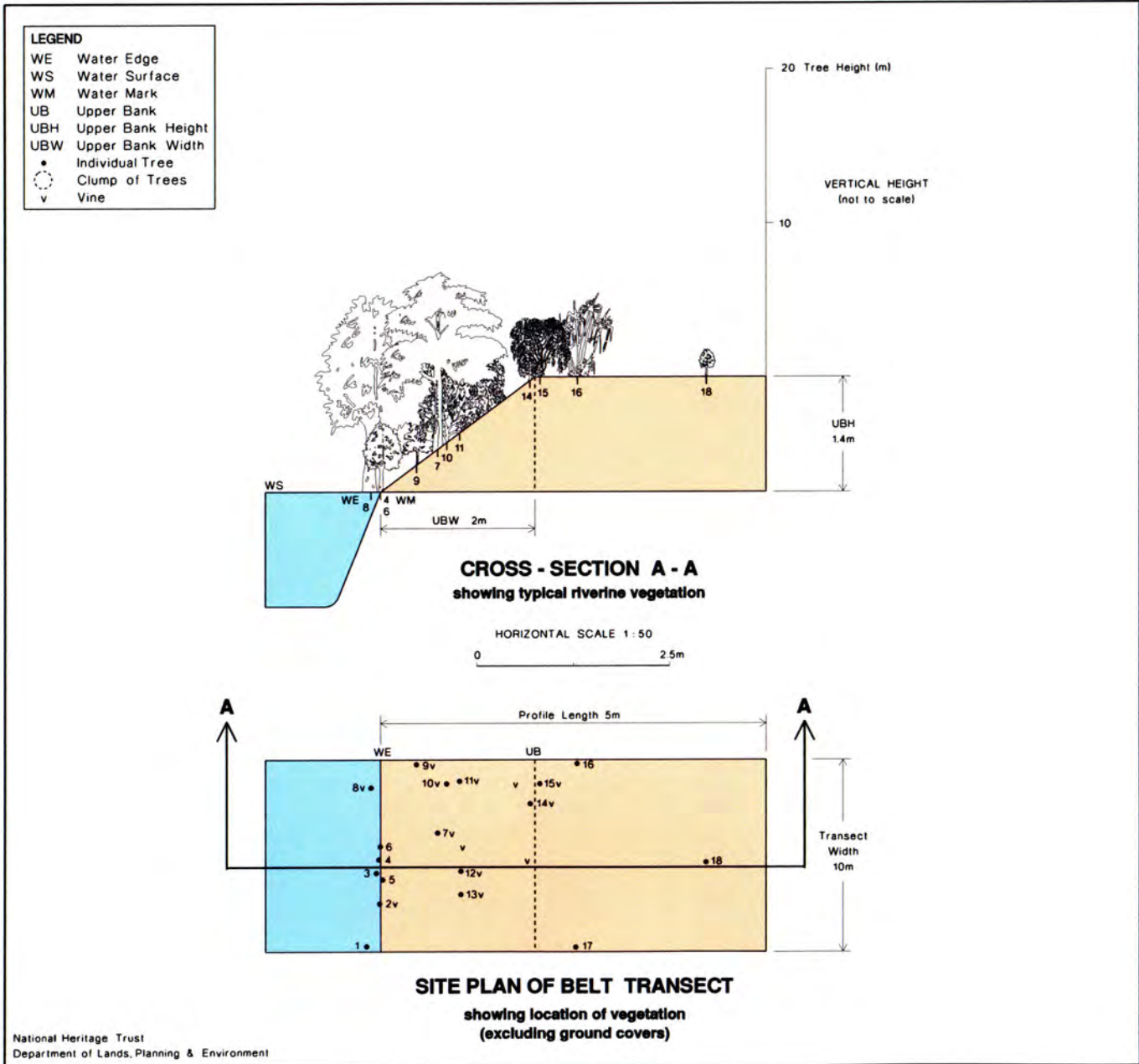
*Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 - Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

STRAY CREEK		Date 7.7.95
Sub-section 10	Site 1	Figure 10.87



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1	18	<i>Lophostemon grandiflorus</i>
2	4	<i>Syzygium eucalyptoides</i> or <i>eucalyptoides</i>
3, 10	4-6	<i>Antidesma ghaesembilla</i>
4-6, 8, 12, 18	1.3-13	<i>Litsea glutinosa</i>
7	12	<i>Canarium australianum</i>
9	3	<i>Ficus racemosa</i>
11, 15	4-6	<i>Denhamia obscura</i>
13, 14	1.5	<i>Bridelia tomentosa</i>
16, 17	5.5-7	<i>Pandanus spiralis</i>

OTHER SPECIES LOCATED AT SITE:

Forbs: *Cyanthillium cinereum*
Cyperus javanicus
Triumfetta sp.

Grasses: *Arundinella nepalensis*
Panicum mindanaense

Tree/Shrubs: *Acacia holosericea*
Canthium sp.
Flacourtia territorialis

Trees: *Eucalyptus papuana*
Eucalyptus polycarpa
Ficus coronulata
Grevillea pteridifolia
Metaleuca argentea
Nauclea orientalis
Terminalia platyphylia
Vitex glabrata

Vines: **Passiflora foetida*

Weeds: **Hyptis suaveolens* (Noxious)

*Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 - Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

STRAY CREEK	Date 13.11.96
Sub-section 10 Site 3	Figure 10.88

Table 10.25 Major Vegetation Species Recorded at Site 4 located within Sub-section 10 – Stray Creek

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Site Where Recorded (Sub-section No. / Site No.)
<i>Acacia difficilis</i>	Low tree / shrub		10/4
<i>Alphitonia excelsa</i>	Low tree / shrub		10/4
<i>Antidesma ghaesembilla</i>	Low tree / shrub		10/4
<i>Ficus coronulata</i>	Tree		10/4
<i>Grevillea pteridifolia</i>	Tree		10/4
<i>Hyptis suaveolens</i>	Forb	E/N	10/4
<i>Lophostemon grandiflorus</i>	Tree		10/4
<i>Melaleuca leucadendra</i>	Tree		10/4
<i>Melaleuca viridiflora</i>	Low tree / shrub		10/4
<i>Pandanus spiralis</i>	Tree		10/4
<i>Passiflora foetida</i>	Vine	E	10/4

* Declared Noxious Weed within the Northern Territory



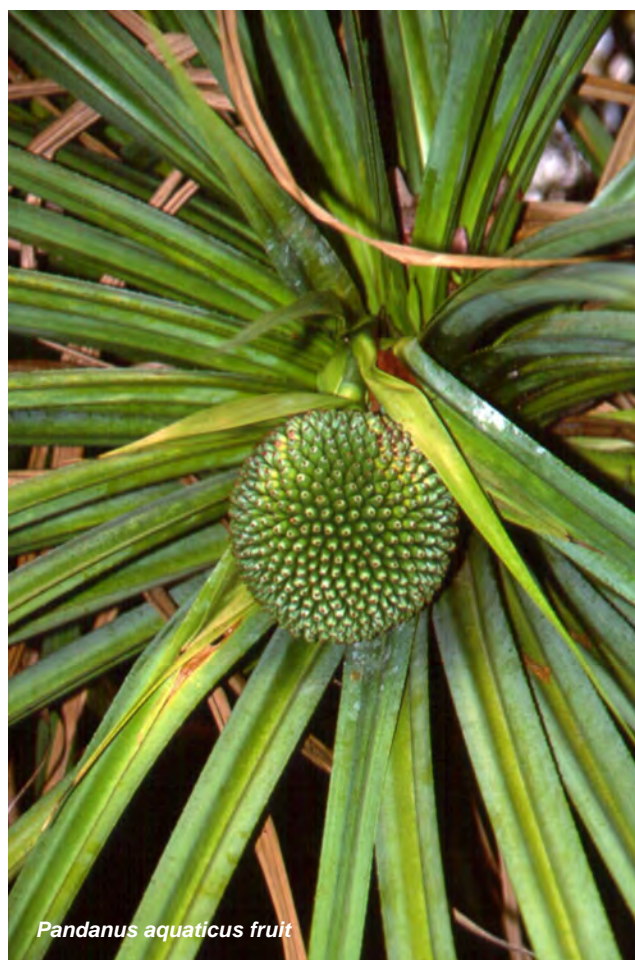
Ficus scobina

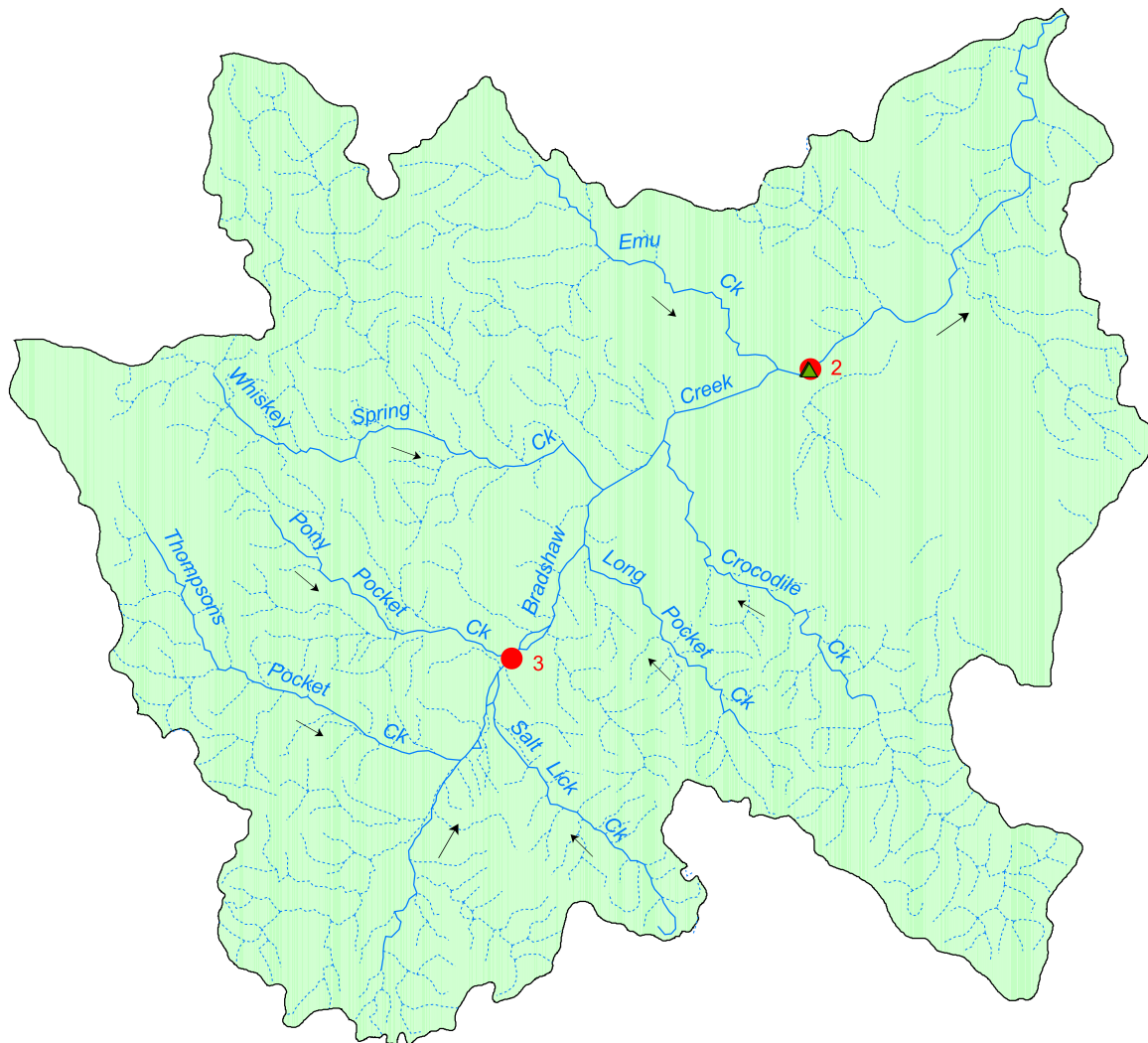
10.9 Bradshaw Creek

Sub-section 11 includes the catchment area of Bradshaw Creek. Of the two sites located in this sub-section, one site was fully assessed (refer Table 10.26 and Map 40).

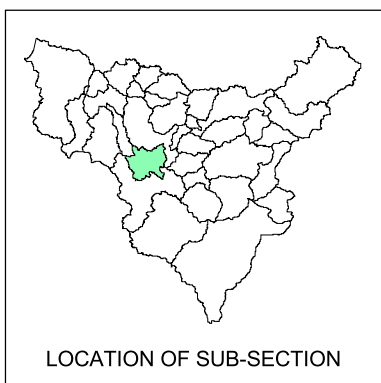
Table 10.26 Summary of Survey Information for Sub-section 11 – Bradshaw Creek

Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
2	Bradshaw Creek	A	Riffle	√		
		B	Pool	√		
3	Bradshaw Creek					√





Area - 1,181 km²



LEGEND	
● 5	Site
▲	Sample Point
(VP)	Vegetation Profile
—	Longitudinal Profile Survey
—	River
—	Creek
←	Flow direction

BRADSHAW CREEK

SUB-SECTION 11

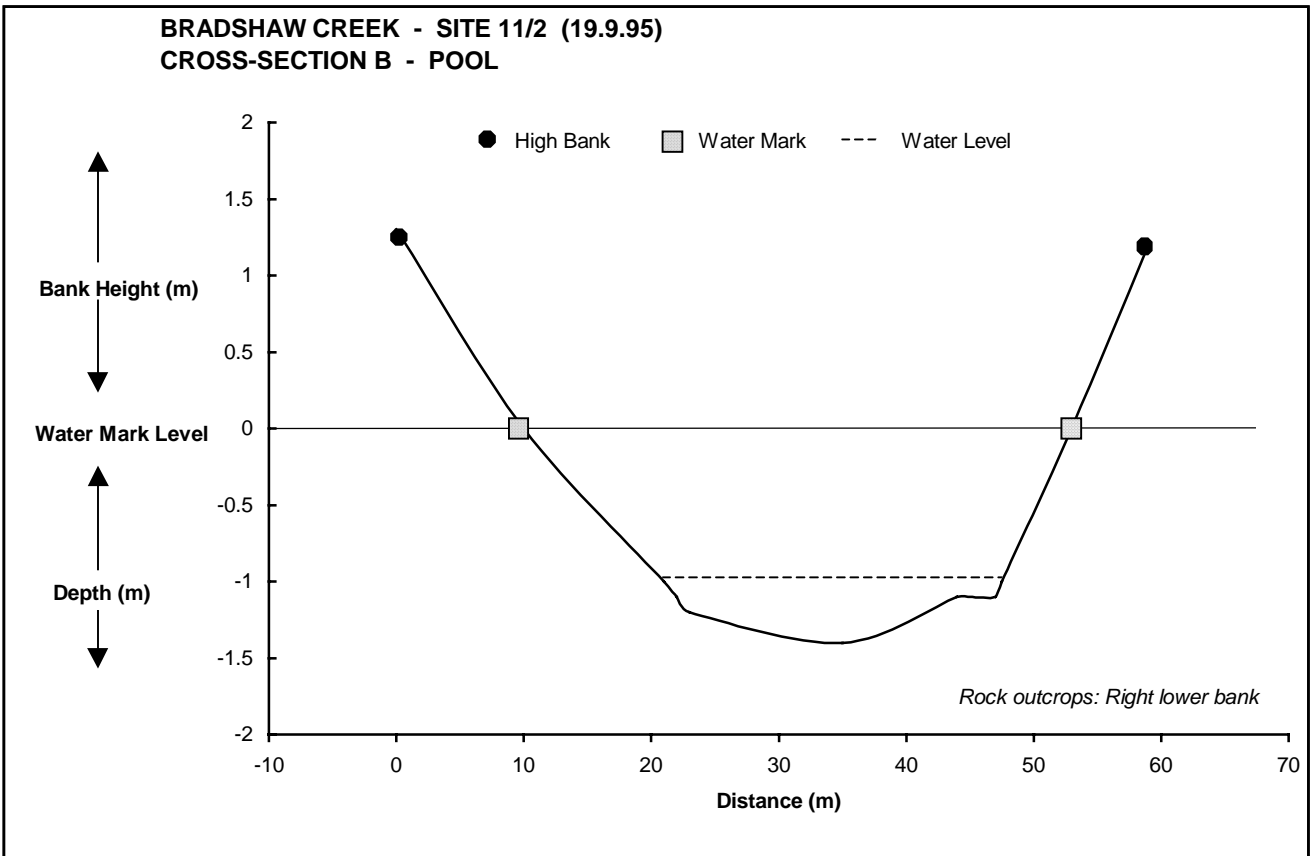
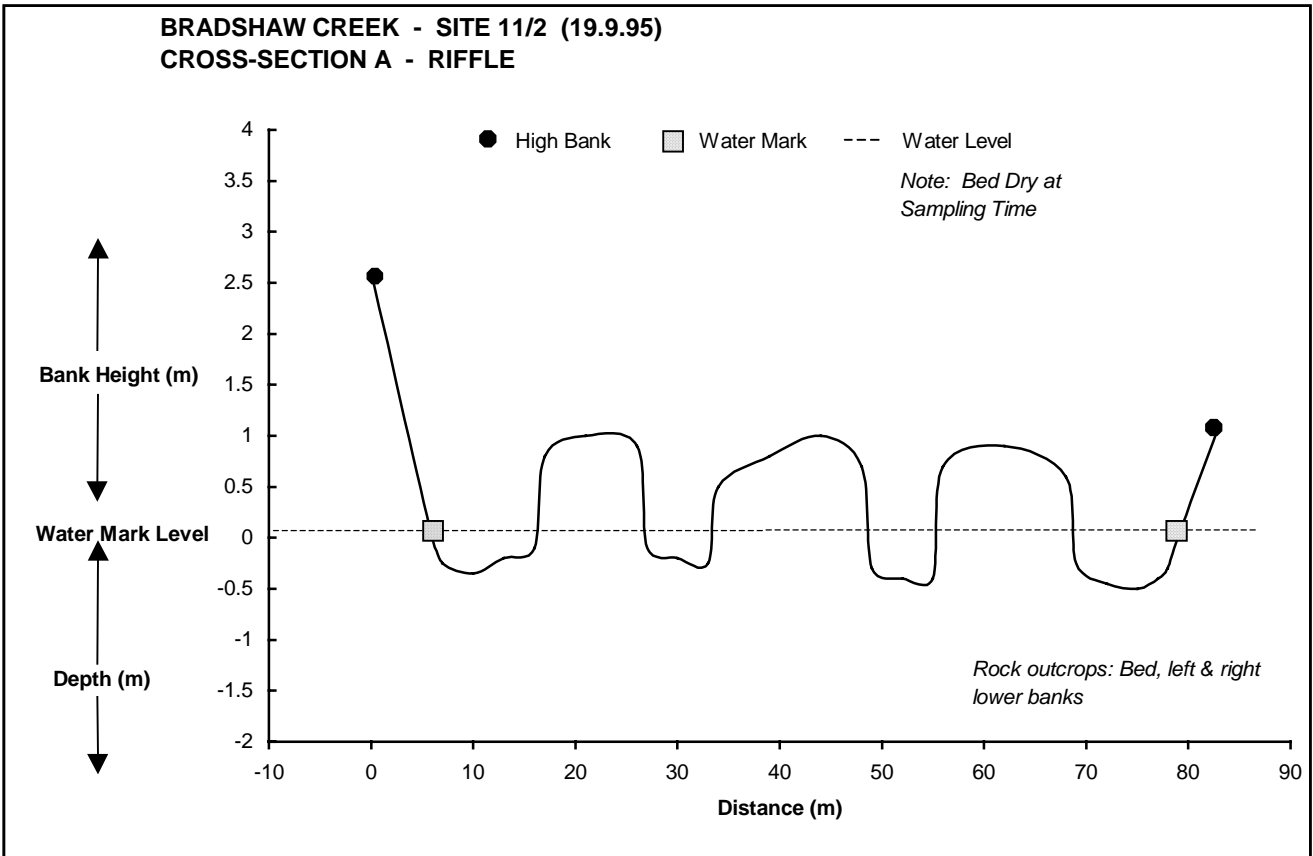


Figure 10.89 Cross-section Surveys for Site 11/2 – Bradshaw Creek

Table 10.27 Major Vegetation Species Recorded at Sites 2 and 3 on Bradshaw Creek located within Sub-section 11

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Sites Where Recorded (Sub-section No. / Site No.)
<i>Acacia holosericea</i>	Low tree / shrub		11/2
<i>Coldenia procumbens</i>	Forb		11/2
<i>Eriachne festucacea</i>	Grass		11/2
<i>Eucalyptus camaldulensis</i>	Tree		11/2
<i>Ficus racemosa</i>	Tree		11/2
<i>Heteropogon contortus</i>	Grass		11/2
<i>Hyptis suaveolens</i>	Forb	E/N	11/2
<i>Lophostemon grandiflorus</i>	Tree		11/2
<i>Melaleuca dealbata</i>	Tree		11/3
<i>Melaleuca leucadendra</i>	Tree		11/2
<i>Nauclea orientalis</i>	Tree		11/2
<i>Pandanus aquaticus</i>	Tree		11/2
<i>Pandanus spiralis</i>	Tree		11/3
<i>Sesbania formosa</i>	Tree		11/2

* Declared Noxious Weed within the Northern Territory



Pandanus aquaticus

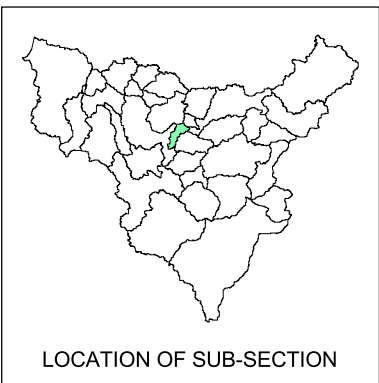
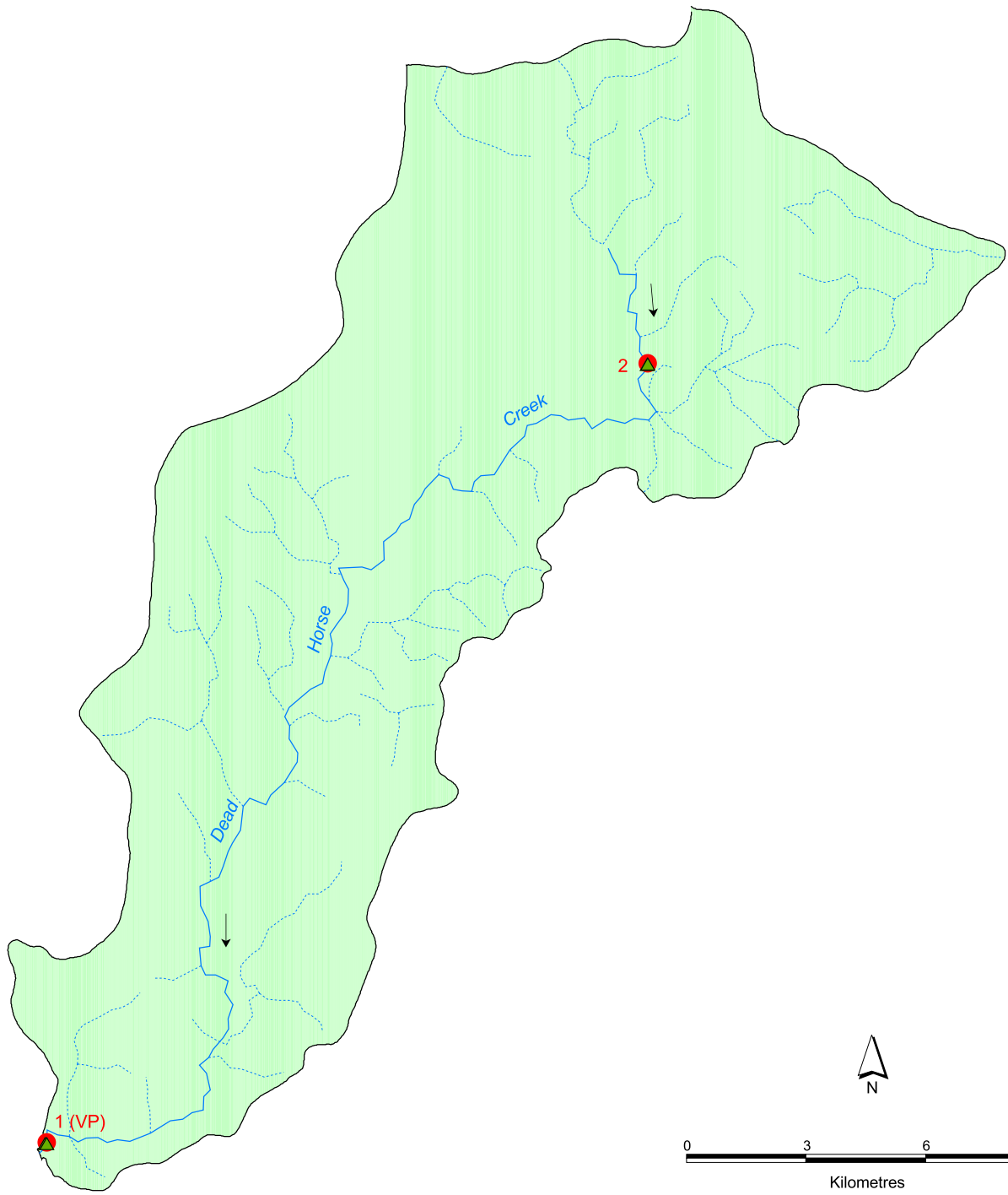
10.10 Dead Horse Creek

Sub-section 12 includes the catchment area of Stray Creek. Two sites were fully assessed within this sub-section (refer Table 10.28 and Map 41).

Table 10.28 Summary of Survey Information for Sub-section 12 – Dead Horse Creek

Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
1	Dead Horse Creek	A	Pool	√	√	
		B	Riffle	√		
2	Dead Horse Creek	A	Riffle	√		
		B	Pool	√		





LEGEND

- 5 Site
- ▲ Sample Point
- (VP) Vegetation Profile
- Longitudinal Profile Survey
- River
- Creek
- ← Flow direction

DEAD HORSE CREEK
SUB-SECTION 12

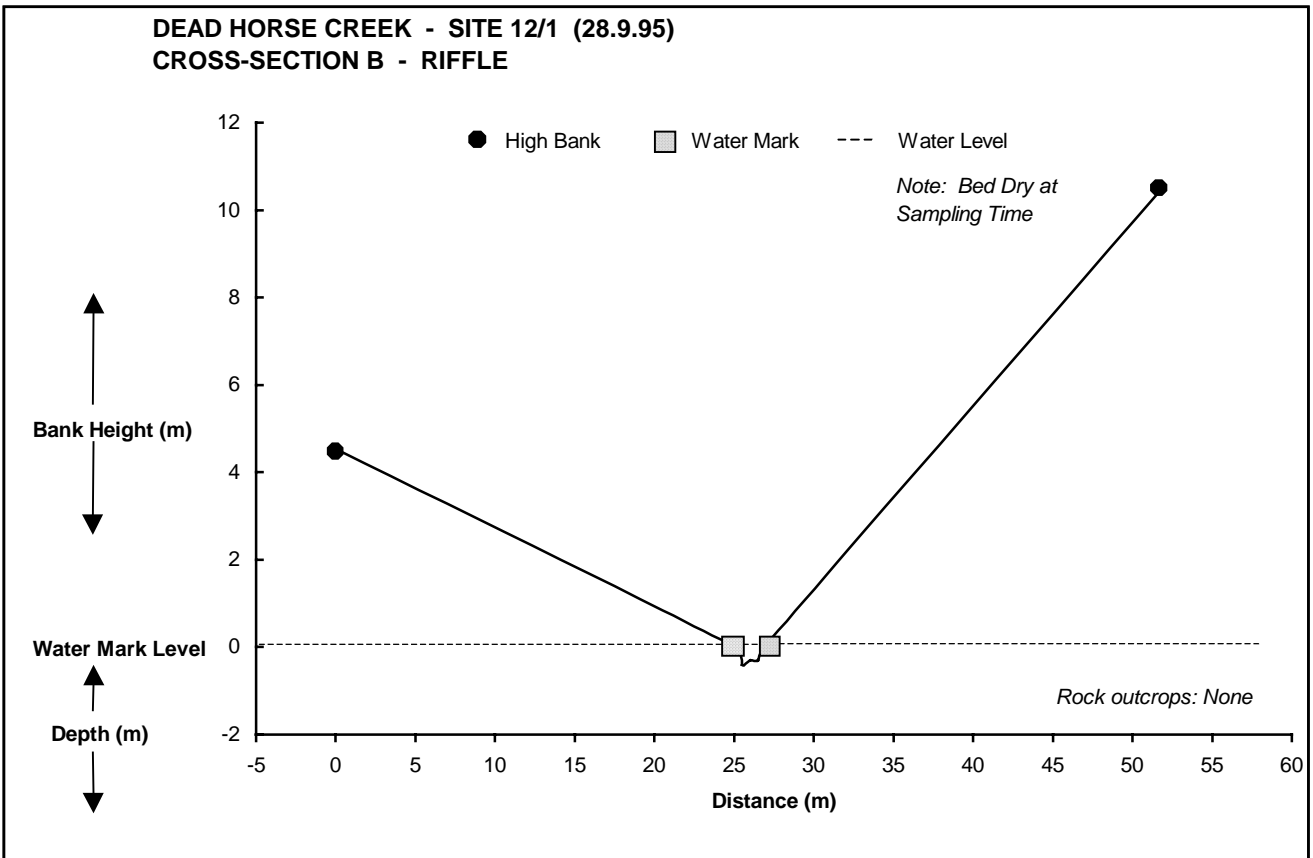
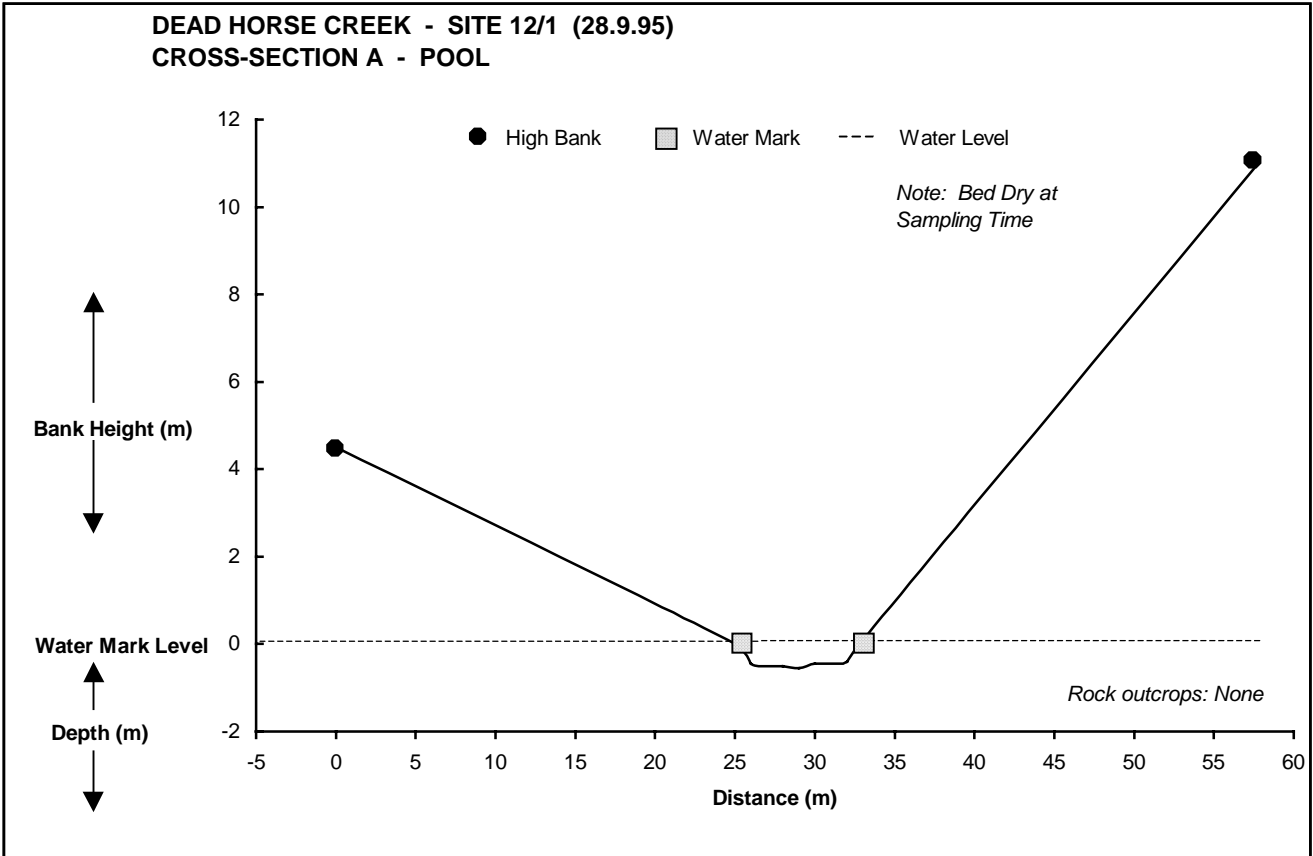


Figure 10.90 Cross-section Surveys for Site 12/1 – Dead Horse Creek

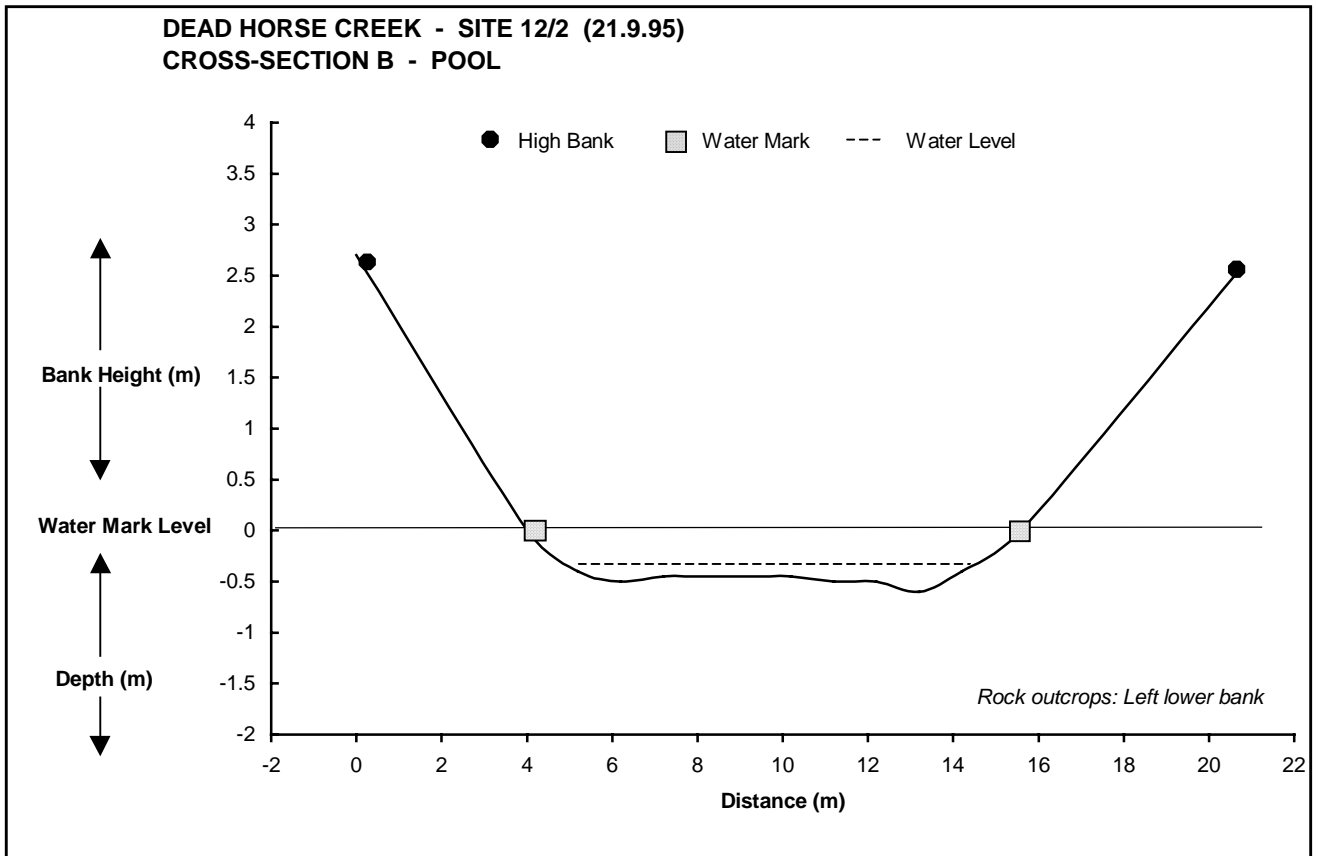
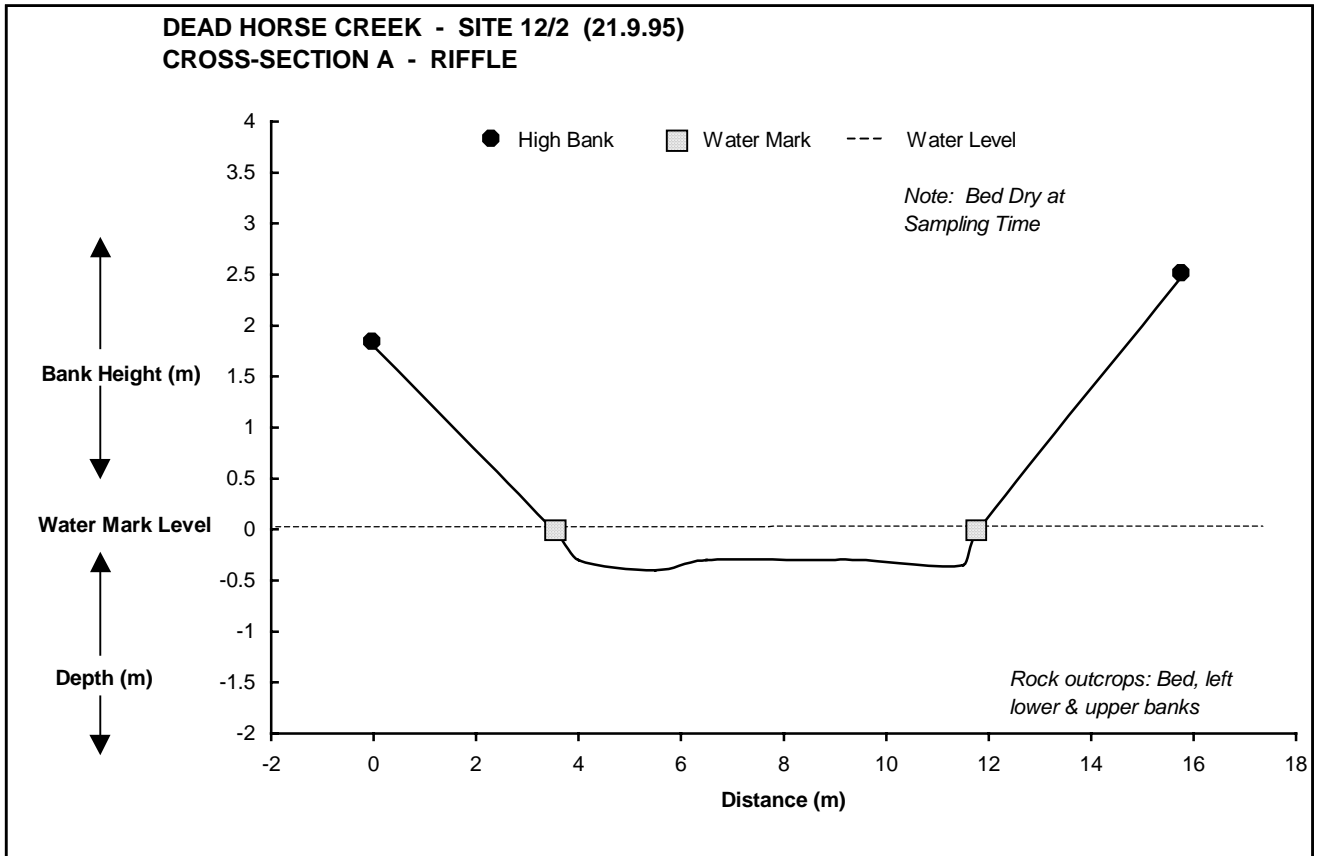
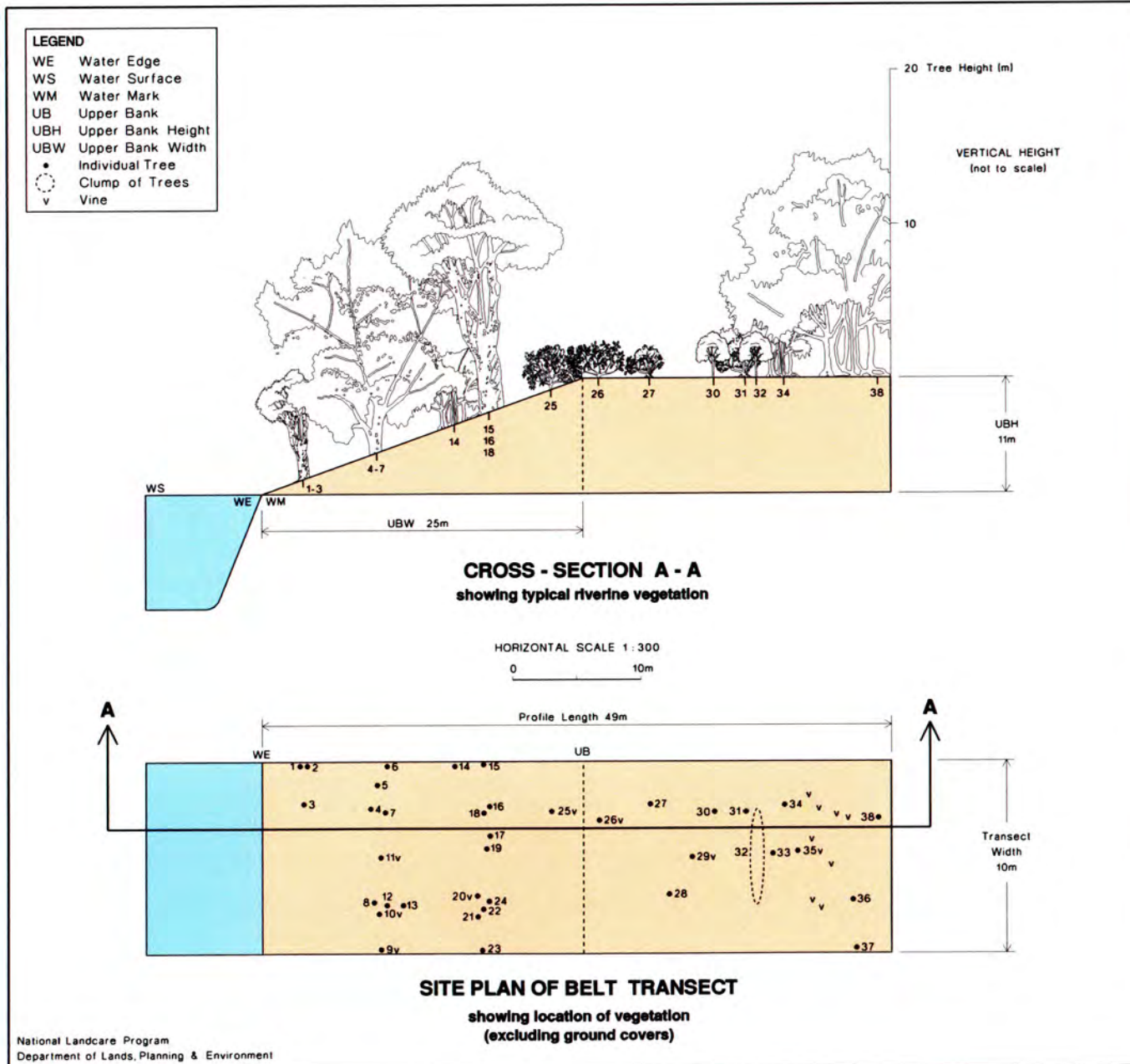


Figure 10.91 Cross-section Surveys for Site 12/2 – Dead Horse Creek



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1-3, 8-13, 15-24, 28	3.8-17	<i>Meisaleuca argentea</i> or <i>Meisaleuca leucadendra</i>
4-7	8-16	<i>Casuarina cunninghamiana</i>
14	7.5	<i>Barringtonia acutangula</i>
25, 33, 36	3-5.5	<i>Ficus scobina</i>
26	2.5	<i>Antidesma ghaesembilla</i>
27, 31, 34, 35, 37, 38	2.2-15	<i>Cathormion umbellatum</i>
29	18	<i>Eucalyptus camaldulensis</i>
30, 32 (4 trees)	2.8	<i>Strychnos lucida</i>

OTHER SPECIES LOCATED AT SITE:

- Forbs:** *Centipeda minima*, *Coldenia procumbens*, *Dentella repens*, *Glinus oppositifolius*, *Nelsonia campestris*
- Grasses:** *Paspalidium distans*
- Tree/Shrub:** *Alatalaya hemiglauca*
- Trees:** *Nauclea orientalis*
- Vines:** **Cardiospermum halicacabum*, *Flagellaria indica*, **Passiflora foetida*
- Weeds:** **Xanthium occidentale* (Noxious)

* Exotic species

NOTES

1. The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
2. Cross-section A-A includes all vegetation above the line marked through the belt transect.
3. The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
4. Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

DEAD HORSE CREEK	Date 28.9.95
Sub-section 12 Site 1	Figure 10.92

Table 10.29 Major Vegetation Species Recorded at Site 2 on Dead Horse Creek located within Sub-section 12

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Sites Where Recorded (Sub-section No. / Site No.)
<i>Acacia difficilis</i>	Low tree / shrub		12/2
<i>Acacia holosericea</i>	Low tree / shrub		12/2
<i>Cynodon dactylon</i>	Grass		12/2
<i>Cyperus holoschoenus</i>	Forb		12/2
<i>Eragrostis cumingii</i>	Grass		12/2
<i>Eucalyptus patellaris</i>	Tree		12/2
<i>Eucalyptus polycarpa</i>	Tree		12/2
<i>Grevillea pteridifolia</i>	Tree		12/2
<i>Lophostemon grandiflorus</i>	Tree		12/2
<i>Nelsonia campestris</i>	Forb		12/2
<i>Pandanus spiralis</i>	Tree		12/2
<i>Petalostigma banksii</i>	Tree		12/2
<i>Plectranthus scutellarioides</i>	Forb		12/2
<i>Trachymene rotundifolia</i>	Forb		12/2

* Declared Noxious Weed within the Northern Territory



Acacia holosericea

10.11 Fergusson River

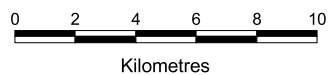
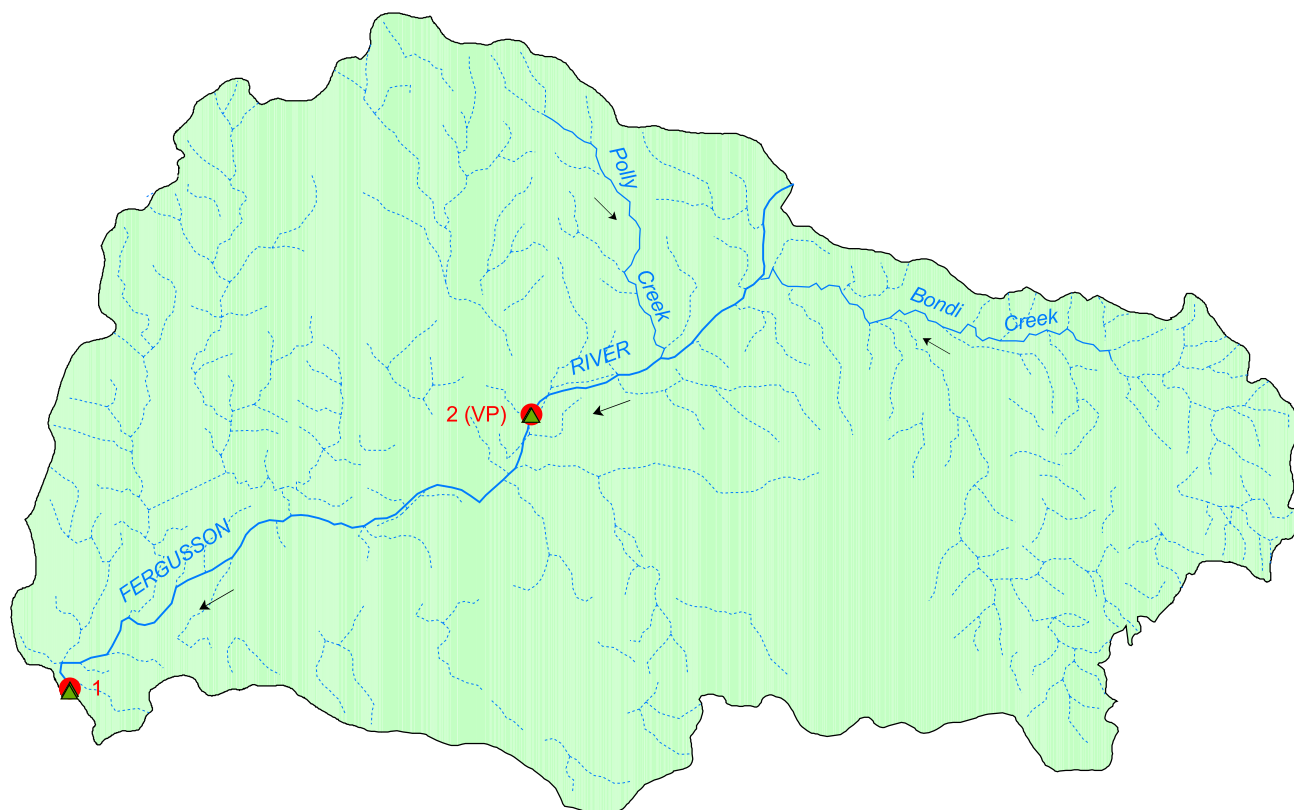
10.11.1 Fergusson River – Below Edith River

Sub-section 13a encompasses the Fergusson River, downstream of the junction with Edith River. Two sites were fully assessed in this sub-section (refer Table 10.30 and Map 42).

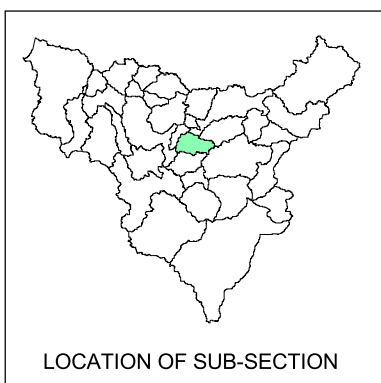
Table 10.30 Summary of Survey Information for Sub-section 13a – Fergusson River Below Edith River

Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
1	Fergusson River	A	Riffle	√		
		B	Pool	√		
2	Fergusson River	A	Pool		√	
		B	Riffle	√		





Area - 711 km²



LEGEND	
● 5	Site
▲	Sample Point
(VP)	Vegetation Profile
—	Longitudinal Profile Survey
—	River
—	Creek
←	Flow direction

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

FERGUSSON RIVER Below Edith River

SUB-SECTION 13a

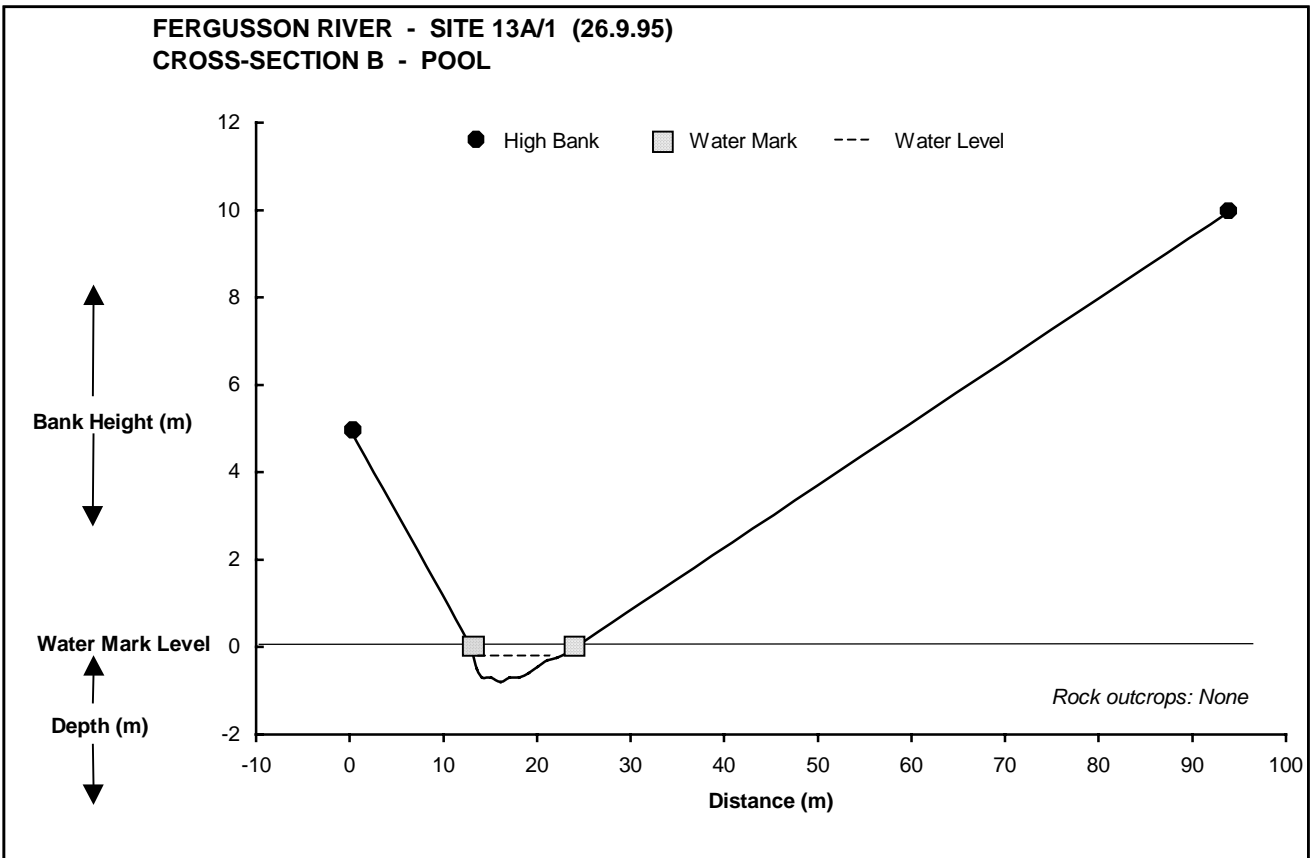
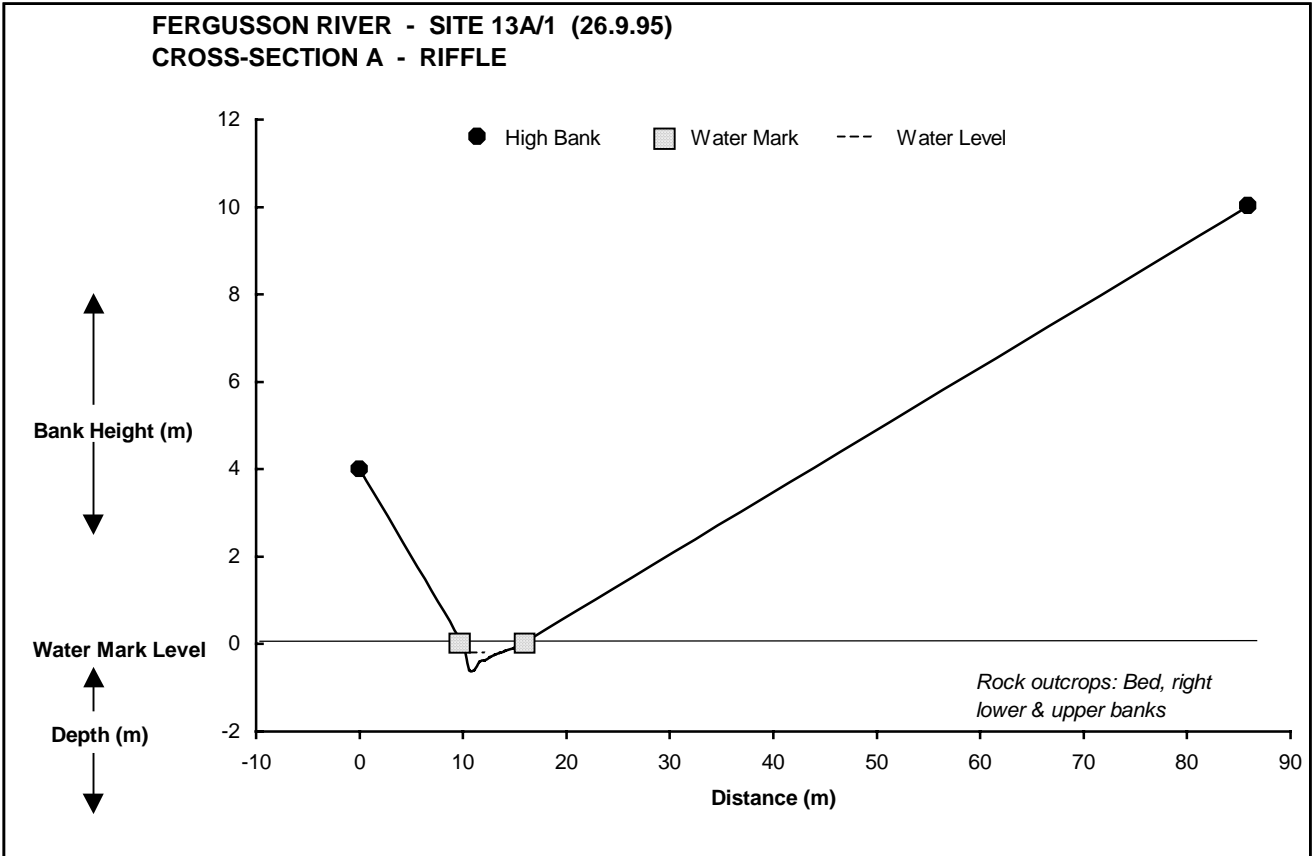


Figure 10.93 Cross-section Surveys for Site 13a/1 – Fergusson River

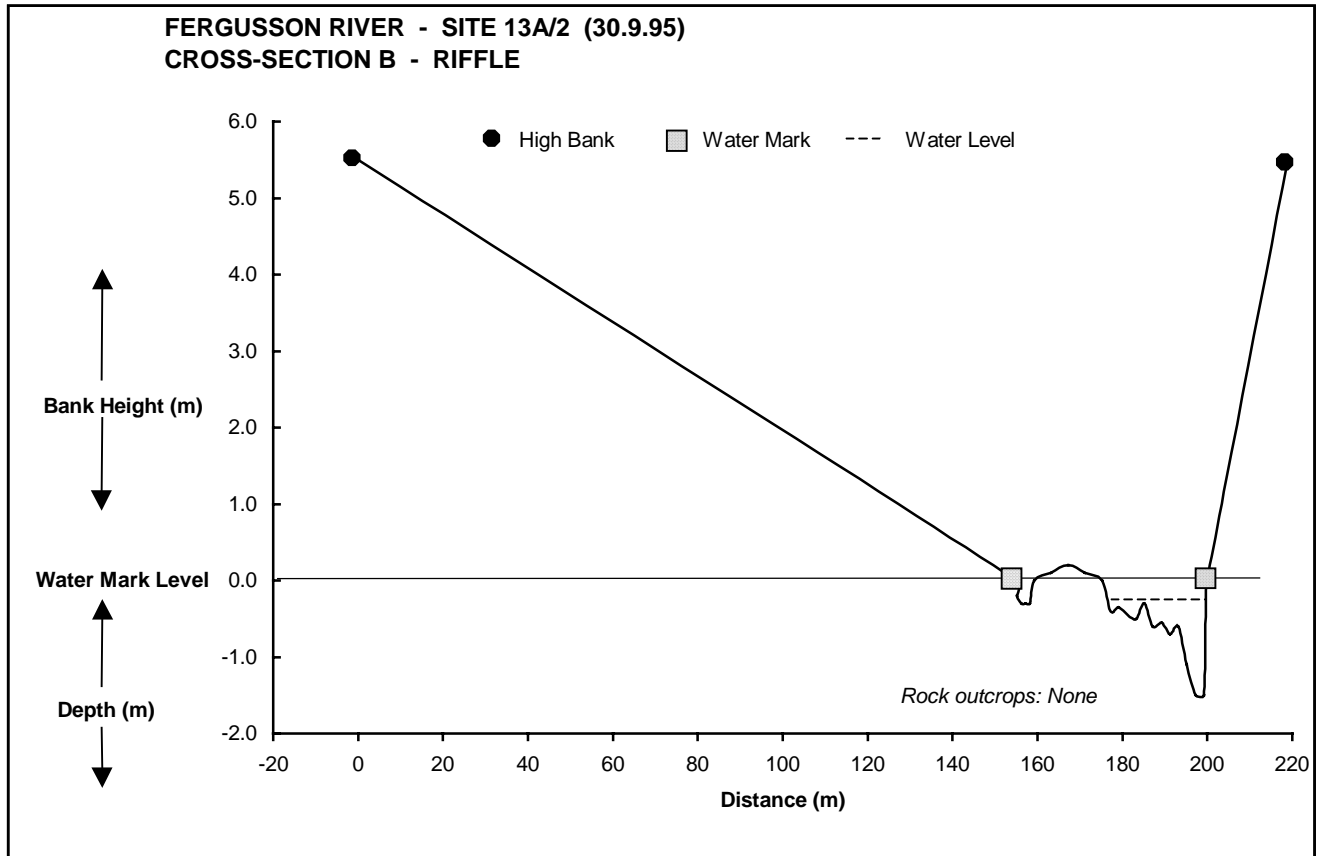
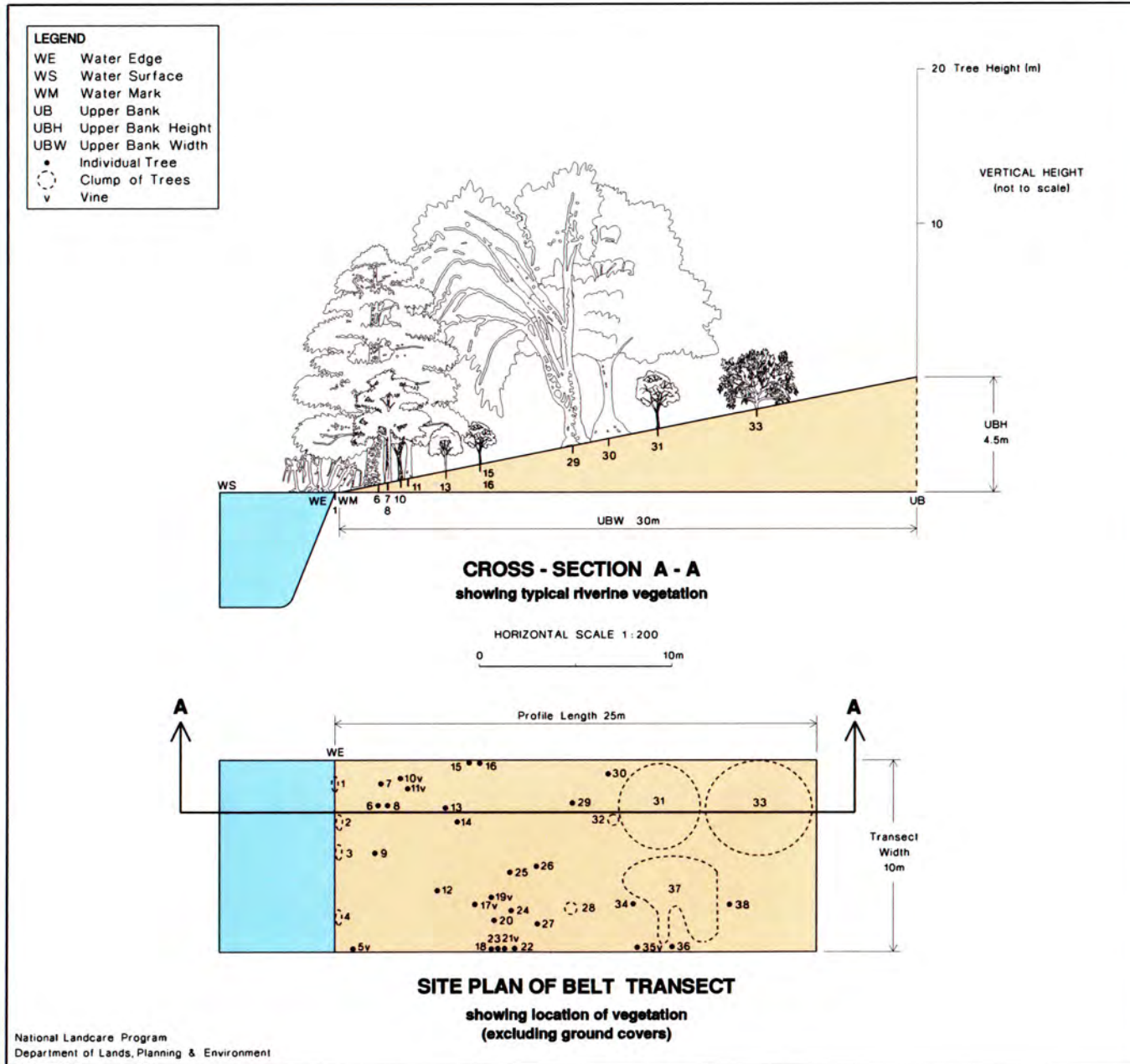


Figure 10.94 Cross-section Survey for Site 13a/2 – Fergusson River





TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1 (1 tree)	3-5	<i>Pandanus aqualicus</i>
2 (3 trees), 4 (2 trees)	3.5-6.5	<i>Terminalia erythrocarpa</i>
3 (2 shrubs), 9	2.5-4	<i>Phyllanthus reticulatus</i>
5, 22	1.3	<i>Canthium schultzei</i>
6	16	<i>Nauclea orientalis</i>
7, 8, 17, 19-21	5-15	<i>Syzygium lorte</i>
10, 12, 15, 16, 24, 25, 28 (4 trees), 31 (11 trees), 34-36	1.3-8	<i>Acacia auriculiformis</i>
11	7	<i>Antidesma ghaesemilla</i>
13, 18, 27	1.4-5	<i>Diospyros calycantha</i>
14	2.3	<i>Flacourtia territorialis</i>
23, 32 (2 trees), 33 (16 trees), 37 (15 trees)	1.3-4	<i>Ficus scobina</i>
26, 30	17-18	<i>Terminalia microcarpa</i>
29	19	<i>Melaleuca leucadendra</i>
38	1.4	<i>Atalaya hemiglauca</i>

OTHER SPECIES LOCATED AT SITE:

Forbs: *Achyranthes aspera*, *Chara* sp. (Aquatic), **Melochia pyramidata*

Grasses: *Paspalum distans*, *Paspalum scrobiculatum*

Trees: *Barringtonia acutangula*, *Eucalyptus camaldulensis*

Vines: **Passiflora foetida*

*Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 - Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

FERGUSSON RIVER	Date 30.9.95
Sub-section 13A Site 2	Figure 10.95

Table 10.31 Major Vegetation Species Recorded at Site 1 on Fergusson River located within Sub-section 13a

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Site Where Recorded (Sub-section No. / Site No.)
<i>Barringtonia acutangula</i>	Low tree / shrub		13a/1
<i>Casuarina cunninghamiana</i>	Tree		13a/1
<i>Chara sp.</i>	Forb		13a/1
<i>Coldenia procumbens</i>	Forb		13a/1
<i>Cynodon dactylon</i>	Grass		13a/1
<i>Dentella repens</i>	Forb		13a/1
<i>Eucalyptus camaldulensis</i>	Tree		13a/1
<i>Melaleuca argentea</i>	Tree		13a/1
<i>Melaleuca leucadendra</i>	Tree		13a/1
<i>Nauclea orientalis</i>	Tree		13a/1
<i>Passiflora foetida</i>	Vine	E	13a/1
<i>Xanthium occidentale</i>	Forb	E/N	13a/1

* Declared Noxious Weed within the Northern Territory



Vegetation along Fergusson River at Site 13a/2 showing area where vegetation profile completed

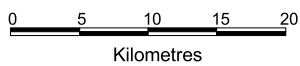
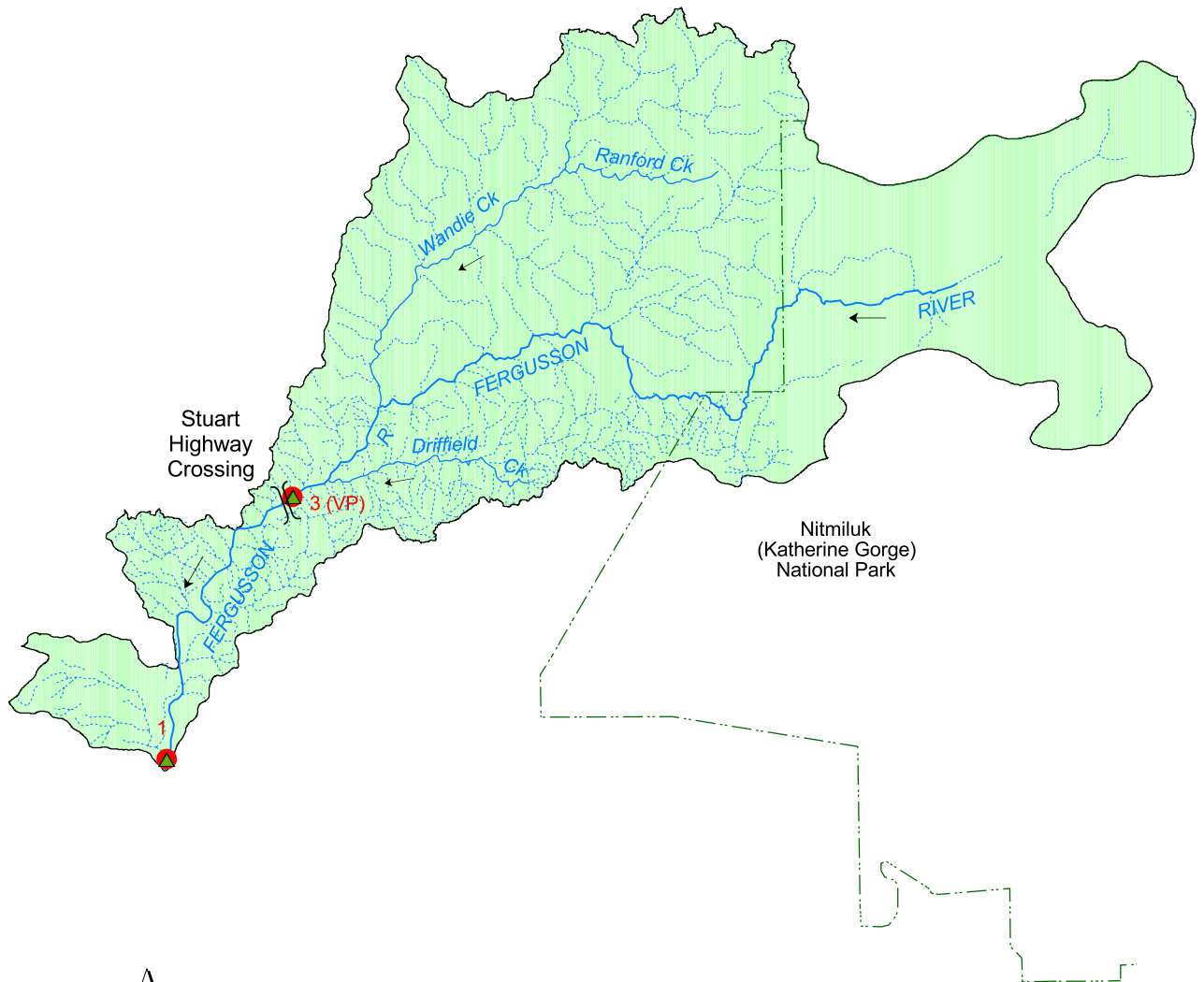
10.11.2 Fergusson River – Above Edith River

Sub-section 13b encompasses the Fergusson River, upstream of the junction with Edith River (excluding Edith River, Eight Mile Creek and Cullen River catchment areas). Two sites were fully assessed in this sub-section (refer Table 10.32 and Map 43).

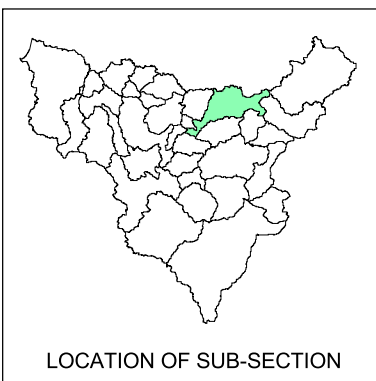
Table 10.32 Summary of Survey Information for Sub-section 13b – Fergusson River Above Edith River

Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
1	Fergusson River	A	Riffle	√		
		B	Pool	√		
3	Fergusson River	A	Pool	√	√	
		B	Rapid	√		





Area - 1,961 km²



LEGEND	
● 5	Site
▲	Sample Point
(VP)	Vegetation Profile
— (Yellow)	Longitudinal Profile Survey
— (Blue)	River
— (Light Blue)	Creek
←	Flow direction

 TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

FERGUSSON RIVER Above Edith River

SUB-SECTION 13b

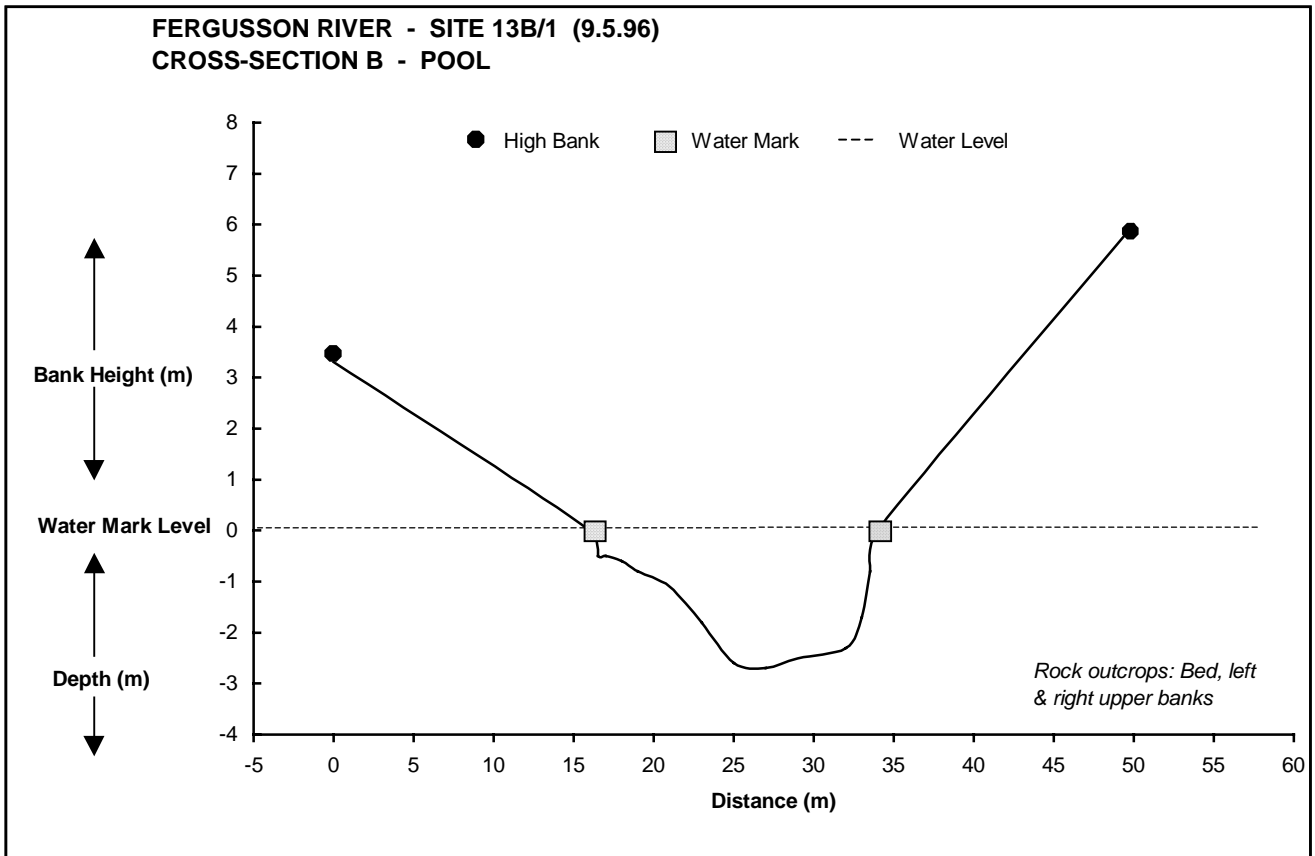
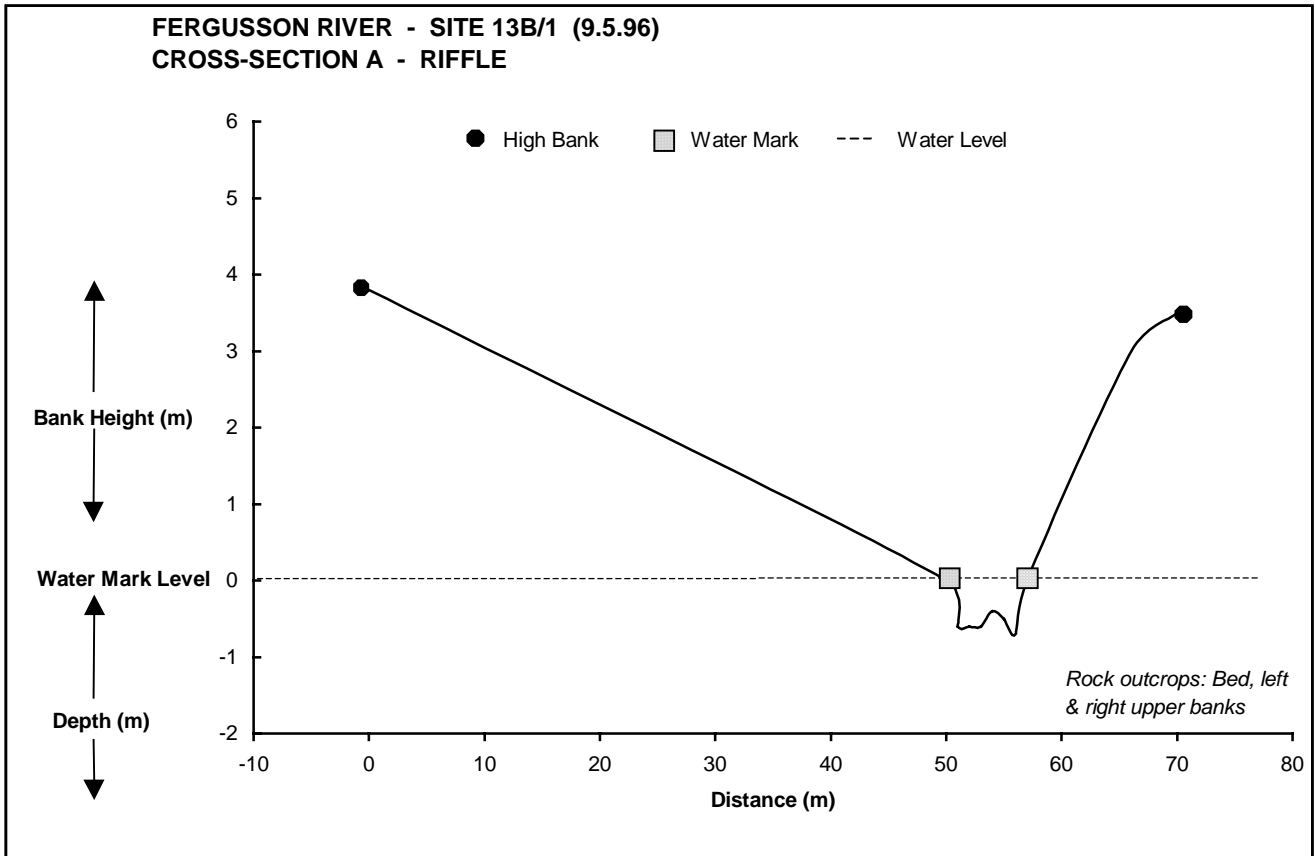


Figure 10.96 Cross-section Surveys for Site 13b/1 – Fergusson River

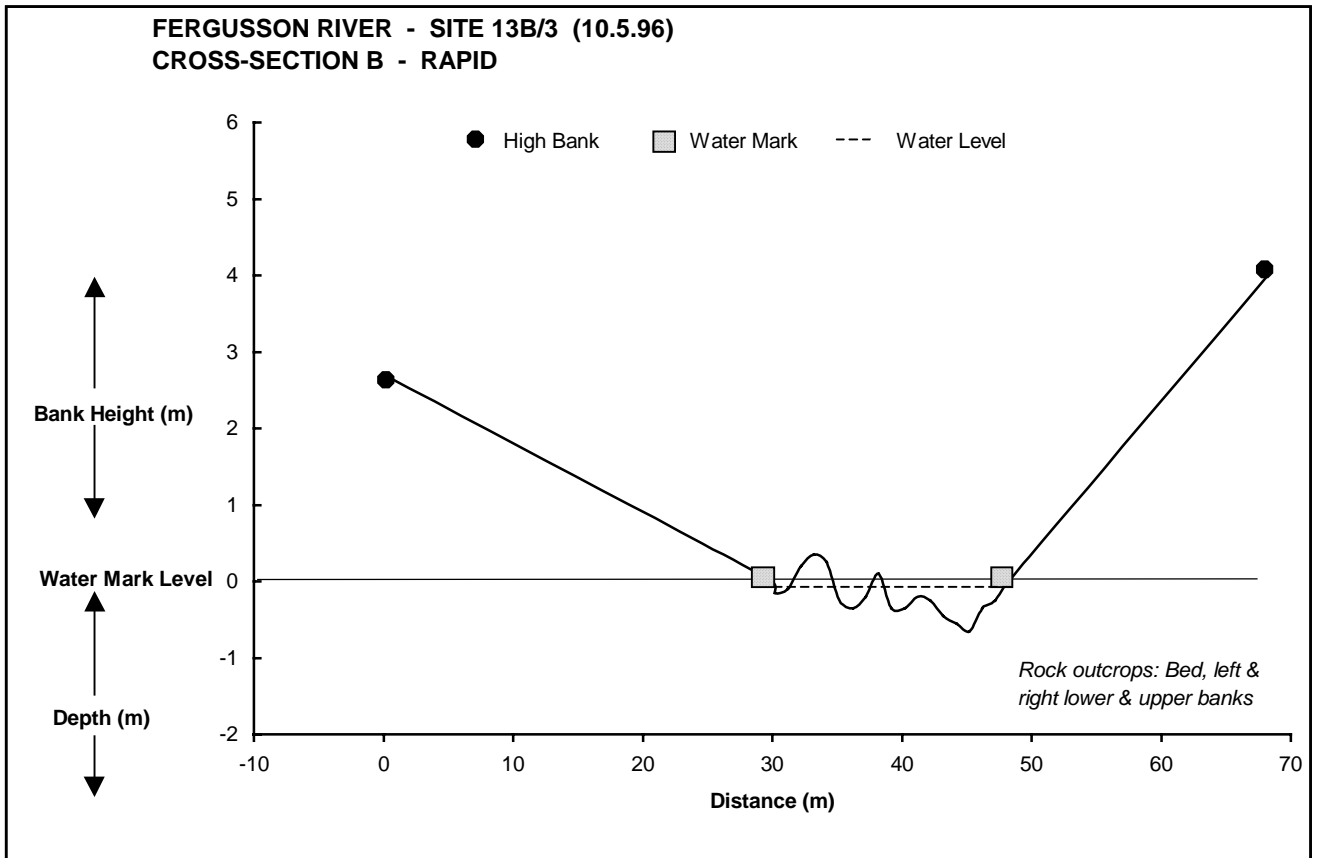
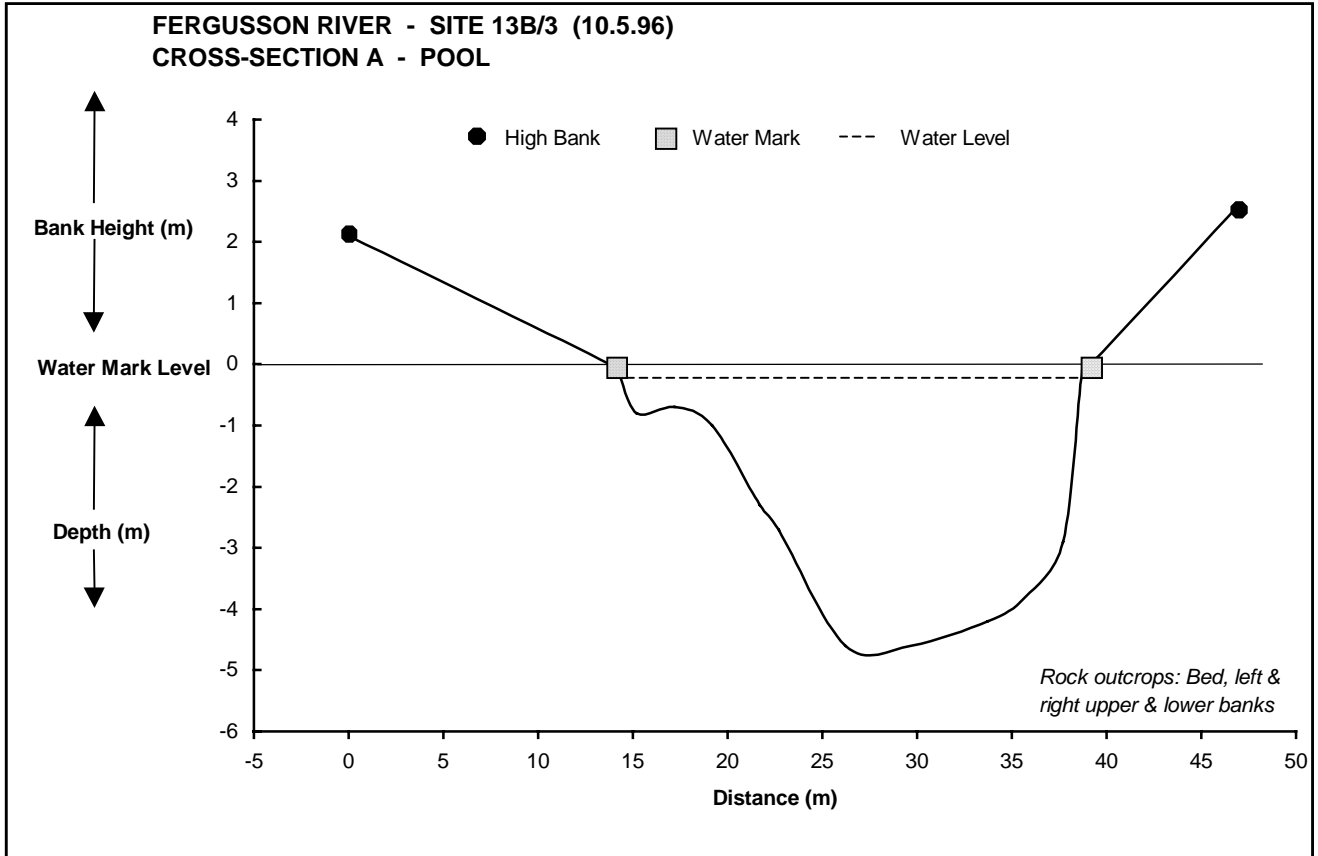
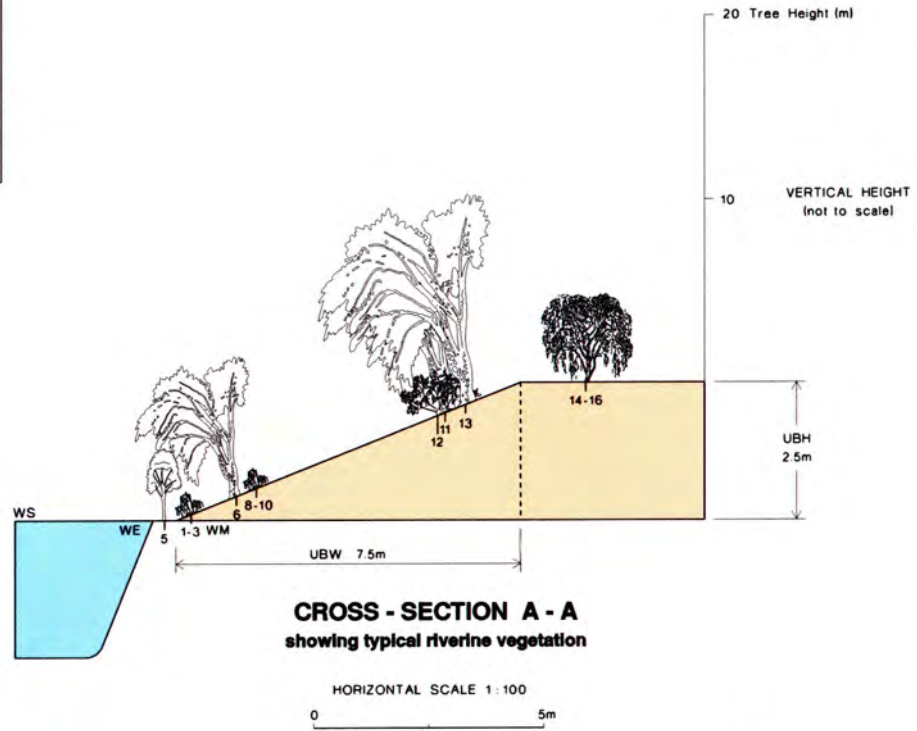
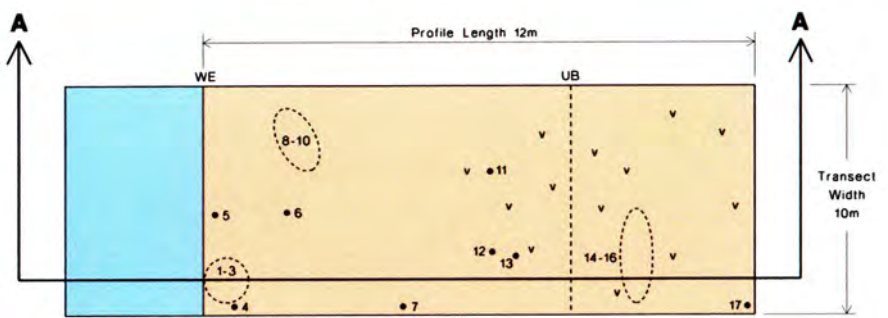


Figure 10.97 Cross-section Surveys for Site 13b/3 – Fergusson River

LEGEND	
WE	Water Edge
WS	Water Surface
WM	Water Mark
UB	Upper Bank
UBH	Upper Bank Height
UBW	Upper Bank Width
•	Individual Tree
○	Clump of Trees
v	Vine



CROSS - SECTION A - A
showing typical riverine vegetation



SITE PLAN OF BELT TRANSECT
showing location of vegetation
(excluding ground covers)

National Landcare Program
Department of Lands, Planning & Environment

TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1-3, 8-10	1.3-1.5	<i>Pandanus aquaticus</i>
4	1.5	<i>Centium schultzi</i>
5	4	<i>Syzygium eucalyptoides</i> spp. <i>eucalyptoides</i>
6, 7, 11, 13	8-12	<i>Melaleuca leucadendra</i>
12	2.5	<i>Phyllanthus reticulatus</i>
14-16	5	<i>Ficus coronata</i>
17	8	<i>Eucalyptus camaldulensis</i>

OTHER SPECIES LOCATED AT SITE:

Forbs: *Blumea saxatilis*
Melochia corchorifolia

Grasses: *Arundinella* sp.
Panicum mindanaense
Paspalum scrobiculatum

Shrubs: *Calytrix exstipulata*

Shrub/Tree: *Acacia difficilis*
Acacia holosericea
Melaleuca nervosa

Trees: *Lophostemon grandillarus*

Vines: **Passiflora foetida*

Weeds: **Hyptis suaveolens* (Noxious)

*Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 - Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT
RIVERINE VEGETATION PROFILE

FERGUSSON RIVER	Date 10.5.98
Sub-section 13B Site 3	Figure 10.98

Table 10.33 Major Vegetation Species Recorded at Site 1 on Fergusson River located within Sub-section 13b

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Site Where Recorded (Sub-section No. / Site No.)
<i>Acacia auriculiformis</i>	Tree		13b/1
<i>Antidesma ghaesembilla</i>	Low tree / shrub		13b/1
<i>Barringtonia acutangula</i>	Low tree / shrub		13b/1
<i>Calytrix brownii</i>	Low tree / shrub		13b/1
<i>Carallia brachiata</i>	Tree		13b/1
<i>Diospyros calycantha</i>	Tree		13b/1
<i>Diospyros compacta</i>	Tree		13b/1
<i>Eleocharis geniculata</i>	Forb		13b/1
<i>Eucalyptus camaldulensis</i>	Tree		13b/1
<i>Ficus coronulata</i>	Tree		13b/1
<i>Flacourtia territorialis</i>	Small tree / shrub		13b/1
<i>Flagellaria indica</i>	Vine		13b/1
<i>Germainia truncatiglumis</i>	Grass		13b/1
<i>Lophostemon grandiflorus</i>	Tree		13b/1
<i>Melaleuca leucadendra</i>	Tree		13b/1
<i>Nauclea orientalis</i>	Tree		13b/1
<i>Pandanus aquaticus</i>	Tree		13b/1
<i>Passiflora foetida</i>	Vine	E	13b/1
<i>Phragmites karka</i>	Grass		13b/1
<i>Phyllanthus reticulatus</i>	Low tree / shrub		13b/1
<i>Planchonia careya</i>	Tree		13b/1
<i>Strychnos lucida</i>	Tree		13b/1

* Declared Noxious Weed within the Northern Territory

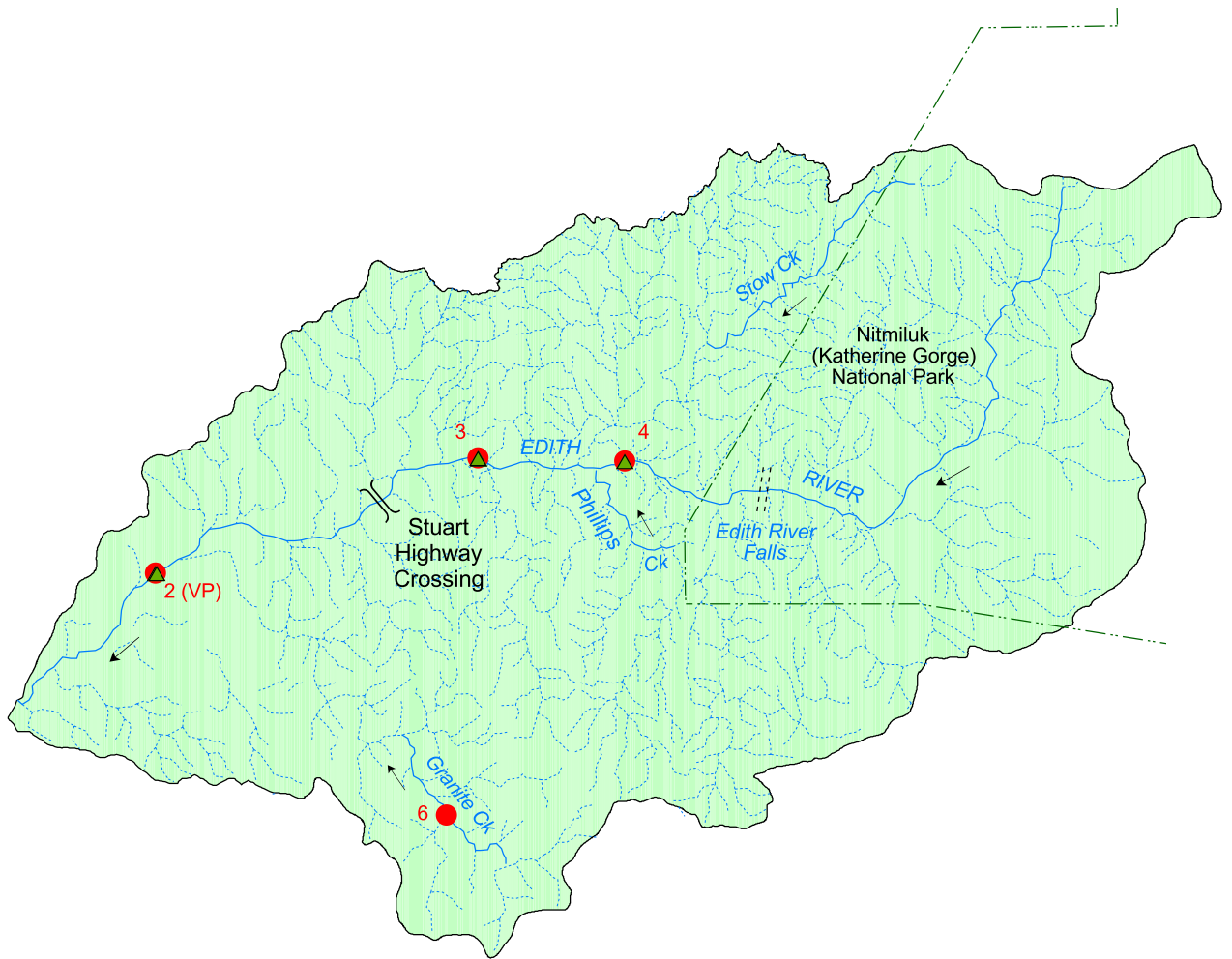
10.11.3 Edith River

Sub-section 14 includes the catchment of Edith River. Of the 4 sites located within this sub-section, 3 sites were fully assessed (refer Table 10.34 and Map 44).

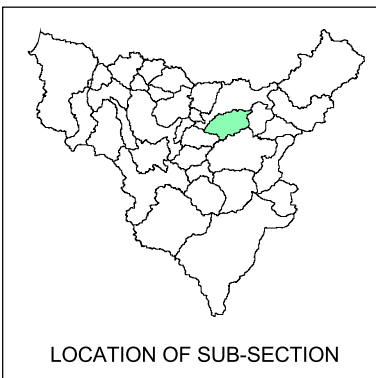
Table 10.34 Summary of Survey Information for Sub-section 14 – Edith River

Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
2	Edith River	A	Riffle	√	√	
		B	Pool	√		
3	Edith River	A	Riffle	√		
		B	Pool	√		
4	Edith River	A	Pool	√		
6	Granite Creek					√





Area - 1,057 km²



LEGEND	
● 5	Site
▲	Sample Point
(VP)	Vegetation Profile
—	Longitudinal Profile Survey
—	River
—	Creek
←	Flow direction



TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

EDITH RIVER

SUB-SECTION 14

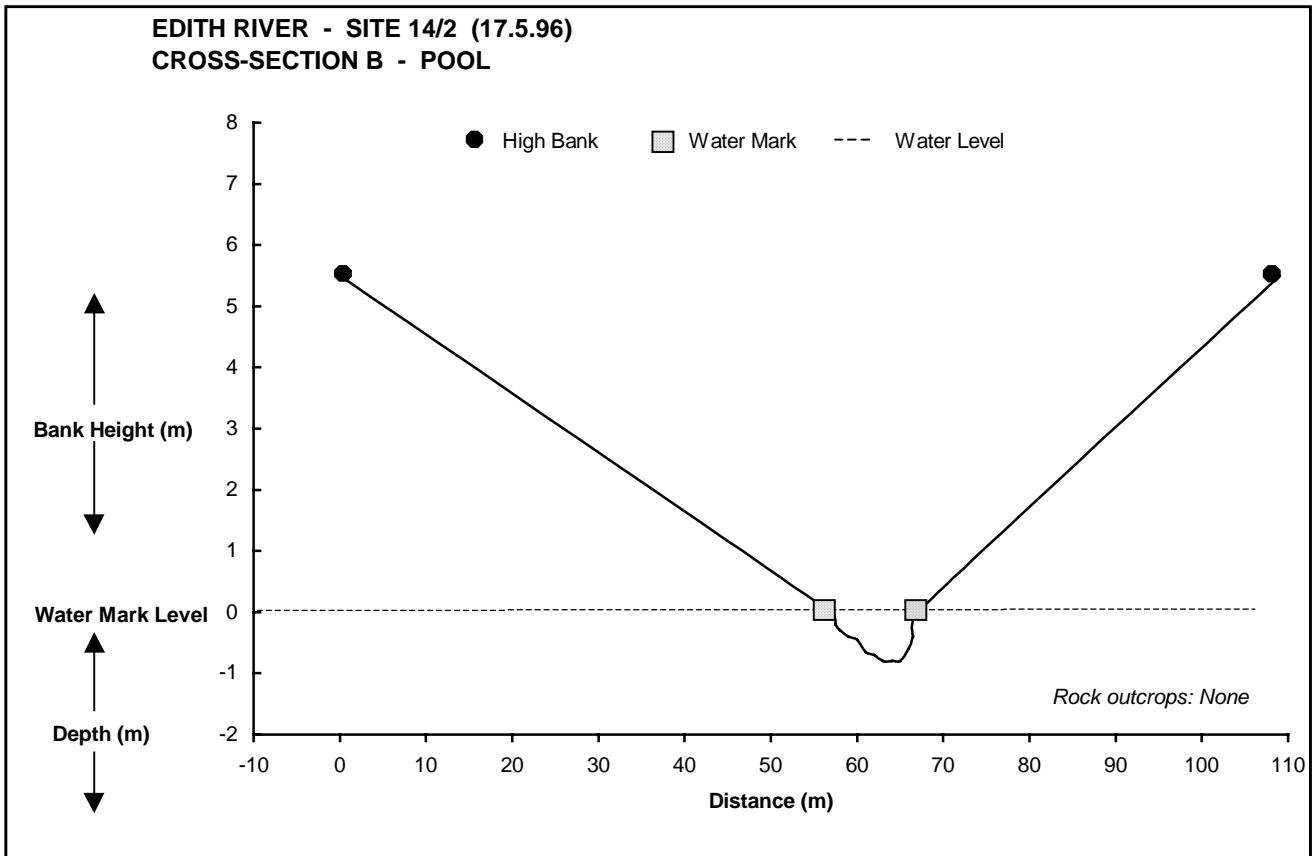
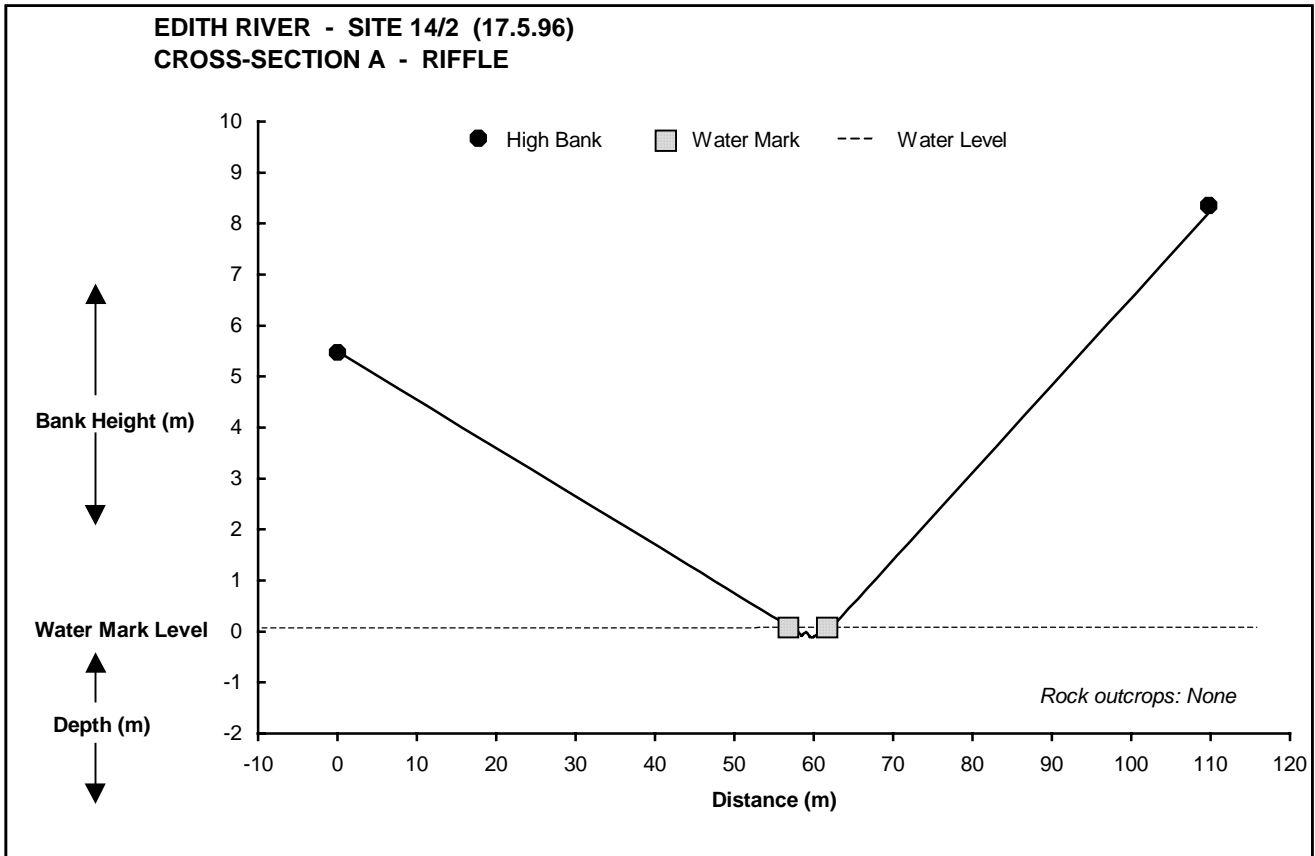


Figure 10.99 Cross-section Surveys for Site 14/2 – Edith River

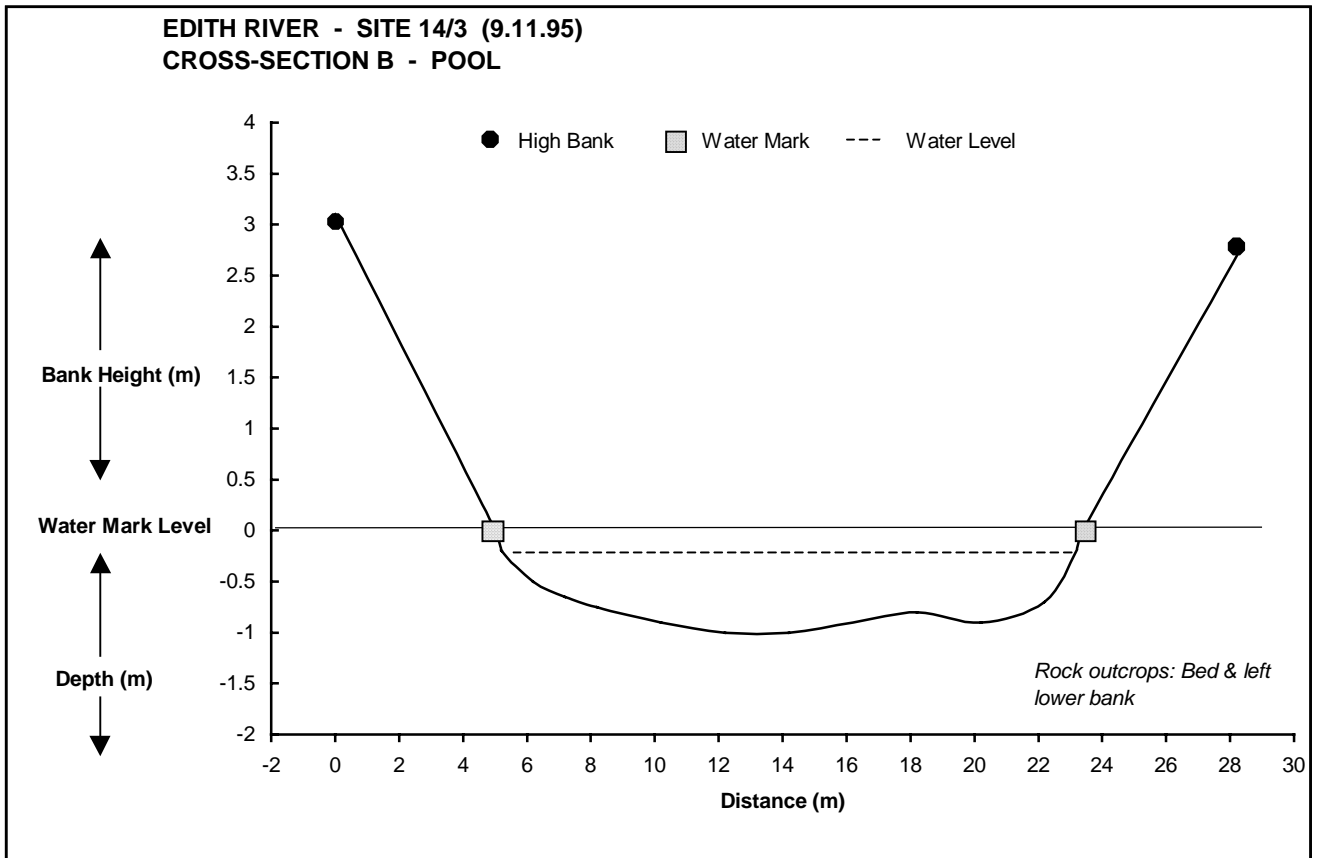
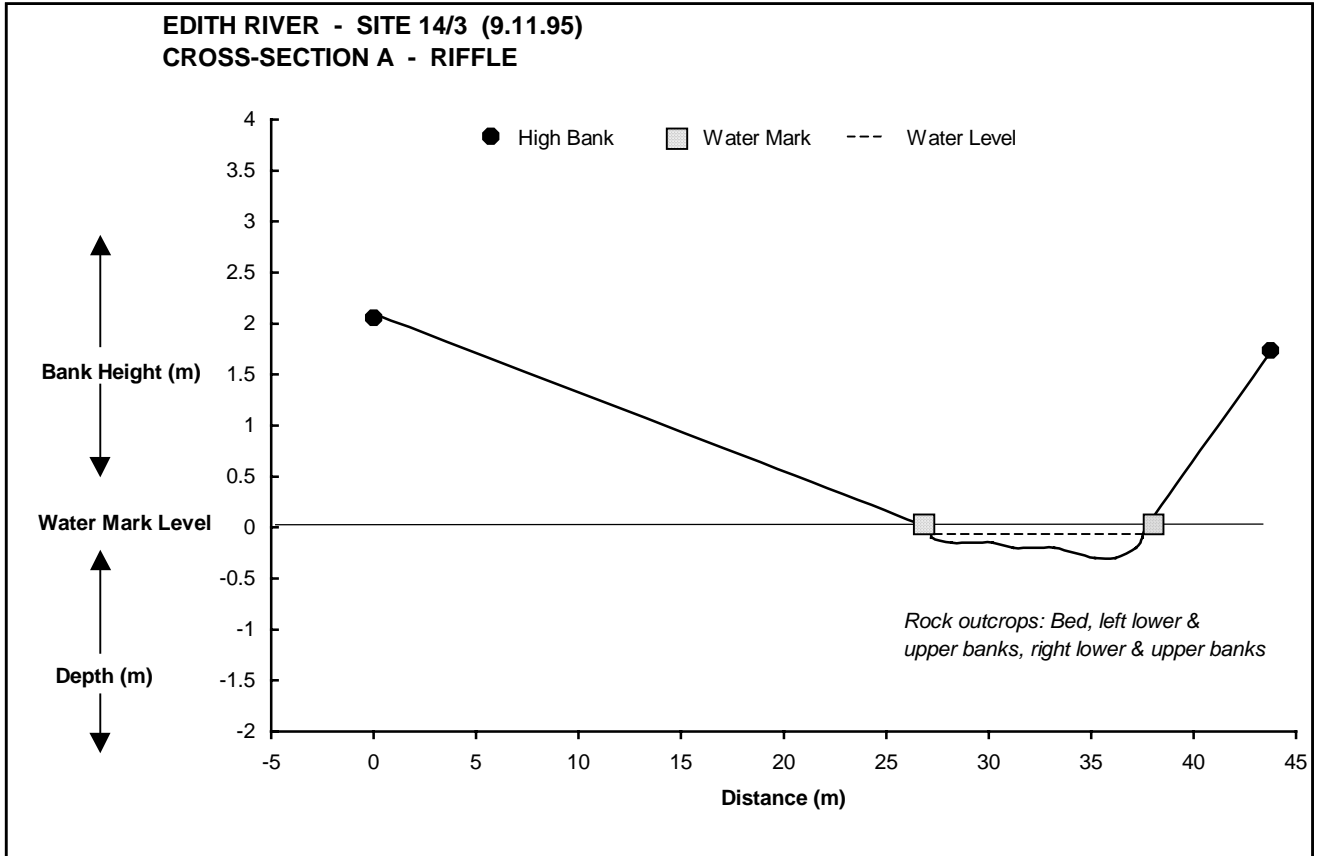


Figure 10.100 Cross-section Surveys for Site 14/3 – Edith River

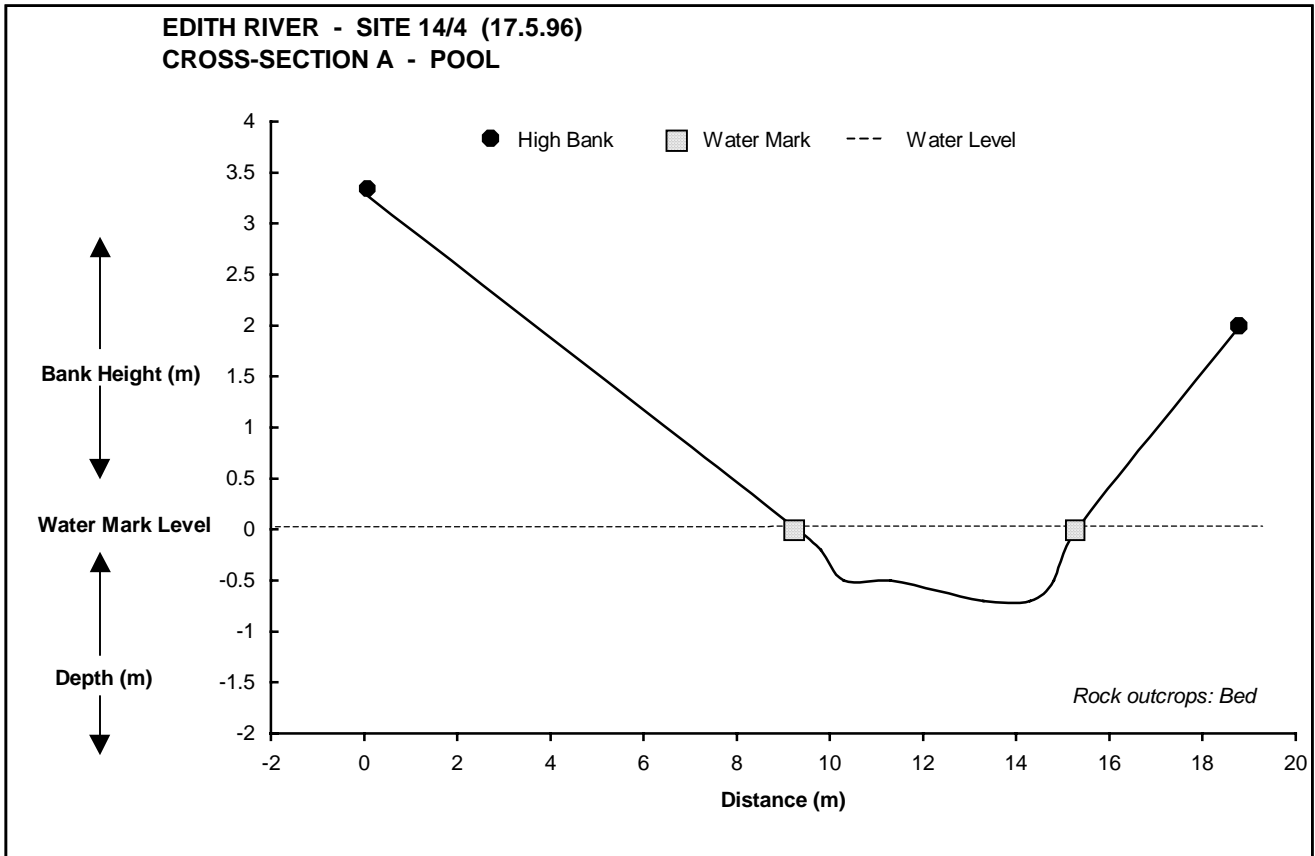
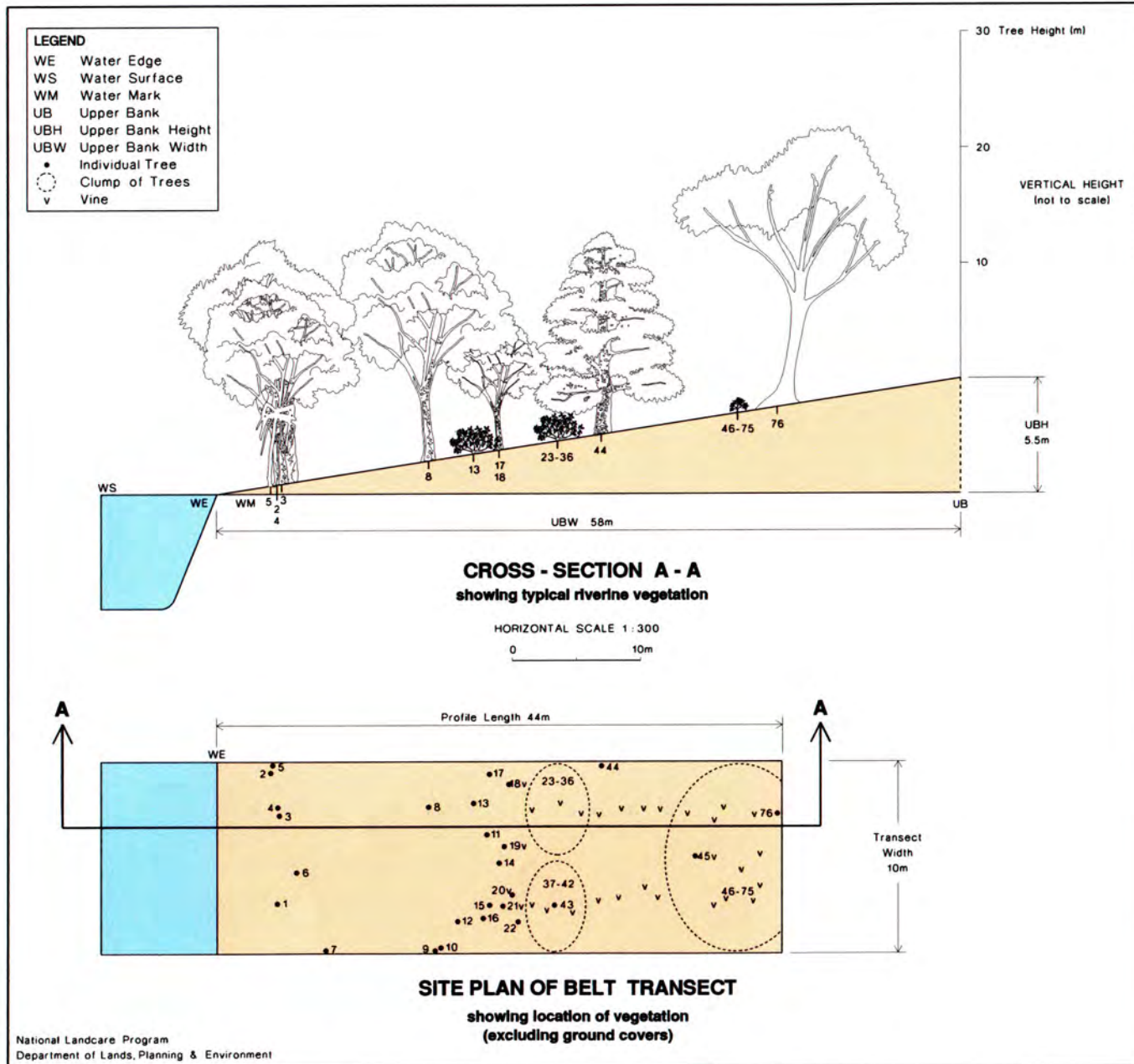


Figure 10.101 Cross-section Survey for Site 14/4 – Edith River





TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1,2,4,6,7,9, 3,8,10,11,17, 18,20,43,45	10-25 7-25	<i>Melaleuca argentea</i> <i>Syzygium lorte</i>
5	8.5	<i>Pandanus aquaticus</i>
12-14,19,21, 23-42	1.3-3	<i>Canthium schultzei</i>
15	2	<i>Acacia auriculiformis</i>
16,22,46-75	1-2	<i>Eleocharis arnhemica</i>
44	18	<i>Nauclea orientalis</i>
76	25	<i>Eucalyptus camaldulensis</i>

OTHER SPECIES LOCATED AT SITE:

Forbs: *Cyperus aquatilis*
Cyperus javanicus
Eleocharis geniculata
Nelsohia campestris

Grasses: *Eragrostis spartinoides*
Paspalidium distans

Tree/Shrub: *Ficocourtia territorialis*

Trees: *Ficus coronulata*

Vines: *Flagellaria indica*
Passiflora foetida

* Exotic species

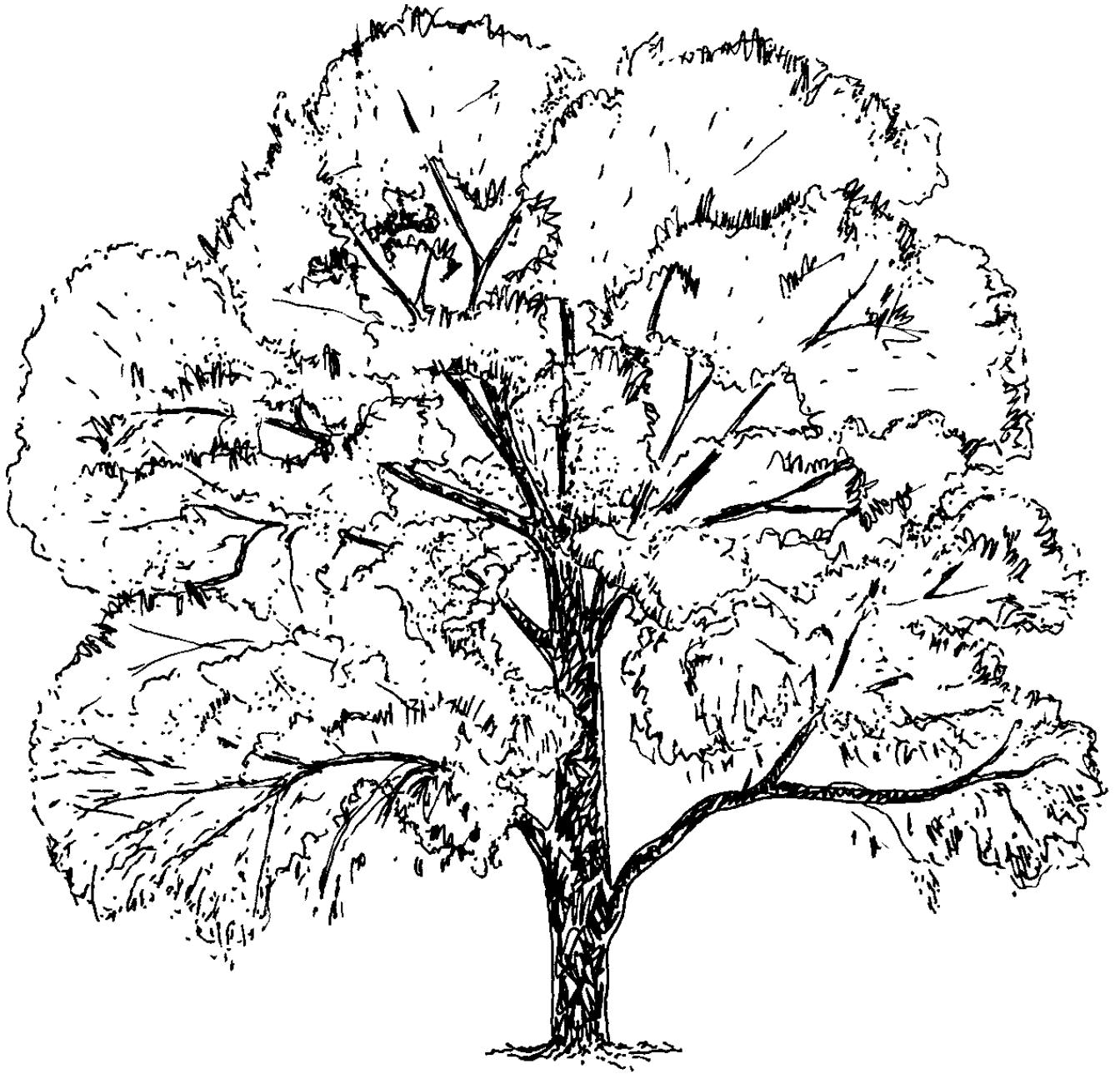
- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 - Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

<p>TOP END WATERWAYS PROJECT DALY RIVER CATCHMENT</p>			
RIVERINE VEGETATION PROFILE			
EDITH RIVER		Date 17.5.96	
Sub-section 14	Site 2	Figure 10.102	

Table 10.35 Major Vegetation Species Recorded at Sites 3, 4 and 6 on Edith River and Granite Creek located within Sub-section 14

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Sites Where Recorded (Sub-section No. / Site No.)
<i>Acacia dimidiata</i>	Low tree / shrub		14/6
<i>Acacia holosericea</i>	Low tree / shrub		14/3, 14/4
<i>Antidesma ghaesembilla</i>	Low tree / shrub		14/4
<i>Calytrix brownii</i>	Low tree / shrub		14/3
<i>Canthium schultzei</i>	Low tree / shrub		14/4
<i>Cyperus conicus</i>	Forb		14/3
<i>Cyperus haspan</i>	Forb		14/3, 14/4
<i>Dichanthium fecundum</i>	Grass		14/6
<i>Epiltes australis</i>	Forb		14/3
<i>Eragrostis cumingii</i>	Grass		14/3
<i>Eucalyptus camaldulensis</i>	Tree		14/3
<i>Eucalyptus polycarpa</i>	Tree		14/4
<i>Eulalia aurea</i>	Grass		14/3
<i>Ficus coronulata</i>	Tree		14/3, 14/4
<i>Fimbristylis pauciflora</i>	Forb		14/3
<i>Germainia truncatiglumis</i>	Grass		14/3
<i>Glinus oppositifolius</i>	Forb		14/3
<i>Goodenia purpurascens</i>	Forb		14/3
<i>Grevillea pteridifolia</i>	Tree		14/3
<i>Hakea arborescens</i>	Tree		14/6
<i>Heteropogon contortus</i>	Grass		14/3
<i>Hyptis suaveolens</i>	Forb	E/N	14/3
<i>Lipocarpa microcephala</i>	Forb		14/3
<i>Lophostemon grandiflorus</i>	Tree		14/3, 14/6
<i>Melaleuca argentea</i>	Tree		14/3
<i>Melaleuca leucadendra</i>	Tree		14/4
<i>Melaleuca nervosa</i>	Low tree / shrub		14/6
<i>Pandanus aquaticus</i>	Tree		14/3, 14/4
<i>Passiflora foetida</i>	Vine	E	14/3, 14/4
<i>Phyllanthus reticulatus</i>	Low tree / shrub		14/3
<i>Stemodia lythriifolia</i>	Forb		14/3
<i>Tephrosia brachyodon</i>	Forb		14/3
<i>Terminalia platyphylla</i>	Tree		14/6
<i>Vitex glabrata</i>	Tree		14/3
<i>Waltheria indica</i>	Low tree / shrub		14/4

* Declared Noxious Weed within the Northern Territory



Lophostemon grandiflorus

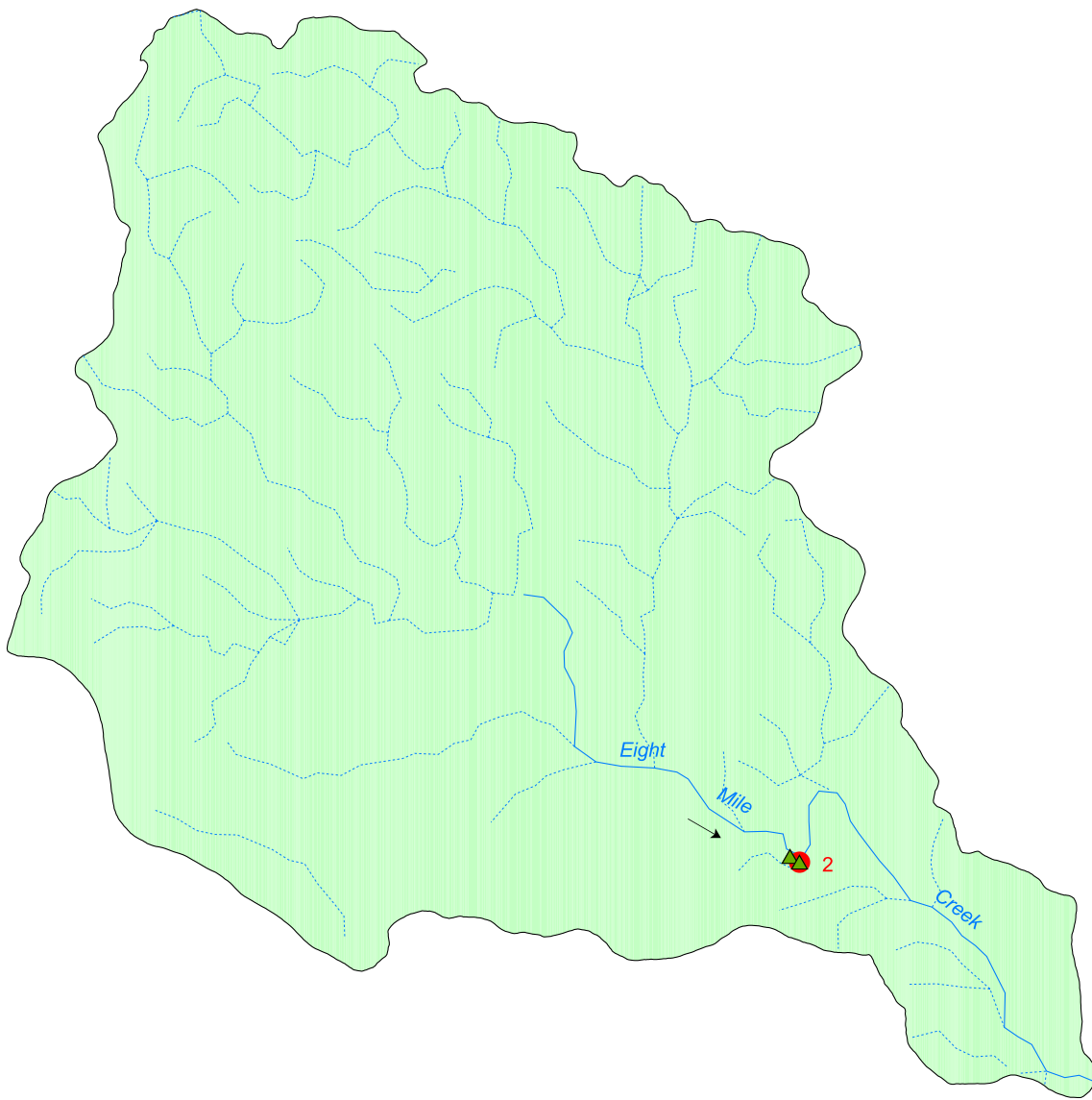
10.11.4 Eight Mile Creek

Sub-section 15 includes the catchment of Eight Mile Creek. One site was fully assessed within this sub-section (refer Table 10.36 and Map 45).

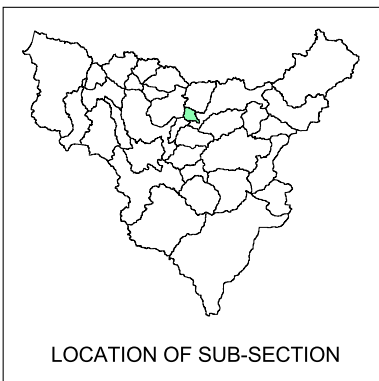
Table 10.36 Summary of Survey Information for Sub-section 15 – Eight Mile Creek

Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
2	Eight Mile Creek	A	Riffle	√		
		B	Pool	√		





Area - 180 km²



LEGEND	
● 5	Site
▲ 2	Sample Point
(VP)	Vegetation Profile
—	Longitudinal Profile Survey
—	River
—	Creek
←	Flow direction

 TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

EIGHT MILE CREEK

SUB-SECTION 15

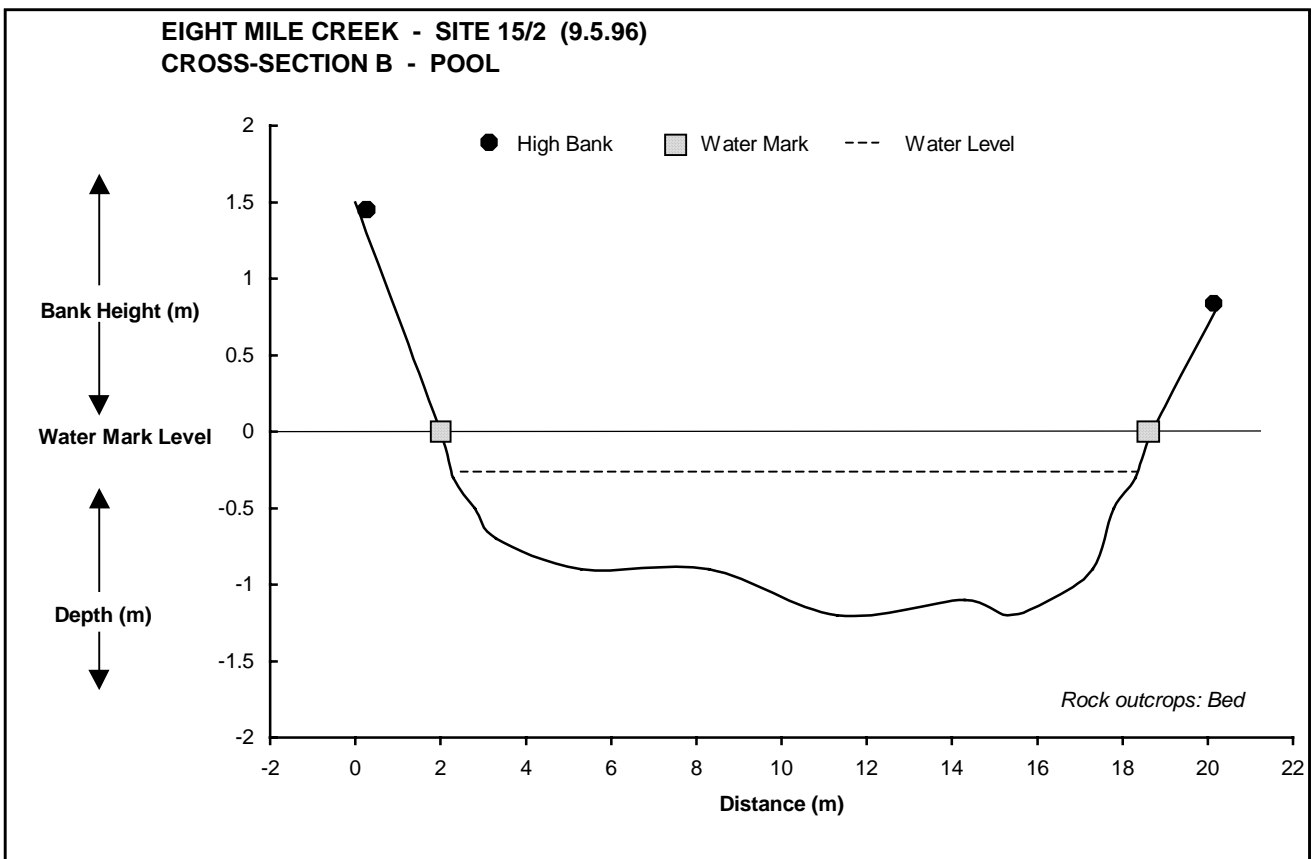
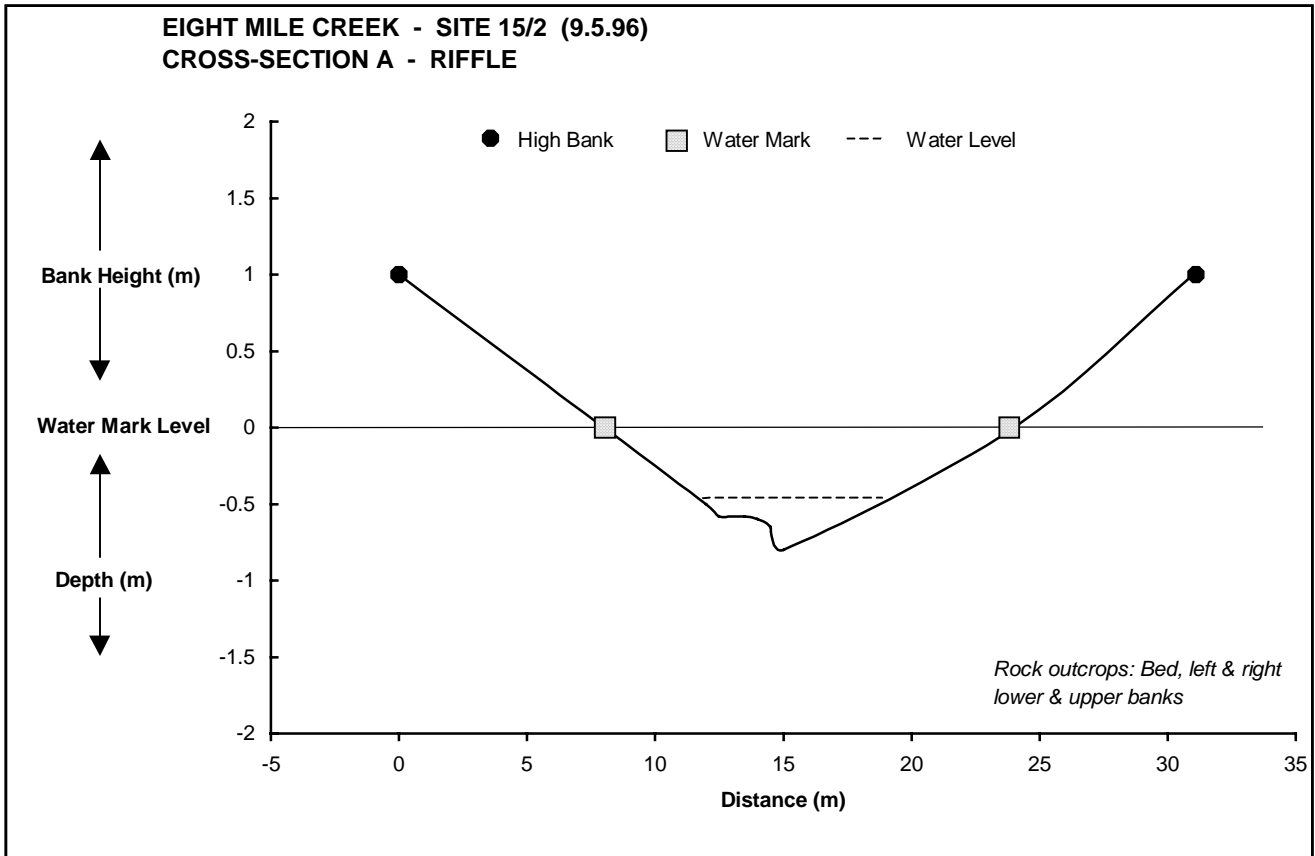


Figure 10.103 Cross-section Surveys for Site 15/2 – Eight Mile Creek

Table 10.37 Major Vegetation Species Recorded at Site 2 on Eight Mile Creek located within Sub-section 15

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Site Where Recorded (Sub-section No. / Site No.)
<i>Acacia holosericea</i>	Low tree / shrub		15/2
<i>Arundinella nepalensis</i>	Grass		15/2
<i>Bridelia tomentosa</i>	Low tree / shrub		15/2
<i>Cyperus viscidulus</i>	Forb		15/2
<i>Eragrostis spartinooides</i>	Grass		15/2
<i>Ficus coronulata</i>	Tree		15/2
<i>Hyptis suaveolens</i>	Forb	E/N	15/2
<i>Lophostemon grandiflorus</i>	Tree		15/2
<i>Melaleuca argentea</i>	Tree		15/2
<i>Melinis repens</i>	Grass	E	15/2
<i>Passiflora foetida</i>	Vine	E	15/2
<i>Pennisetum polystachion</i>	Grass	E/N	15/2
<i>Strychnos lucida</i>	Tree		15/2
<i>Terminalia platyphylla</i>	Tree		15/2
<i>Waltheria indica</i>	Low tree / shrub		15/2

* Declared Noxious Weed within the Northern Territory



Riparian vegetation along Eight Mile Creek (Site 15/2)

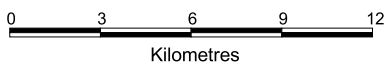
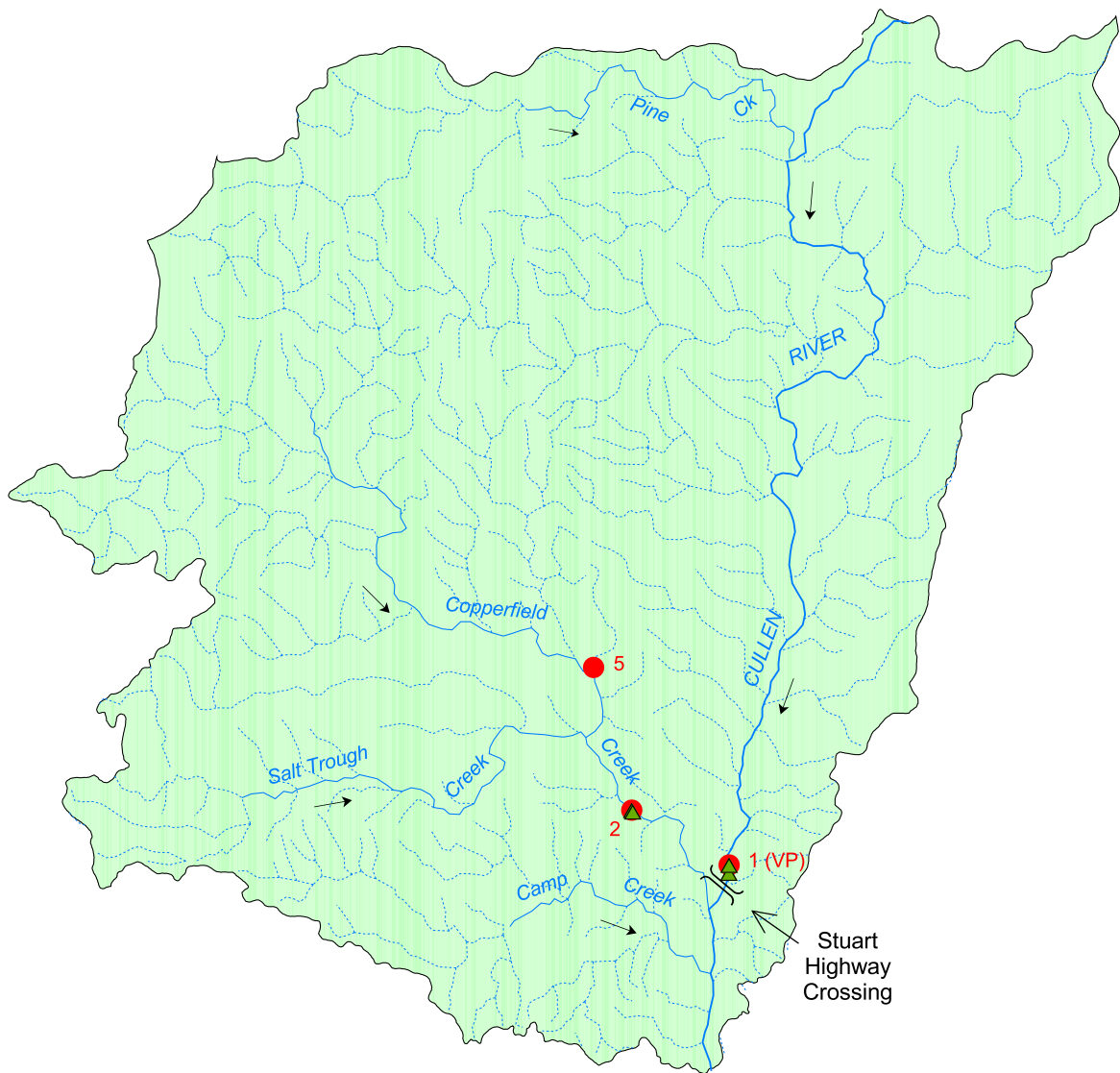
10.11.5 Cullen River and Copperfield Creek

Sub-section 16 includes the catchment of Cullen River. Three sites were fully assessed within this sub-section (refer Table 10.38 and Map 46). The sites were located on the Cullen River (1) and its tributary, Copperfield Creek (2).

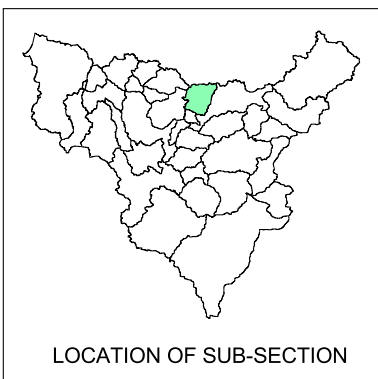
Table 10.38 Summary of Survey Information for Sub-section 16 – Cullen River and Copperfield Creek

Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
1	Cullen River	A	Riffle	√	√	
		B	Pool	√		
2	Copperfield Creek	A	Pool	√		
		B	Riffle	√		
5	Copperfield Creek					√





Area - 879 km²



LEGEND	
● 5	Site
▲	Sample Point
(VP)	Vegetation Profile
— (Yellow)	Longitudinal Profile Survey
— (Blue)	River
— (Light Blue)	Creek
←	Flow direction

 TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

CULLEN RIVER & COPPERFIELD CREEK

SUB-SECTION 16

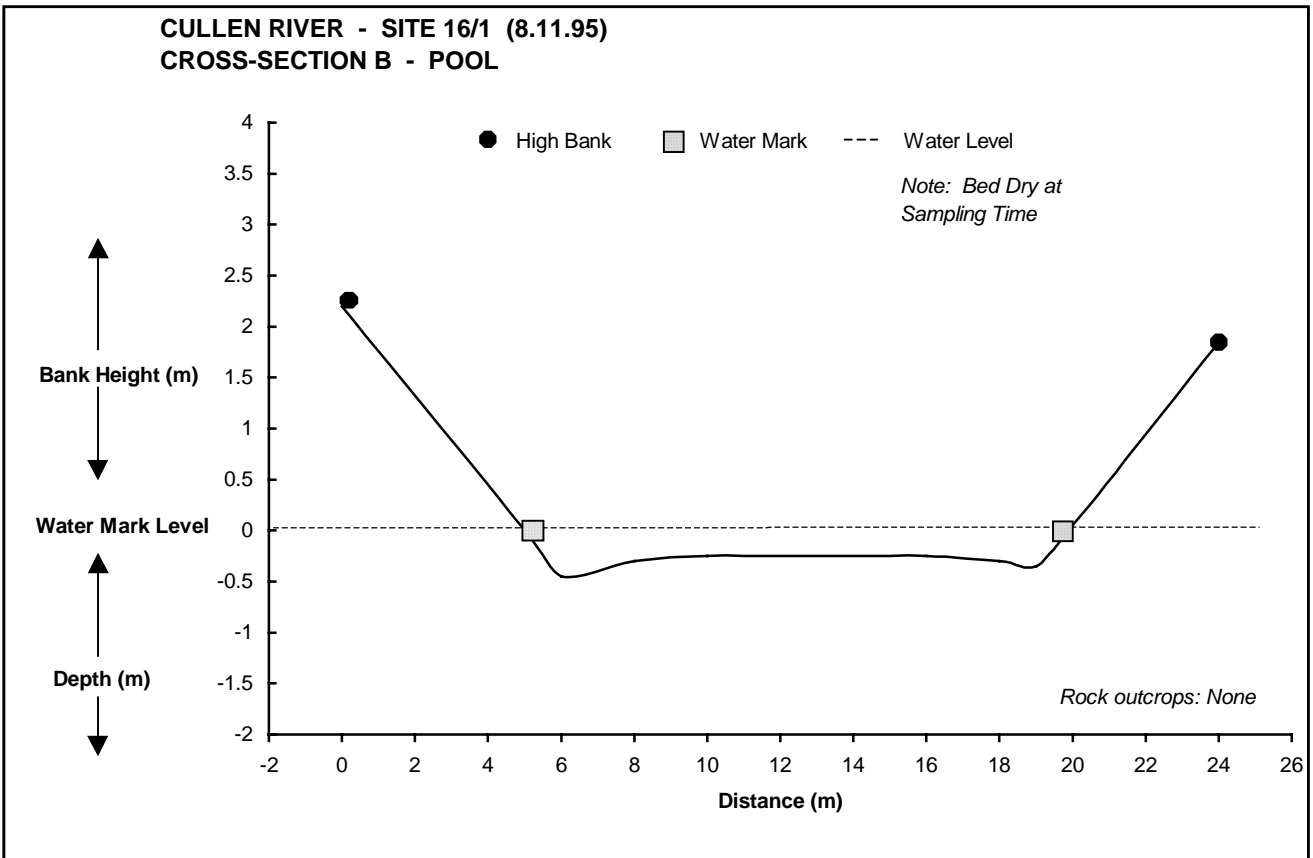
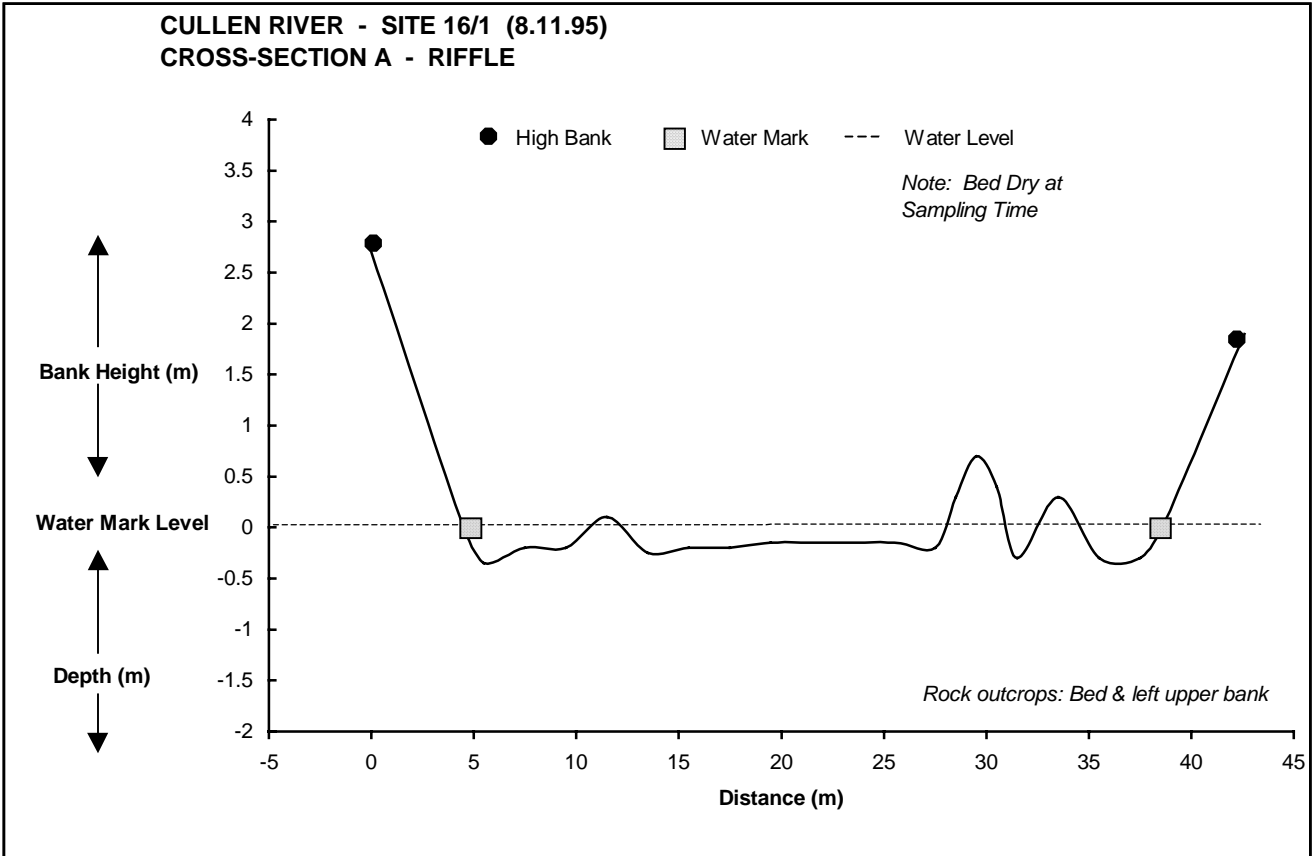


Figure 10.104 Cross-section Surveys for Site 16/1 – Cullen River

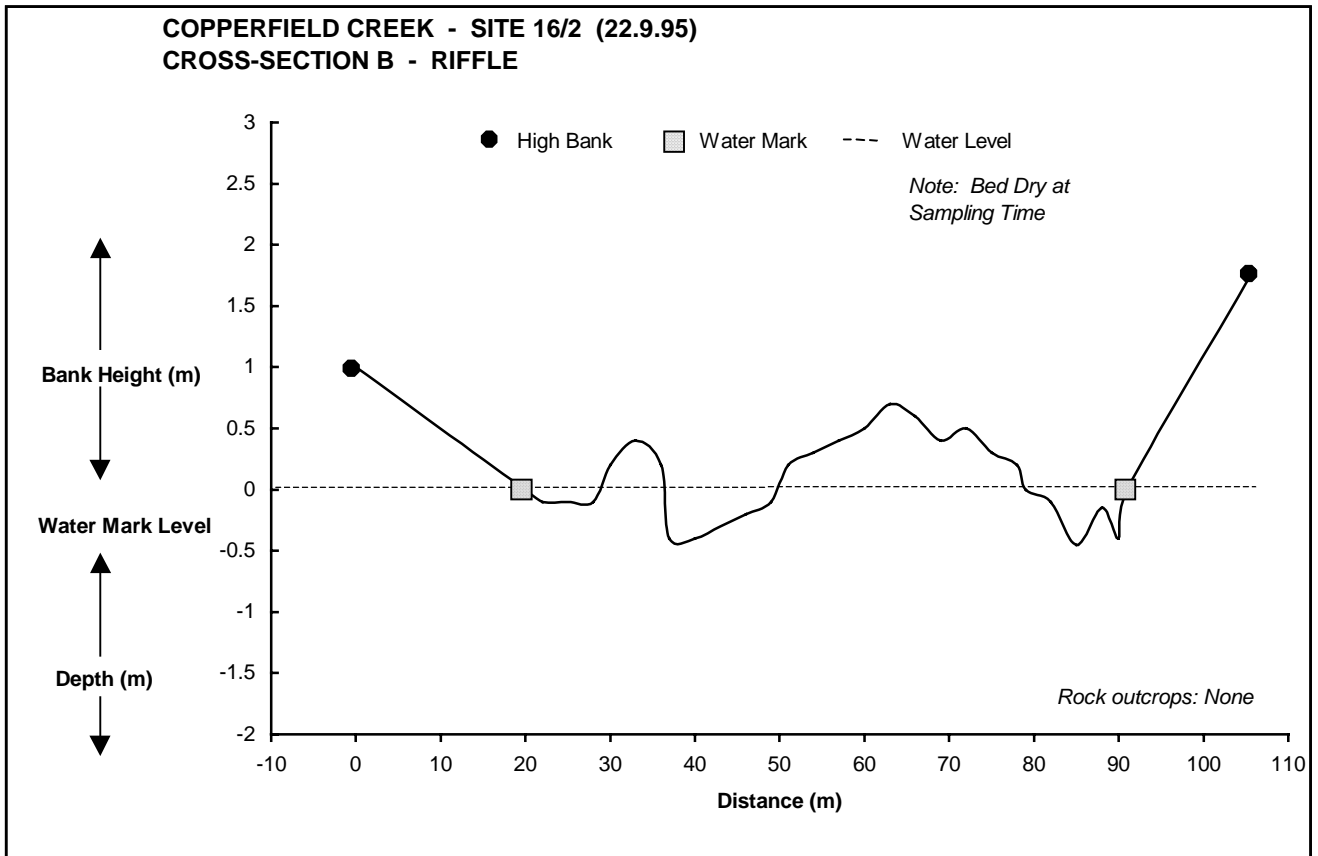
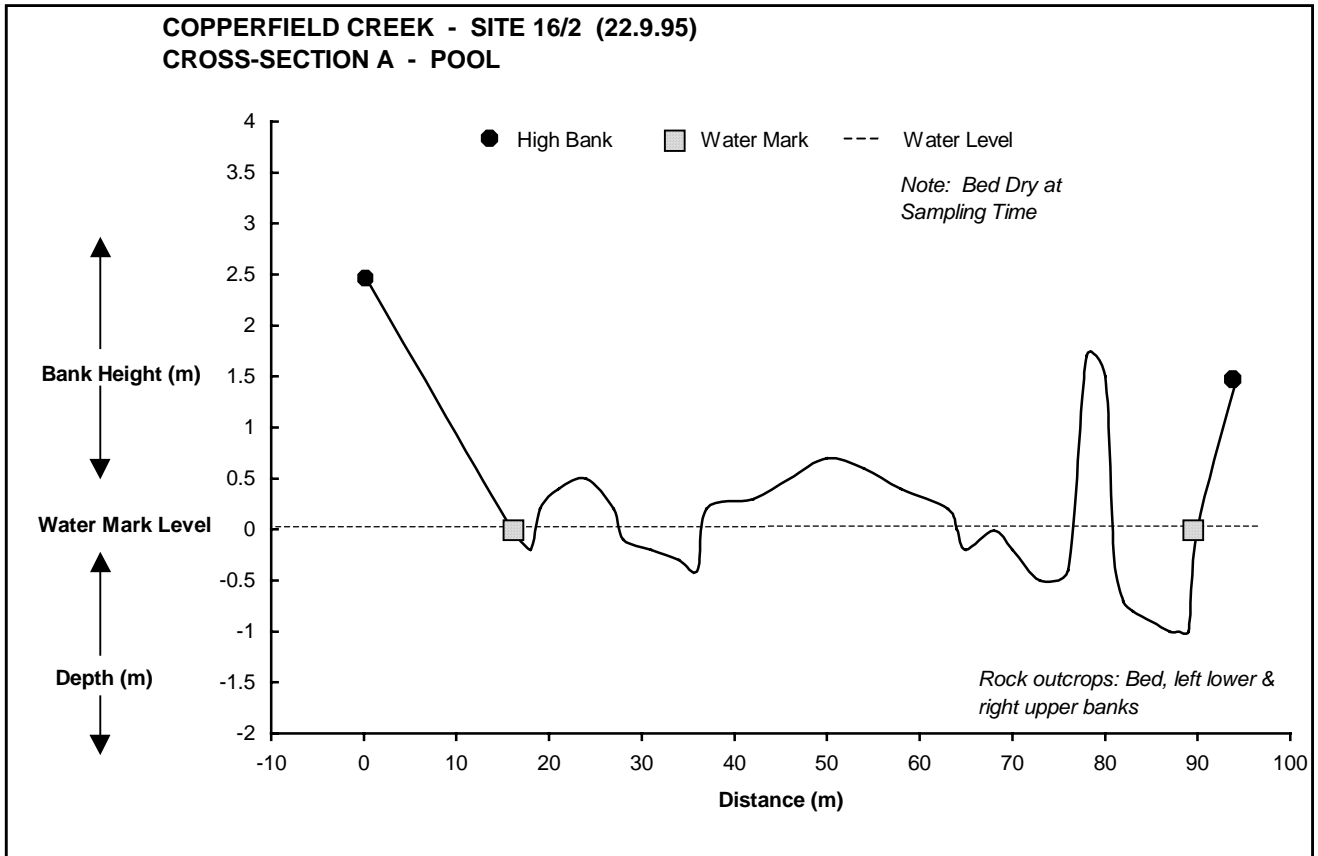
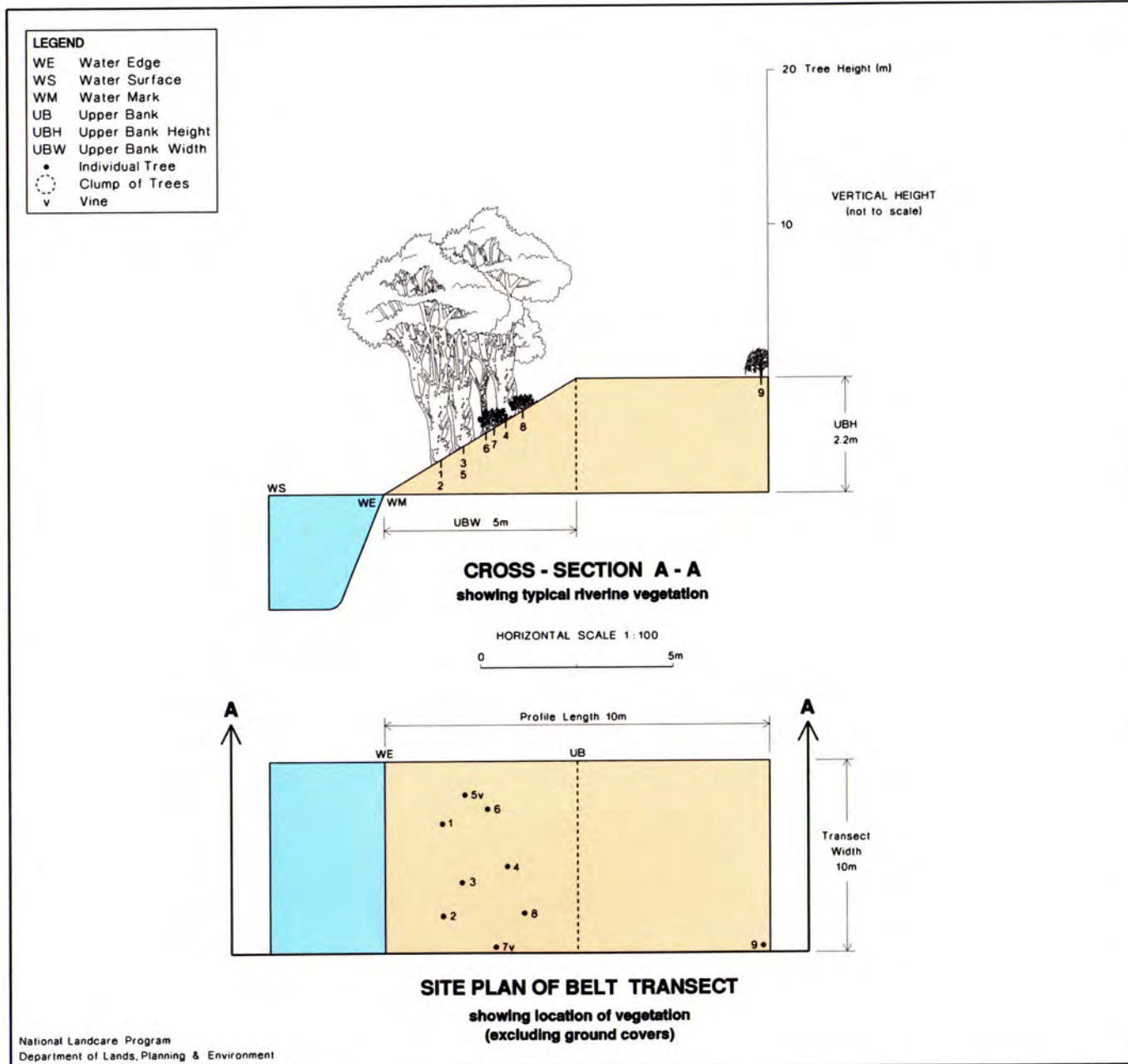


Figure 10.105 Cross-section Surveys for Site 16/2 – Copperfield Creek



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1-5	13-16	<i>Meioteuca argentea</i>
6	10.5	<i>Terminalia platyphylla</i>
7, 8	1.1-1.3	<i>Antidesma ghaesambilla</i>
9	2	<i>Flueggea virosa</i>

OTHER SPECIES LOCATED AT SITE:

- Forbs:** *Fimbristylis acicularis*
Glinus oppositifolius
Staurogyne leptocaulis
- Grasses:** *Arundinella nepalensis*
Cynodon dactylon
Eragrostis spartinioides
Eriacne festucacea
- Shrub/Tree:** *Acacia holosericea*
Alphitonia excelsa
- Trees:** *Ficus coronulata*
Grevillea pteridifolia
Lophostemon grandiflorus
Pandanus spiralis
Syzygium eucalyptoides spp. *eucalyptoides*
Vitex glabrata
- Vines:** **Passiflora foetida*
- Weeds:** **Hyptis suaveolens* (Noxious)

* Exotic species

NOTES

- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
- Cross-section A-A includes all vegetation above the line marked through the belt transect.
- The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
- Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

CULLEN RIVER		Date 8.11.95
Sub-section 16	Site 1	Figure 10.106

Table 10.39 Major Vegetation Species Recorded at Sites 2 and 5 on Copperfield Creek located within Sub-section 16

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Sites Where Recorded (Sub-section No. / Site No.)
<i>Acacia holosericea</i>	Low tree / shrub		16/2, 16/5
<i>Arundinella nepalensis</i>	Grass		16/2
<i>Calytrix brownii</i>	Low tree / shrub		16/2
<i>Cyperus viscidulus</i>	Forb		16/2
<i>Eragrostis cumingii</i>	Grass		16/2
<i>Eucalyptus polycarpa</i>	Tree		16/2
<i>Ficus coronulata</i>	Tree		16/5
<i>Flueggea virosa</i>	Low tree / shrub		16/5
<i>Germainia truncatiglumis</i>	Grass		16/2
<i>Grevillea pteridifolia</i>	Tree		16/2
<i>Heteropogon triticeus</i>	Grass		16/2
<i>Hibiscus meraukensis</i>	Forb		16/2
<i>Hyptis suaveolens</i>	Forb	E/N	16/2, 16/5
<i>Lophostemon grandiflorus</i>	Tree		16/2, 16/5
<i>Melaleuca argentea</i>	Tree		16/2, 16/5
<i>Pandanus aquaticus</i>	Tree		16/2, 16/5
<i>Passiflora foetida</i>	Vine	E	16/2, 16/5
<i>Staurogyne leptocaulis</i>	Forb		16/2
<i>Terminalia platyphylla</i>	Tree		16/2, 16/5

* Declared Noxious Weed within the Northern Territory



Riparian vegetation along Cullen River (Site 16/1)



Collecting vegetation samples for identification



10.12 Flora River

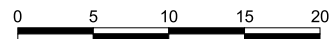
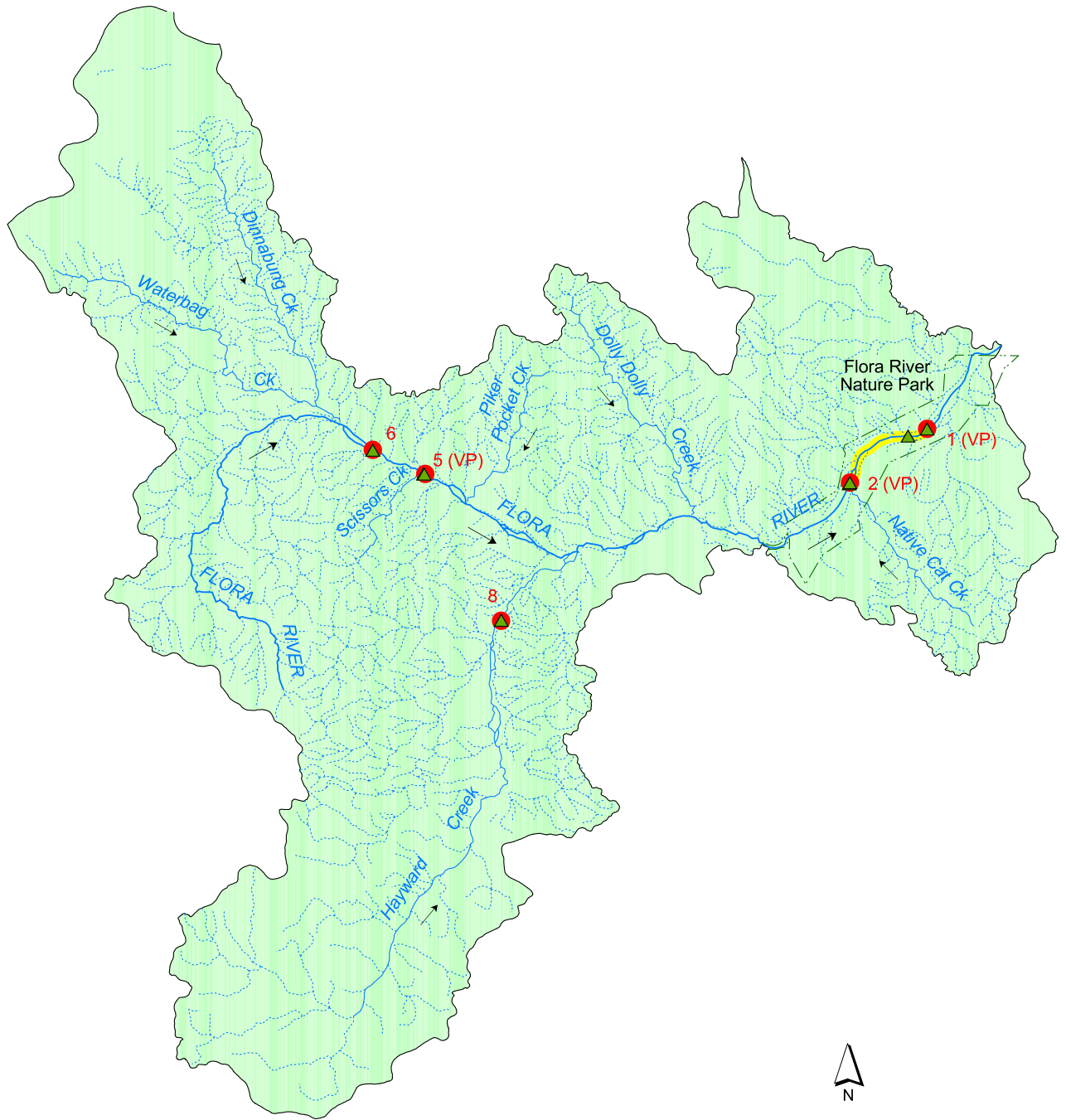
10.12.1 Flora River and Hayward Creek

Sub-section 17 encompasses the Flora River and its tributary, Hayward Creek (excluding Mathison Creek catchment area). Five sites were fully assessed in this sub-section. One of these sites is located on Hayward Creek, whilst the remaining sites are on Flora River (refer Table 10.40 and Map 47).

Table 10.40 Summary of Survey Information for Sub-section 17 – Flora River and Hayward Creek

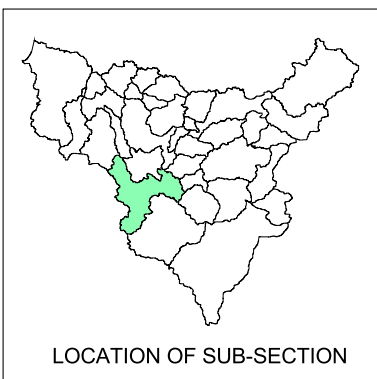
Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
1	Flora River	A	Cascade	√	√	
		B	Pool	√		
2	Flora River	A	Pool	√	√	
		B	Waterfall	√		
5	Flora River	A	Riffle	√	√	
		B	Pool	√		
6	Flora River	A	Riffle	√		
		B	Pool	√		
8	Hayward Creek	A	Riffle	√		
		B	Pool	√		





Kilometres

Area - 2,946 km²



LEGEND	
● 5	Site
▲	Sample Point
(VP)	Vegetation Profile
—	Longitudinal Profile Survey
—	River
—	Creek
←	Flow direction

 TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

FLORA RIVER & HAYWARD CREEK

SUB-SECTION 17

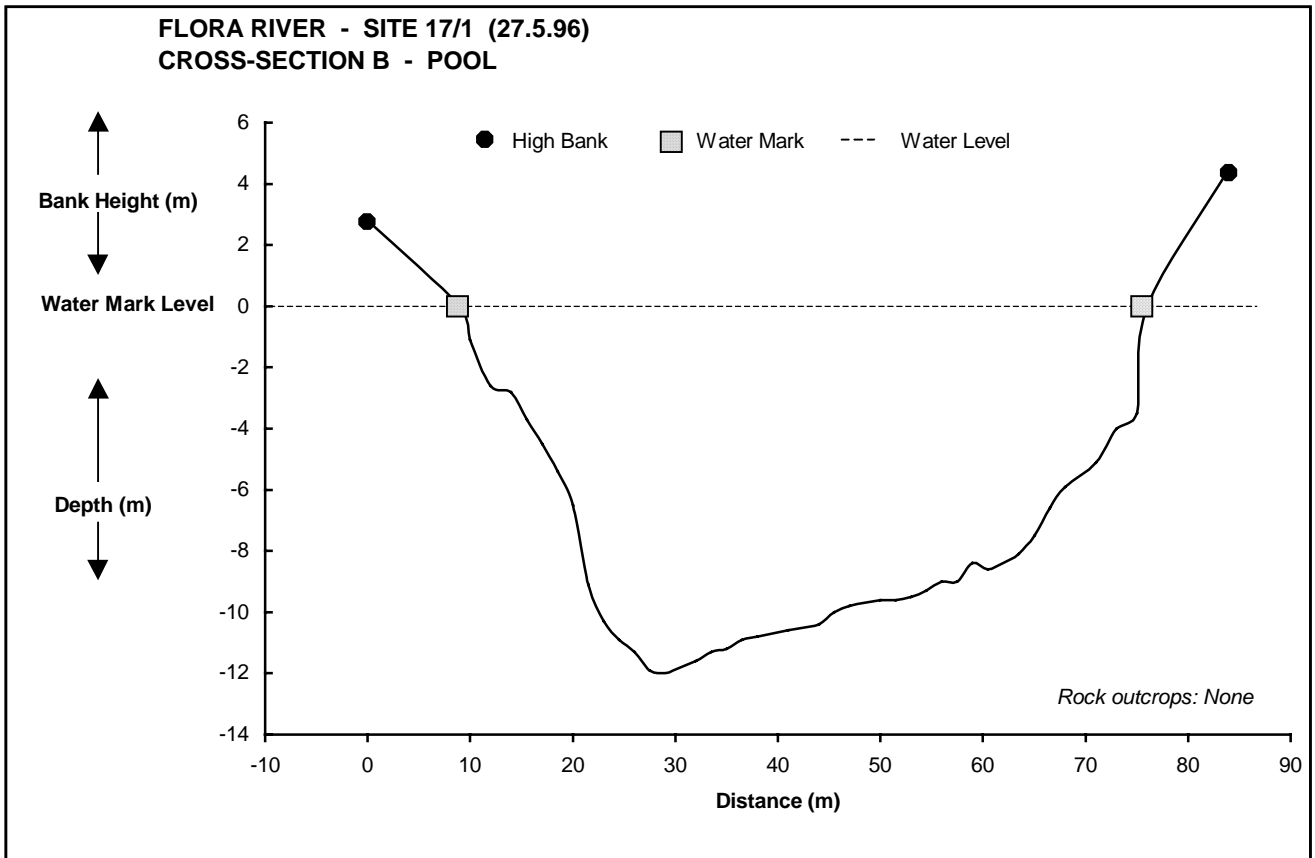
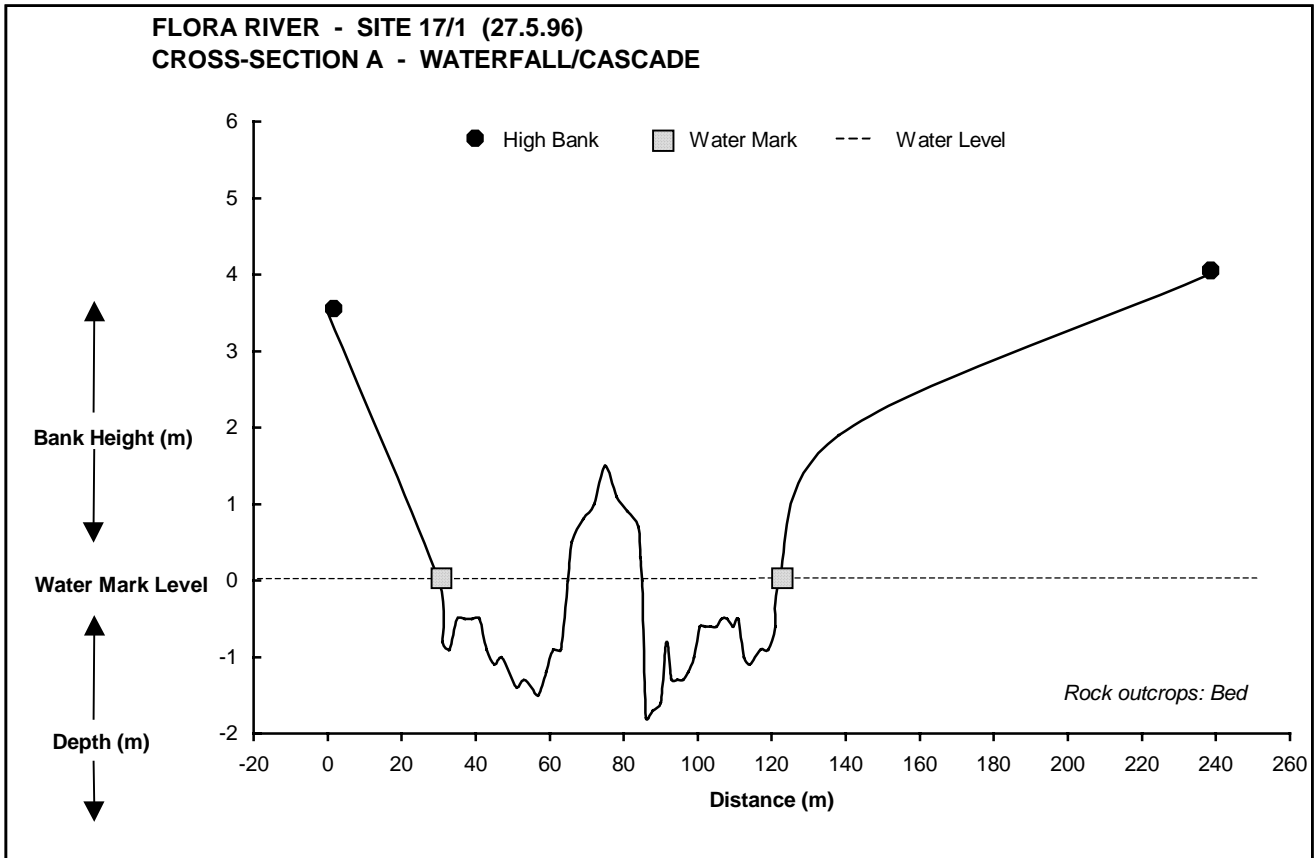


Figure 10.107 Cross-section Surveys for Site 17/1 – Flora River

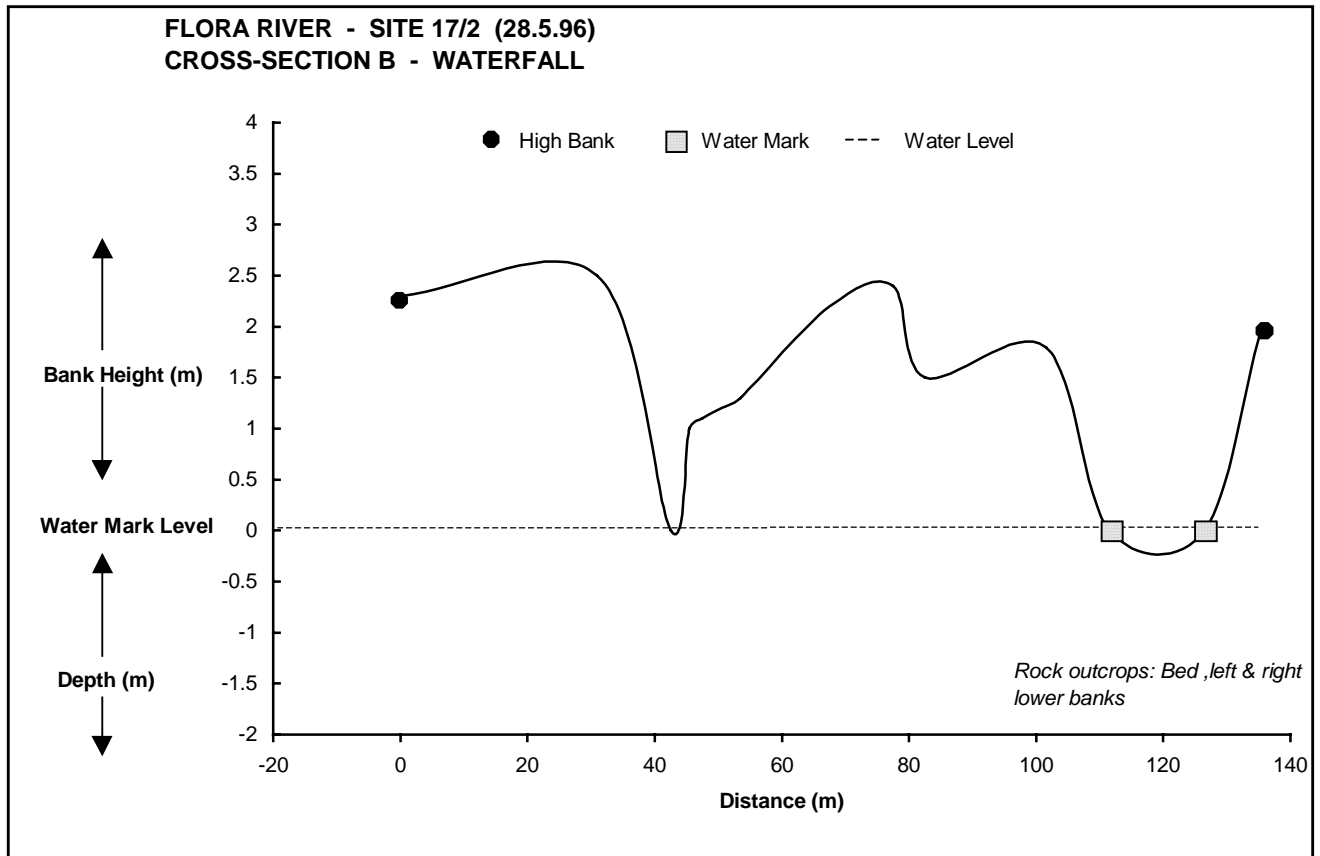
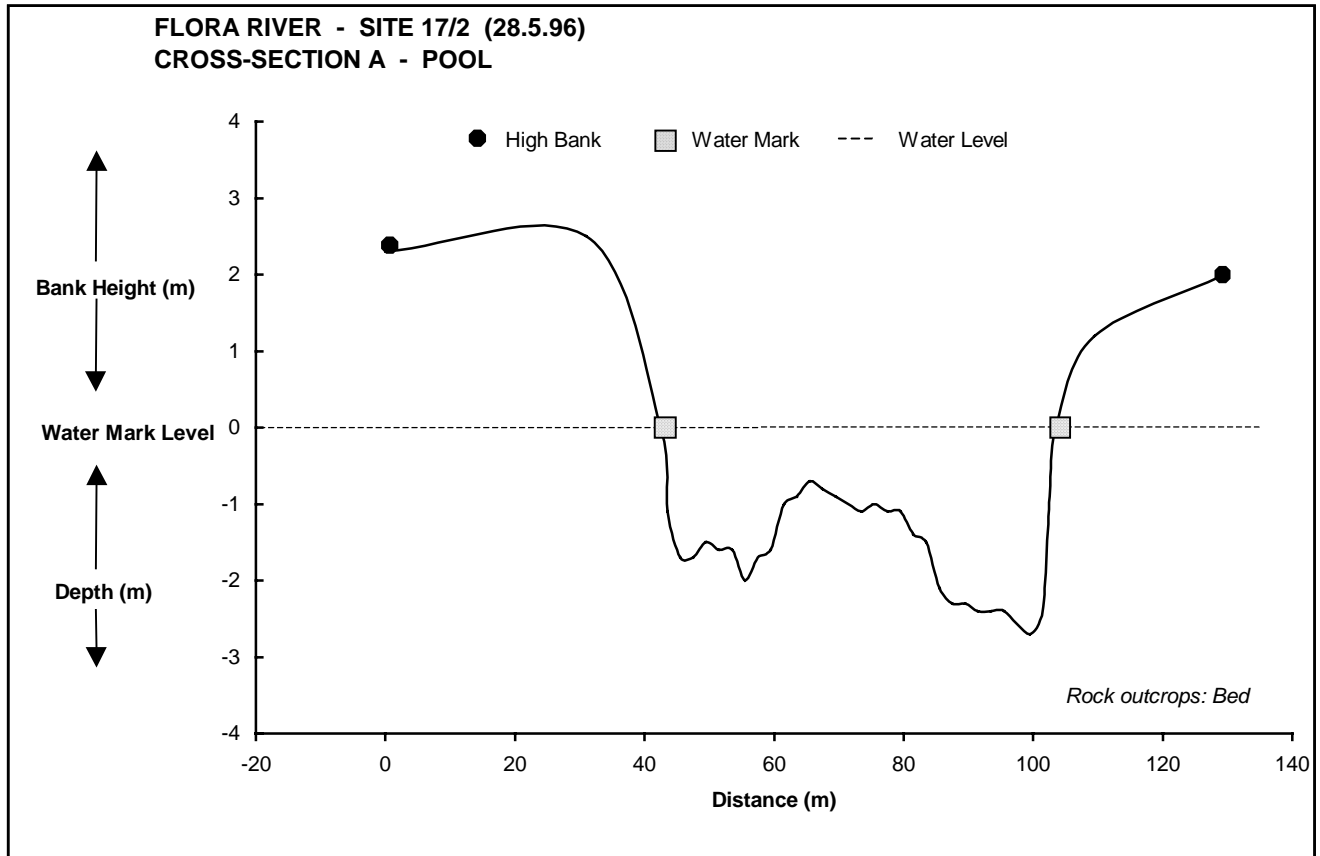


Figure 10.108 Cross-section Surveys for Site 17/2 – Flora River

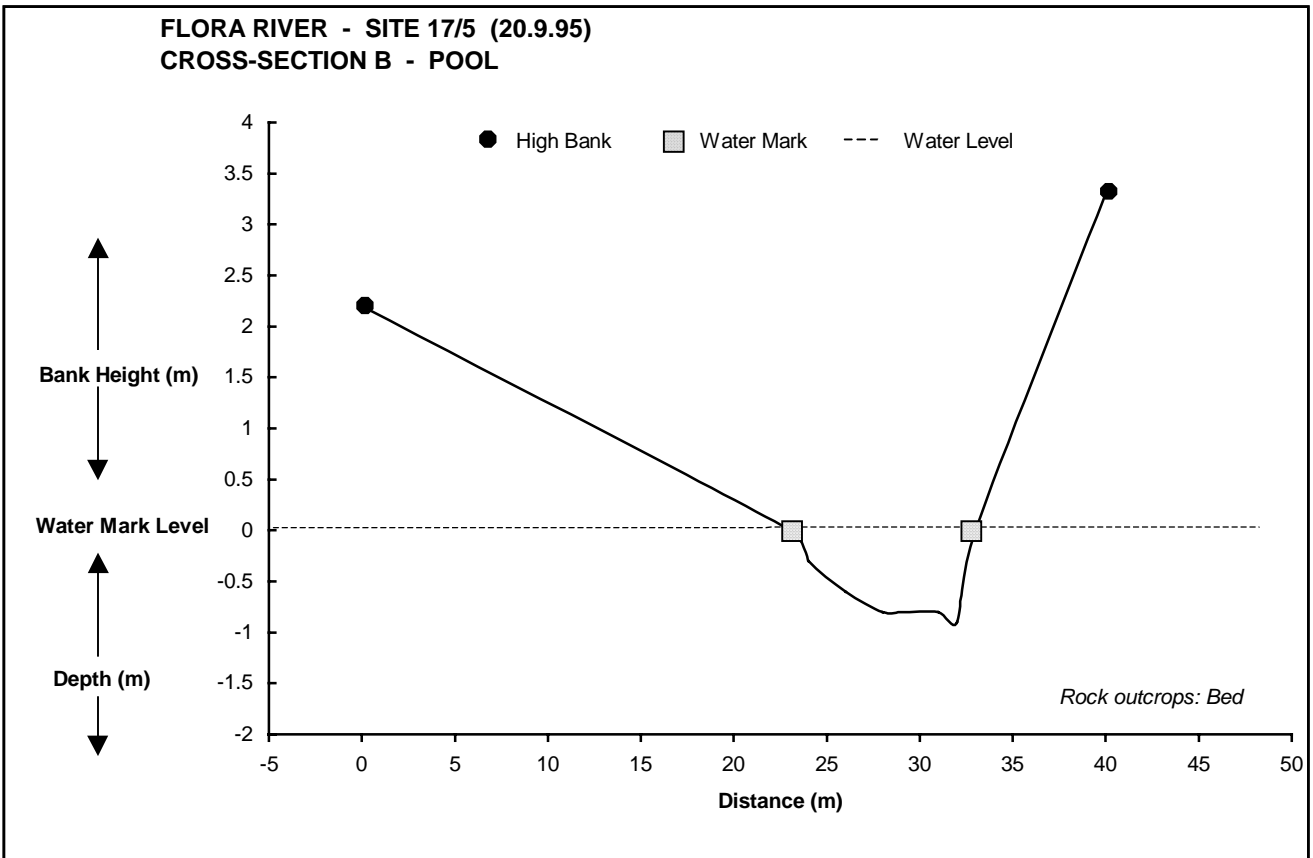
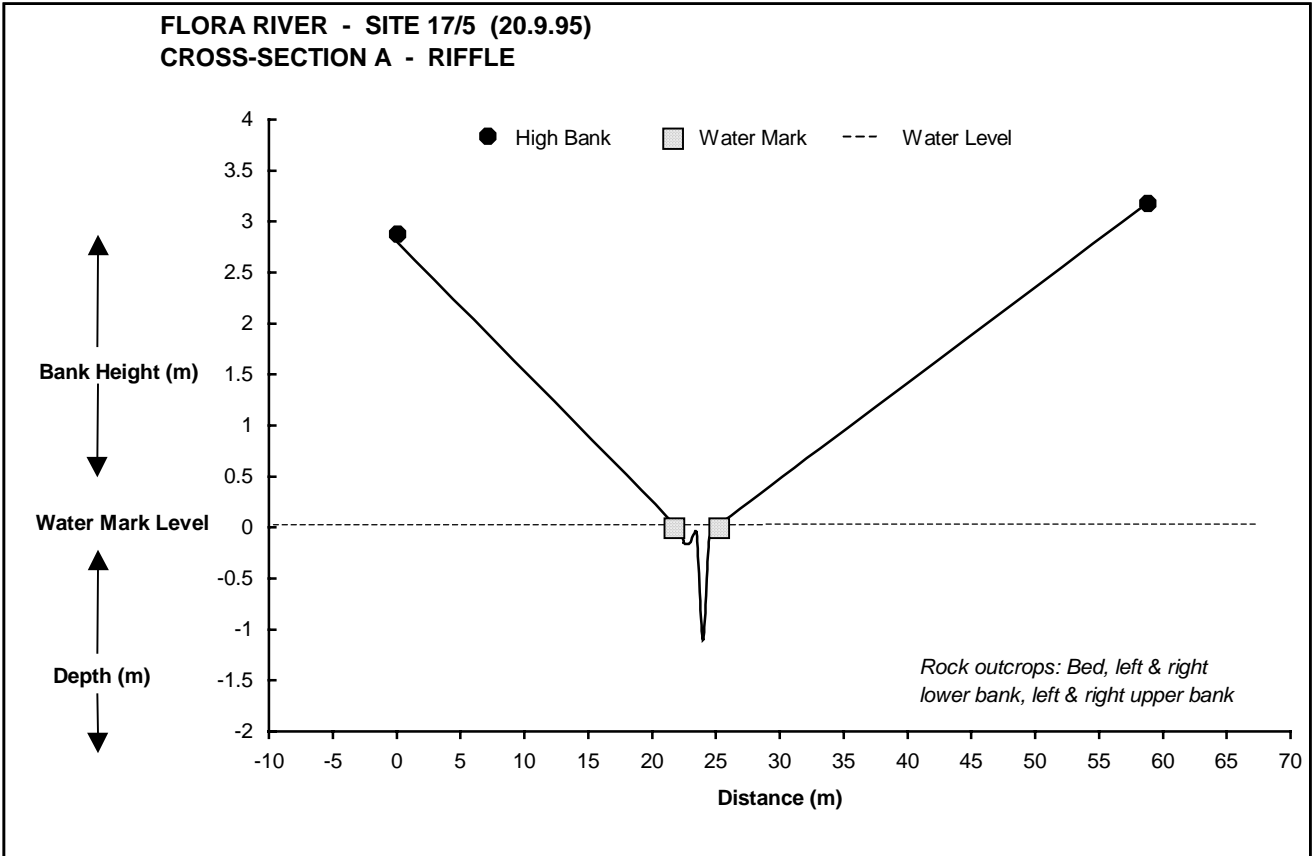


Figure 10.109 Cross-section Surveys for Site 17/5 – Flora River

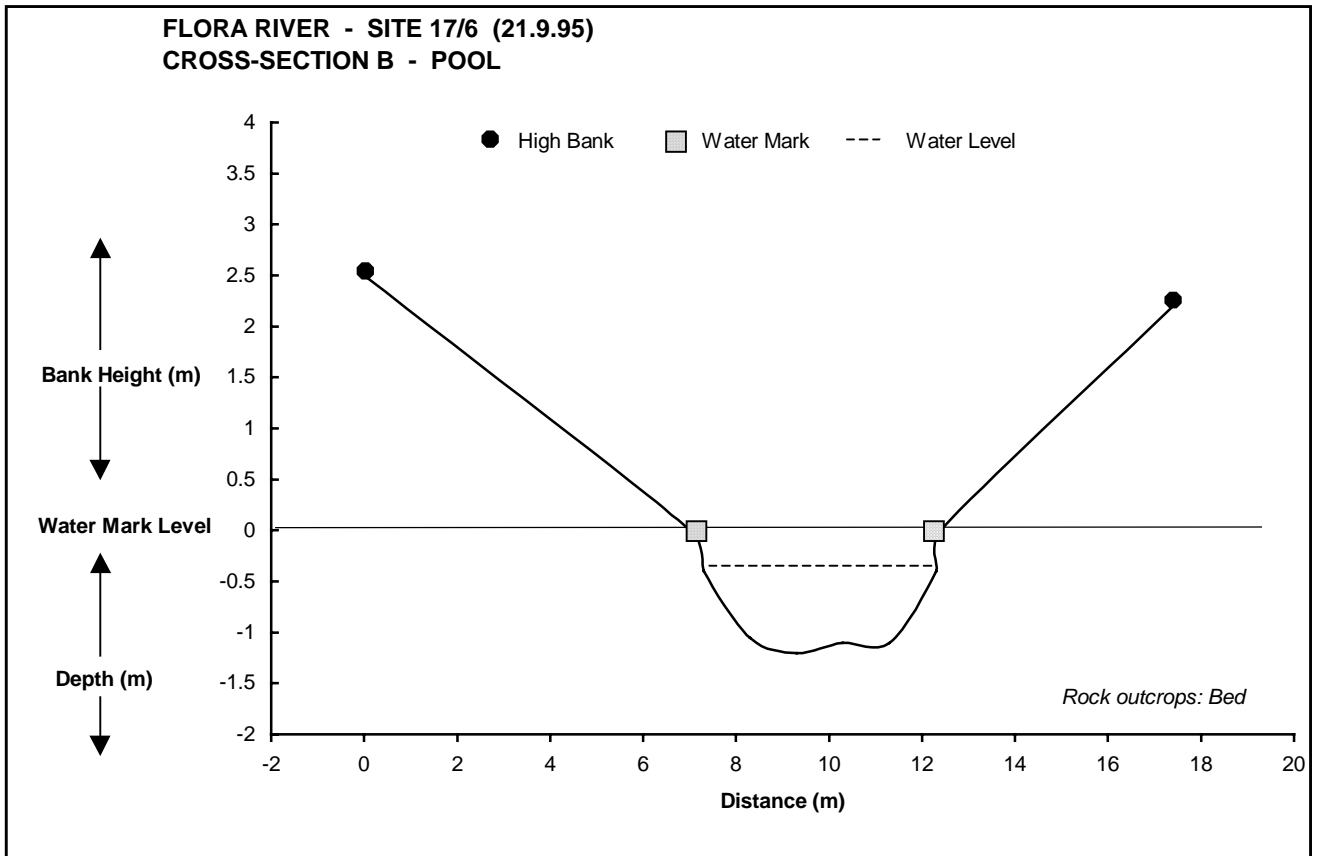
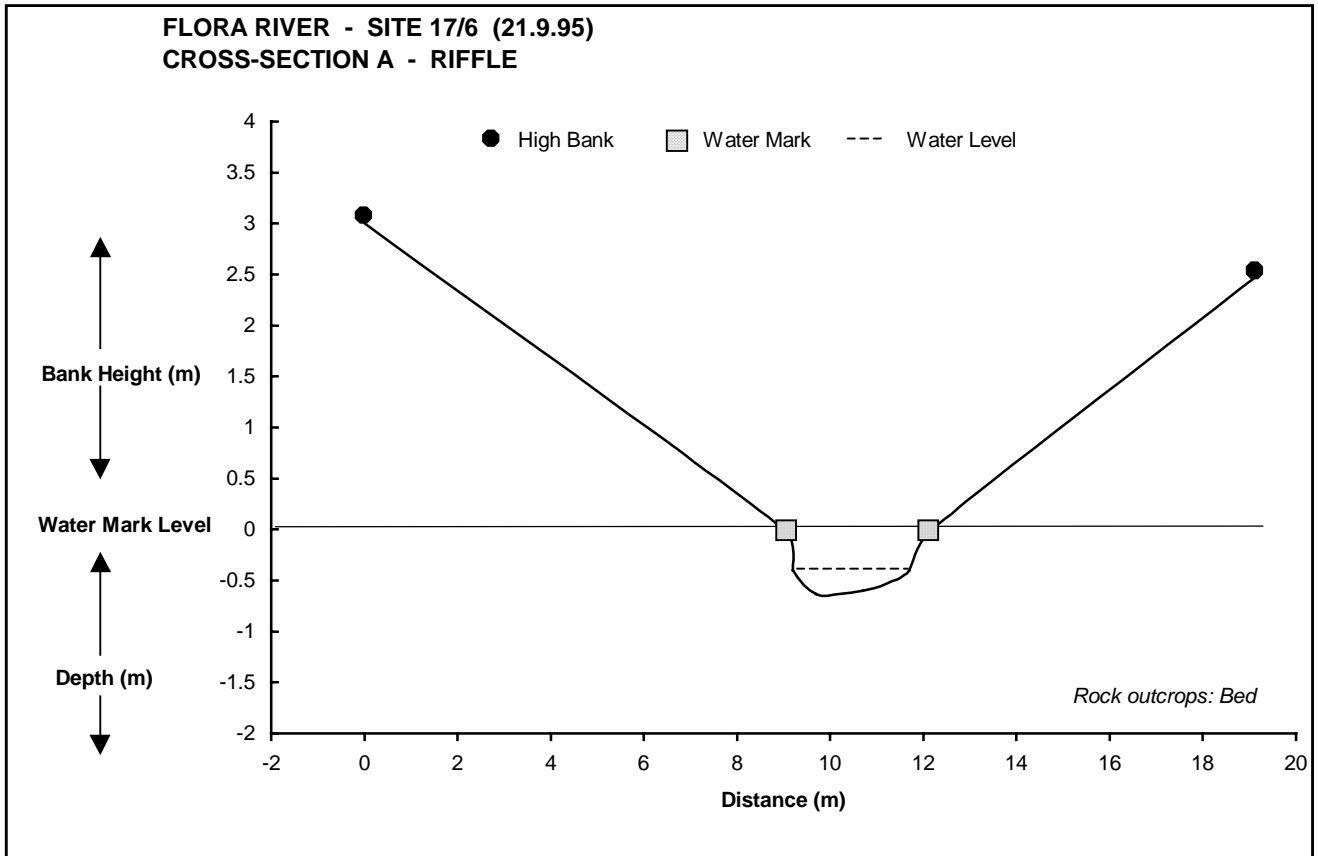


Figure 10.110 Cross-section surveys for Site 17/6 – Flora River

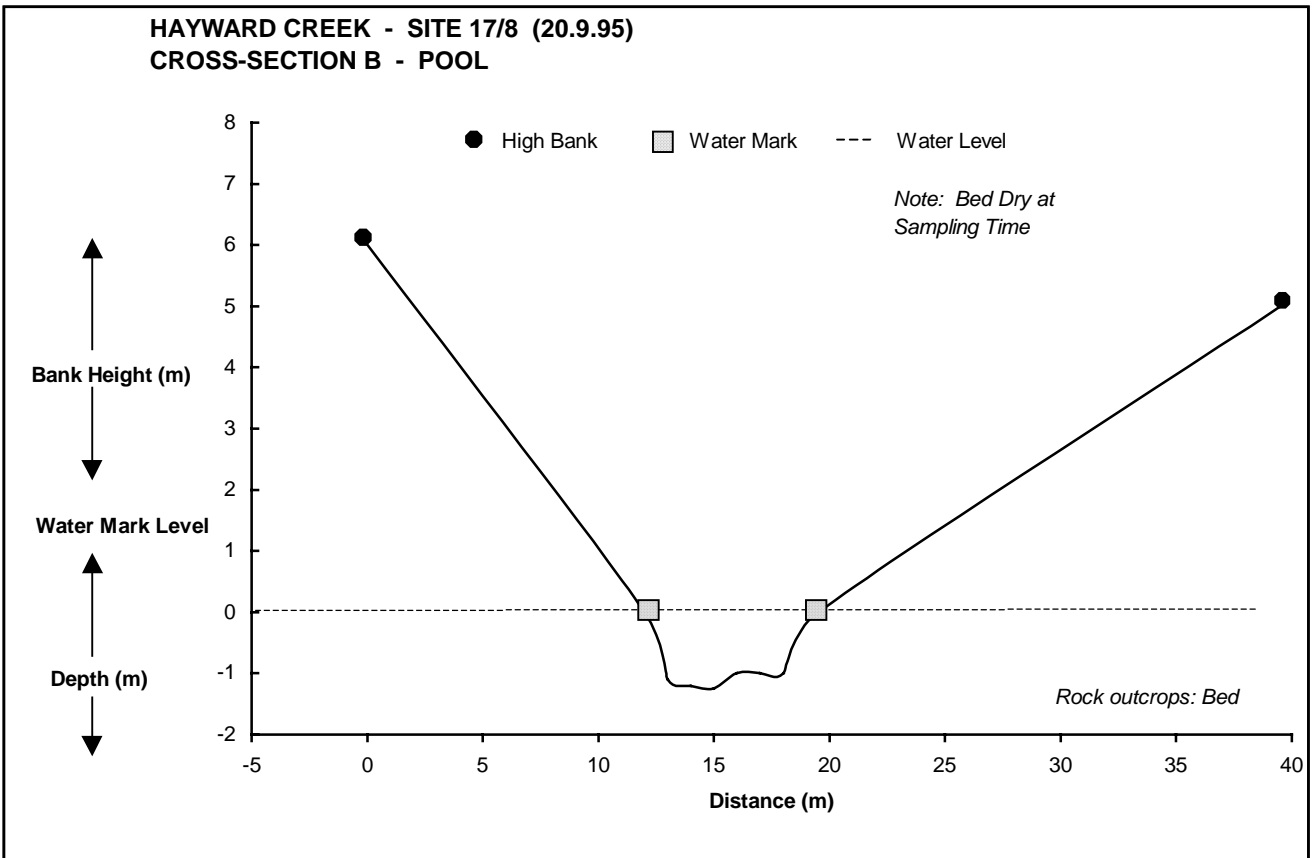
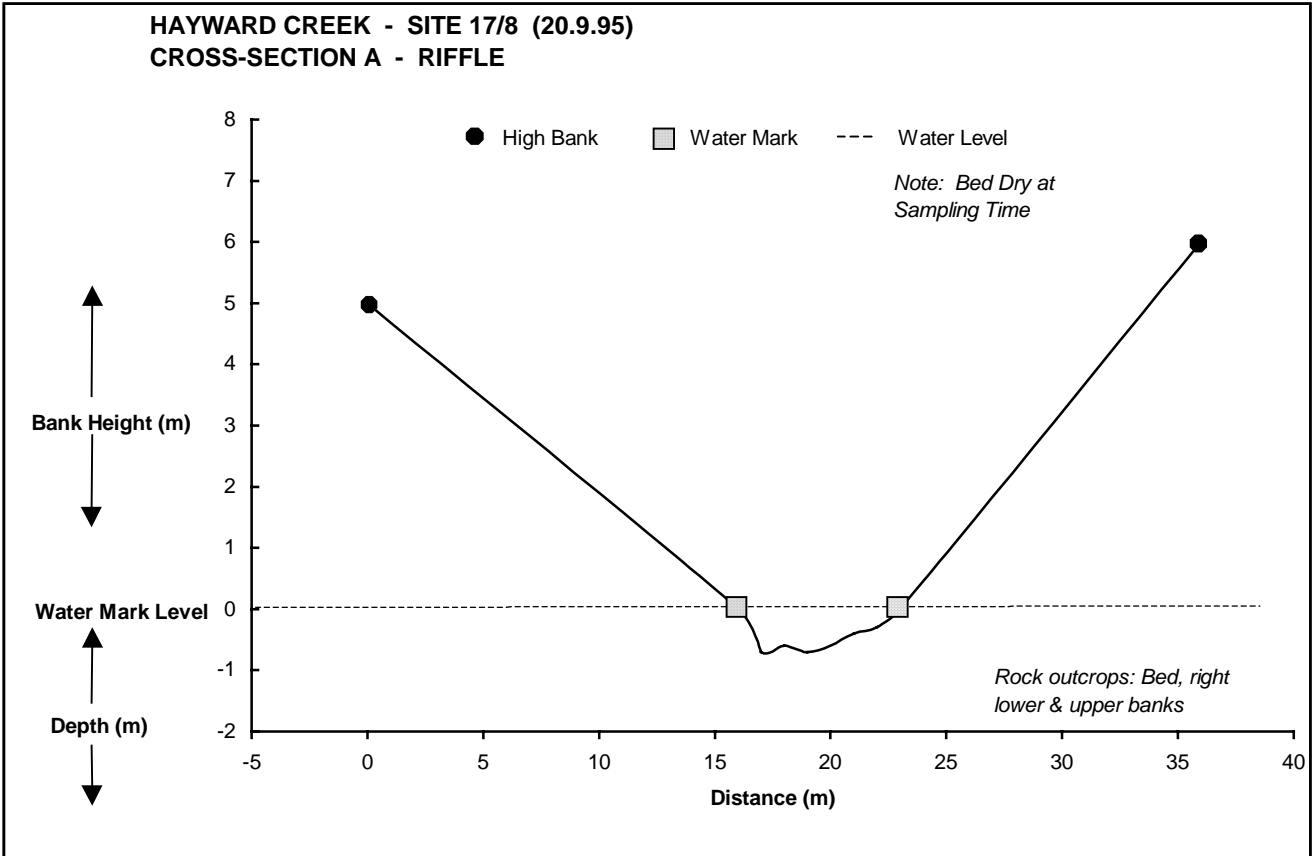
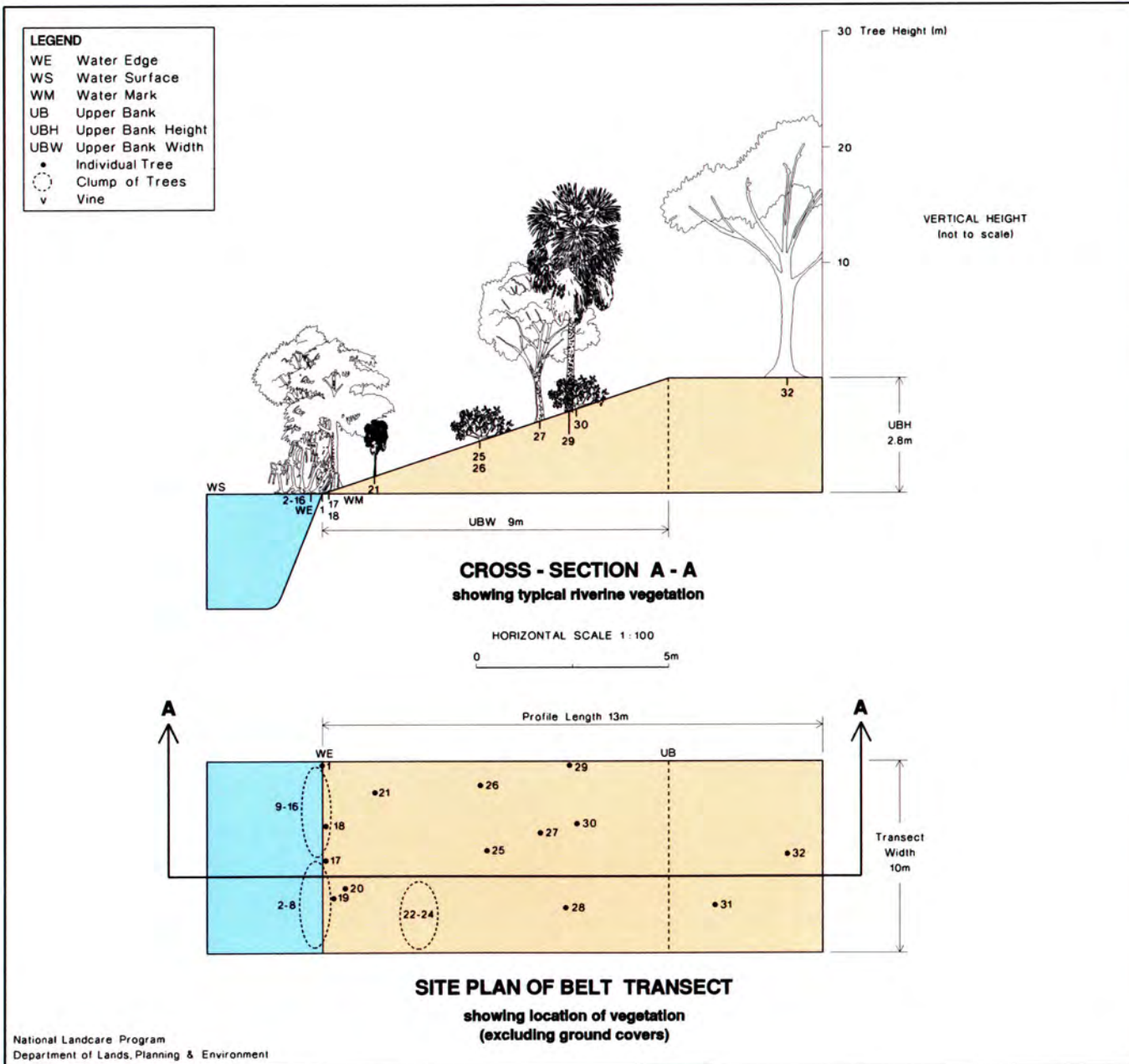


Figure 10.111 Cross-section Surveys for Site 17/8 – Hayward Creek



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1	15	<i>Melaleuca argentea</i>
2-16	1-6	<i>Pandanus aquaticus</i>
17, 18	14	<i>Ficus racemosa</i>
19, 20	4-16	<i>Nauclea orientalis</i>
21, 29	3.3-20	<i>Livistona rigida</i>
22-24	1.3-5	<i>Barringtonia acutangula</i>
25, 26, 28, 30, 31	1.3-3.5	<i>Grewia breviflora</i>
27	14	<i>Terminalia platyphylla</i>
32	23	<i>Eucalyptus camaldulensis</i>

OTHER SPECIES LOCATED AT SITE:

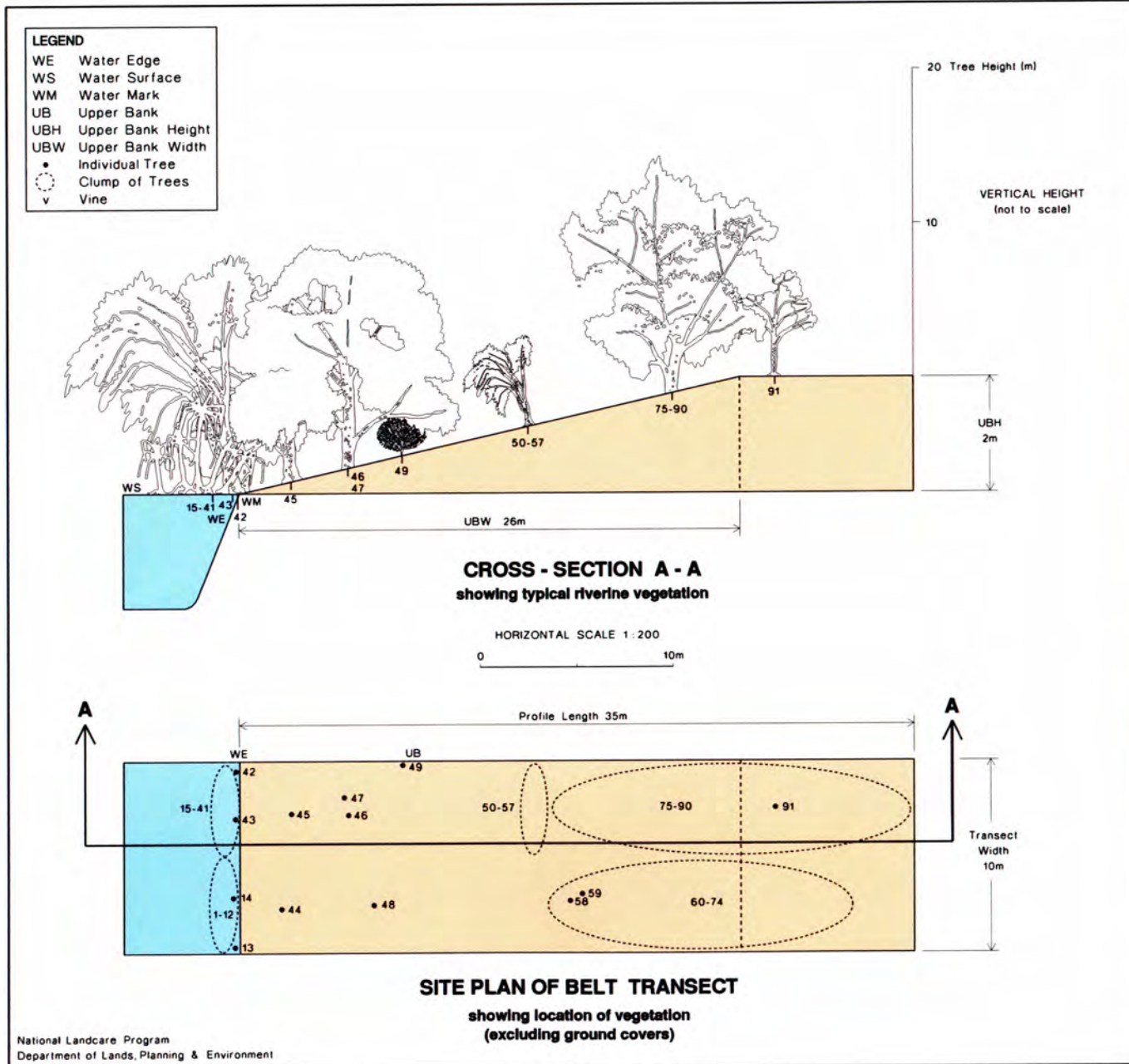
- Forbs:** *Achyranthes aspera*, *Myriophyllum* sp. (Aquatic), *Neosonia campestris*, *Nitella* sp. (Aquatic), *Schoenoplectus litoralis*
- Grasses:** *Arundinella nepalensis*, *Eriachne festucacea*, *Phragmites karka*
- Tree/Shrub:** *Acacia holosericea*, *Cathormion umbellatum*, *Dodonaea platyptera*, *Ficus scobina*
- Trees:** *Casuarina cunninghamiana*, *Litsea glutinosa*, *Sesbania formosa*, *Terminalia erythrocarpa*
- Vines:** *Flagellaria indica*, *Luffa cylindrica*, *Passiflora foetida*
- Weeds:** **Hyptis suaveolens* (Noxious), **Sida acuta* (Noxious)

*Exotic species

NOTES

- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
- Cross-section A-A includes all vegetation above the line marked through the belt transect.
- The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
- Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT DALY RIVER CATCHMENT			
RIVERINE VEGETATION PROFILE			
FLORA RIVER		Date 27.5.96	
Sub-section	17	Site	1
			Figure 10.112



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1-12, 15-41	1-8	<i>Pandanus aquaticus</i>
13, 14	3-4	<i>Terminalia erythrocarpa</i>
42, 48, 60-90	1.5-16	<i>Casuarina cunninghamiana</i>
43-45, 50-59	1.5-17	<i>Melaleuca leucadendra</i>
46, 47	14-15	<i>Lophostemon grandiflorus</i>
49	2.5	<i>Acacia holosericea</i>
91	7	<i>Eucalyptus papuana</i>

OTHER SPECIES LOCATED AT SITE:

Forbs: *Blumea saxatilis*, *Lobelia quadrangularis*, *Myriophyllum* sp. (Aquatic), *Nelsonia campestris*, *Nitella* sp. (Aquatic), *Schoenoplectus litoralis*

Grasses: *Arundinella nepalensis*, *Eriachne festucacea*, *Phragmites karka*

Palms: *Livistona rigida*

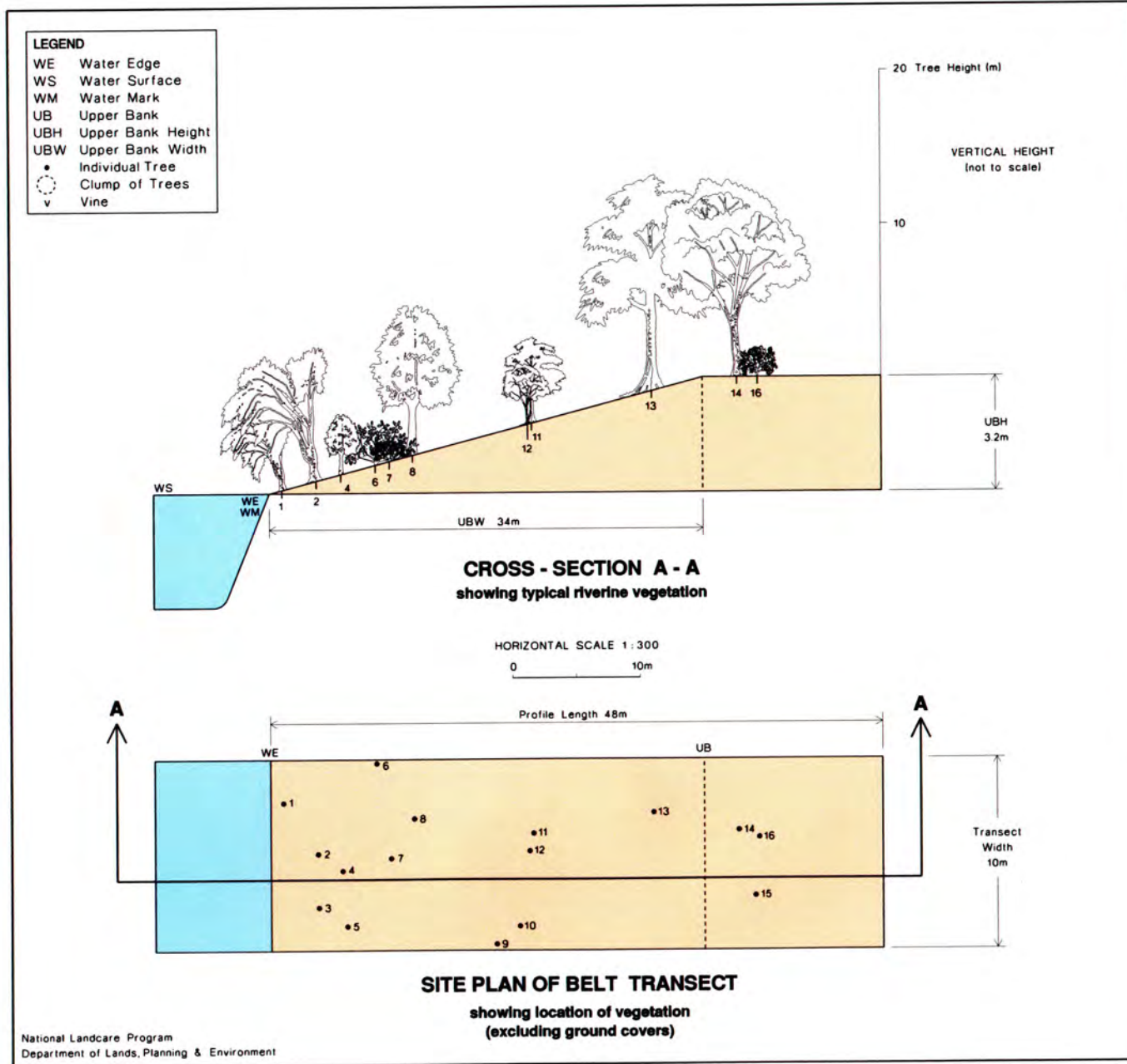
Trees: *Excoecaria parvifolia*, *Ficus racemosa*, *Nauclea orientalis*, *Sesbania formosa*

Vines: **Passiflora loetida*

* Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 - Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT DALY RIVER CATCHMENT	
RIVERINE VEGETATION PROFILE	
FLORA RIVER	Date 28.5.96
Sub-section 17 Site 2	Figure 10.113



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1, 2, 15	6-15	<i>Melaleuca leucadendra</i>
3, 4, 8	4-10	<i>Timonius timon</i>
5	11.5	<i>Nauclea orientalis</i>
6, 7, 12, 14	1.5-13	<i>Terminalia platyphylla</i>
9	6	<i>Acacia holosericea</i>
10	6	<i>Ficus coronata</i>
11, 13	6-15	<i>Ficus racemosa</i>
16	2	<i>Strychnos lucida</i>

OTHER SPECIES LOCATED AT SITE:

Forbs: *Chera* sp. (Aquatic)
Fimbristylis pauciflora
Nitella sp. (Aquatic)

Grasses: *Germania truncatigulumis*
Heteropogon contortus

Trees: *Pandanus aquaticus*

*Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 - Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

FLORA RIVER	Date 20.9.95
Sub-section 17 Site 5	Figure 10.114

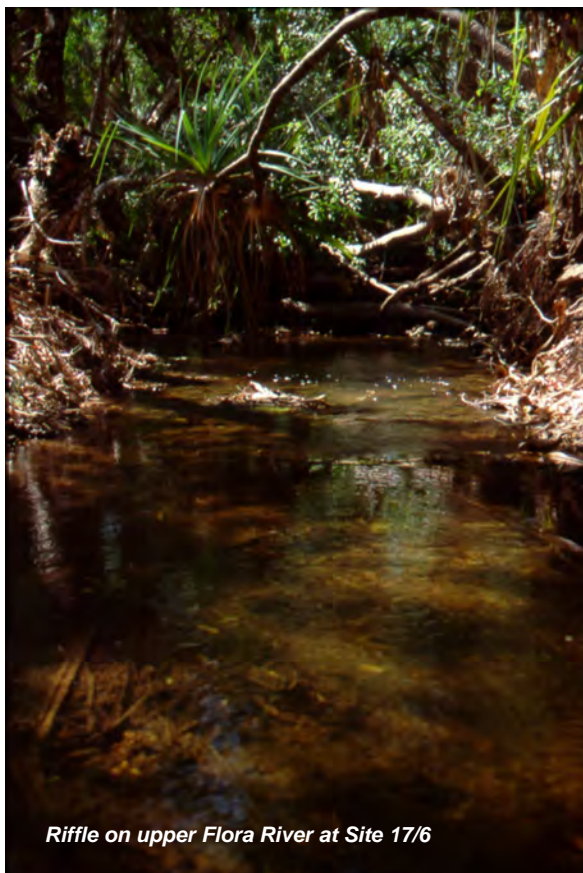
Table 10.41 Major Vegetation Species Recorded at Sites 6 and 8 on Flora River and Hayward Creek, respectively, located within Sub-section 17

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Sites Where Recorded (Sub-section No. / Site No.)
<i>Acacia holosericea</i>	Low tree / shrub		17/6
<i>Arundinella nepalensis</i>	Grass		17/6
<i>Casuarina cunninghamiana</i>	Tree		17/8
<i>Chara sp.</i>	Forb		17/6
<i>Crotolaria sp.</i>	Low tree / shrub		17/6
<i>Dodonaea platyptera</i>	Low tree / shrub		17/6
<i>Eleocharis geniculata</i>	Forb		17/6
<i>Eucalyptus papuana</i>	Tree		17/6
<i>Excoecaria parvifolia</i>	Tree		17/8
<i>Hyptis suaveolens</i>	Forb	E/N	17/8
<i>Lophostemon grandiflorus</i>	Tree		17/6, 17/8
<i>Melaleuca argentea</i>	Tree		17/8
<i>Melaleuca leucadendra</i>	Tree		17/6, 17/8
<i>Nauclea orientalis</i>	Tree		17/6
<i>Nelsonia campestris</i>	Forb		17/6
<i>Nitella sp.</i>	Forb		17/6
<i>Pandanus aquaticus</i>	Tree		17/6
<i>Paspalum scrobiculatum</i>	Grass		17/6
<i>Passiflora foetida</i>	Vine	E	17/6, 17/8
<i>Terminalia platyphylla</i>	Tree		17/6
<i>Timonius timon</i>	Tree		17/6

* Declared Noxious Weed within the Northern Territory



View along reach on lower Flora River (Site 17/1)



Riffle on upper Flora River at Site 17/6



Tufa waterfalls at Kathleen Falls on Flora River



Cascade at Florence Falls on Flora River (Site 17/2)



Reach on Hayward Creek at Site 17/8



Reach on upper Flora River at Site 17/5

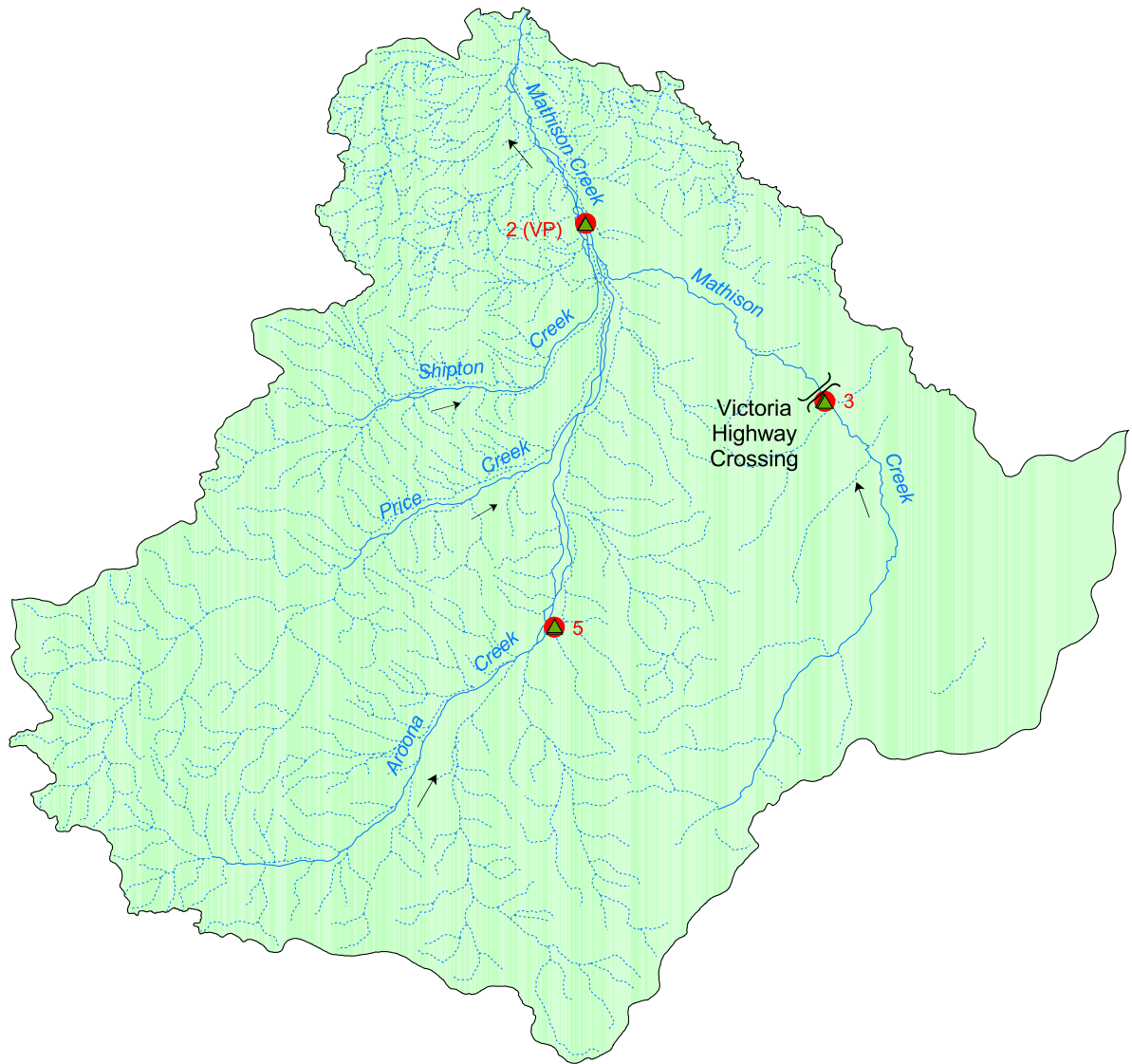
10.12.2 Mathison and Aroona Creeks

Sub-section 18 includes the catchment of Mathison and Aroona Creeks. Three sites were fully assessed in this sub-section (refer Table 10.42 and Map 48).

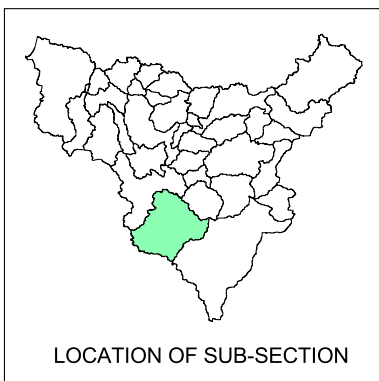
Table 10.42 Summary of Survey Information for Sub-section 18 – Mathison and Aroona Creeks

Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
2	Mathison Creek	A	Riffle	√	√	
		B	Pool	√		
3	Mathison Creek	A	Pool	√		
		B	Riffle	√		
5	Aroona Creek	A	Pool	√		
		B	Riffle	√		





Area - 3,790 km²



LEGEND	
● 5	Site
▲	Sample Point
(VP)	Vegetation Profile
—	Longitudinal Profile Survey
—	River
—	Creek
←	Flow direction

 TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

MATHISON & AROONA CREEKS

SUB-SECTION 18

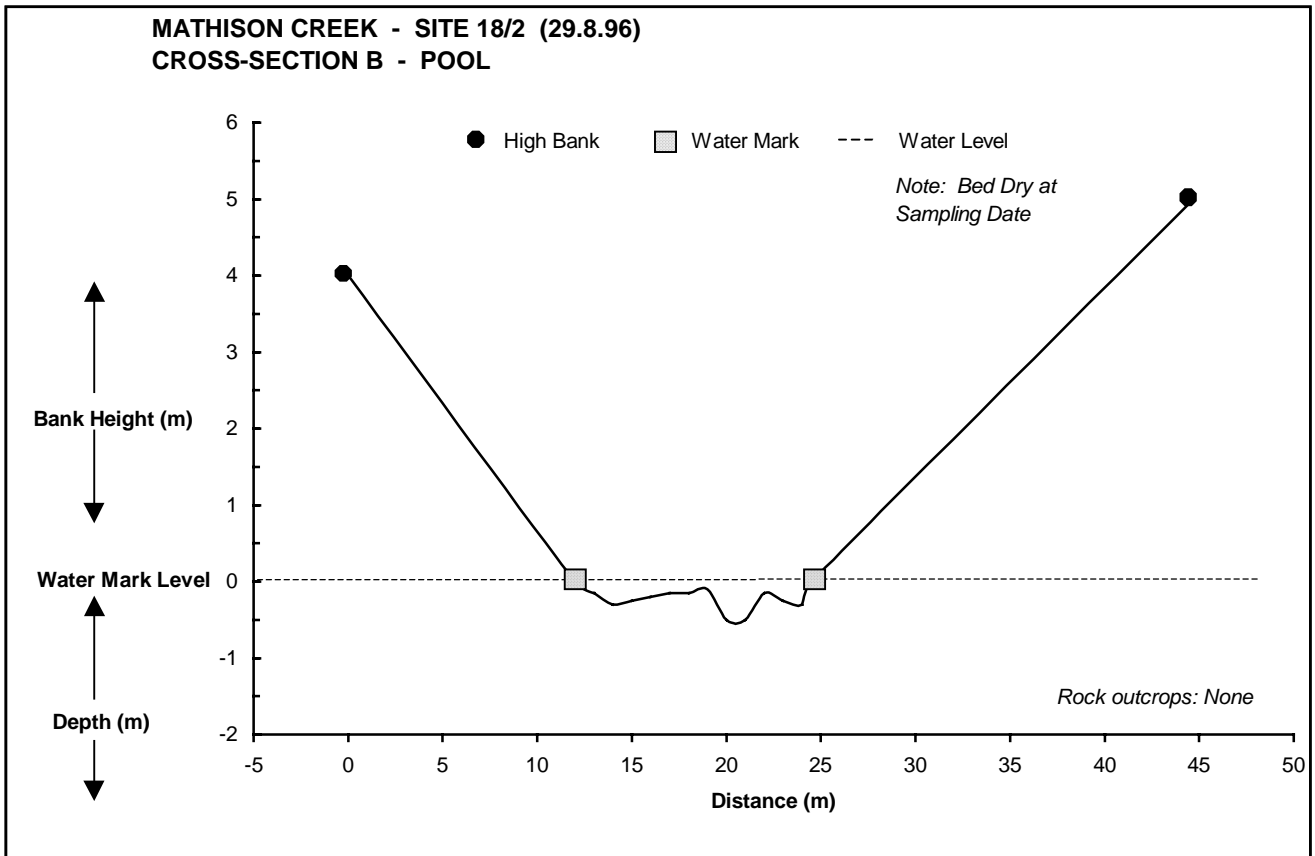
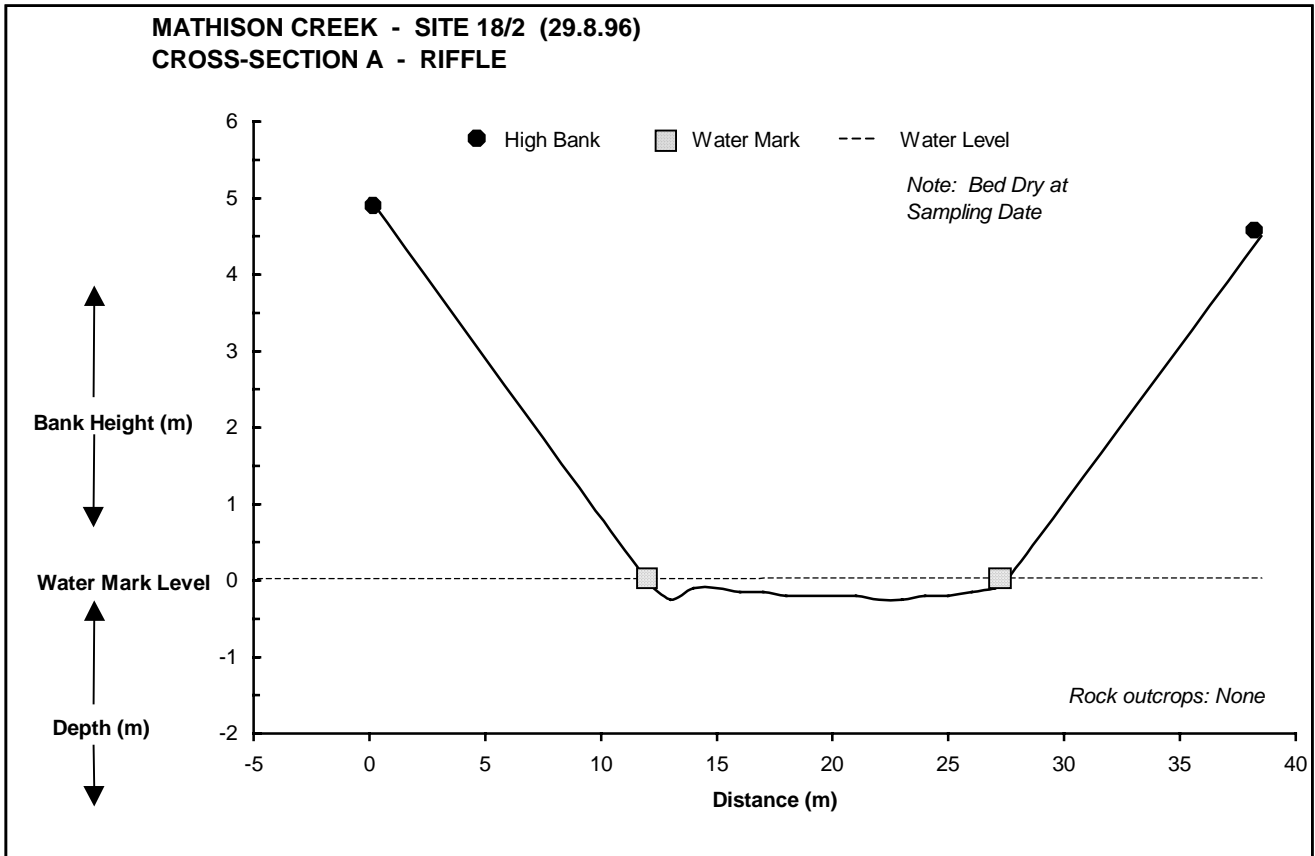


Figure 10.115 Cross-section Surveys for Site 18/2 – Mathison Creek

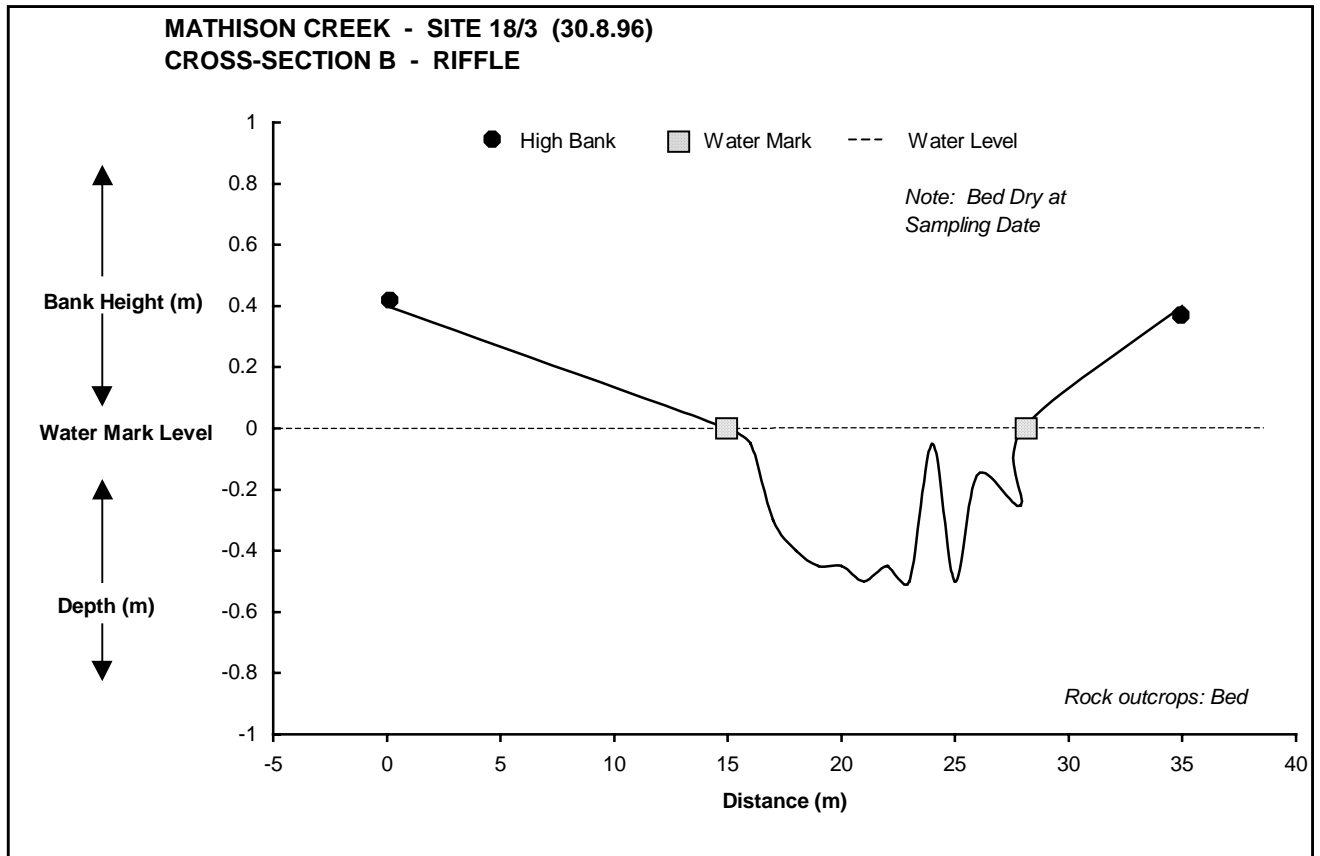
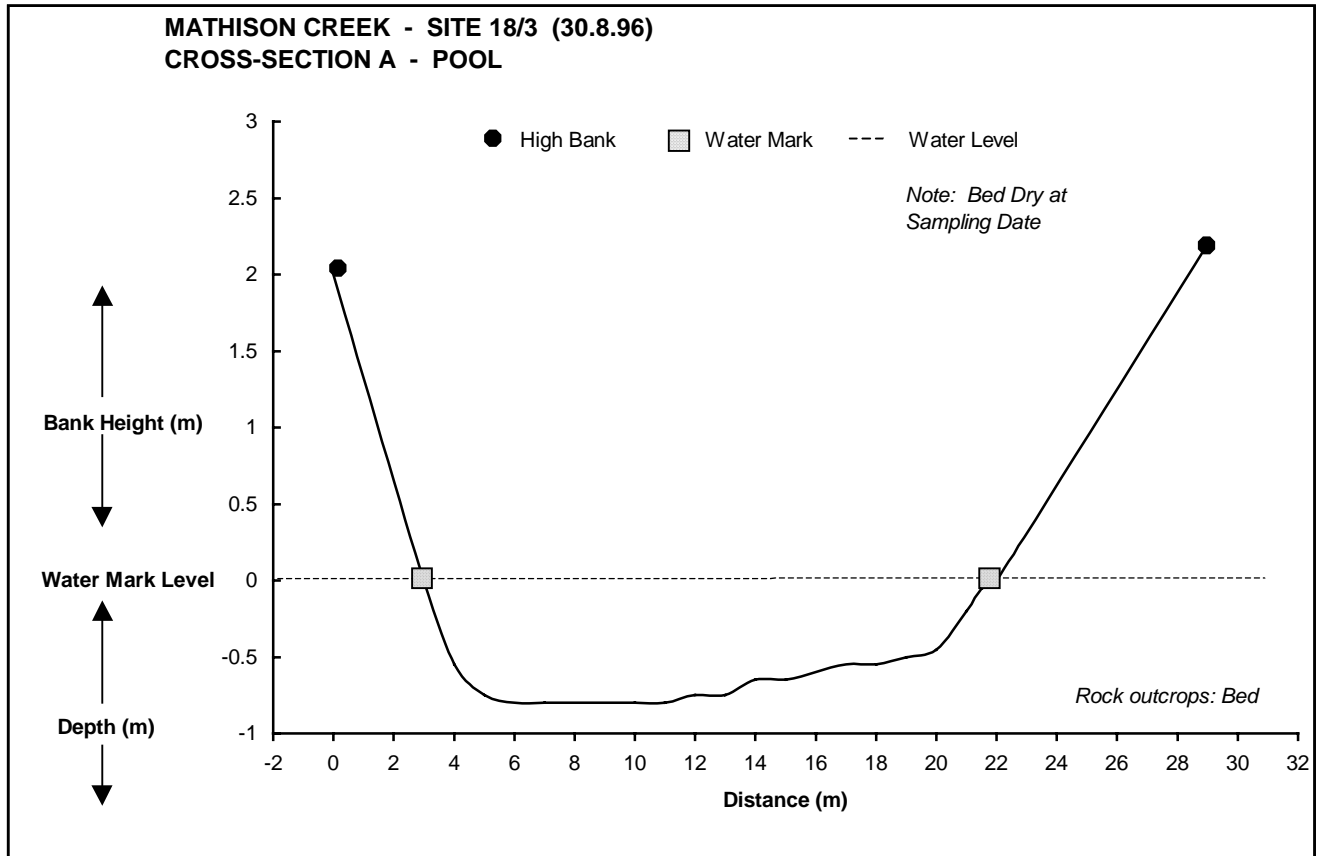


Figure 10.116 Cross-section Surveys for Site 18/3 – Mathison Creek

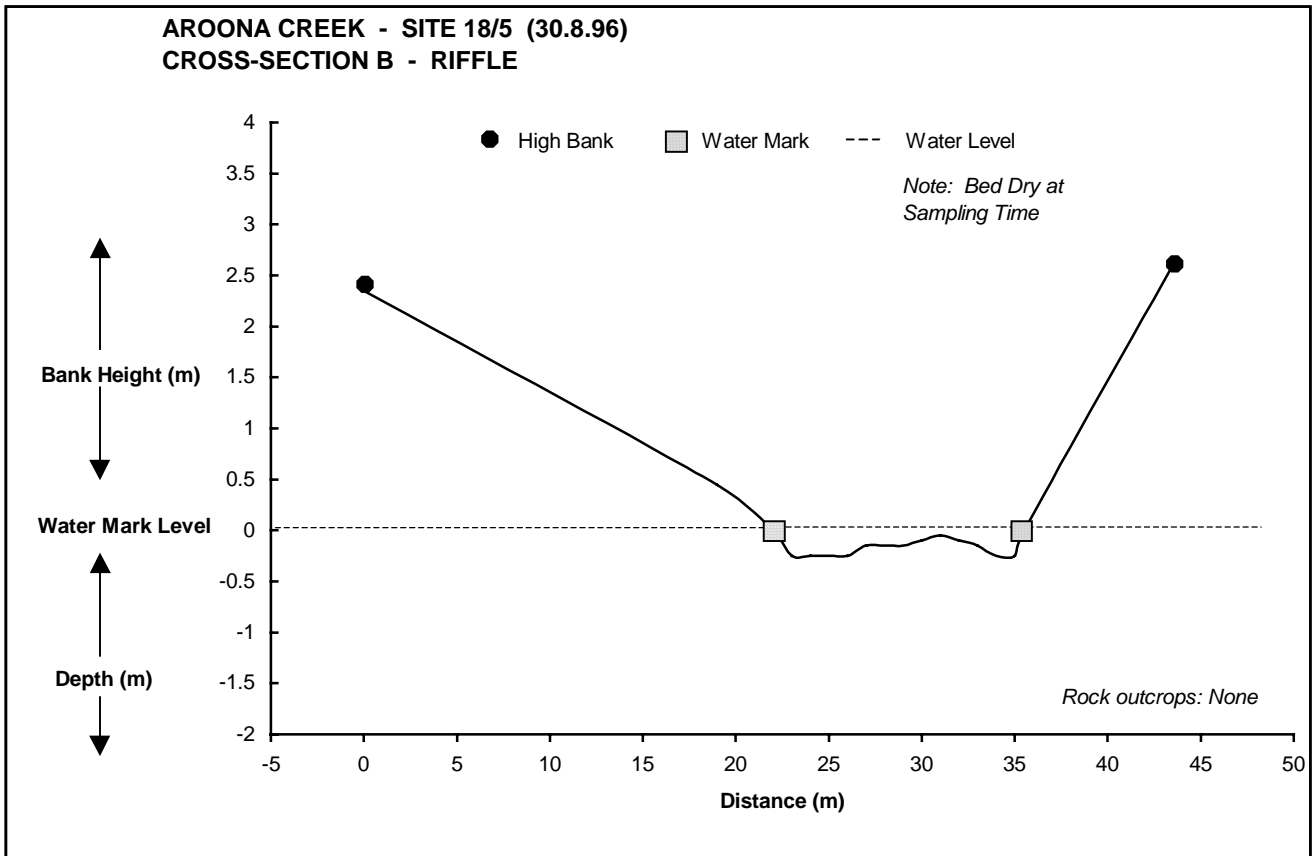
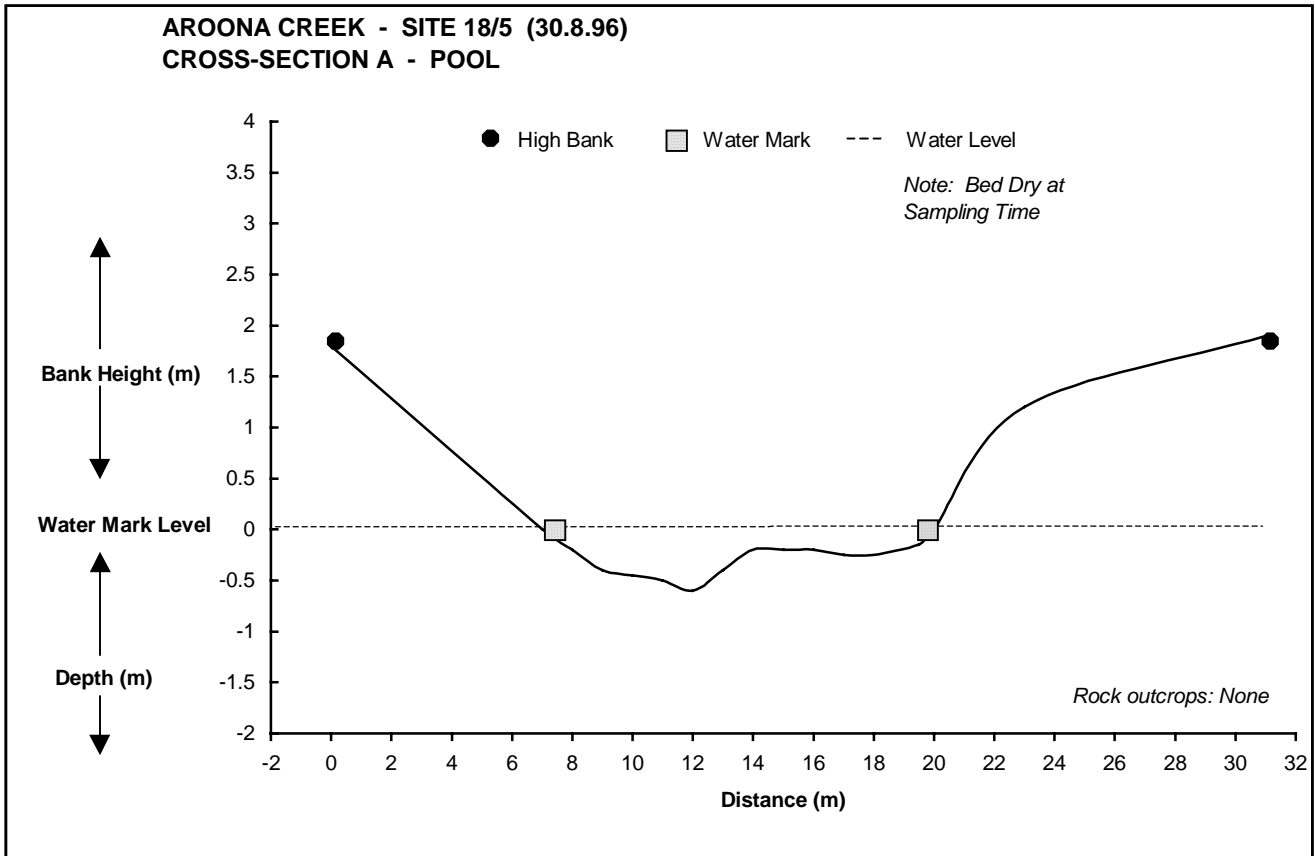
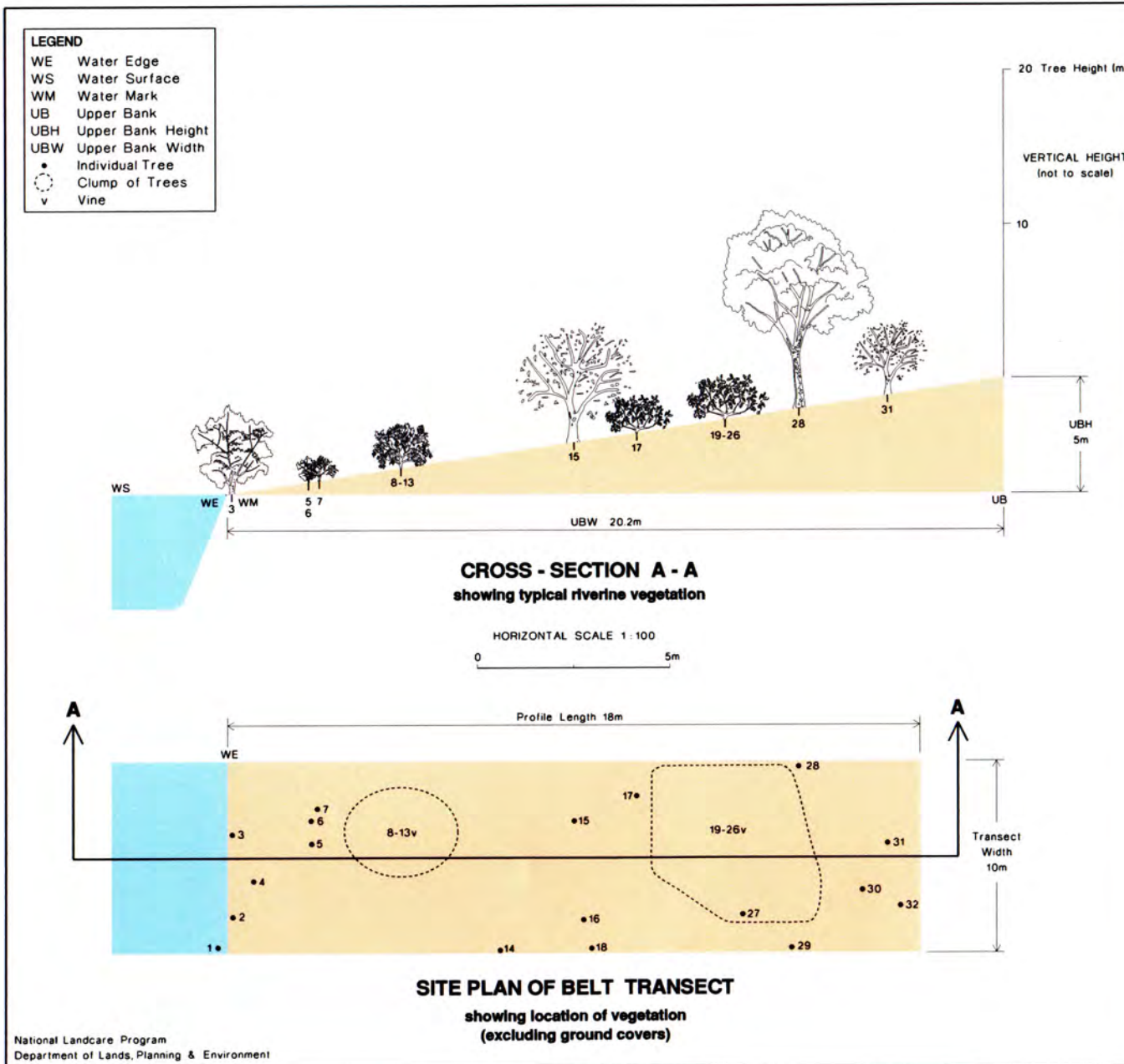


Figure 10.117 Cross-section Surveys for Site 18/5 – Aroona Creek



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1, 3, 5, 6	15-14	<i>Casuarina cunninghamiana</i>
2, 8-13	13-3	<i>Antidesma ghaesemilla</i>
4, 32	13-7	<i>Cathormion umbellatum</i>
7	1.7	<i>Atalaya hemiglauca</i>
14, 15, 18, 31	2.4-8	* <i>Parkinsonia aculeata</i> (Noxious)
16	16	<i>Eucalyptus camaldulensis</i>
17, 19-26, 30	13-3	* <i>Jatropha gossypifolia</i> (Noxious)
27	2.5	<i>Dodonaea platyptera</i>
28	13	<i>Terminalia platyphyla</i>
29	16	<i>Eucalyptus microtheca</i>

- OTHER SPECIES LOCATED AT SITE:**
- Forbs:** *Bidens bipinnata*
Nelsoa campestris
 - Grasses:** *Mnesithea rotboelliioides*
Paspalum distans
 - Trees:** *Ficus coronulata*
Lysiphylum cunninghamii
Melaleuca leucadendra
Nauclea orientalis
Strychnos lucida
 - Vines:** **Passiflora foetida*
 - Weeds:** **Pennisetum polystachion* (Noxious)
- *Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 - Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

MATHISON CREEK	Date 29.8.96
Sub-section 18 Site 2	Figure 10.118

Table 10.43 Major Vegetation Species Recorded at Sites 3 and 5 on Mathison and Aroona Creeks, respectively, located within Sub-section 18

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Sites Where Recorded (Sub-section No. / Site No.)
<i>Acacia holosericea</i>	Low tree / shrub		18/3
<i>Aristida pruinosa</i>	Grass		18/3
<i>Brachiaria piligera</i>	Grass		18/5
<i>Brachyachne convergens</i>	Grass		18/5
<i>Calytrix exstipulata</i>	Low tree / shrub		18/3
<i>Chrysopogon fallax</i>	Grass		18/3, 18/5
<i>Cyperus holoschoenus</i>	Forb		18/3
<i>Dodonaea platyptera</i>	Low tree / shrub		18/3
<i>Echinochloa colona</i>	Grass	E	18/5
<i>Eucalyptus camaldulensis</i>	Tree		18/3, 18/5
<i>Eucalyptus tectifica</i>	Tree		18/3
<i>Excoecaria parvifolia</i>	Tree		18/5
<i>Fimbristylis littoralis</i>	Forb		18/3
<i>Flacourtia territorialis</i>	Low tree / shrub		18/3
<i>Heteropogon contortus</i>	Grass		18/3, 18/5
<i>Hyptis suaveolens</i>	Forb	E/N	18/3
<i>Indigofera linifolia</i>	Forb		18/5
<i>Jatropha gossypifolia</i>	Low tree / shrub	E/N	18/5
<i>Lophostemon grandiflorus</i>	Tree		18/3, 18/5
<i>Lysiphyllum cunninghamii</i>	Tree		18/3, 18/5
<i>Melaleuca leucadendra</i>	Tree		18/5
<i>Melaleuca viridiflora</i>	Low tree / shrub		18/3
<i>Mnesithea rottboellioides</i>	Grass		18/5
<i>Panicum mindanaense</i>	Grass		18/3
<i>Parkinsonia aculeata</i>	Low tree / shrub	E/N	18/5
<i>Sesbania cannabina</i>	Forb		18/5
<i>Strychnos lucida</i>	Tree		18/3
<i>Terminalia platyphylla</i>	Tree		18/3, 18/5

* Declared Noxious Weed within the Northern Territory



View along reach on Mathison Creek at Site 18/3



Reach along Aroona Creek at Site 18/5



Measuring bank height on Mathison Creek (Site 18/2)



An eroding bank along Aroona Creek (Site 18/5)

10.13 Katherine River

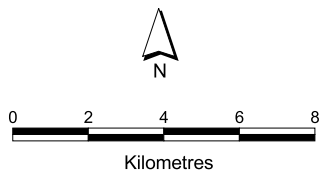
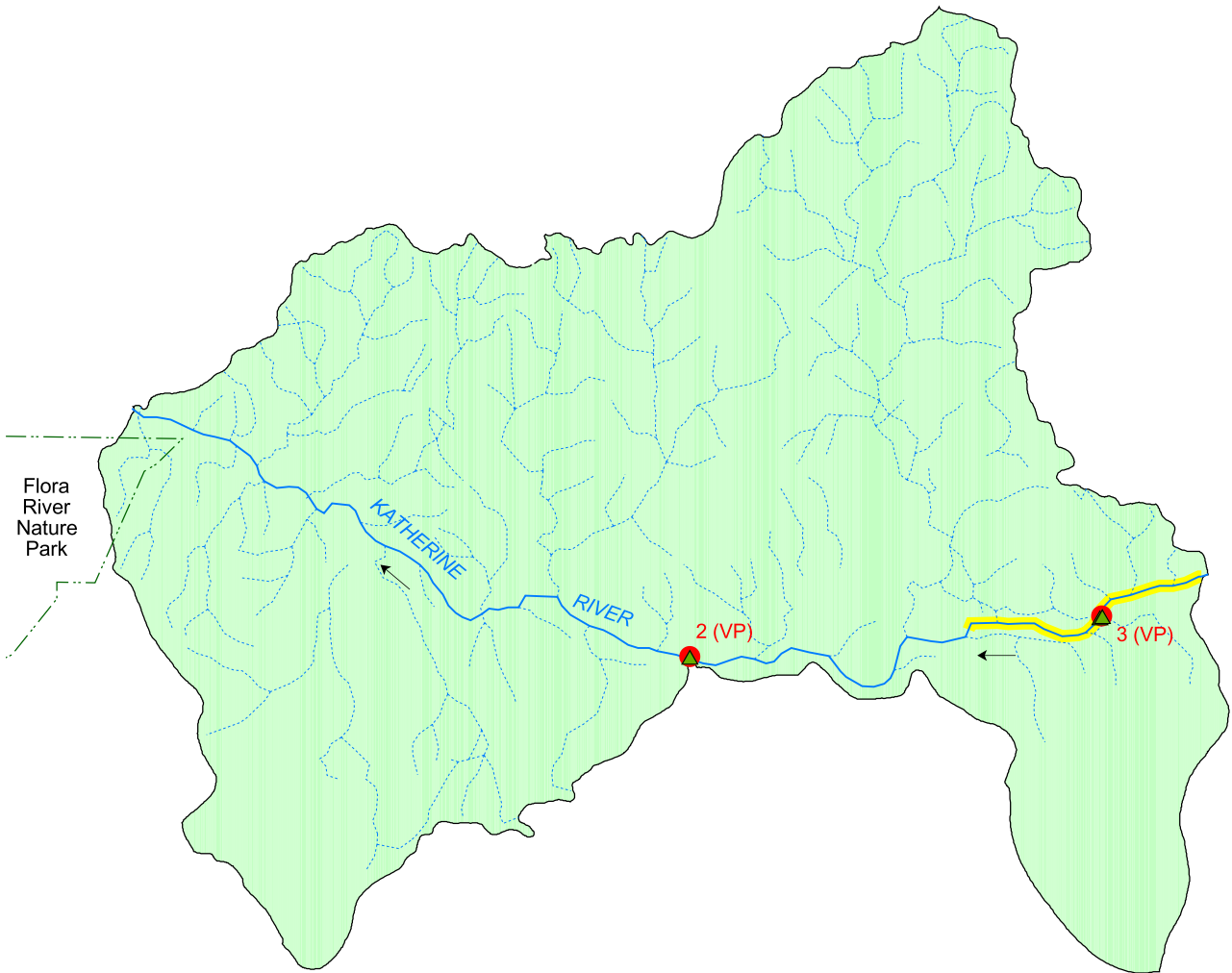
10.13.1 Katherine River – Below King River

Sub-section 19a encompasses the Katherine River from the junction with Daly River upstream to King River (excluding the catchment area of Limestone and Scott Creeks). Two sites, located on the Katherine River, were fully assessed in this sub-section (refer Table 10.44 and Map 49).

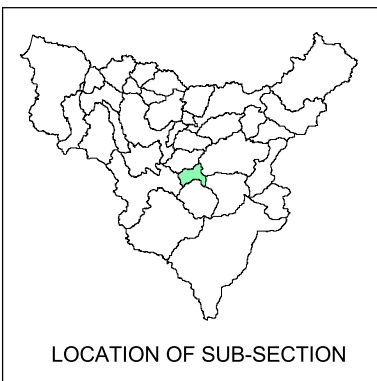
Table 10.44 Summary of Survey Information for Sub-section 19a – Katherine River Below King River

Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
2	Katherine River	A	Cascade	√	√	
3	Katherine River	A	Pool	√	√	
		B	Rapid	√		





Area - 446 km²



LEGEND	
● 5	Site
▲	Sample Point
(VP)	Vegetation Profile
—	Longitudinal Profile Survey
—	River
—	Creek
←	Flow direction

 TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

KATHERINE RIVER Below King River

SUB-SECTION 19a

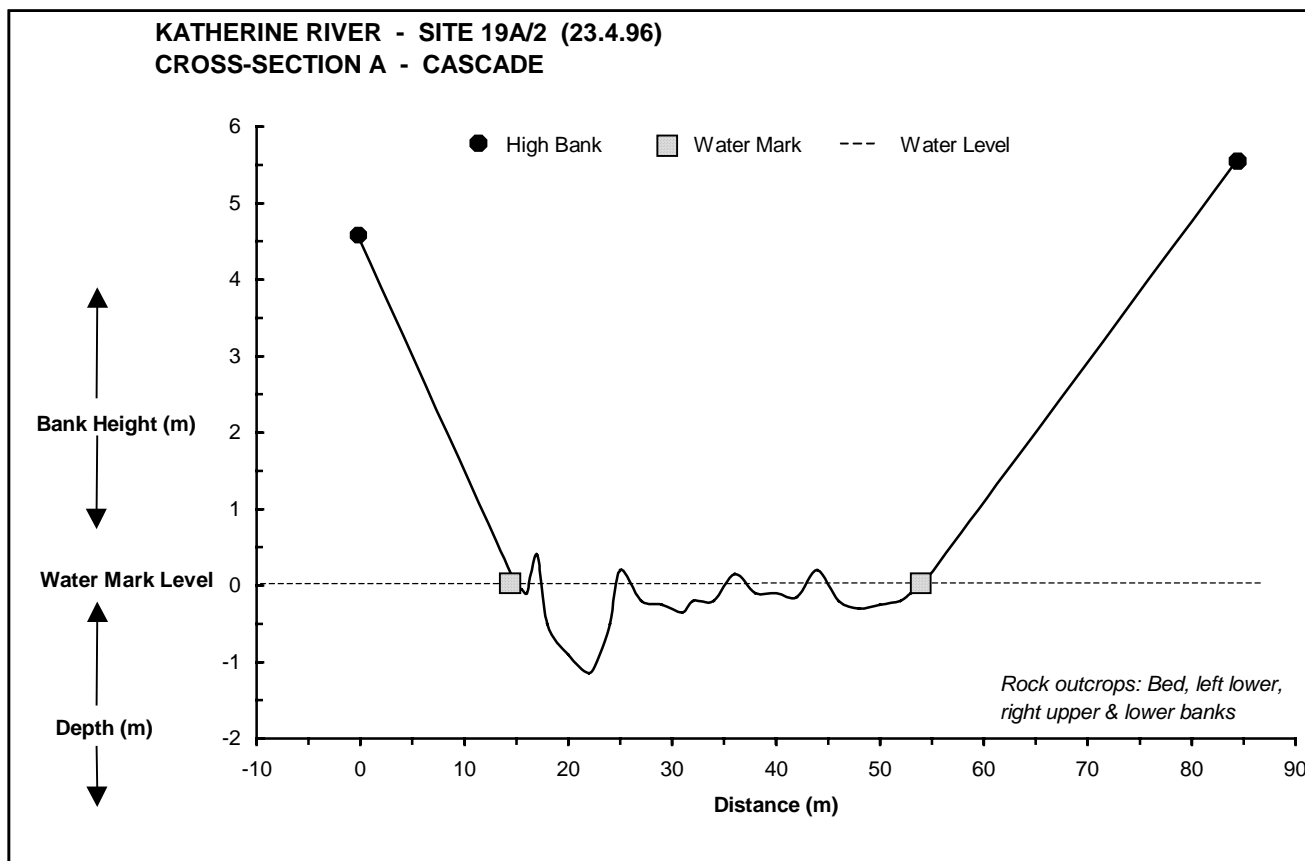


Figure 10.119 Cross-section Survey for Site 19a/2 – Katherine River



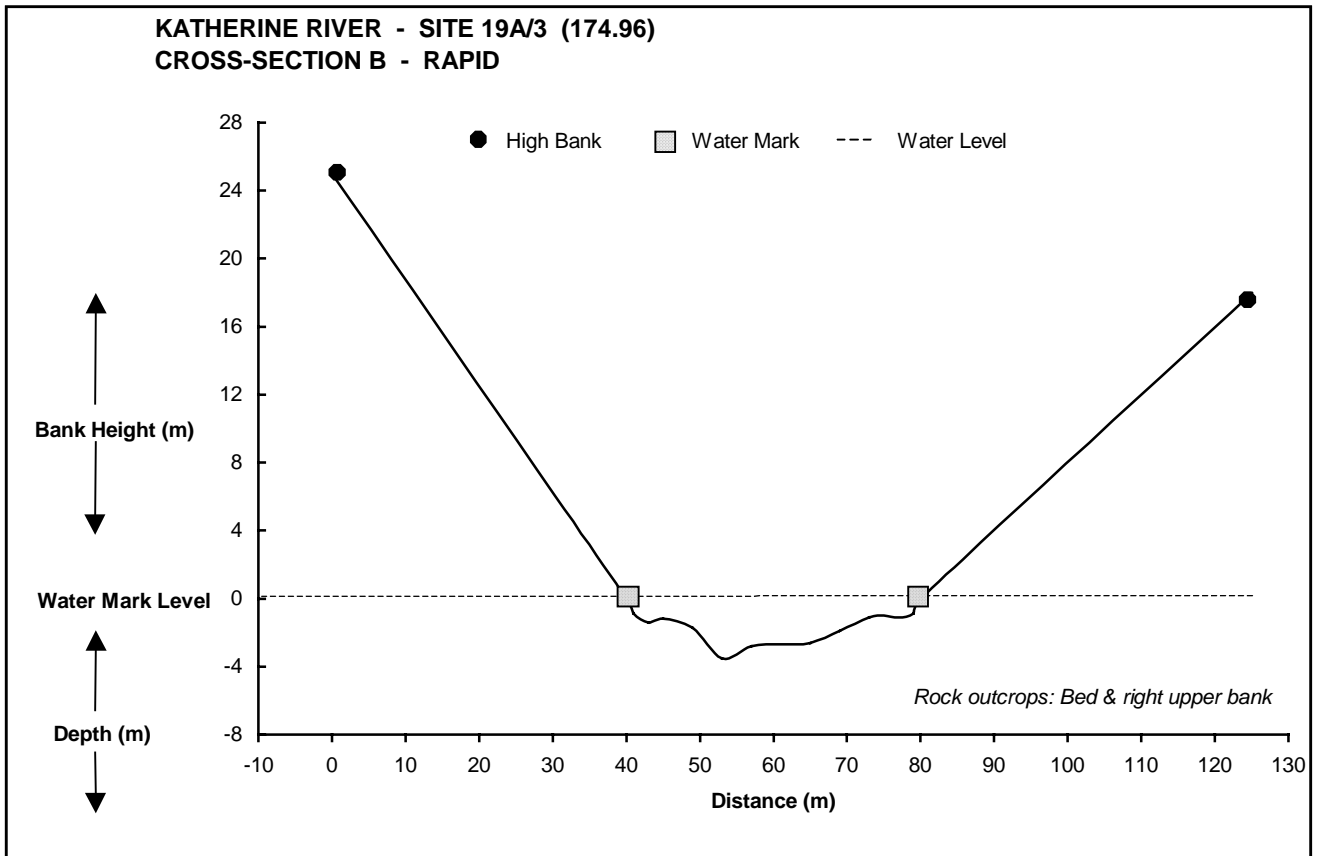
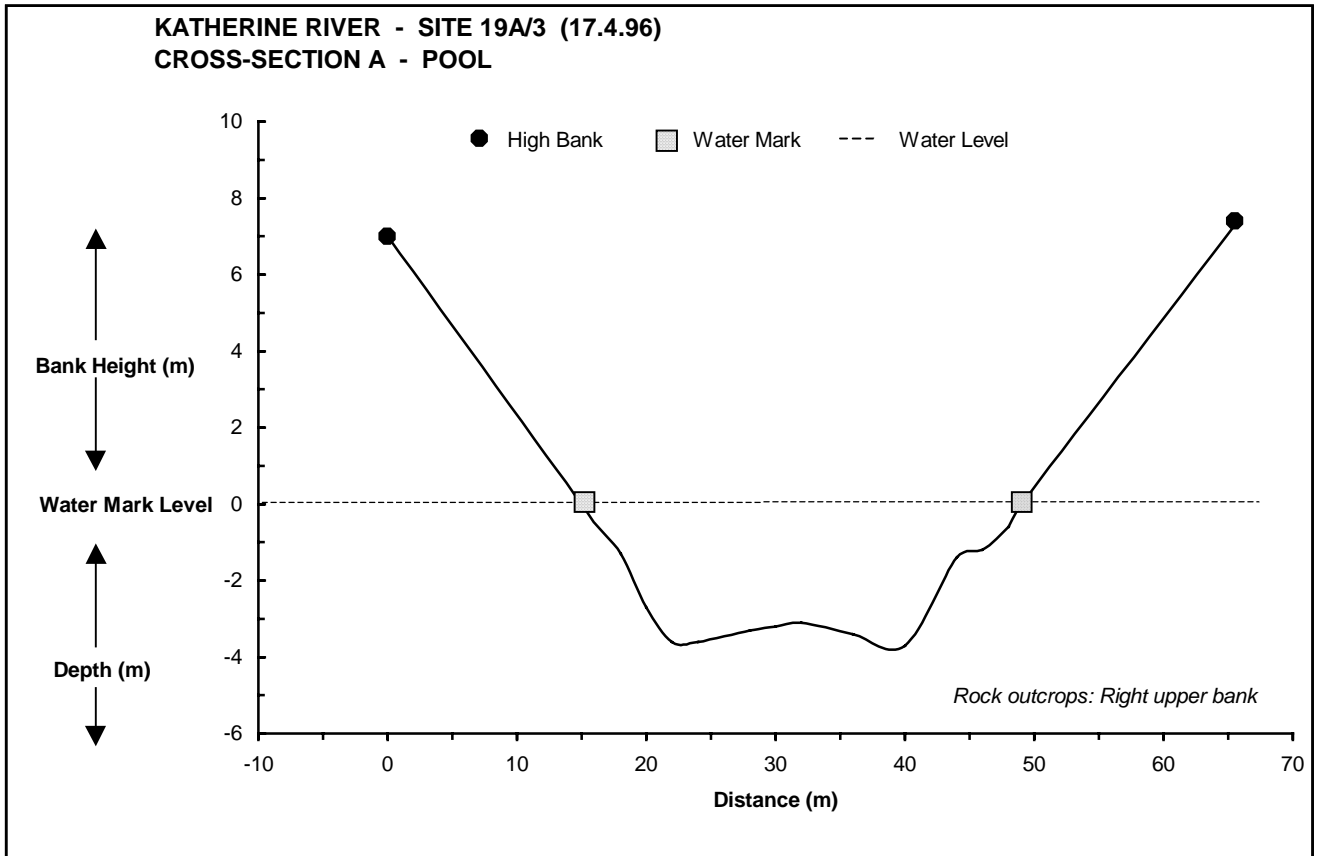
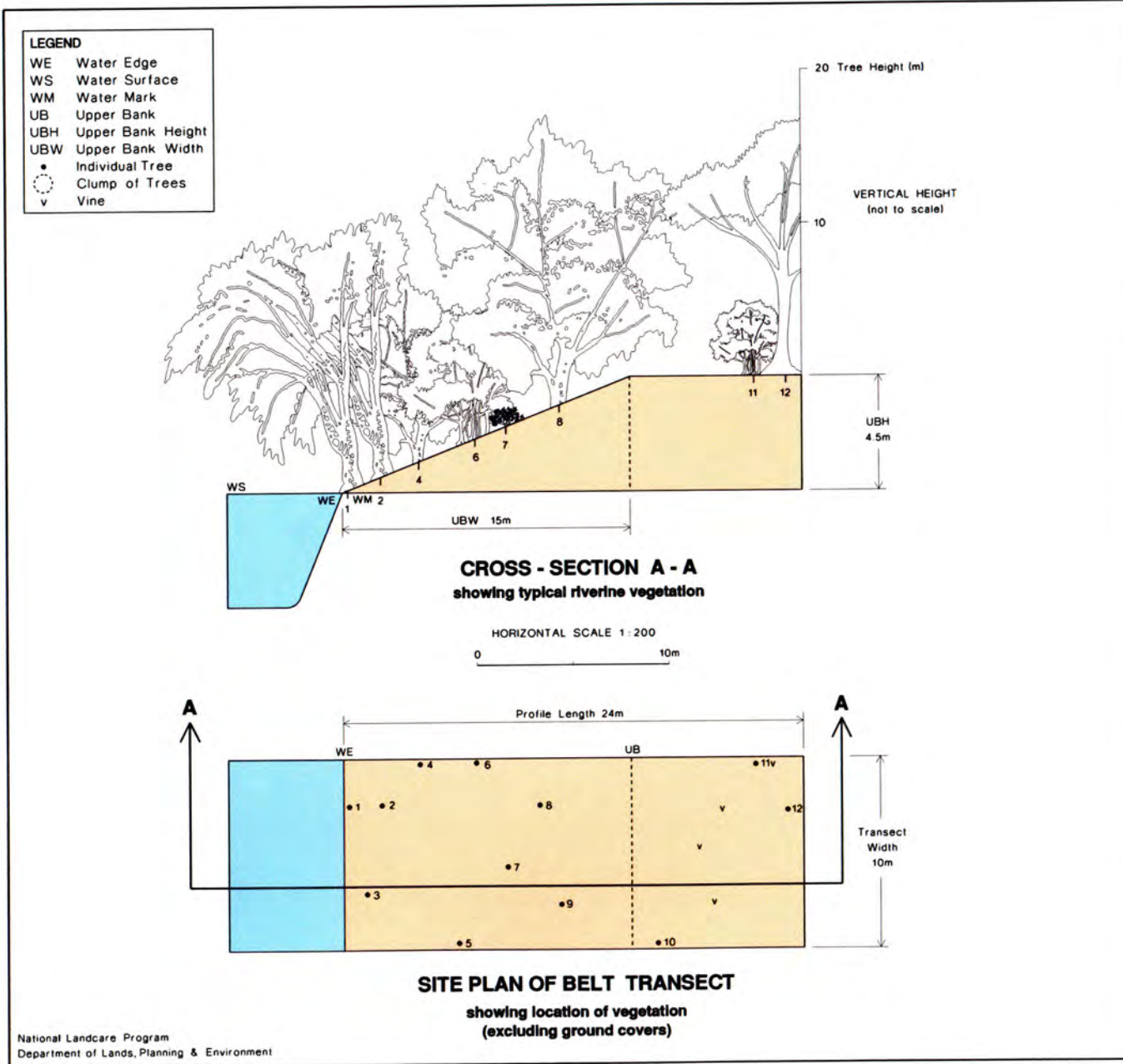


Figure 10.120 Cross-section Surveys for Site 19a/3 – Katherine River



National Landcare Program
Department of Lands, Planning & Environment

TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1, 2	18	<i>Melaleuca leucadendra</i>
3, 4, 8, 9	13-20	<i>Casuarina cunninghamiana</i>
5	13	<i>Nauclea orientalis</i>
6, 11	5-9	<i>Barringtonia acutangula</i>
7	1.3	<i>Cathormion umbellatum</i>
10	5	<i>Ficus racemosa</i>
12	17	<i>Eucalyptus camaldulensis</i>

OTHER SPECIES LOCATED AT SITE:

- Forbs:** *Alternanthera nodiflora*
Nelsonia campestris
- Trees:** *Pandanus aquaticus*
Terminalia erythrocarpa
- Vines:** **Passiflora foetida*
- Weeds:** **Xanthium occidentale* (Noxious)

* Exotic species

NOTES

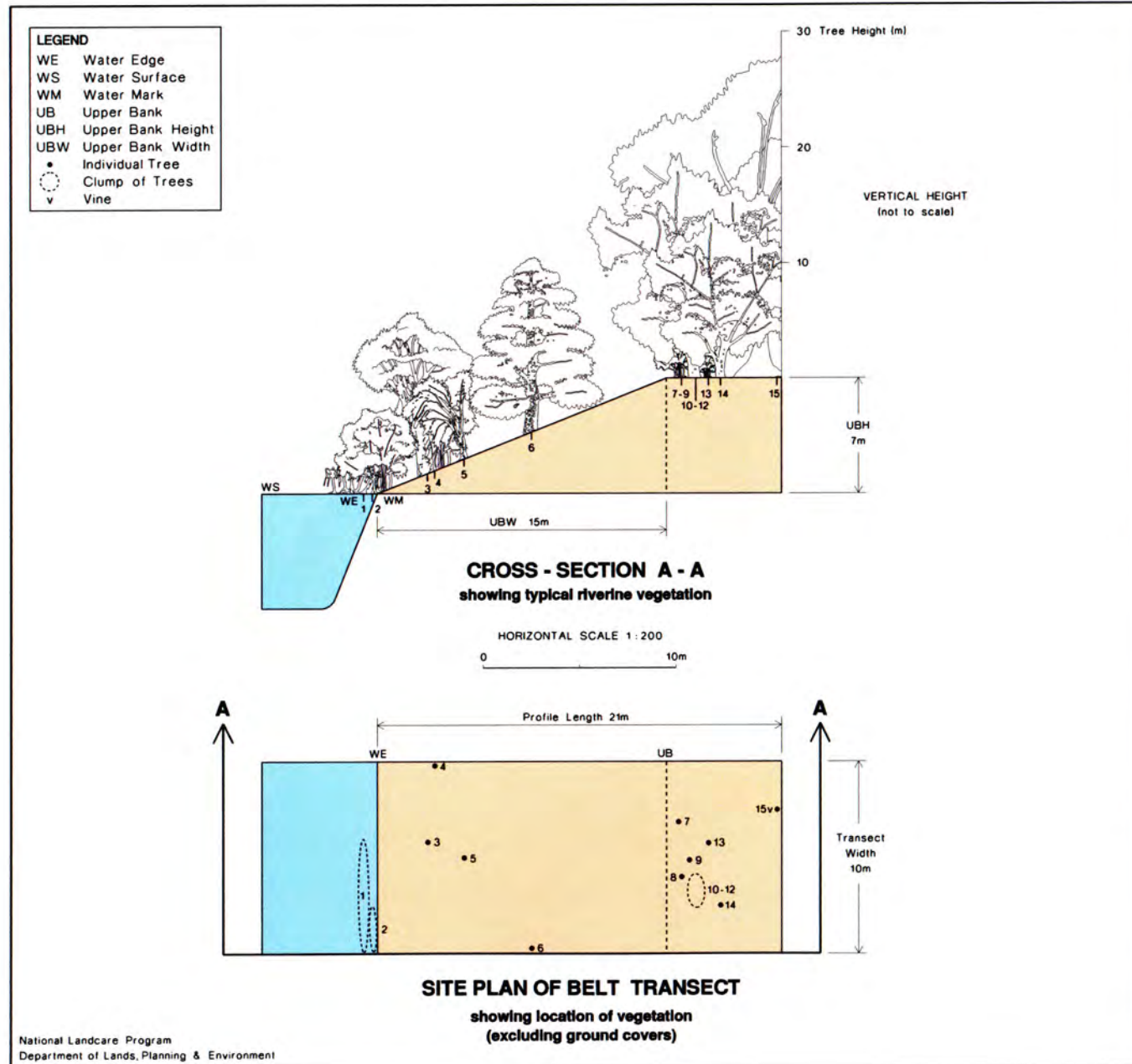
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
- Cross-section A-A includes all vegetation above the line marked through the belt transect.
- The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
- Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.



TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

KATHERINE RIVER		Date 23.4.96
Sub-section 19A	Site 2	Figure 10.121



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1 (21 trees)	1-5	<i>Pandanus aquaticus</i>
2, 4, 7-9, 13	2-8	<i>Barringtonia acutangula</i>
3	15	<i>Melaleuca argentea</i>
5	8	<i>Melaleuca leucadendra</i>
6	16	<i>Nauclea orientalis</i>
10-12, 14	15-20	<i>Casuarina cunninghamiana</i>
15	28	<i>Eucalyptus camaldulensis</i>


OTHER SPECIES LOCATED AT SITE:

- Forbs:** *Alternanthera nodiflora*
Heliotropium indicum
Melochia pyramidata
- Grasses:** *Brachiaria piligera*
Paspalidium distans
Phragmites karka
- Tree/shrub:** *Antidesma ghaesambilla*
Ficus scobina
- Vines:** *Passiflora foetida*

* Exotic species

NOTES

- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
- Cross-section A-A includes all vegetation above the line marked through the belt transect.
- The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
- Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

 TOP END WATERWAYS PROJECT DALY RIVER CATCHMENT	
RIVERINE VEGETATION PROFILE	
KATHERINE RIVER	Date 17.4.96
Sub-section 19A Site 3	Figure 10.122

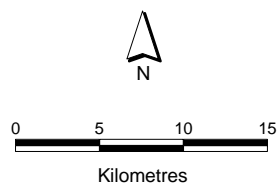
10.13.2 Katherine River – Below Seventeen Mile Creek

Sub-section 19b encompasses the Katherine River from the junction with King River upstream to Seventeen Mile Creek. This sub-section includes the Katherine Township urban and rural residential areas. Six sites, located on the Katherine River, were fully assessed in this sub-section (refer Table 10.45 and Map 50).

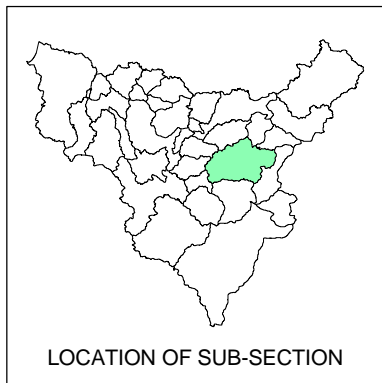
Table 10.45 Summary of Survey Information for Sub-section 19b – Katherine River Below Seventeen Mile Creek

Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
1	Katherine River	A	Rapid	√	√	
2	Katherine River	A	Pool	√	√	
		B	Riffle	√		
3	Katherine River	A	Pool	√	√	
		B	Riffle	√		
4	Katherine River	A	Run	√	√	
		B	Pool	√		
5	Katherine River	A	Riffle	√		
		B	Pool	√		
6	Katherine River	A	Riffle	√	√	
		B	Pool	√		





Area - 2,546 km²



LEGEND	
● 5	Site
▲	Sample Point
(VP)	Vegetation Profile
—	Longitudinal Profile Survey
—	River
—	Creek
←	Flow direction

 TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

KATHERINE RIVER
Below
Seventeen Mile Creek
SUB-SECTION 19b

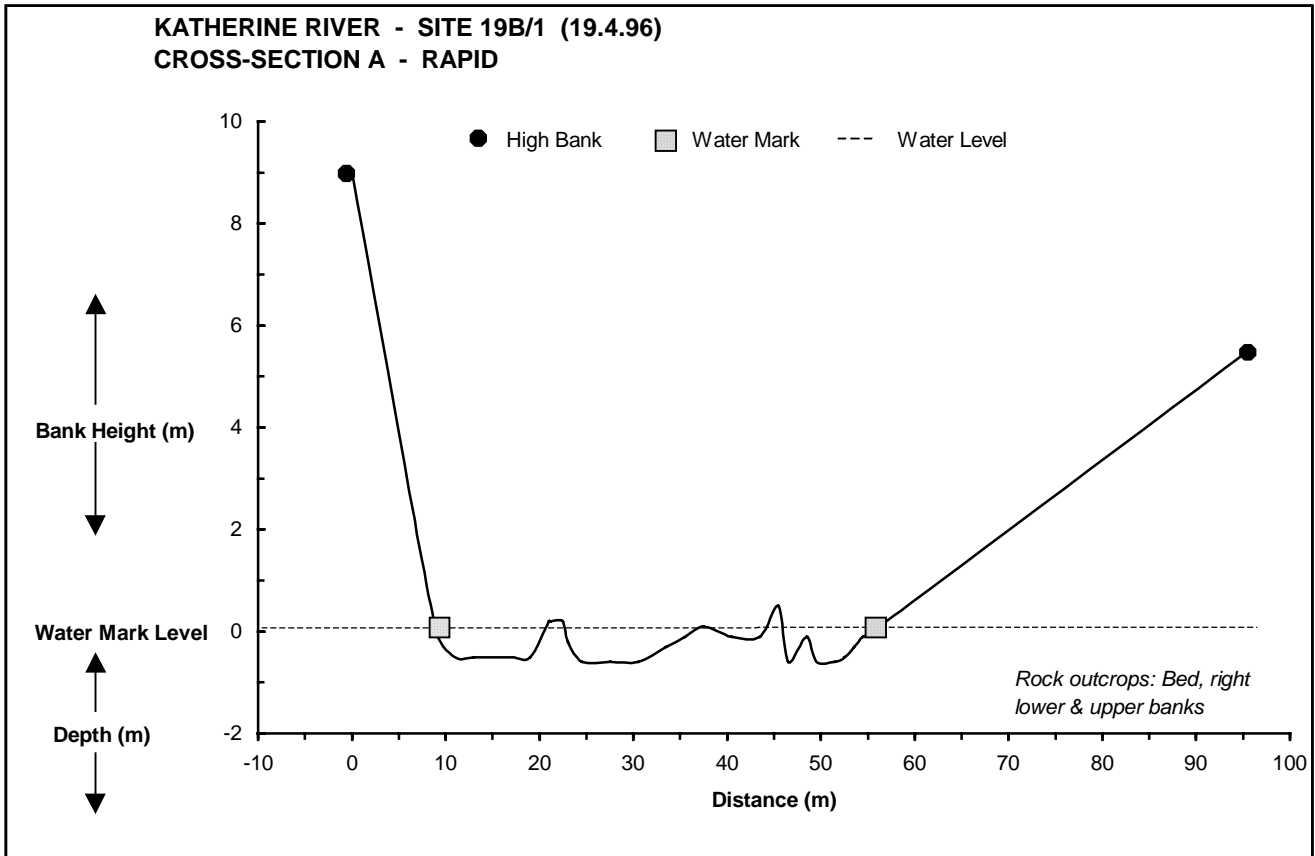


Figure 10.123 Cross-section Survey for Site 19b/1 – Katherine River



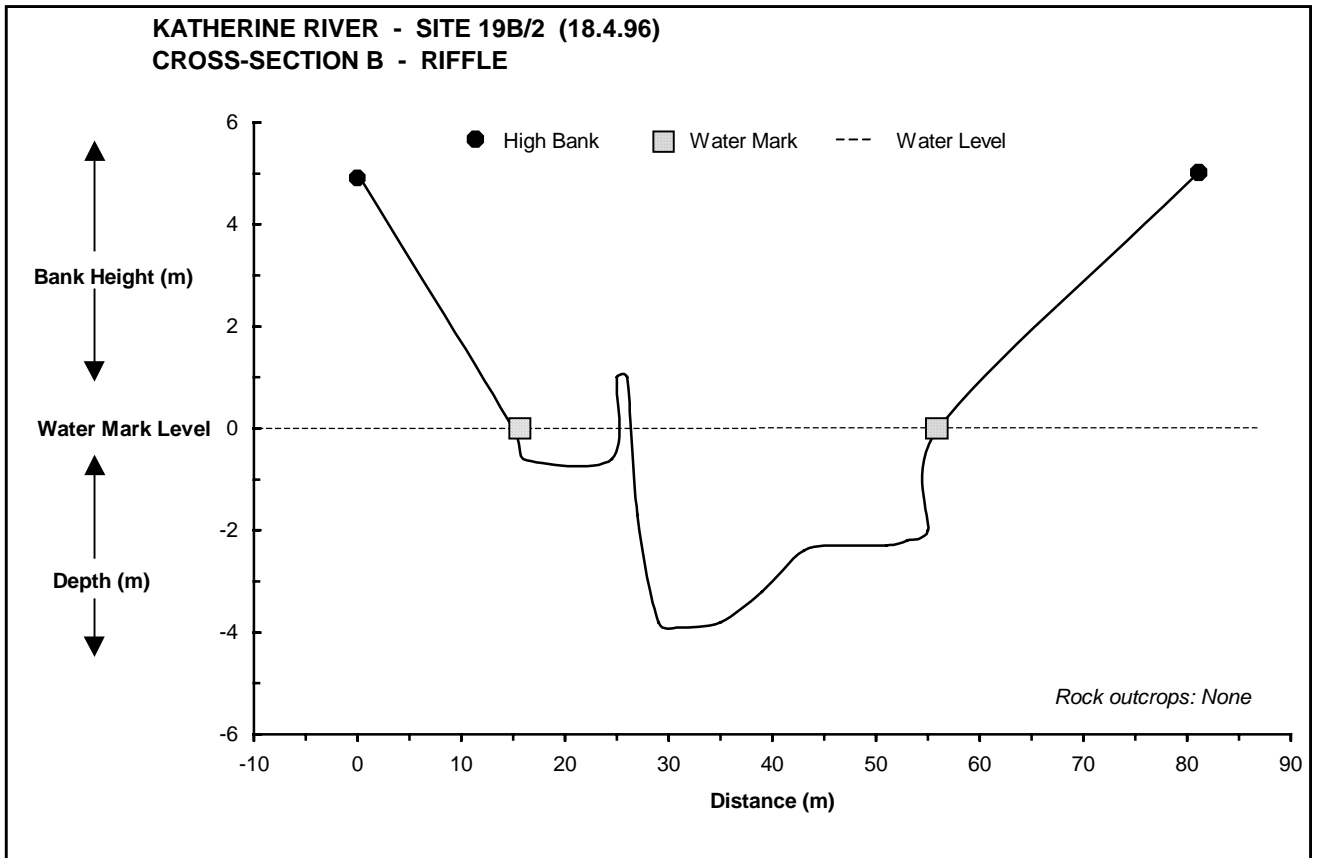
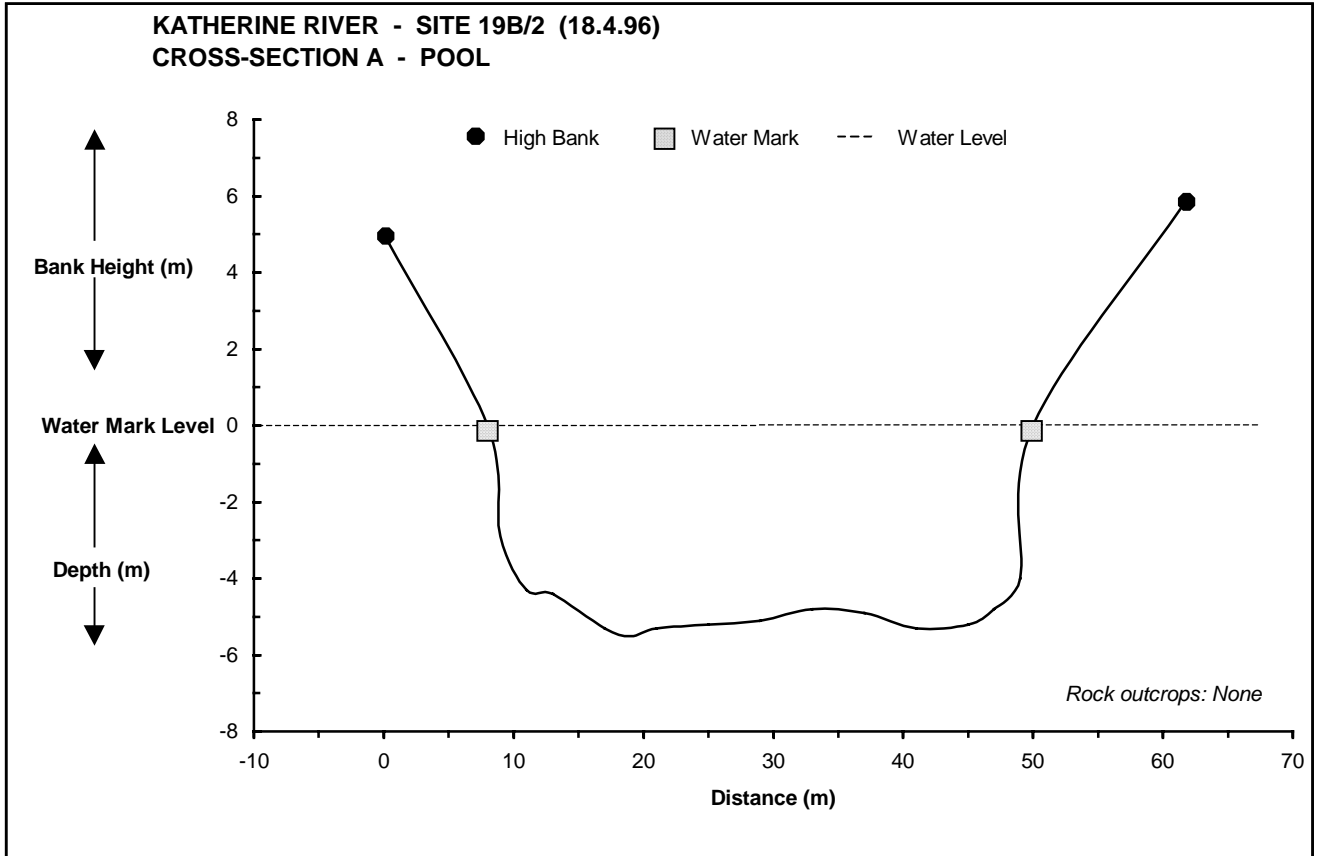


Figure 10.124 Cross-section Surveys for Site 19b/2 – Katherine River

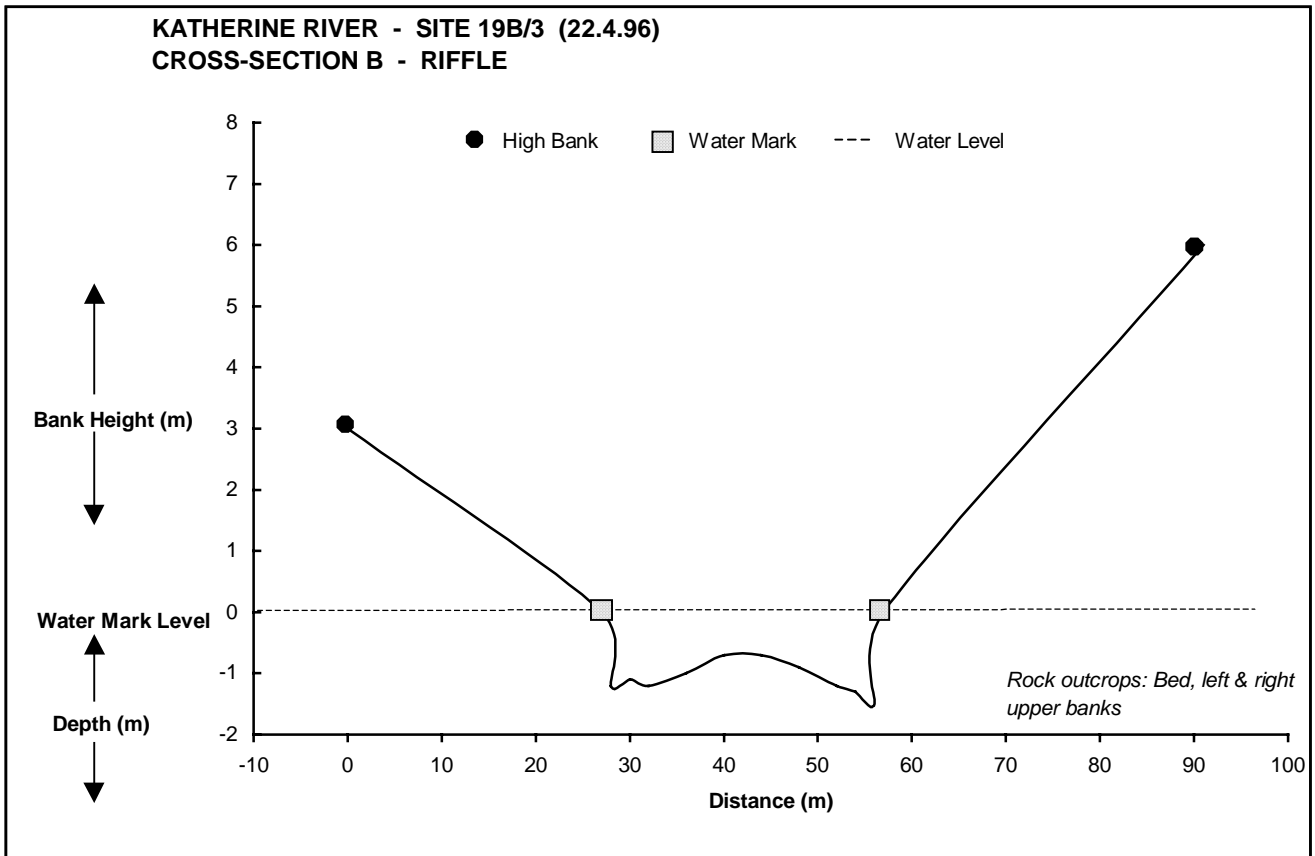
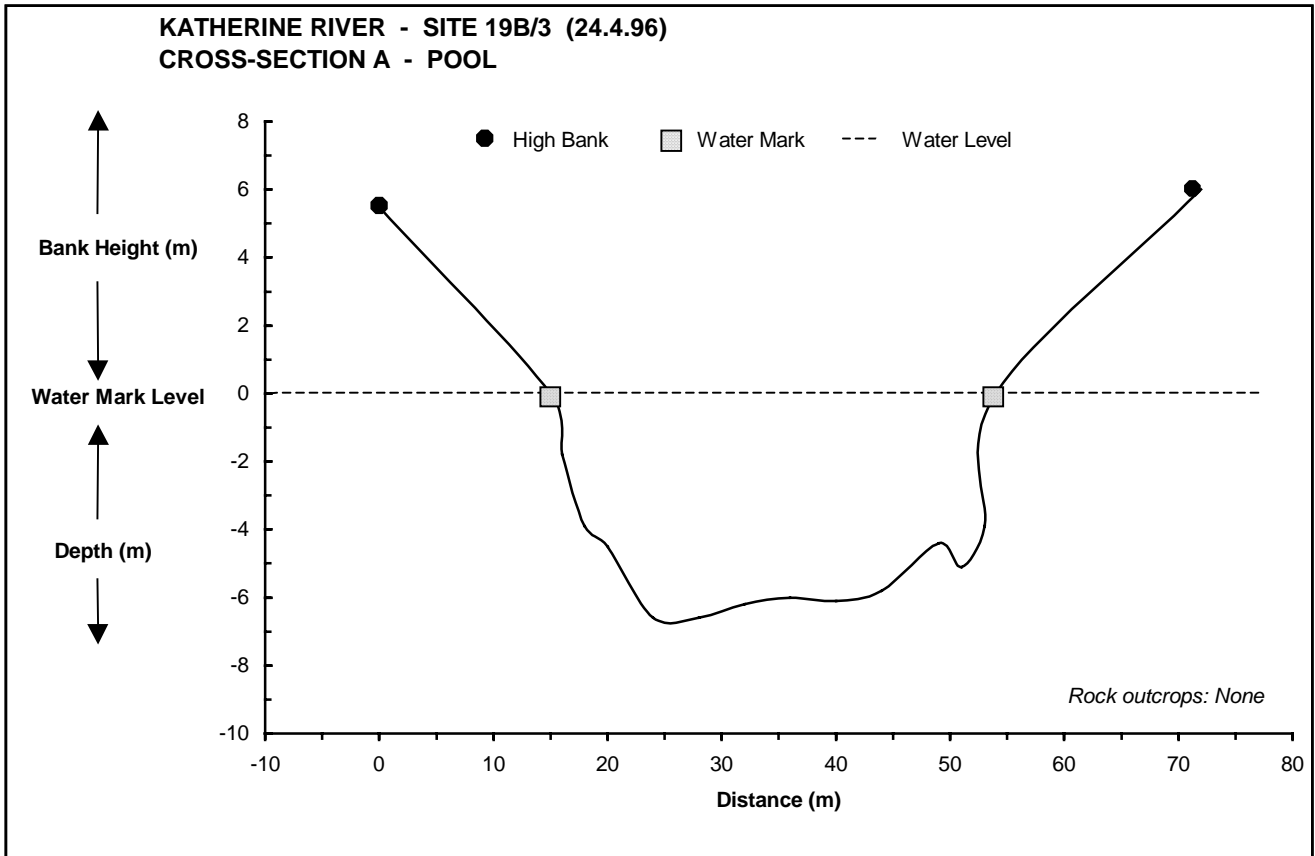


Figure 10.125 Cross-section Surveys for Site 19b/3 – Katherine River

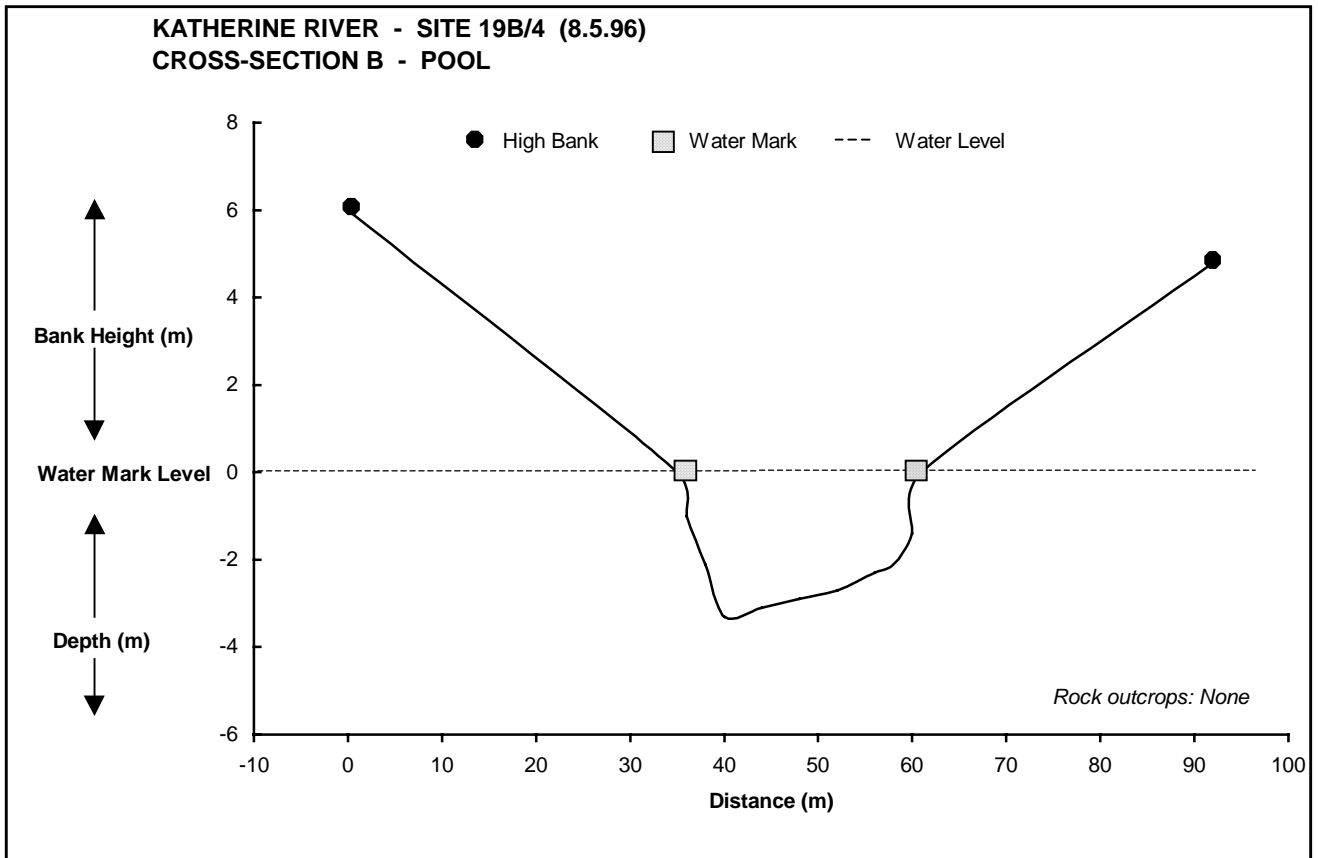
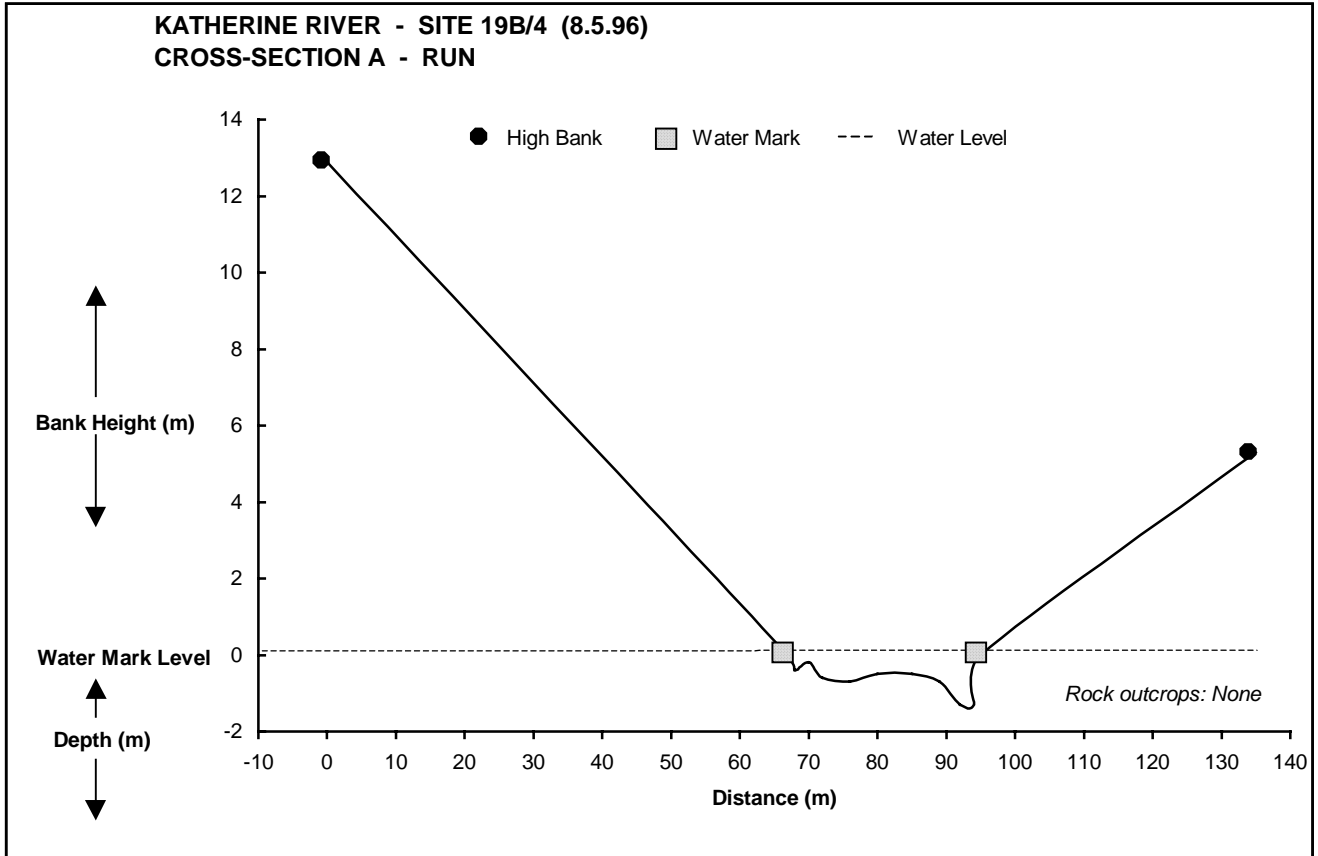


Figure 10.126 Cross-section Surveys for Site 19b/4 – Katherine River

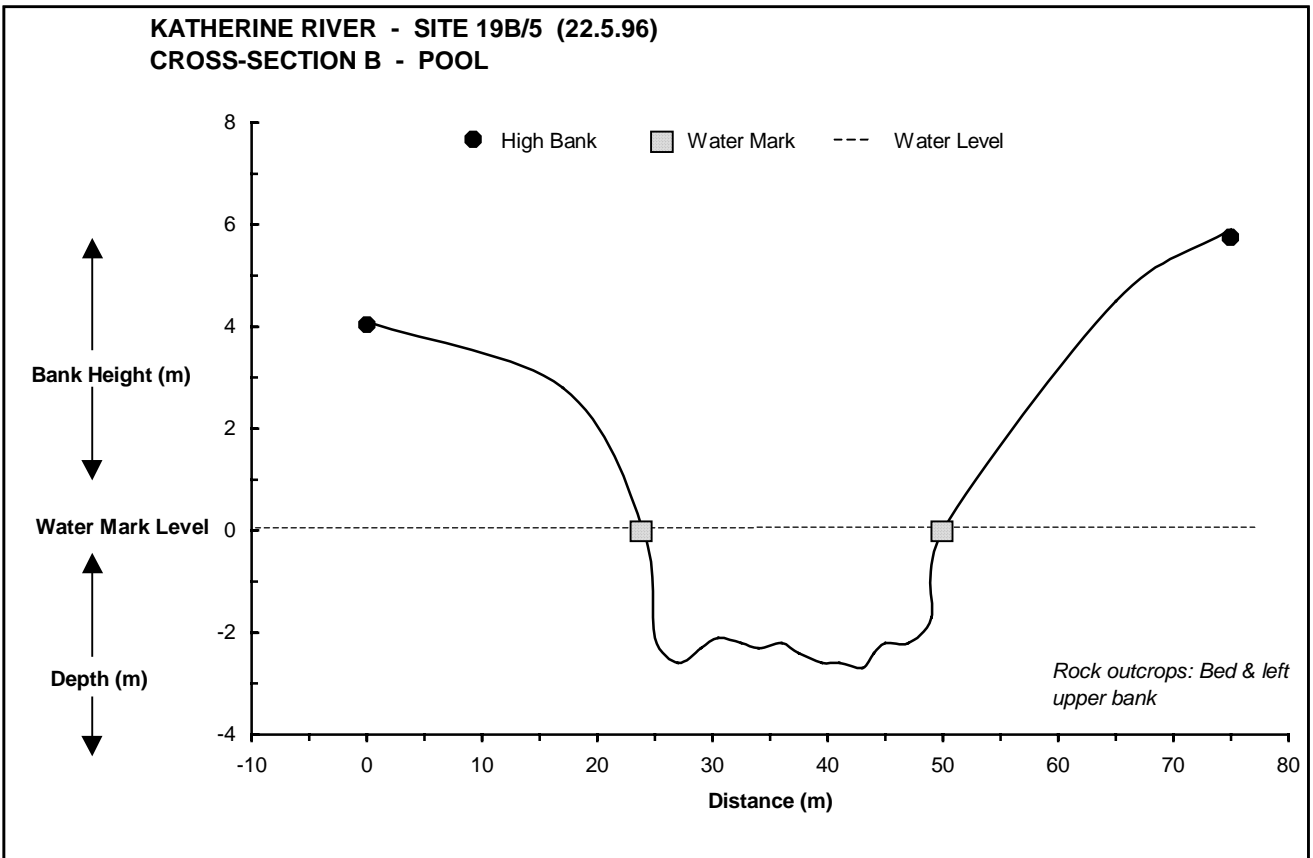
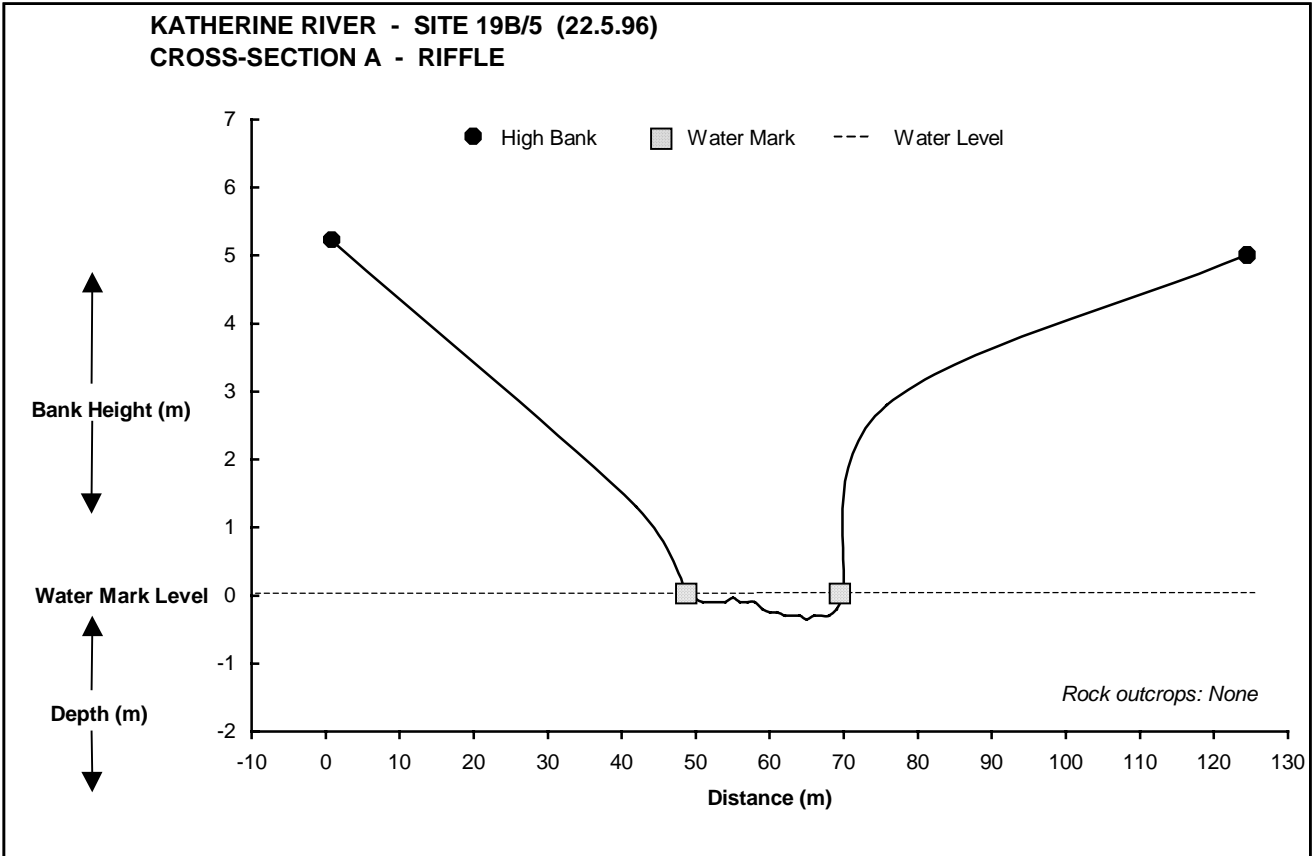


Figure 10.127 Cross-section Surveys for Site 19b/5 – Katherine River

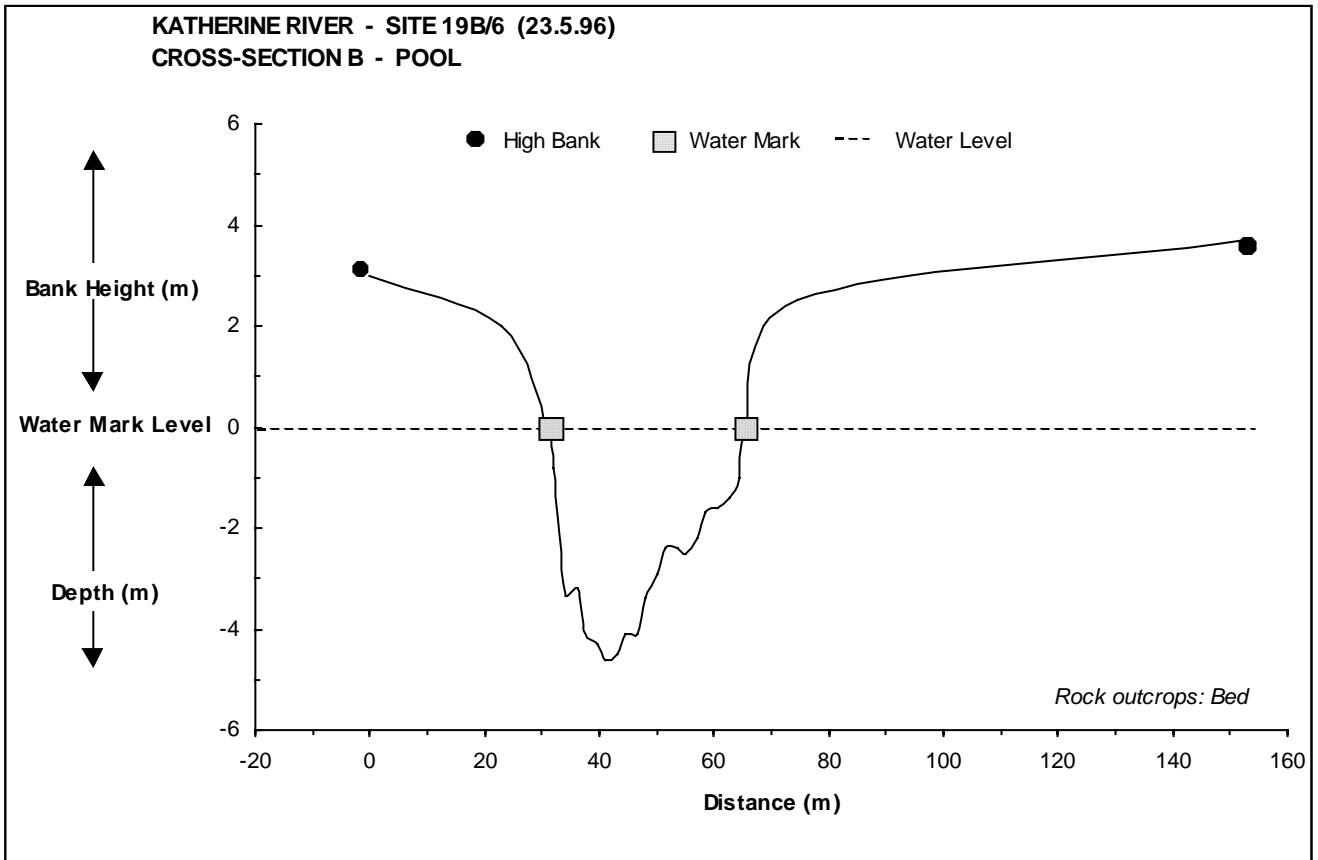
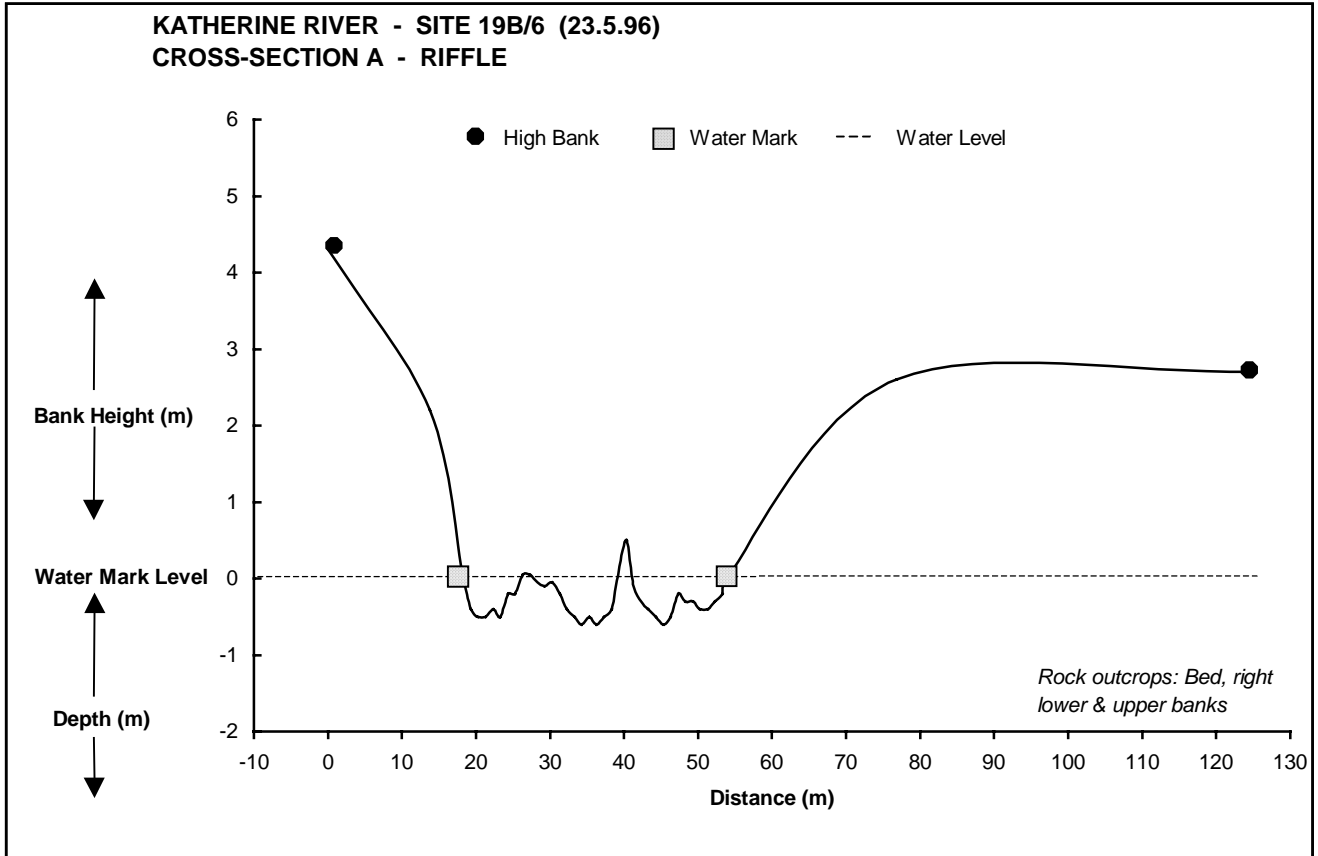
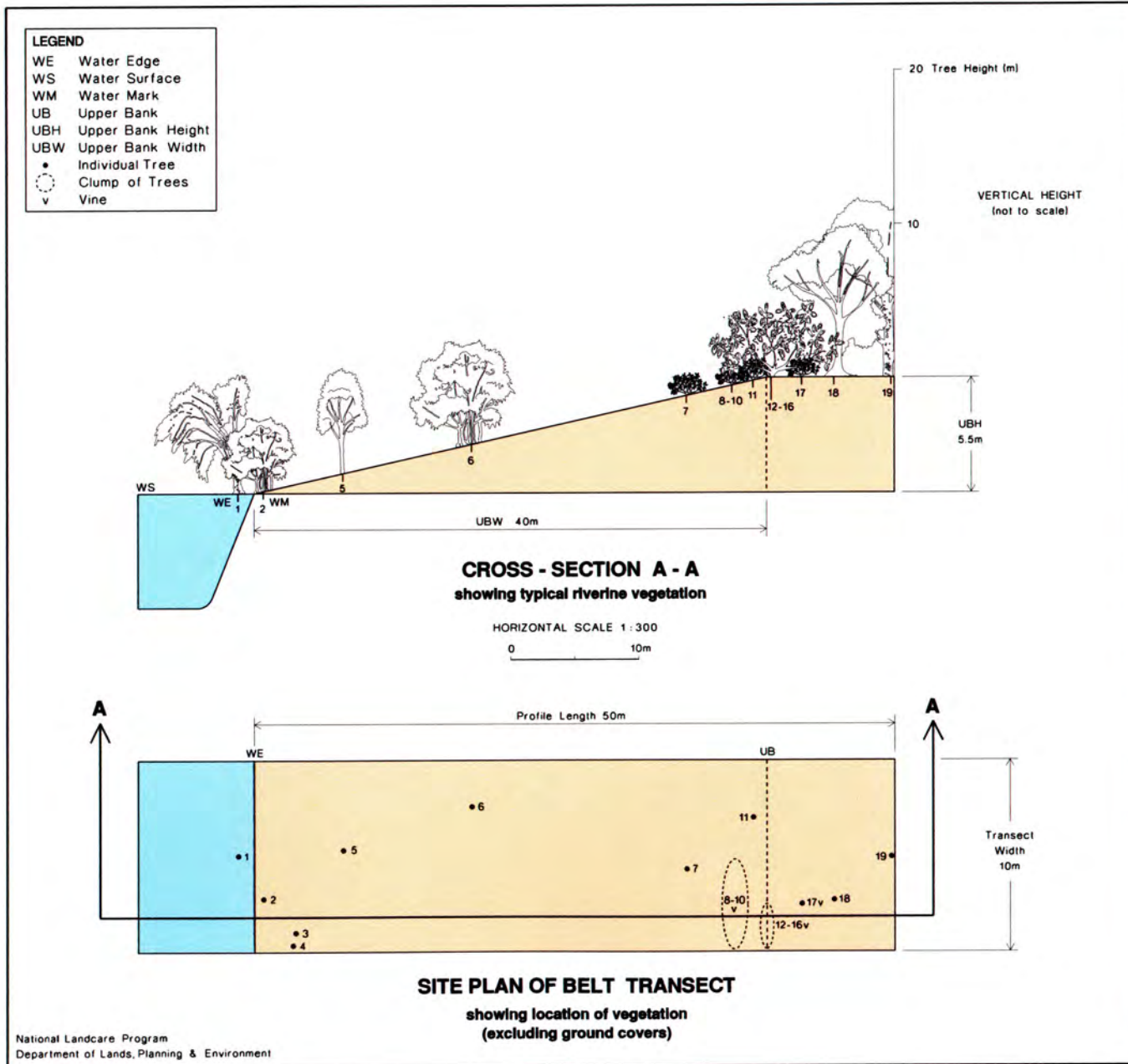


Figure 10.128 Cross-section Surveys for Site 19b/6 – Katherine River



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1, 3	8	<i>Metaleuca leucadendra</i>
2, 4, 6	5-7	<i>Barringtonia acutangula</i>
5	7	<i>Syzygium eucalyptoides</i> spp. <i>eucalyptoides</i>
7-17	1.3-5	<i>Cathormion umbellatum</i>
18	10	<i>Eucalyptus camaldulensis</i>
19	12	<i>Lophostemon grandiflorus</i>

OTHER SPECIES LOCATED AT SITE:

- Forbs:** *Alternanthera nodiflora*
Cleome viscosa
Cyperus conicus or
Cyperus javanicus
- Grasses:** *Cynodon dactylon*
Eragrostis tenellula
- Trees:** *Pandanus aquaticus*
- Vines:** **Passiflora foetida*

*Exotic species

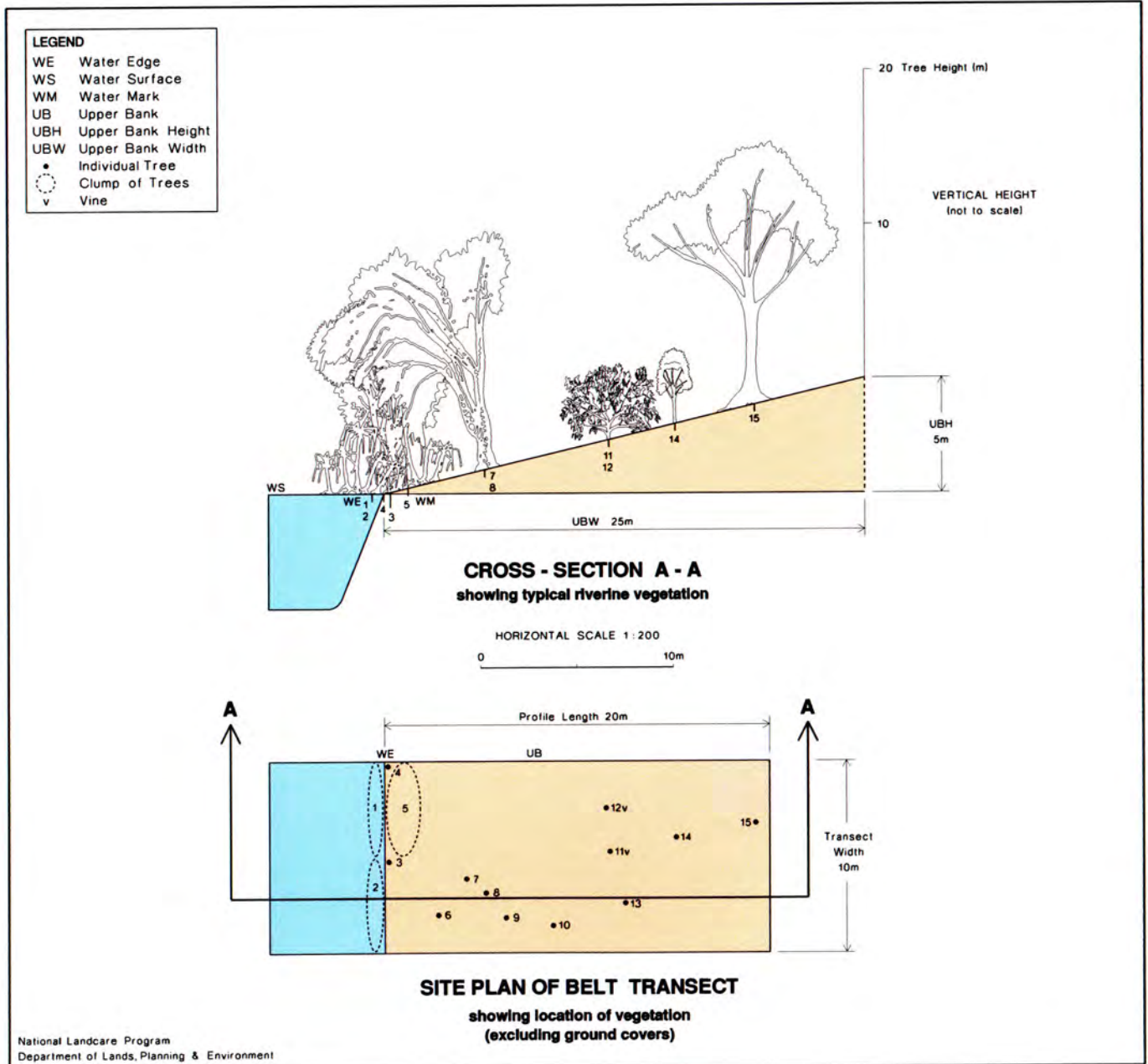
NOTES

- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
- Cross-section A-A includes all vegetation above the line marked through the belt transect.
- The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
- Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

KATHERINE RIVER	Date 19.4.96
Sub-section 19B Site 1	Figure 10.129



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1 (20 trees), 2 (11 trees), 5 (16 trees)	3-6	<i>Pandanus aquaticus</i>
3	14	<i>Melaleuca argentea</i>
4, 13	8-13	<i>Terminalia erythrocarpa</i>
6	12	<i>Nauclea orientalis</i>
7-9	15-19	<i>Melaleuca leucadendra</i>
10	16	<i>Carallia brachiala</i>
11, 12	2.5-5	<i>Antidesma ghaesembilla</i>
14	5	<i>Atalaya hemiglauca</i>
15	17	<i>Eucalyptus camaldulensis</i>

OTHER SPECIES LOCATED AT SITE:

Grasses: *Paspalum scrobiculatum*
Phragmites karka
Sorghum laxiflorum

Shrubs: *Hibiscus maraukensis*

Trees: *Barringtonia acutangula*

Vines: *Flagellaria indica*

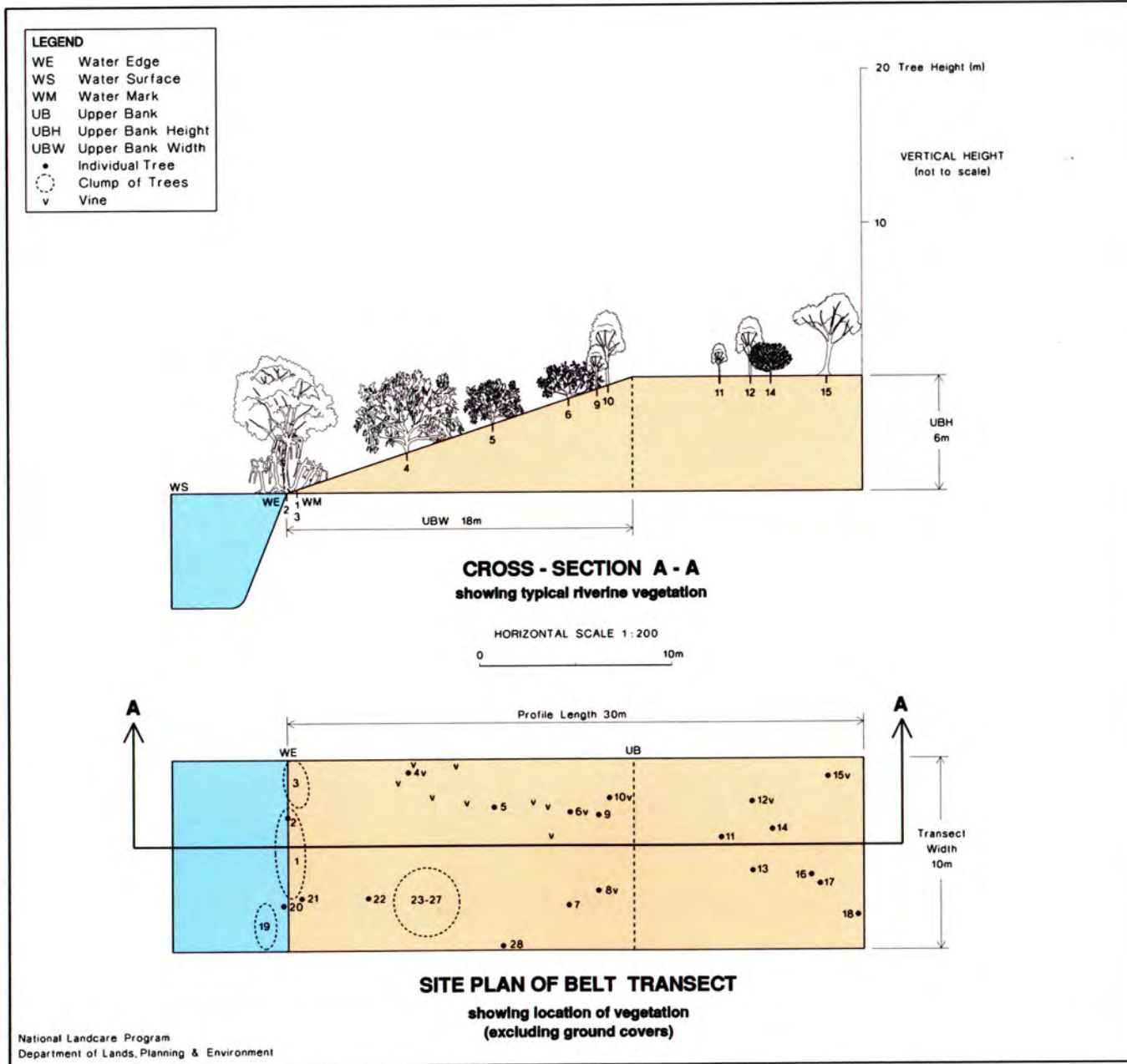
• Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 - Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

KATHERINE RIVER	Date 18.4.96
Sub-section 19B Site 2	Figure 10.130



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1 (14 trees), 3 19 trees, 19 (7 trees)	2-5.5	<i>Pandanus aquaticus</i>
2	9	<i>Syzygium forte</i>
4, 5, 28	3-5.5	<i>Ficus scobina</i>
6	2.5	<i>Antidesma ghaesembilla</i>
7-12, 16, 17	2.1-4	<i>Atalaya hemiglauca</i>
13, 14	2-2.2	<i>Acacia holosericea</i>
15, 18	5.5-25	<i>Eucalyptus camaldulensis</i>
20	10	<i>Melaleuca leucadendra</i>
21	15	<i>Nauclea orientalis</i>
22-27	2-4	<i>Barringtonia acutangula</i>

OTHER SPECIES LOCATED AT SITE:

Forbs: *Alternanthera nodiflora*
Cleome viscosa
**Melochia pyramidata*


Grasses: *Phragmites karka*
Sorghum laxiflorum

Vines: *Flagellaria indica*
**Passiflora foetida*

Weeds: **Hypis suaveolens* (Noxious)

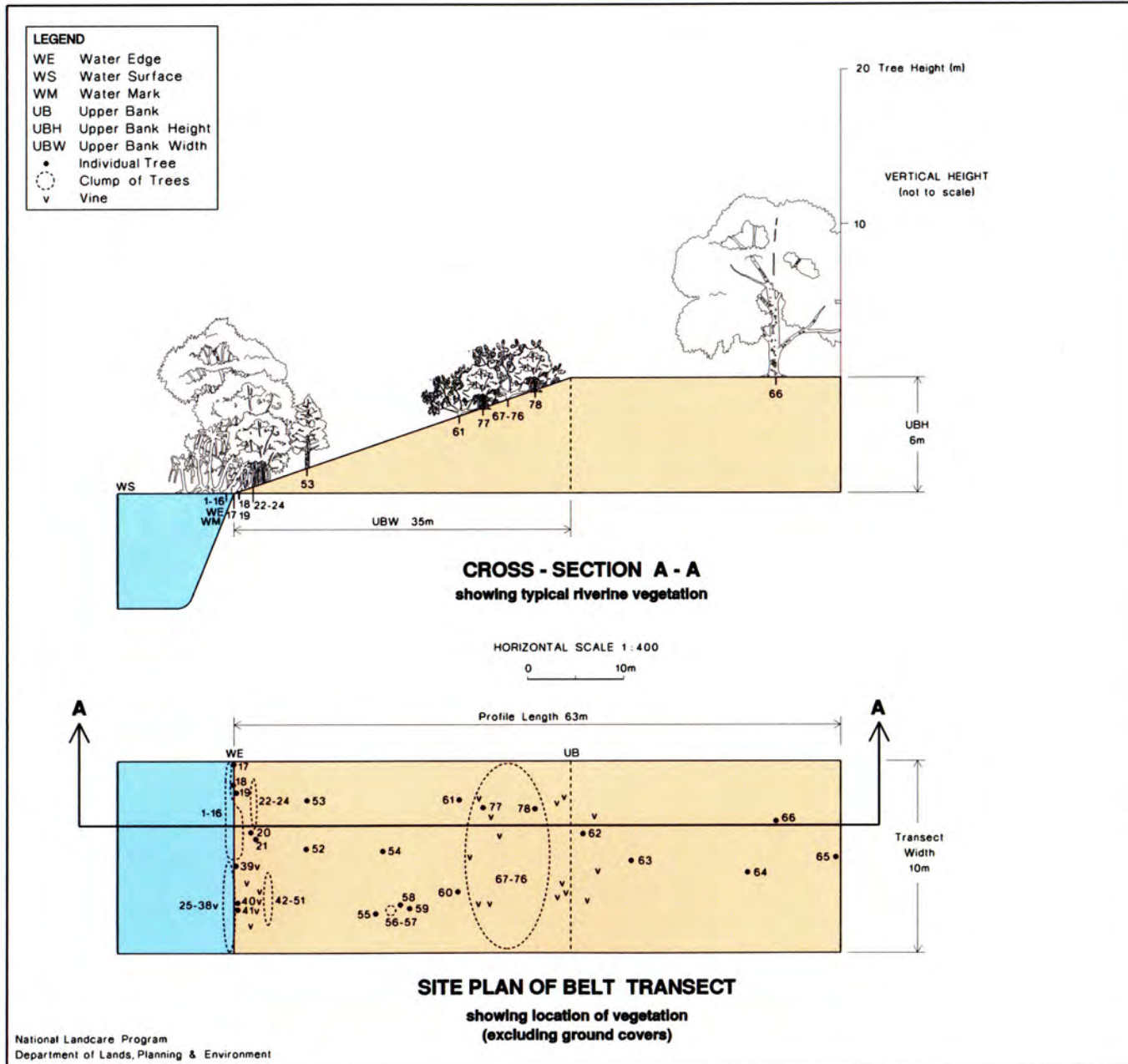
* Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 - Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

 **TOP END WATERWAYS PROJECT**
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

KATHERINE RIVER		Date 24.4.96
Sub-section 19B	Site 3	Figure 10.131



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1-16, 25-38, 42-51	1-7	<i>Pandanus aquaticus</i>
17, 21, 39-41, 52, 58, 60	4-18	<i>Melaleuca argentea</i>
18-20, 22-24, 54-57, 77, 78	2-8	<i>Barringtonia acutangula</i>
53	5	<i>Nauclea orientalis</i>
59	1.8	<i>Syzygium forte</i>
61, 67-76	3-4	<i>Ficus scobina</i>
62	1.8	<i>Ficus coronulata</i>
63	3	<i>Acacia holosericea</i>
64, 66	6-12	<i>Lophostemon grandiflorus</i>
65	16	<i>Eucalyptus camaldulensis</i>

OTHER SPECIES LOCATED AT SITE:

- Forbs:** *Alternanthera nodiflora*
Ludwigia hyssopifolia
Sebastiania chamaelea
- Grasses:** *Cynodon dactylon*
Paspalidium distans
- Tree/Shrub:** *Acacia difficilis*
- Trees:** *Acacia auriculiformis*
- Vines:** *Flagellaria indica*
**Merremia aegyptia*
**Passiflora foetida*

*Exotic species

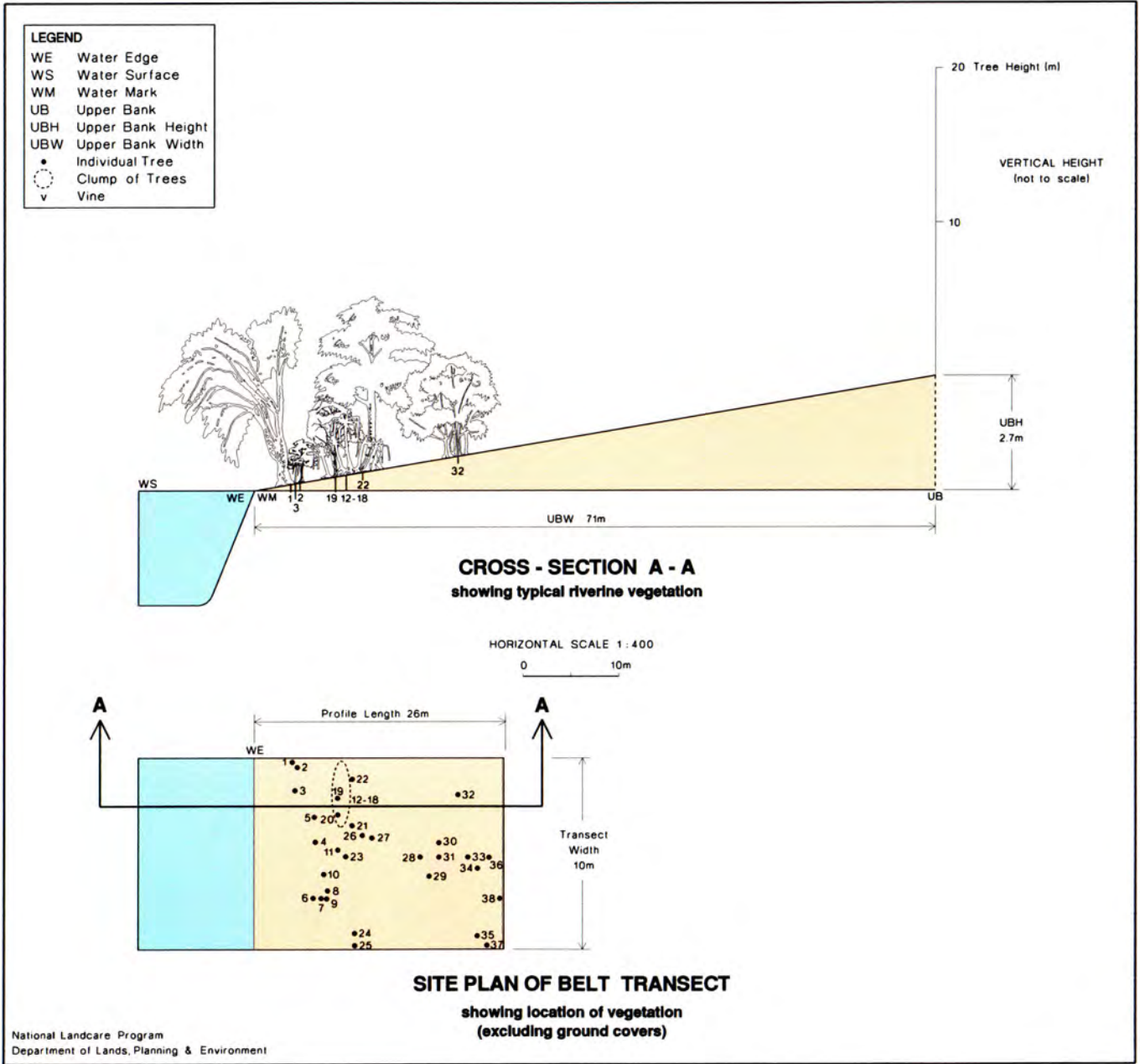
NOTES

- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
- Cross-section A-A includes all vegetation above the line marked through the belt transect.
- The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
- Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

KATHERINE RIVER		Date 8.5.96
Sub-section 19B	Site 4	Figure 10.132



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1, 5, 21	12-15	<i>Meiroleuca leucadendra</i>
2, 6-8, 22, 23, 25, 26, 30, 31	3-15	<i>Notelaea microcarpa</i>
3, 12-18	1.5-5	<i>Pandanus aquaticus</i>
4, 10, 27-29, 32, 37	1.8-7	<i>Barringtonia acutangula</i>
9, 20	2.4-2.5	<i>Canthium schultzei</i>
11	15	<i>Meiroleuca argentea</i>
19, 24, 35, 36	4-15	<i>Syzygium forte</i>
33, 34, 38	3.8-6	<i>Antidesma ghaesembilla</i>

- OTHER SPECIES LOCATED AT SITE:**
- Forbs:** *Achyranthes aspera*
 - Grasses:** *Paspalum scrobiculatum*
 - Shrubs:** *Phyllanthus reticulatus*
 - Tree/shrub:** *Acacia difficilis*, *Acacia holosericea*, *Ficus scobina*
 - Trees:** *Eucalyptus camaldulensis*, *Lophostemon grandiflorus*, *Nauclea orientalis*, *Pandanus spiralis*
 - Vines:** *Flagellaria indica*, *Passiflora foetida*
- * Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 - Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

KATHERINE RIVER	Date 23.5.96
Sub-section 19B Site 6	Figure 10.133

Table 10.46 Major Vegetation Species Recorded at Site 5 on Katherine River located within Sub-section 19b

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Site Where Recorded (Sub-section No. / Site No.)
<i>Alternanthera angustifolia</i>	Forb		19b/5
<i>Barringtonia acutangula</i>	Low tree / shrub		19b/5
<i>Basilicum polystachyon</i>	Forb		19b/5
<i>Canthium schultzei</i>	Low tree / shrub		19b/5
<i>Cynodon dactylon</i>	Grass		19b/5
<i>Eragrostis tenellula</i>	Grass		19b/5
<i>Eucalyptus camaldulensis</i>	Tree		19b/5
<i>Ficus scobina</i>	Low tree / shrub		19b/5
<i>Fimbristylis sp.</i>	Forb		19b/5
<i>Flagellaria indica</i>	Vine		19b/5
<i>Lophostemon grandiflorus</i>	Tree		19b/5
<i>Ludwigia hyssopifolia</i>	Forb		19b/5
<i>Melaleuca argentea</i>	Tree		19b/5
<i>Nauclea orientalis</i>	Tree		19b/5
<i>Pandanus aquaticus</i>	Tree		19b/5
<i>Paspalidium distans</i>	Grass		19b/5
<i>Passiflora foetida</i>	Forb	E	19b/5
<i>Phyllanthus reticulatus</i>	Low tree / shrub		19b/5
<i>Physalis minima</i>	Forb		19b/5
<i>Syzygium forte</i>	Low tree / shrub		19b/5

* Declared Noxious Weed within the Northern Territory



Riparian vegetation on Katherine River (Site 19b/2 downstream of Katherine)



Riparian vegetation on Katherine River (Site 19b/5 upstream of Katherine)

10.13.3 Katherine River – Below Grace and Fanny Creeks

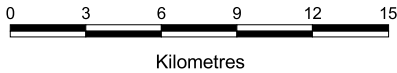
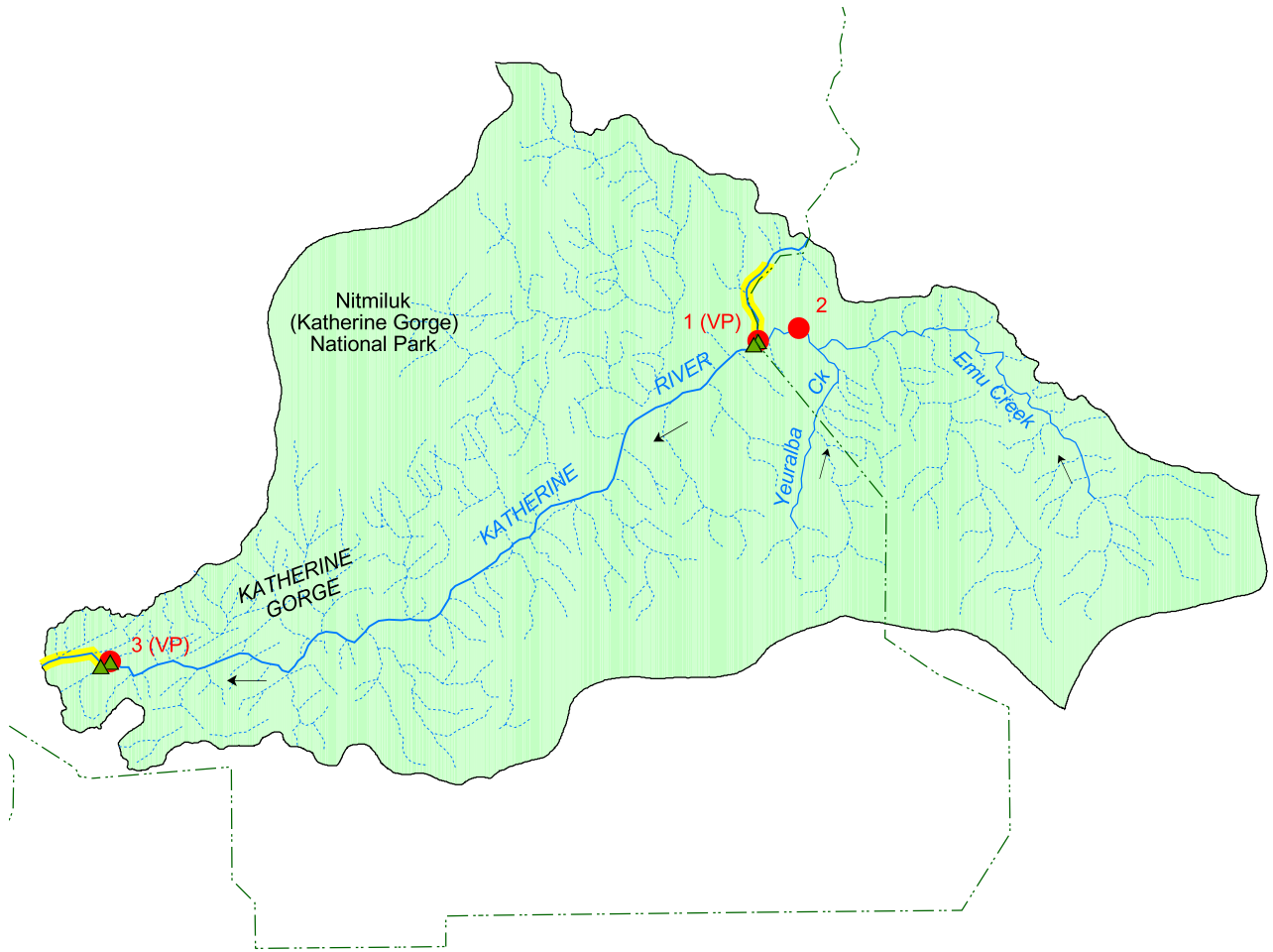
Sub-section 19c encompasses the Katherine River from the junction with Seventeen Mile Creek (not including this creek) upstream to Grace Creek junction. This sub-section includes the Katherine Gorge. Two sites, located on the Katherine River, were fully assessed in this sub-section. A photographic site was also located on Emu Creek, a small tributary of the Katherine River (refer Table 10.47 and Map 51).

Table 10.47 Summary of Survey Information for Sub-section 19c – Katherine River Below Grace and Fanny Creeks

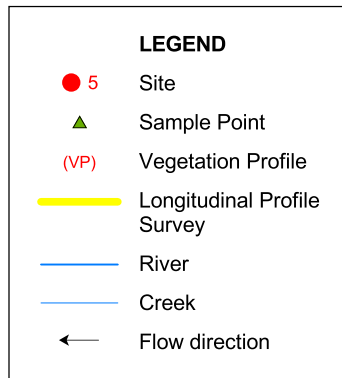
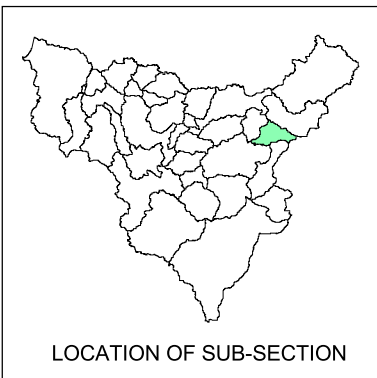
Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
1	Katherine River	A	Pool	√	√	
		B	Rapid	√		
2	Emu Creek					√
3	Katherine River	A	Riffle	√	√	
		B	Pool	√		



View upstream along Gorge 2 on Katherine River within Nitmiluk National Park (above Site 19c/3)



Area - 713 km²



 TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

KATHERINE RIVER
Below
Grace & Fanny Creeks
SUB-SECTION 19c

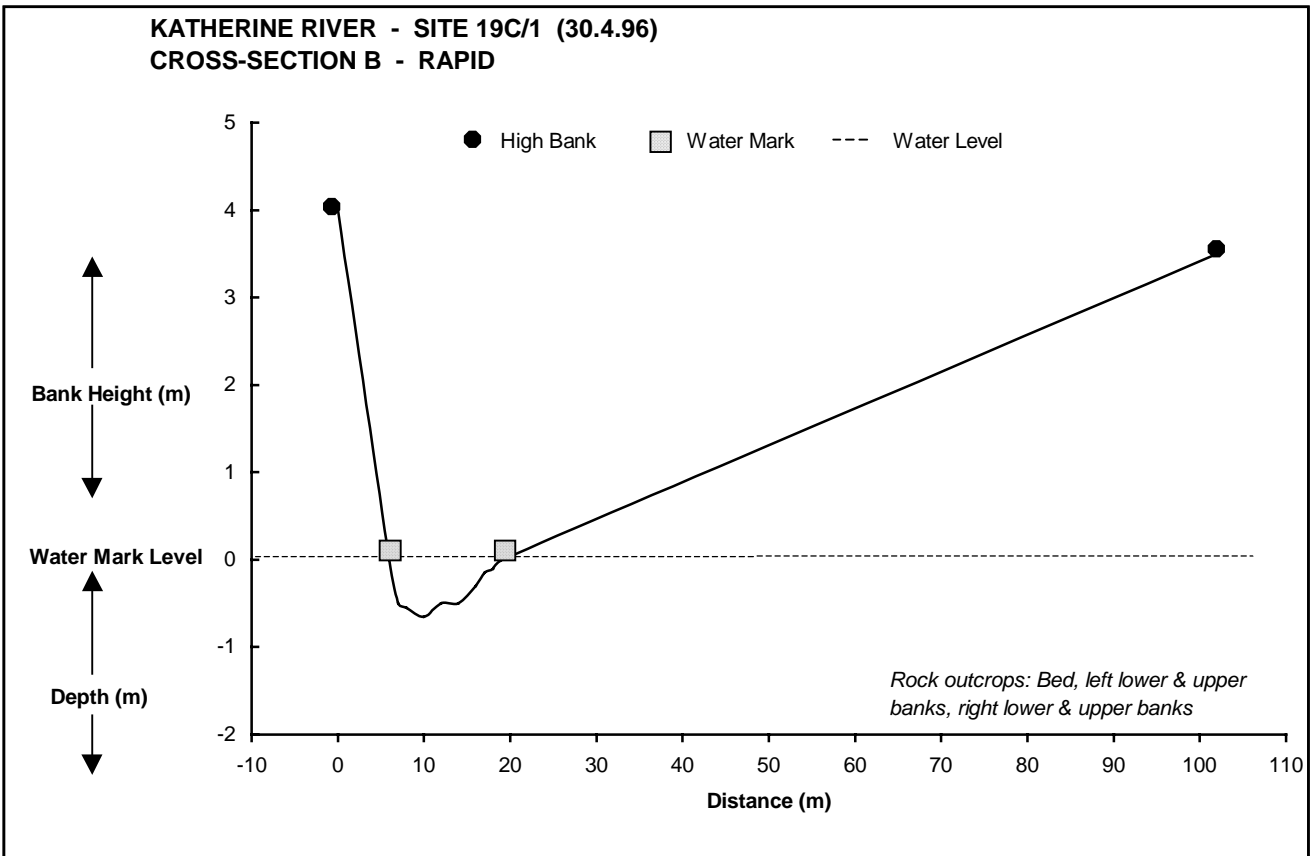
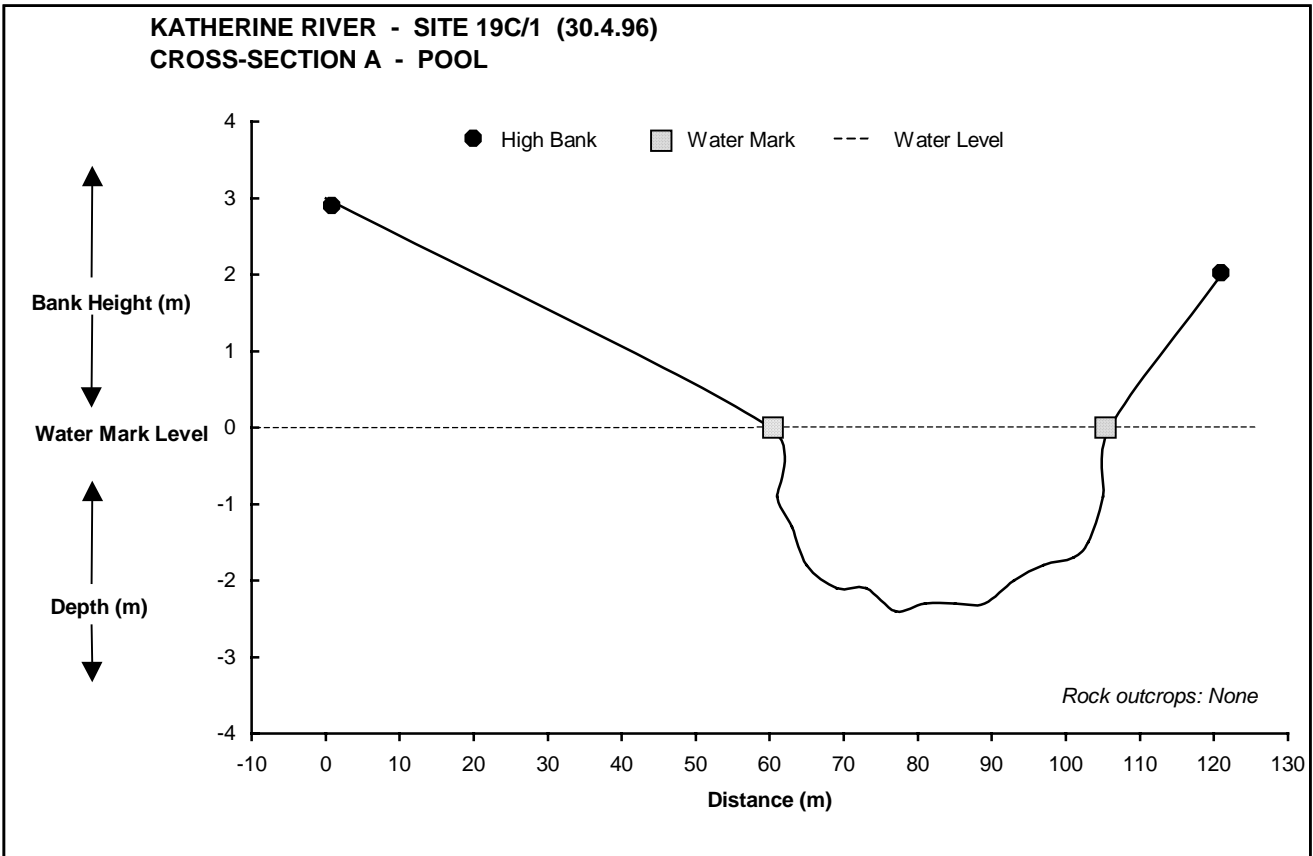


Figure 10.134 Cross-section Surveys for Site 19c/1 – Katherine River

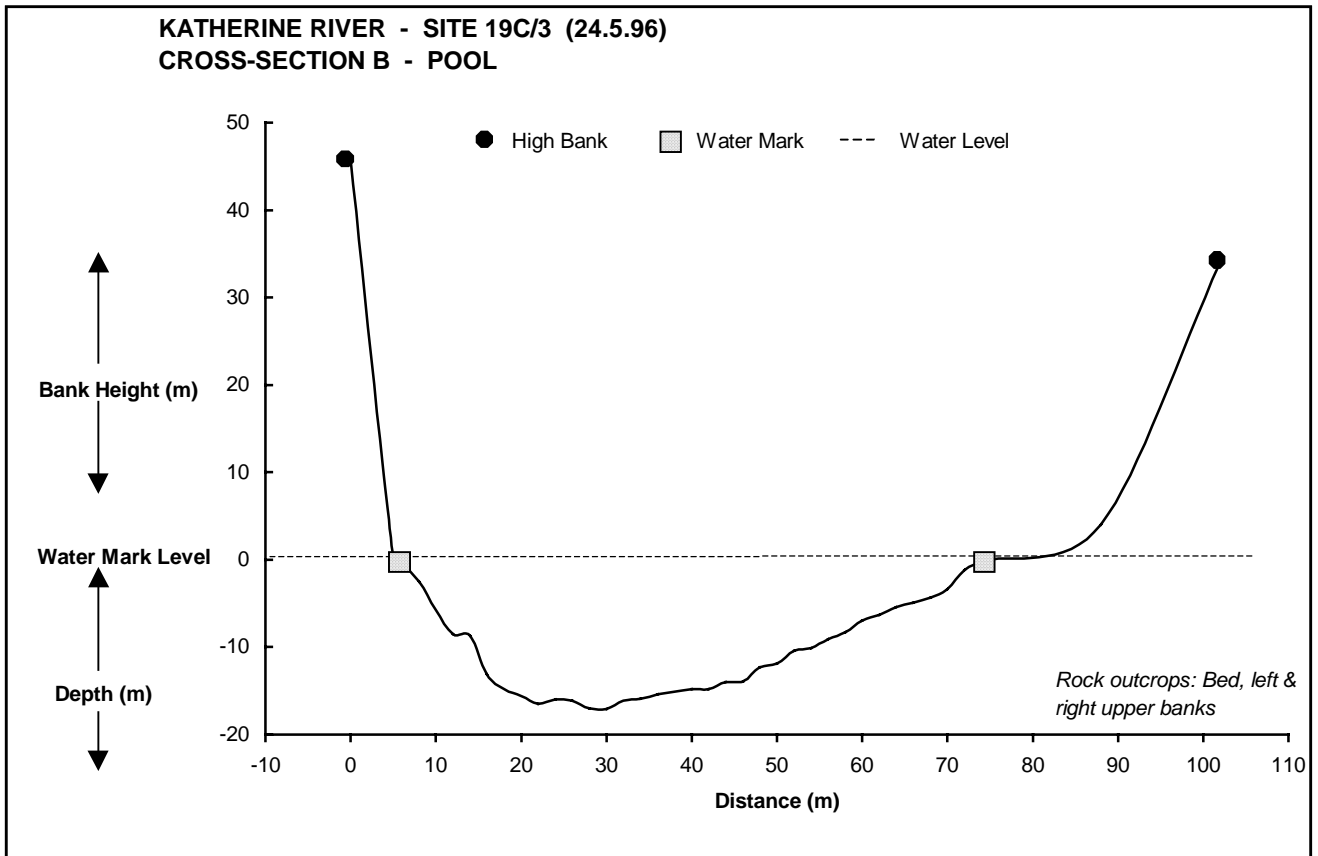
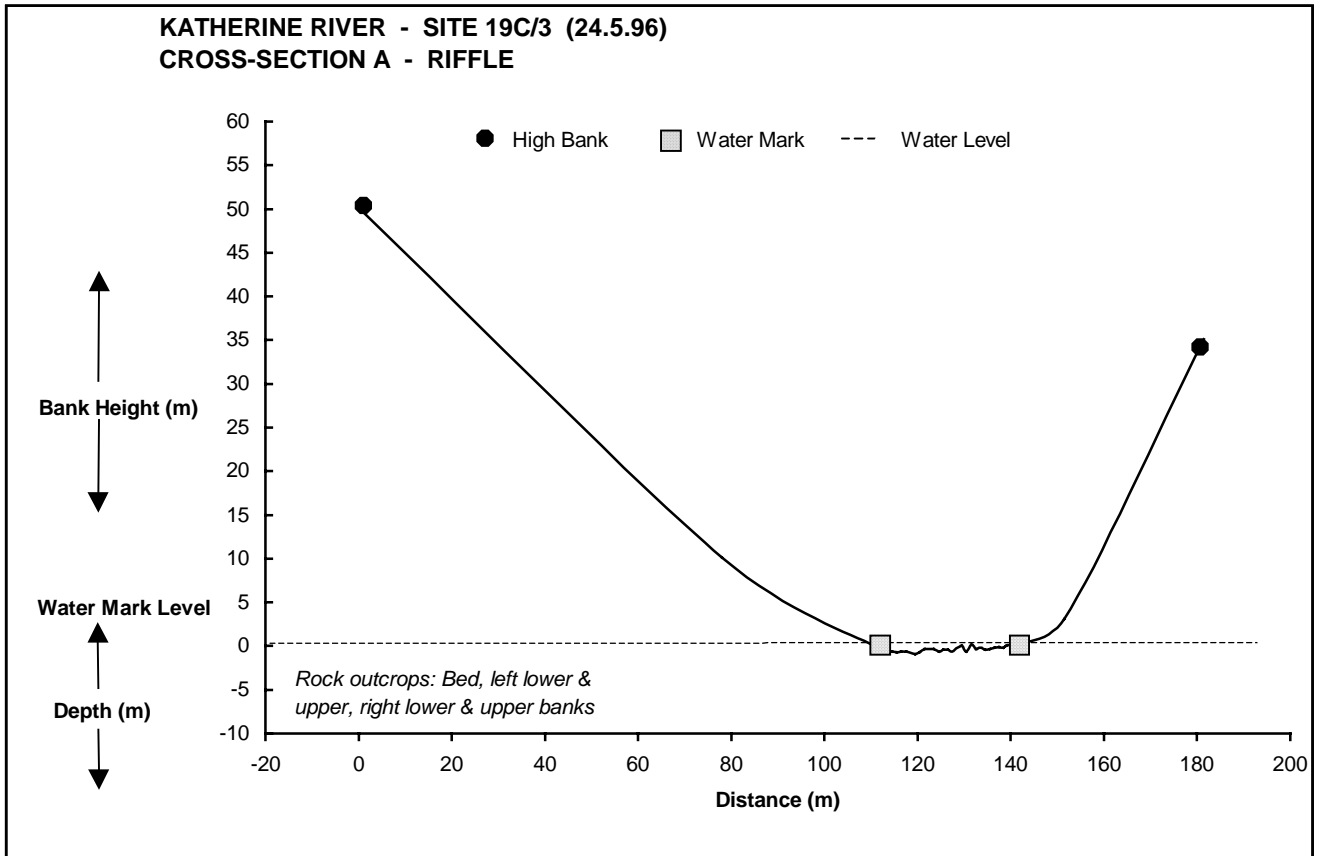
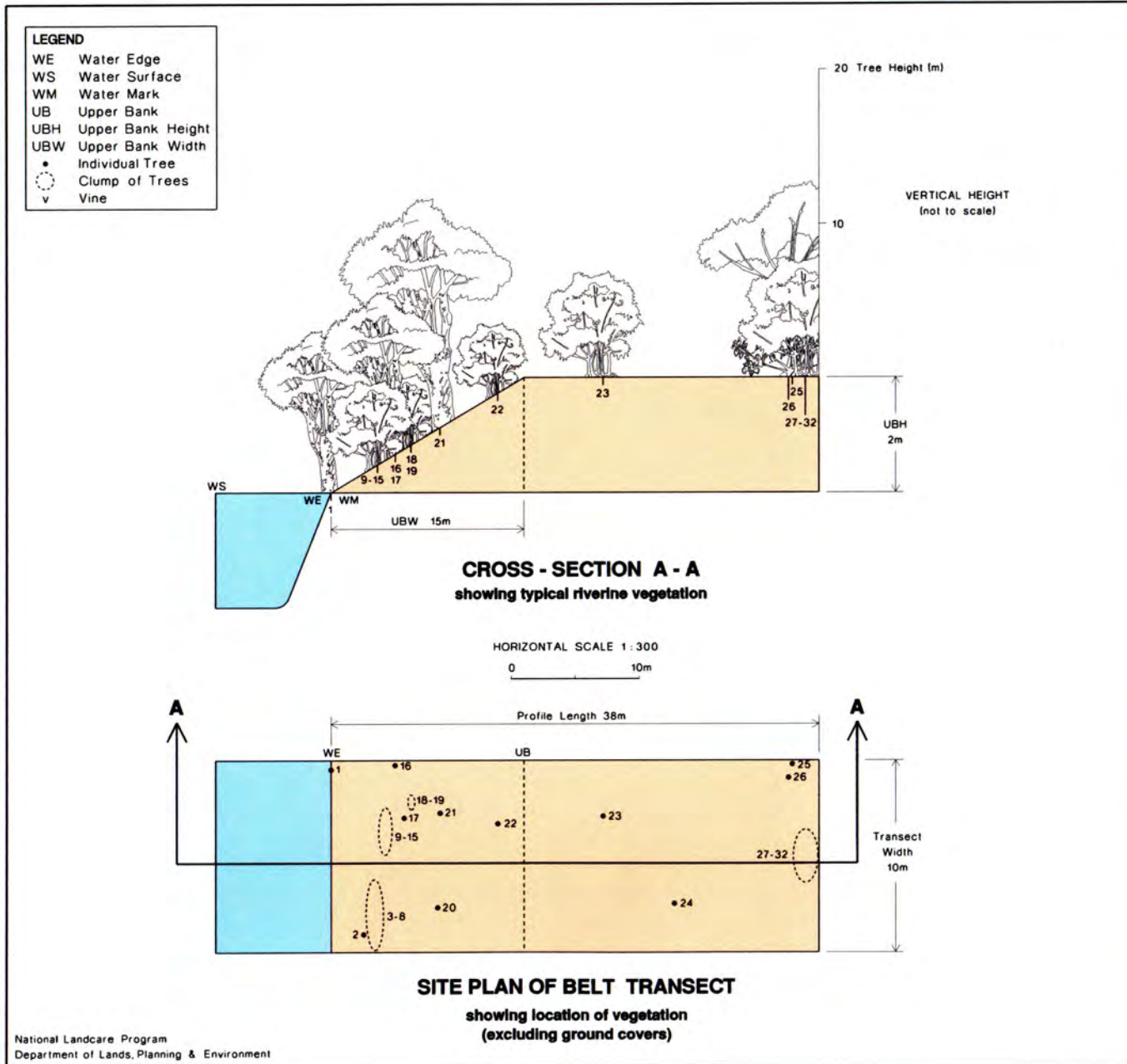


Figure 10.135 Cross-section Surveys for Site 19c/3 – Katherine River



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1, 16, 17, 21	11-16	<i>Melaleuca argentea</i> or <i>Melaleuca leucadendra</i>
2	5.5	<i>Pandanus aquaticus</i>
3-15, 18-20, 22-24, 27-32	2.5-8	<i>Barringtonia acutangula</i>
25	13	<i>Eucalyptus camaldulensis</i>
26	4.5	<i>Phyllanthus reticulatus</i>

OTHER SPECIES LOCATED AT SITE:

Forbs: *Cyperus javanicus*
Dentella repens

Grasses: *Cynodon dactylon*
Eragrostis speciosa
Paspalum scrobiculatum

Tree/Shrub: *Acacia holosericea*

Trees: *Nauclea orientalis*
Syzygium armstrongii

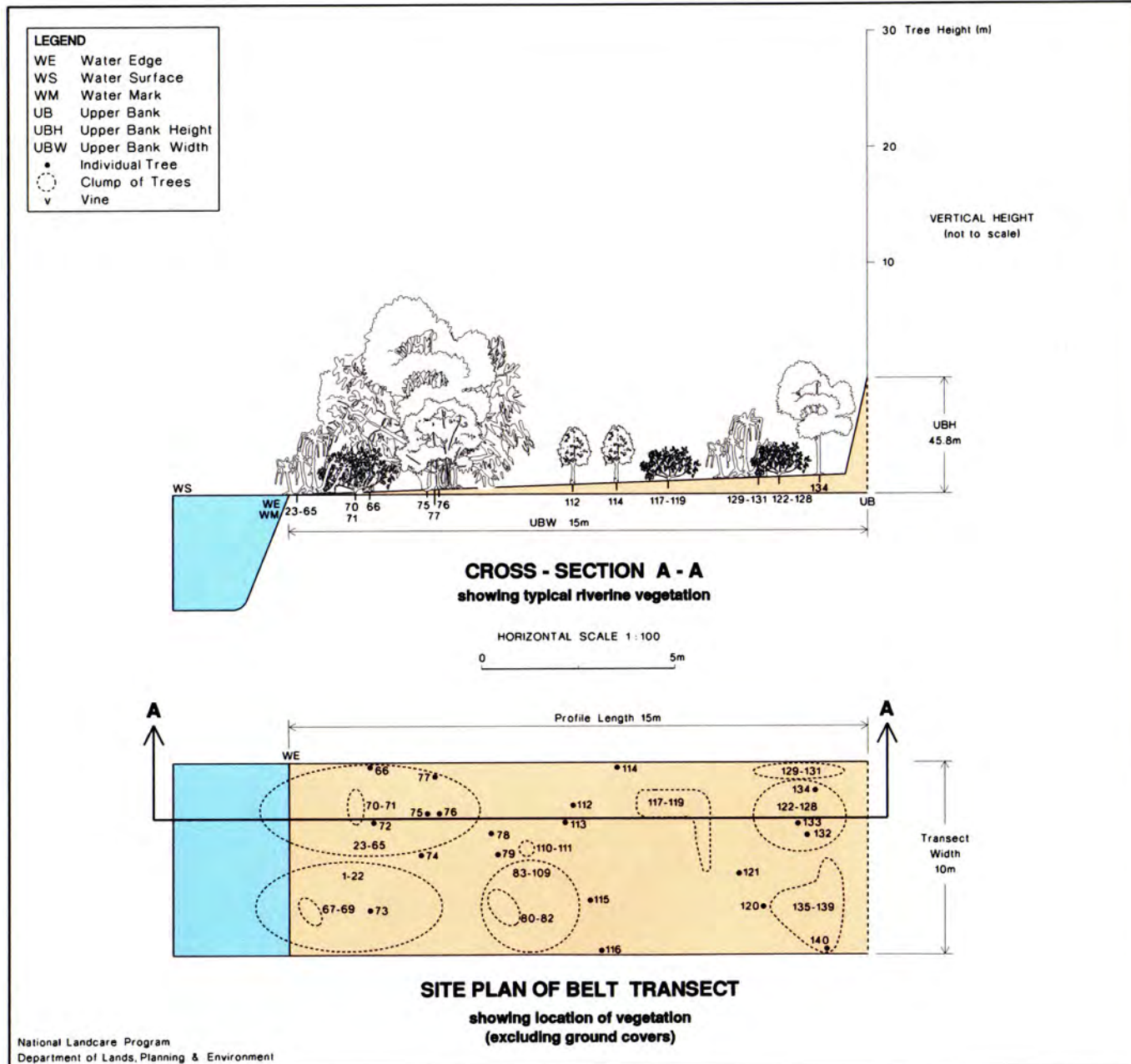
Vines: **Passiflora foetida*

* Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 - Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
 DALY RIVER CATCHMENT
RIVERINE VEGETATION PROFILE

KATHERINE RIVER	Date 30.4.96
Sub-section 19C Site 1	Figure 10.136



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1-65, 83-109, 129-131	1-7	<i>Pandanus aquaticus</i>
66, 72, 78, 112, 114, 116, 120, 121, 133	3-21	<i>Syzygium forte</i>
67-71, 75, 79-82, 110, 111, 113, 117-119, 122-128	2.5-8	<i>Canthium schultzei</i>
73	12	<i>Melaleuca argentea</i>
74, 76, 140	8	<i>Barringtonia acutangula</i>
77, 132, 134-139	4-17	<i>Syzygium armstrongii</i>
115	15	<i>Melaleuca leucadendra</i>

OTHER SPECIES LOCATED AT SITE:

Forbs: *Fimbristylis* sp.

Grasses: *Triodia microstachys*

Palms: *Livistona* sp.

Tree/Shrubs: *Acacia* sp.
Ficus sp.
Syzygium eucalyptoides ssp. *eucalyptoides*

Trees: *Terminalia platyphylla*

Vines: **Passiflora foetida*

* Exotic species

- NOTES**

 1. The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 2. Cross-section A-A includes all vegetation above the line marked through the belt transect.
 3. The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 4. Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

KATHERINE RIVER	Date 24.5.96
Sub-section 19C Site 3	Figure 10.137

Table 10.48 Major Vegetation Species Recorded at Site 2 on Emu Creek located within Sub-section 19c

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Site Where Recorded (Sub-section No. / Site No.)
<i>Acacia sp.</i>	Low tree / shrub		19c/2
<i>Barringtonia acutangula</i>	Low tree / shrub		19c/2
<i>Cyperus sp.</i>	Forb		19c/2
<i>Eucalyptus camaldulensis</i>	Tree		19c/2
<i>Eucalyptus polycarpa</i>	Tree		19c/2
<i>Melaleuca argentea</i>	Tree		19c/2
<i>Phyllanthus reticulatus</i>	Low tree / shrub		19c/2

* Declared Noxious Weed within the Northern Territory





Rapid on Katherine River at Site 19c/1



Riparian vegetation on Katherine River (Site 19c/1)



Emu Creek (Site 19c/2)



Riffle at Site 19c/3 on Katherine River within Gorge



Riparian vegetation on Katherine River (Site 19c/3)



Rapids along Katherine Gorge (above Site 19c/3)

10.13.4 Katherine River – Below Birdie Creek

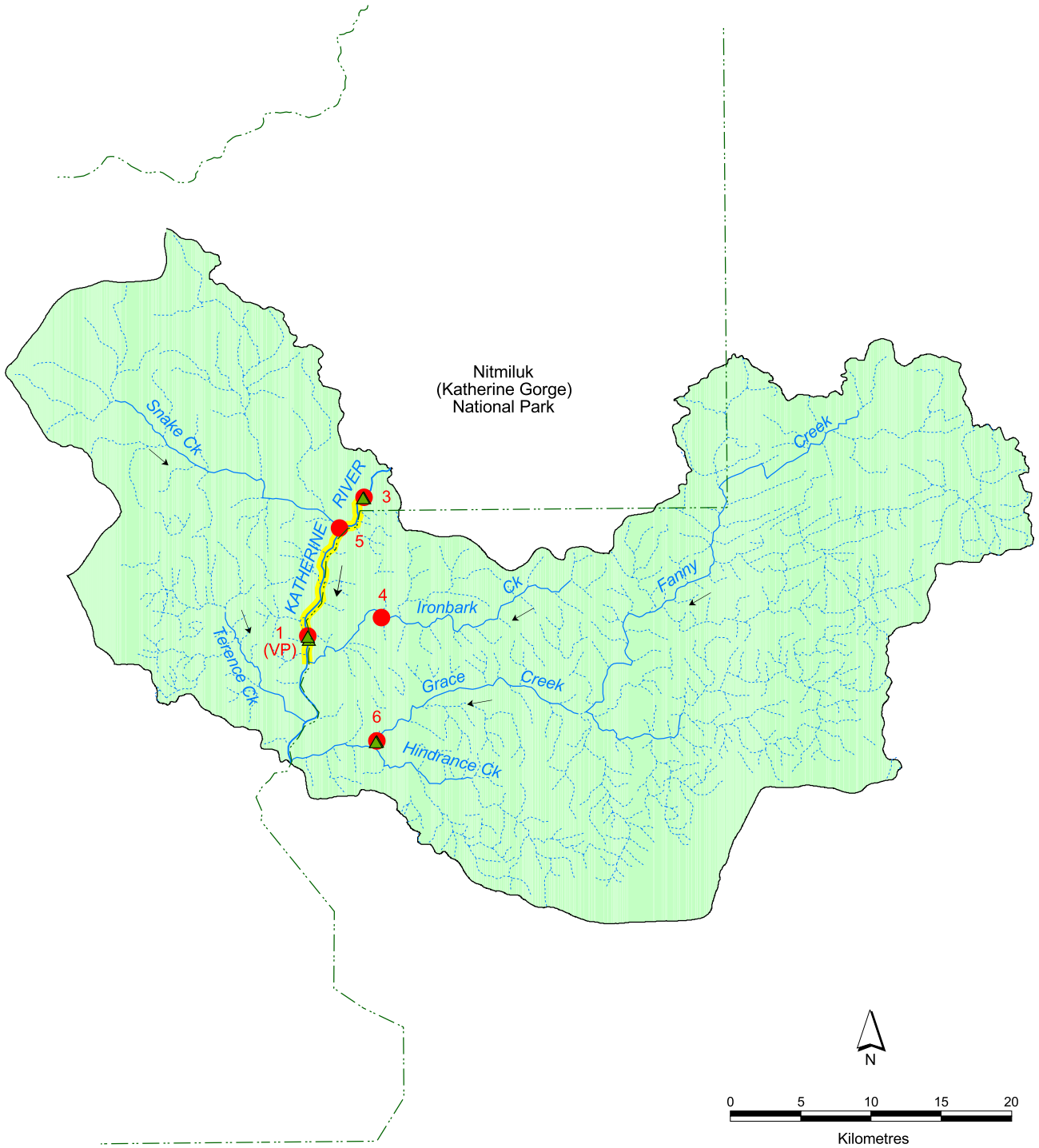
Sub-section 19d encompasses the Katherine River from the junction with Grace Creek upstream to Birdie Creek junction. This sub-section includes the catchment area of Grace and Fanny Creeks. Of the five sites within this sub-section, three were fully assessed. Two sites were located on Katherine River and one on Grace Creek. The two photographic sites were located on Ironbark and Snake Creeks (refer Table 10.49 and Map 52).

Table 10.49 Summary of Survey Information for Sub-section 19d – Katherine River Below Birdie Creek

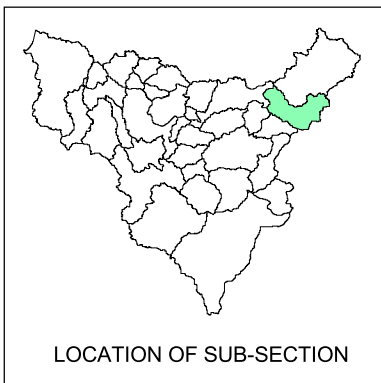
Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
1	Katherine River	A	Pool	√	√	
		B	Rapid	√		
3	Katherine River	A	Riffle	√		
		B	Pool	√		
4	Ironbark Creek					√
5	Snake Creek					√
6	Grace Creek	A	Run	√		
		B	Pool	√		



Rapid on Katherine River at Site 19d/1



Area - 1,782 km²



LEGEND	
● 5	Site
▲	Sample Point
(VP)	Vegetation Profile
— (yellow)	Longitudinal Profile Survey
— (blue)	River
— (light blue)	Creek
←	Flow direction

 TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

KATHERINE RIVER Below Birdie Creek

SUB-SECTION 19d

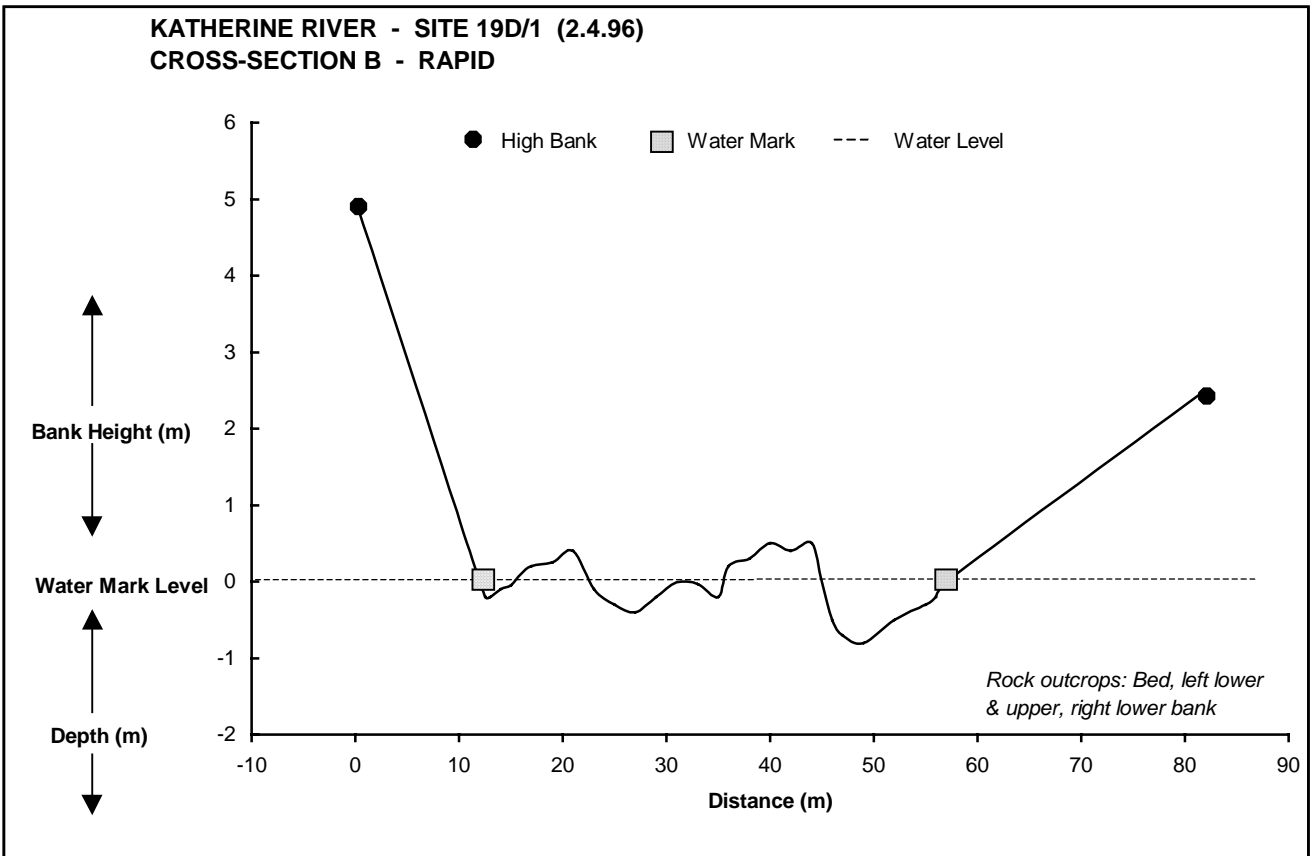
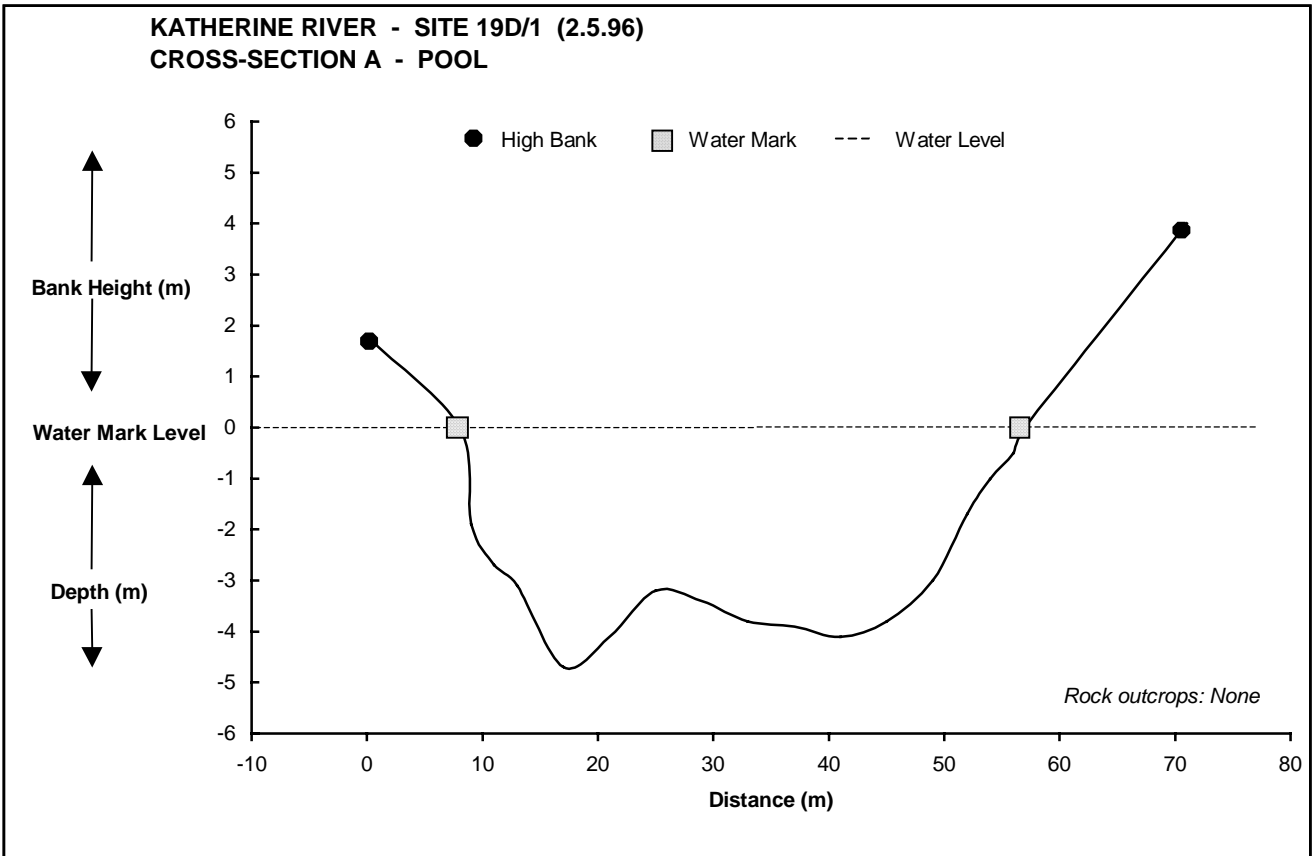


Figure 10.138 Cross-section Surveys for Site 19d/1 – Katherine River

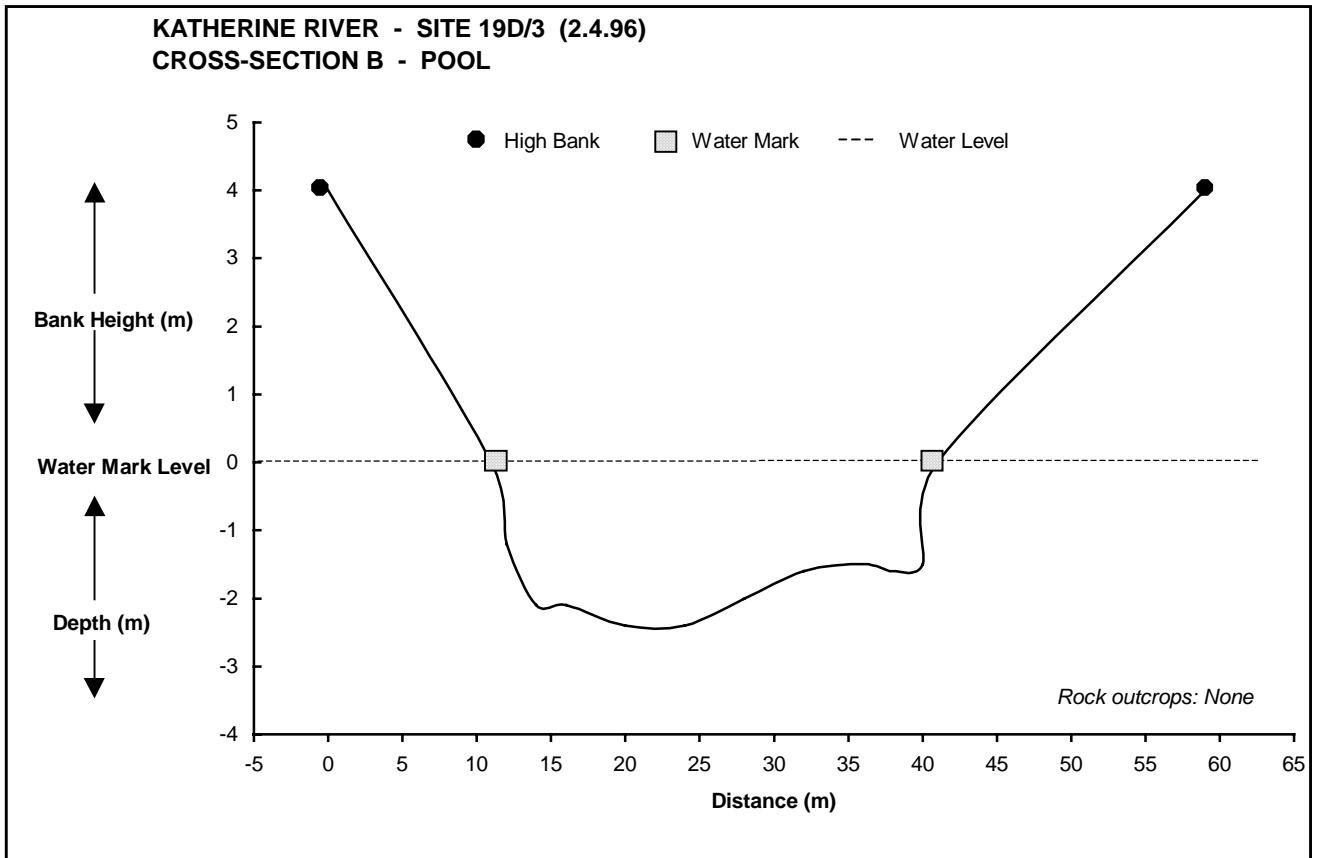
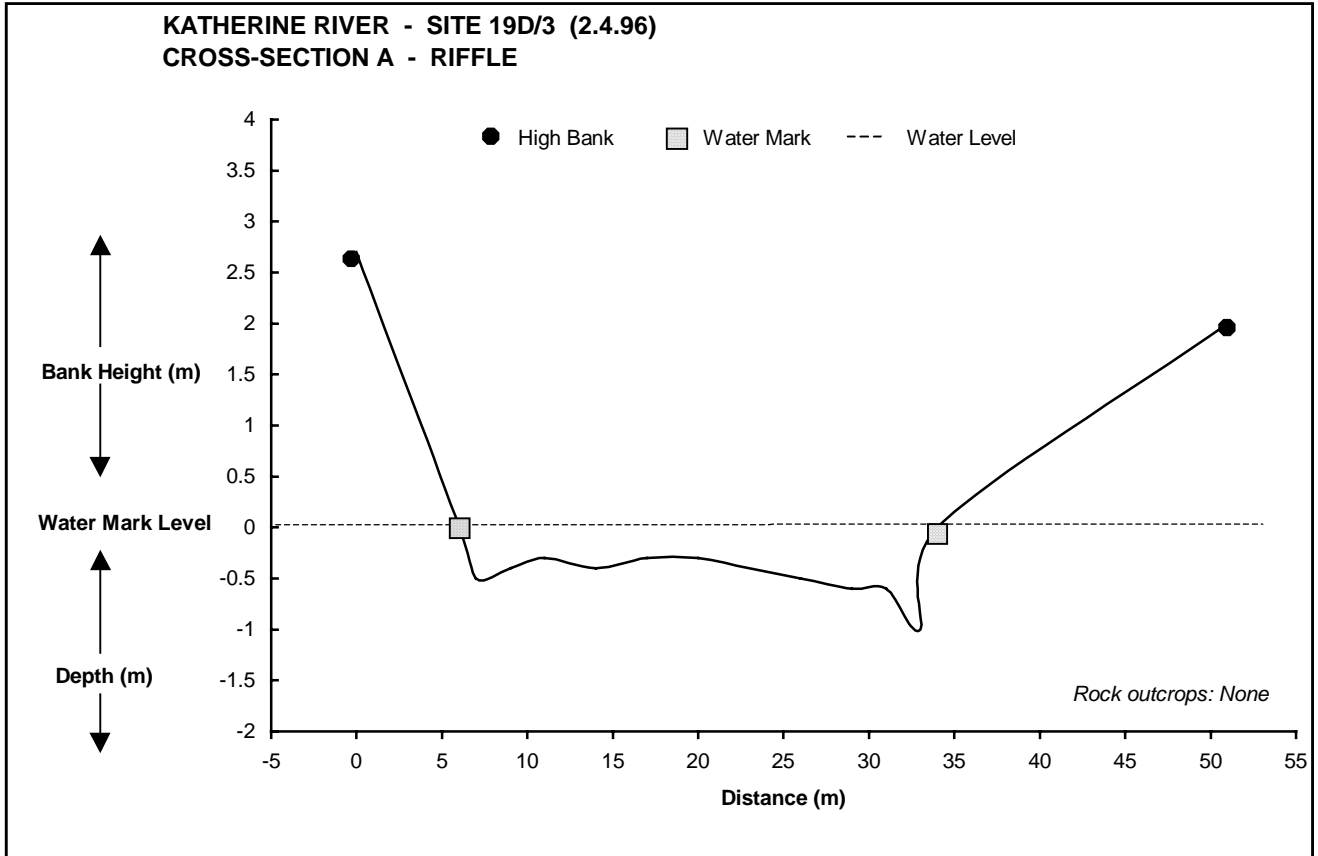


Figure 10.139 Cross-section Surveys for Site 19d/3 – Katherine River

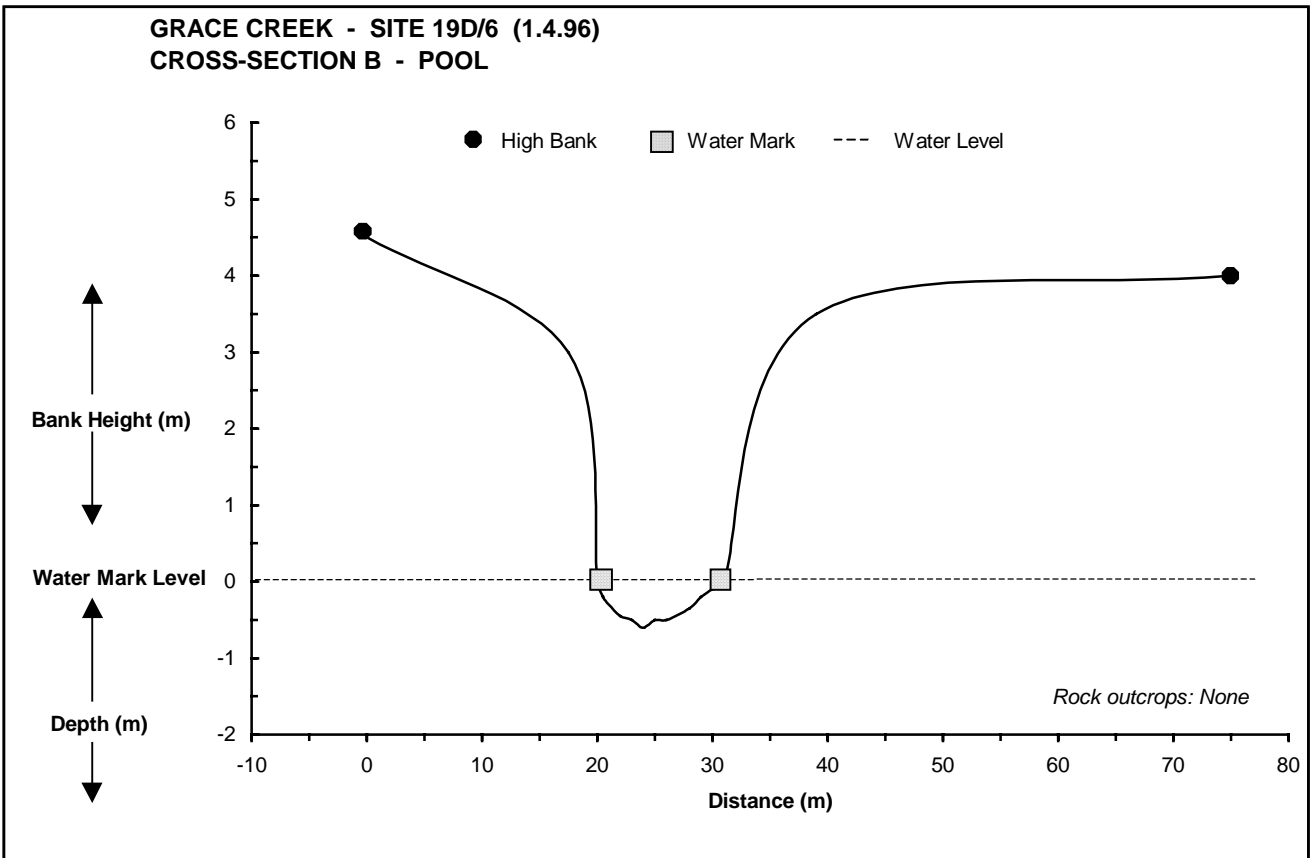
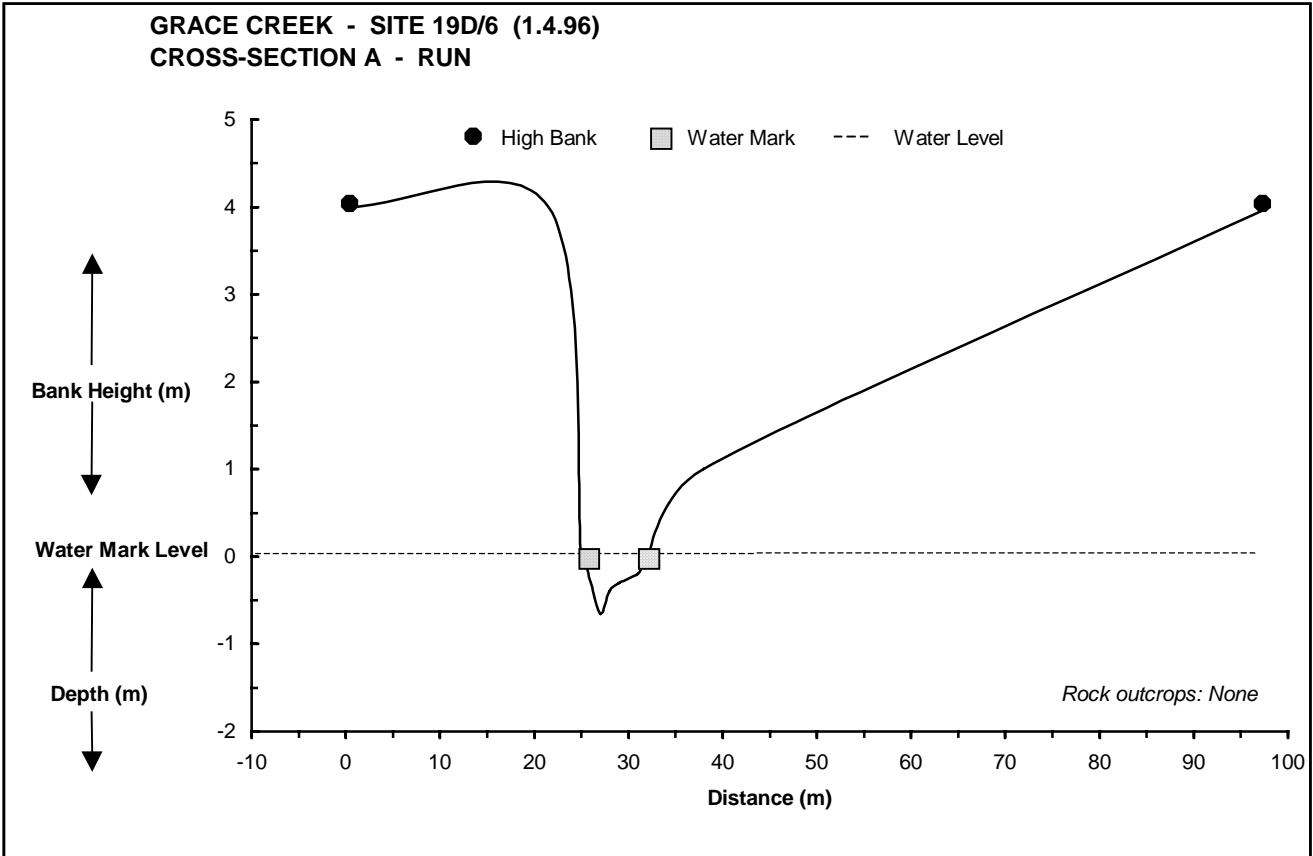
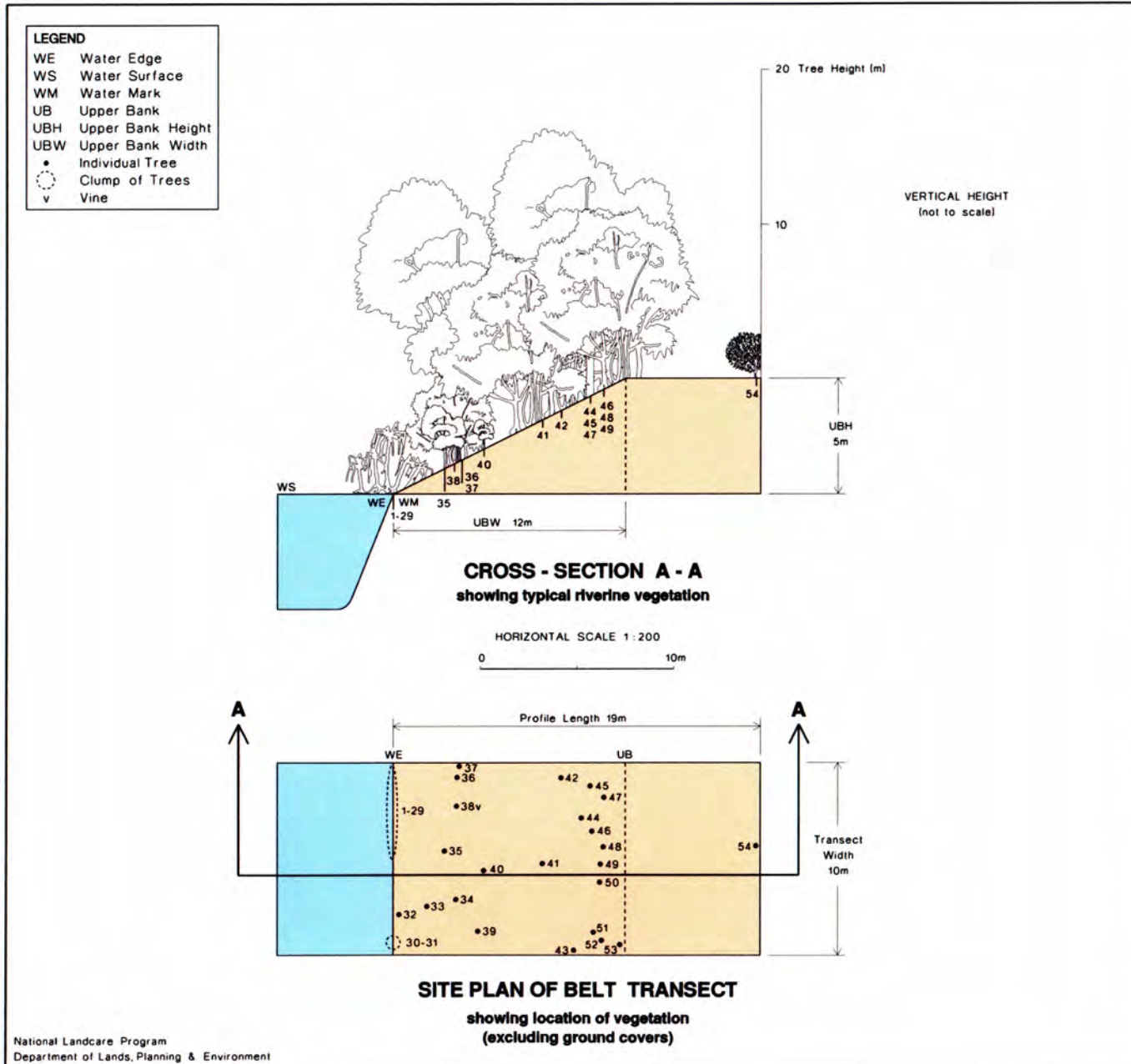


Figure 10.140 Cross-section Surveys for Site 19d/6 – Grace Creek



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1-31	1.3-5.5	<i>Pandanus aquaticus</i>
32, 33, 35-37, 39, 40, 44, 45, 47	2-19	<i>Syzygium armstrongii</i>
34	1.5	<i>Phyllanthus reticulatus</i>
38, 41-43, 46, 48-53	5-12	<i>Barringtonia acutangula</i>
54	3	<i>Acacia holosericea</i>

OTHER SPECIES LOCATED AT SITE:

Forbs: *Alternanthera denticulata*
Cyperus javanicus
Hygrophila angustifolia

Grasses: *Paspalidium distans*

Tree/Shrub: *Antidesma ghaesembilla*

Trees: *Eucalyptus polycarpa*
Melaleuca leucadendra
Nauclea orientalis

Vines: *Passiflora foetida*

*Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 - Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

KATHERINE RIVER	Date 2.5.96
Sub-section 19D Site 1	Figure 10.141

Table 10.50 Major Vegetation Species Recorded at Sites 3, 4, 5 and 6 located within Sub-section 19d – Katherine River Below Birdie Creek

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Sites Where Recorded (Sub-section No. / Site No.)
<i>Acacia holosericea</i>	Low tree / shrub		19d/3, 19d/4, 19d/5, 19d/6
<i>Acacia platycarpa</i>	Low tree / shrub		19d/4
<i>Acacia plectocarpa</i>	Low tree / shrub		19d/4
<i>Alphitonia excelsa</i>	Low tree / shrub		19d/6
<i>Ampelopteris prolifera</i>	Fern		19d/6
<i>Antidesma ghaesembilla</i>	Low tree / shrub		19d/6
<i>Barringtonia acutangula</i>	Low tree / shrub		19d/3, 19d/5, 19d/6
<i>Canthium schultzei</i>	Low tree / shrub		19d/6
<i>Carallia brachiata</i>	Tree		19d/3
<i>Chrysopogon latifolius</i>	Grass		19d/6
<i>Cyperus javanicus</i>	Forb		19d/3, 19d/5, 19d/6
<i>Elaeocarpus arnhemicus</i>	Tree		19d/6
<i>Eucalyptus camaldulensis</i>	Tree		19d/3, 19d/5, 19d/6
<i>Eucalyptus latifolia</i>	Tree		19d/4
<i>Ficus coronulata</i>	Tree		19d/5, 19d/6
<i>Gomphrena canescens</i>	Forb		19d/4
<i>Goodenia purpurascens</i>	Forb		19d/4
<i>Hyptis suaveolens</i>	Forb	E/N	19d/4, 19d/6
<i>Limnophila sp.</i>	Forb		19d/4
<i>Melaleuca argentea</i>	Tree		19d/5, 19d/6
<i>Melaleuca leucadendra</i>	Tree		19d/3
<i>Mnesithea rottboellioides</i>	Grass		19d/6
<i>Nauclea orientalis</i>	Tree		19d/3
<i>Pandanus aquaticus</i>	Tree		19d/3, 19d/6
<i>Pandanus spiralis</i>	Tree		19d/4, 19d/6
<i>Passiflora foetida</i>	Forb	E	19d/4, 19d/6
<i>Sida acuta</i>	Forb	E/N	19d/6
<i>Sorghum sp.</i>	Grass		19d/4
<i>Syzygium armstrongii</i>	Tree		19d/3
<i>Syzygium eucalyptoides</i>	Low tree / shrub		19d/4
<i>Triumfetta sp.</i>	Forb		19d/6

* Declared Noxious Weed within the Northern Territory



View along Katherine River below Site 19d/3



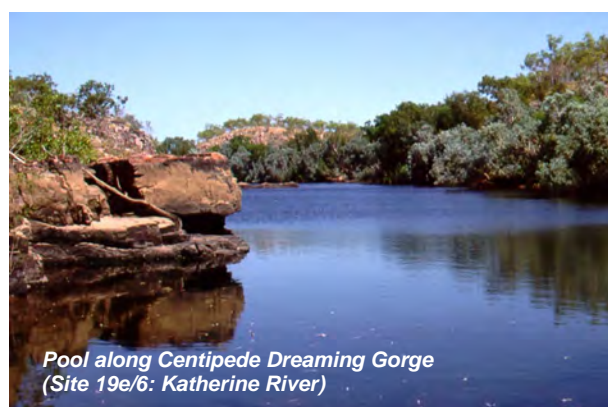
View along a pool on Grace Creek at Site 19d/6

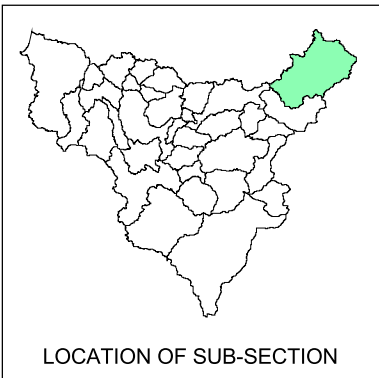
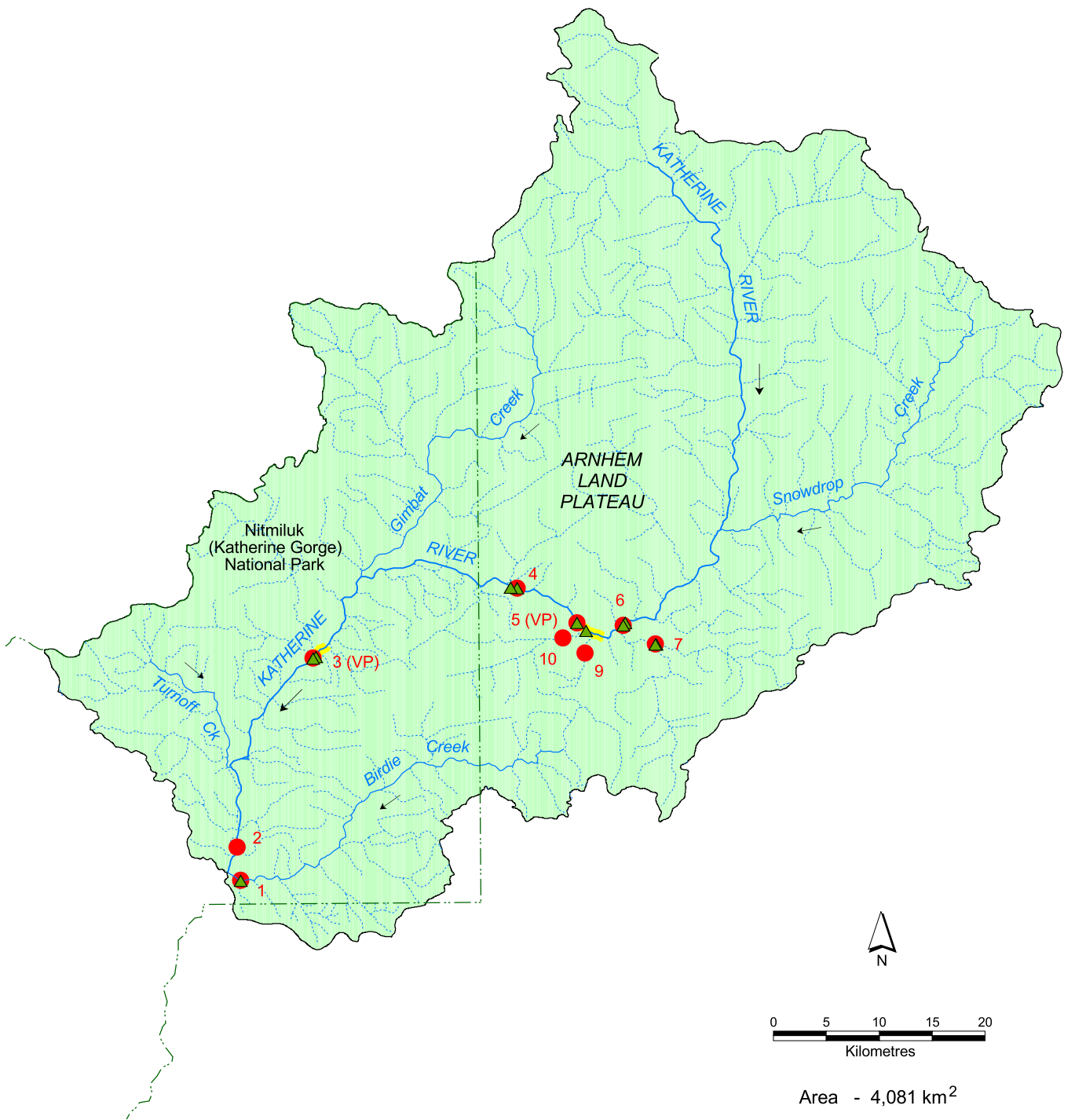
10.13.5 Katherine River – Upper (includes Birdie, Gimbat and Snowdrop Creeks)

Sub-section 19e encompasses the Katherine River from the junction with Birdie Creek to the top of the catchment. This sub-section includes the Arnhem Land Plateau. Of the nine sites located within this sub-section, six were fully assessed - four being located on the Katherine River (refer Table 10.51 and Map 53).

Table 10.51 Summary of Survey Information for Sub-section 19e – Upper Katherine River

Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
1	Birdie Creek	A	Run	√		
2	Katherine River					√
3	Katherine River	A	Pool	√	√	
		B	Riffle	√		
4	Katherine River	A	Riffle	√		
		B	Pool	√		
5	Katherine River	A	Pool	√	√	
		B	Riffle	√		
6	Katherine River	A	Rapid	√		
		B	Pool	√		
7	Unnamed Creek (Arm of Katherine River)	A	Riffle	√		
		B	Pool	√		
9	Jackys Creek					√
10	Hardys Creek					√





LEGEND	
● 5	Site
▲	Sample Point
(VP)	Vegetation Profile
—	Longitudinal Profile Survey
—	River
—	Creek
←	Flow direction

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

KATHERINE RIVER Upper Katherine River

SUB-SECTION 19e

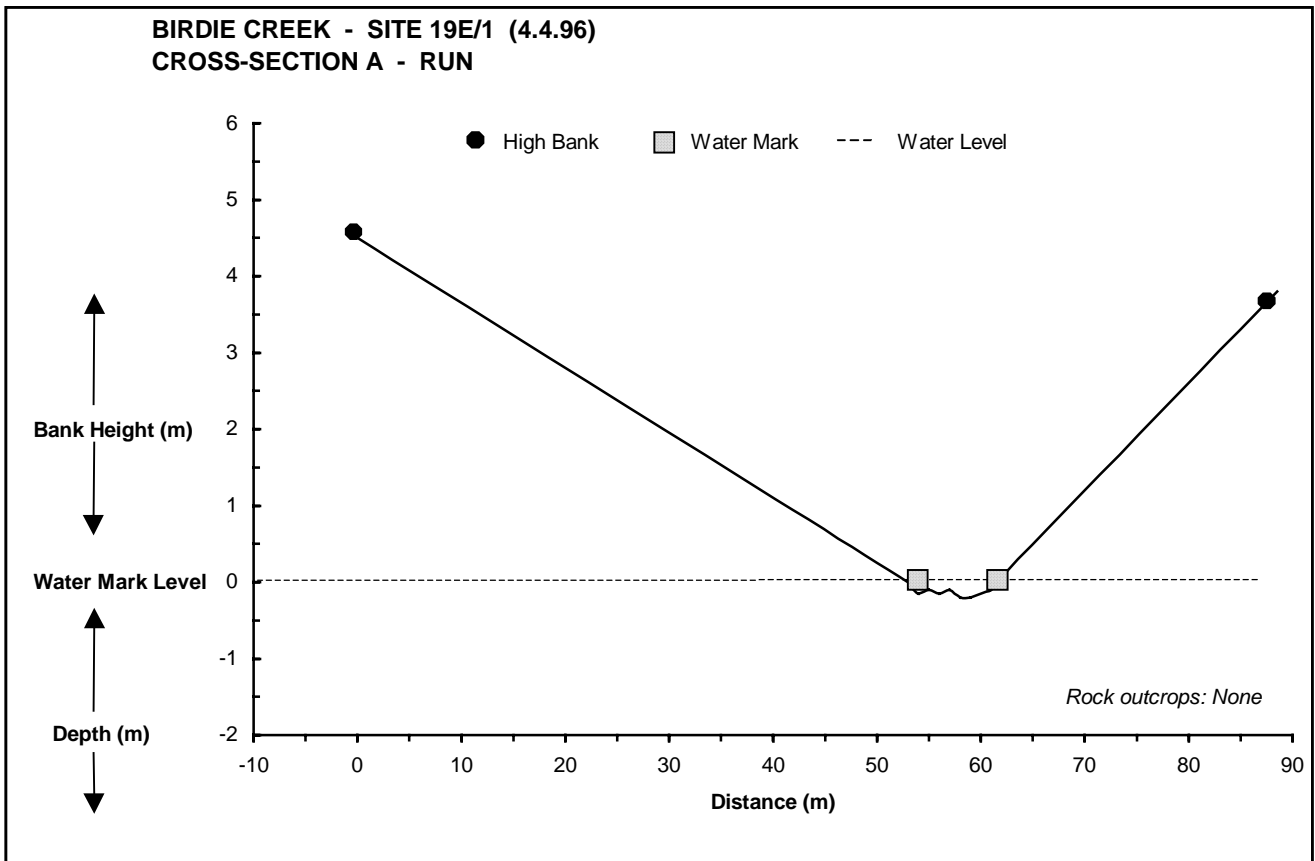
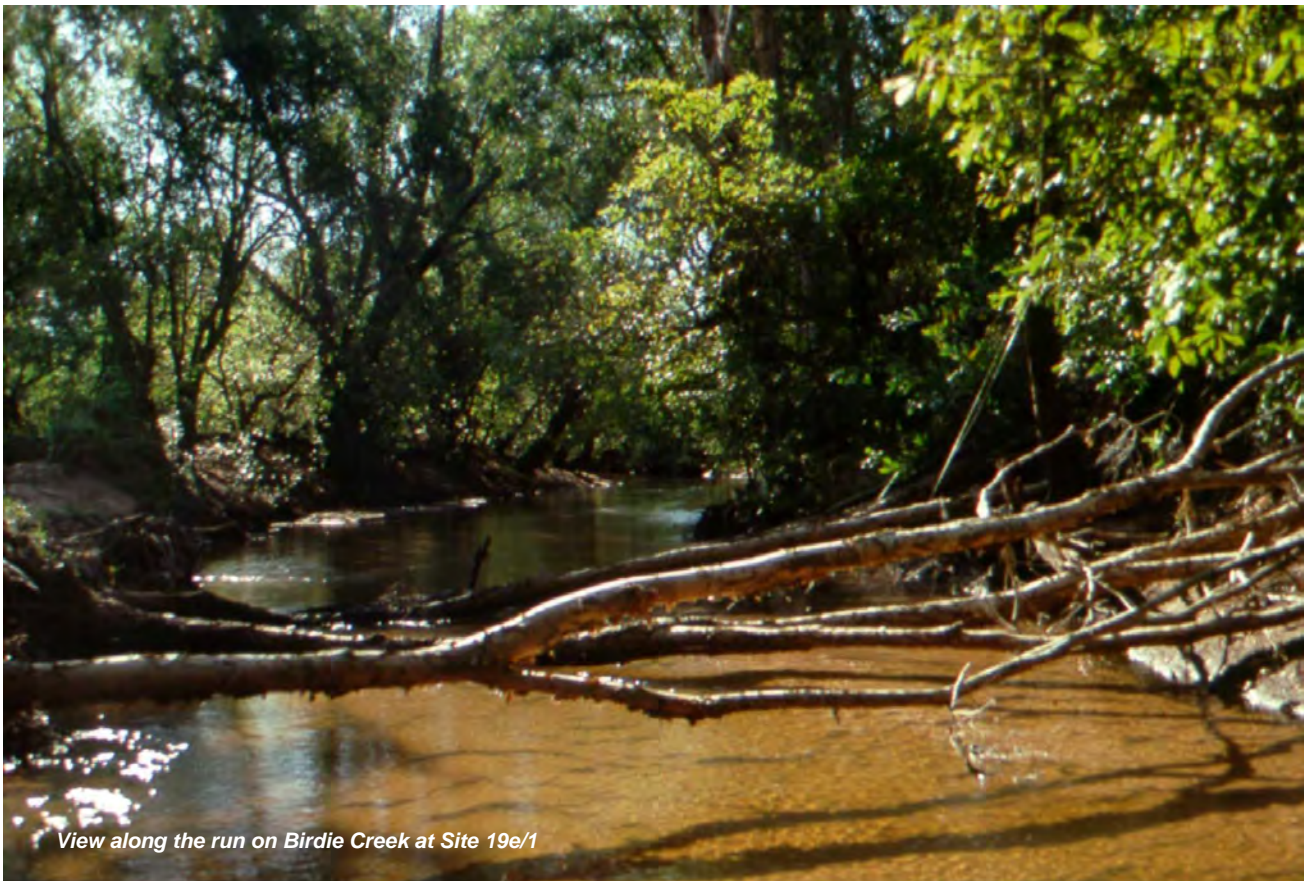


Figure 10.142 Cross-section Survey for Site 19e/1 – Birdie Creek



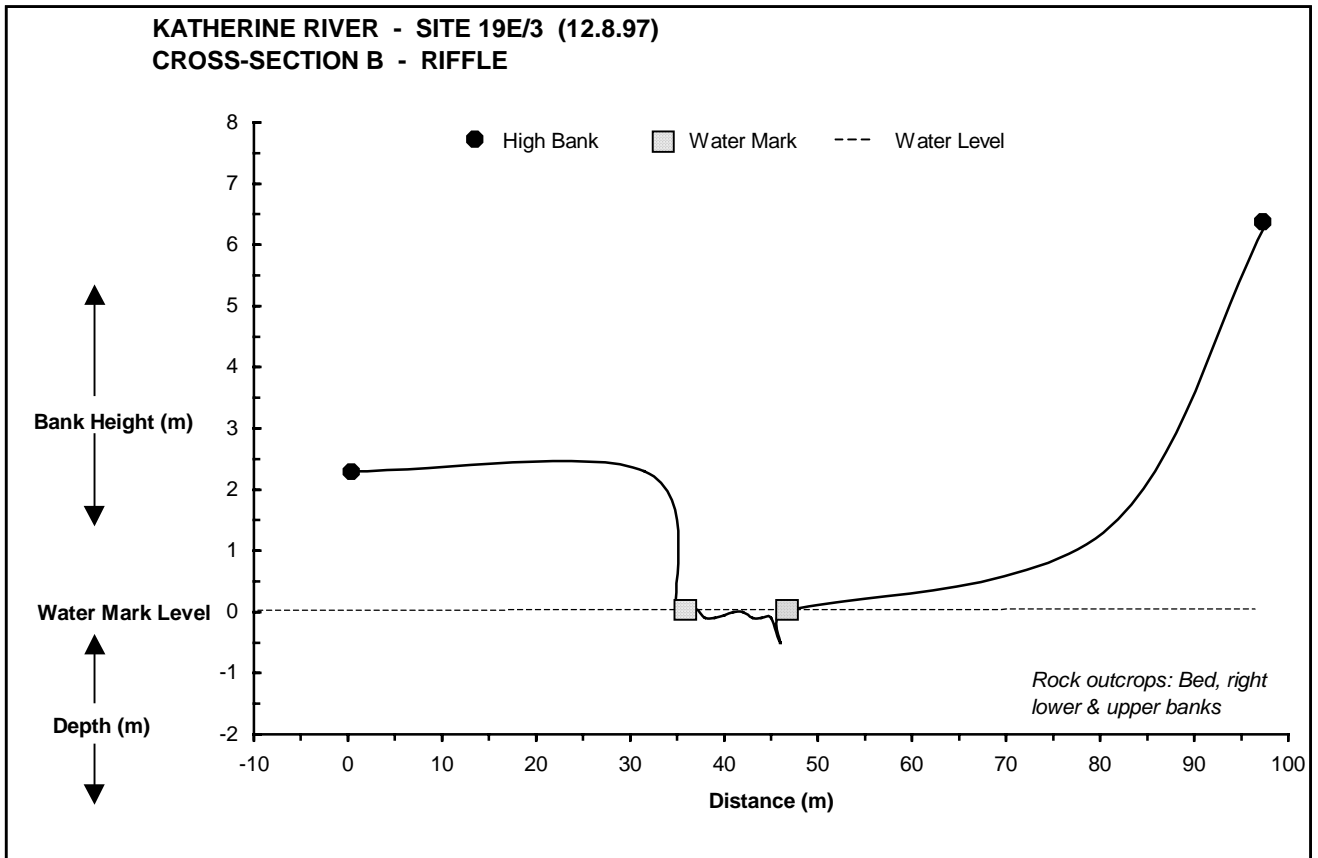
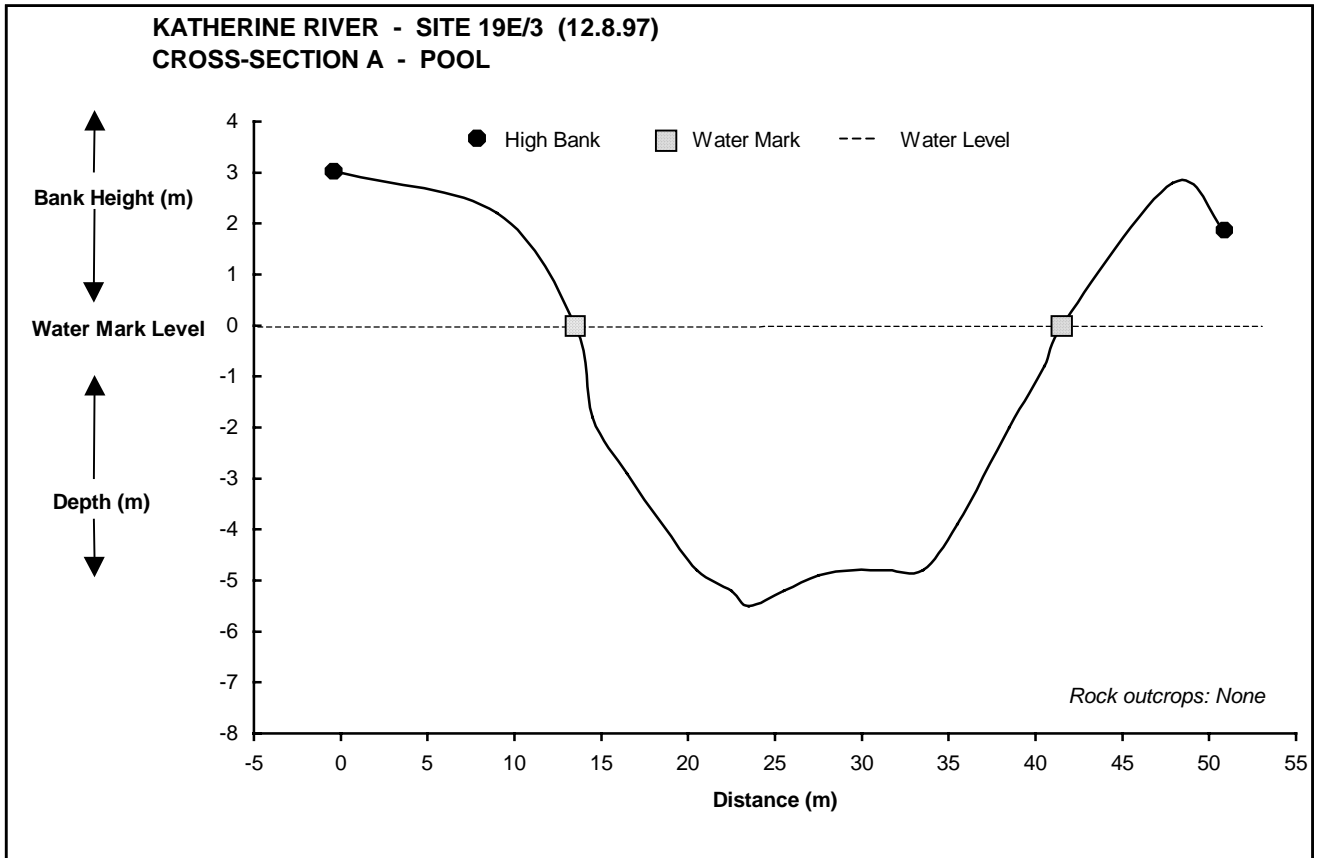


Figure 10.143 Cross-section Surveys for Site 19e/3 – Katherine River

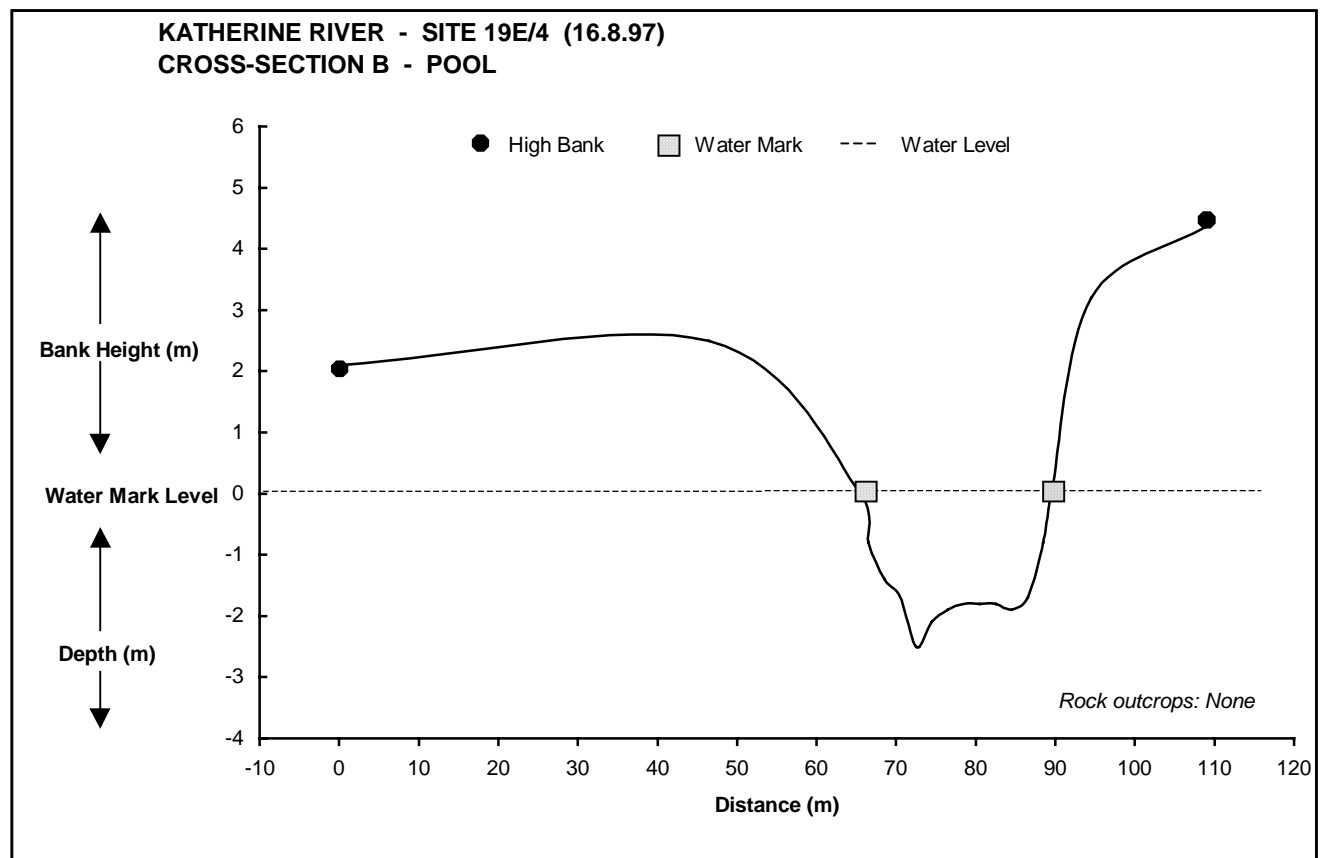
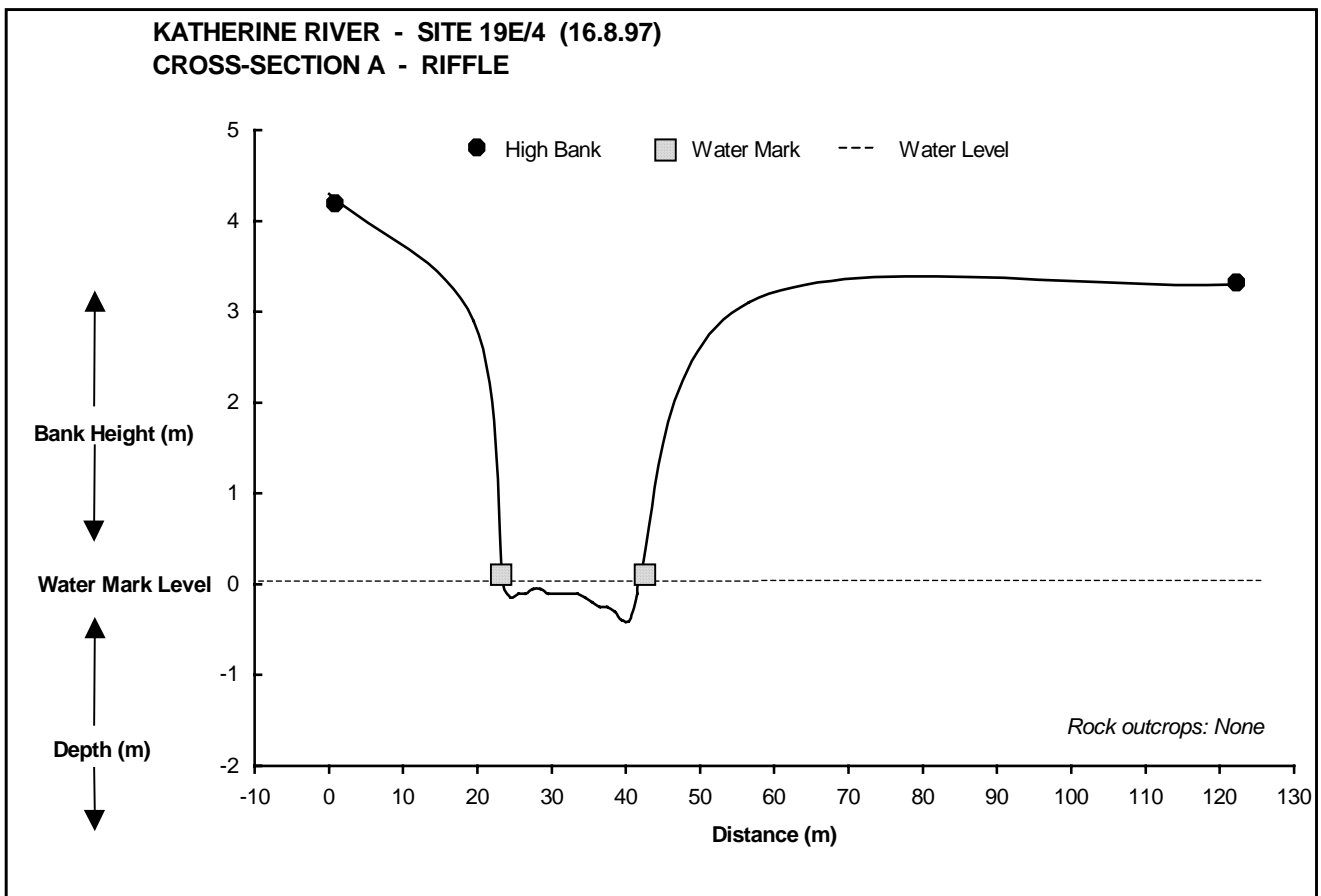


Figure 10.144 Cross-section Surveys for Site 19e/4 – Katherine River

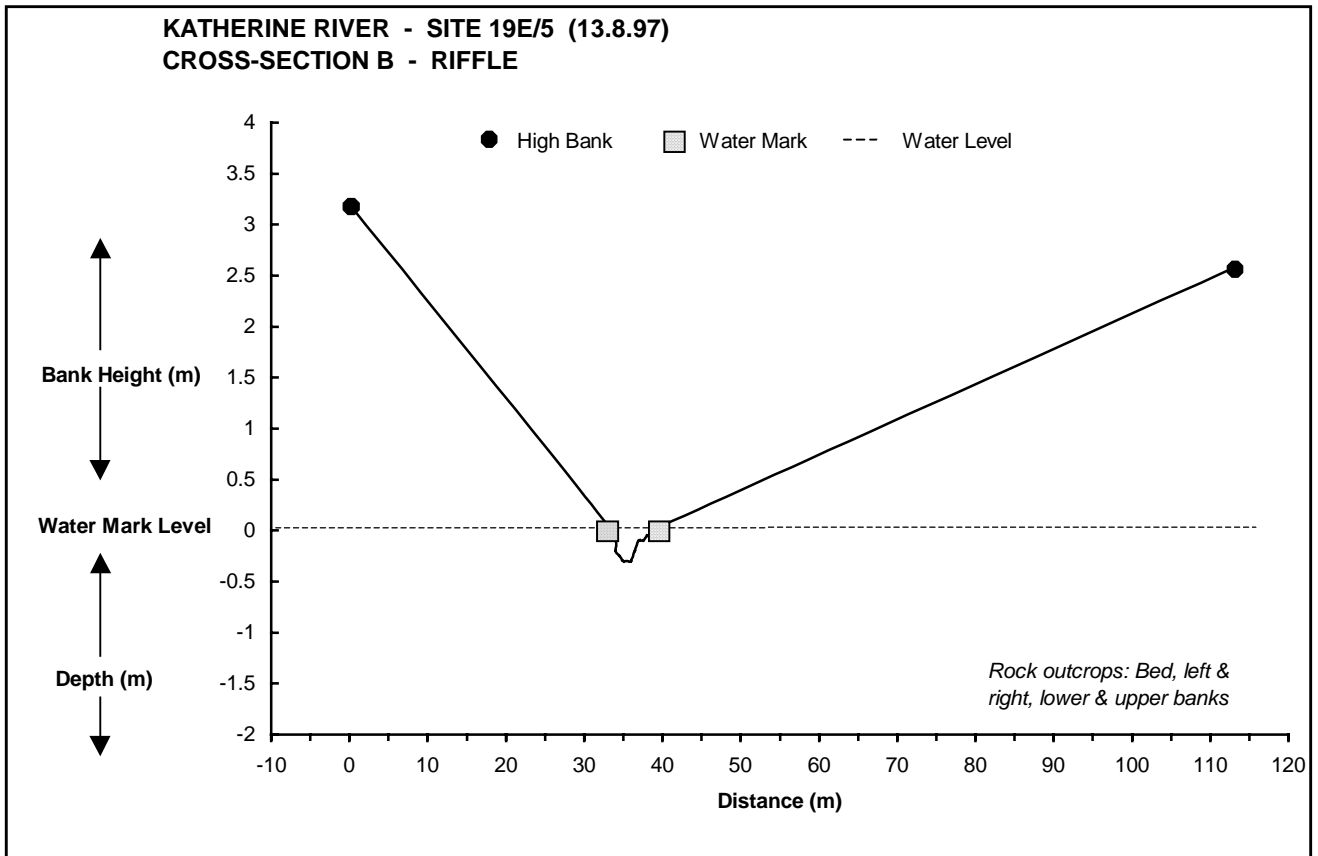
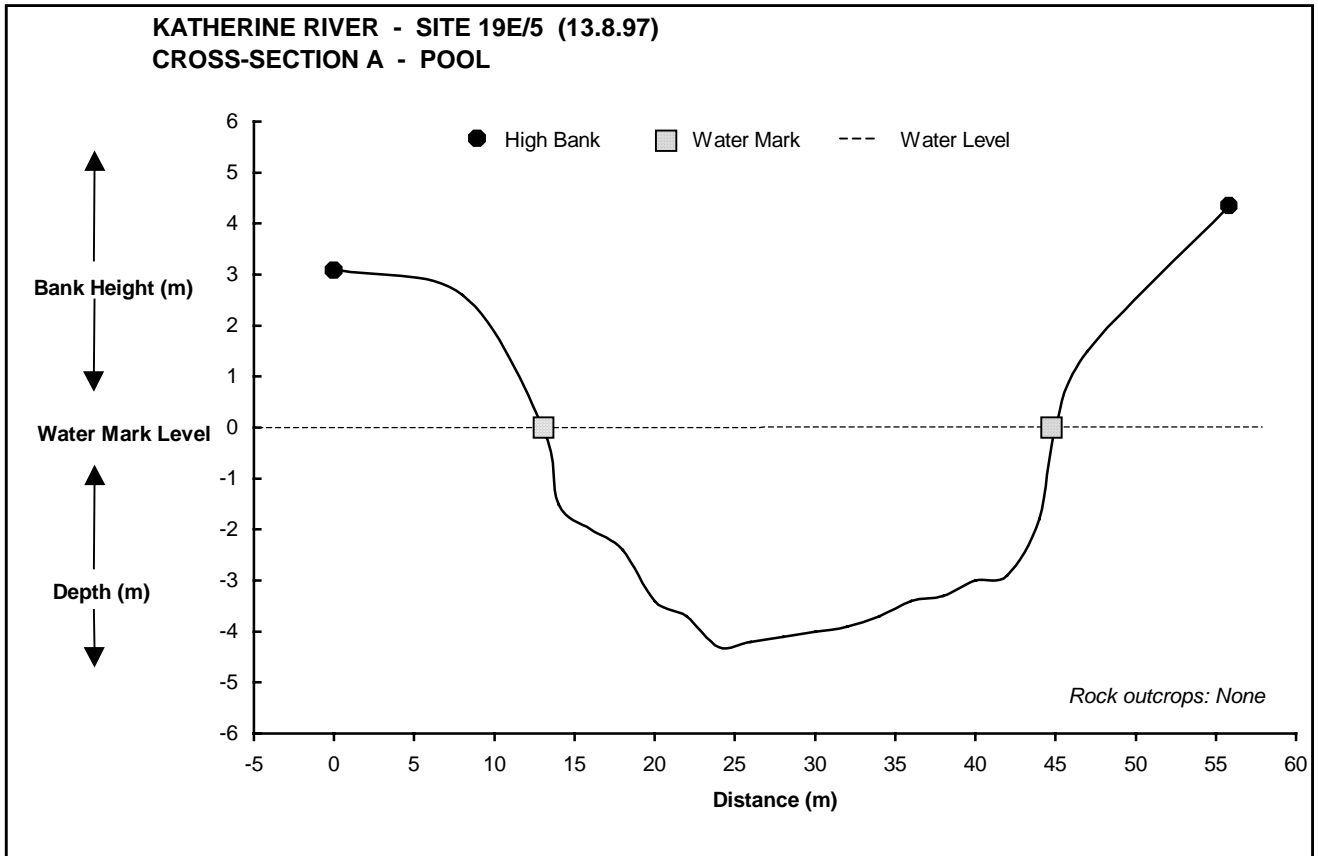


Figure 10.145 Cross-section Surveys for Site 19e/5 – Katherine River

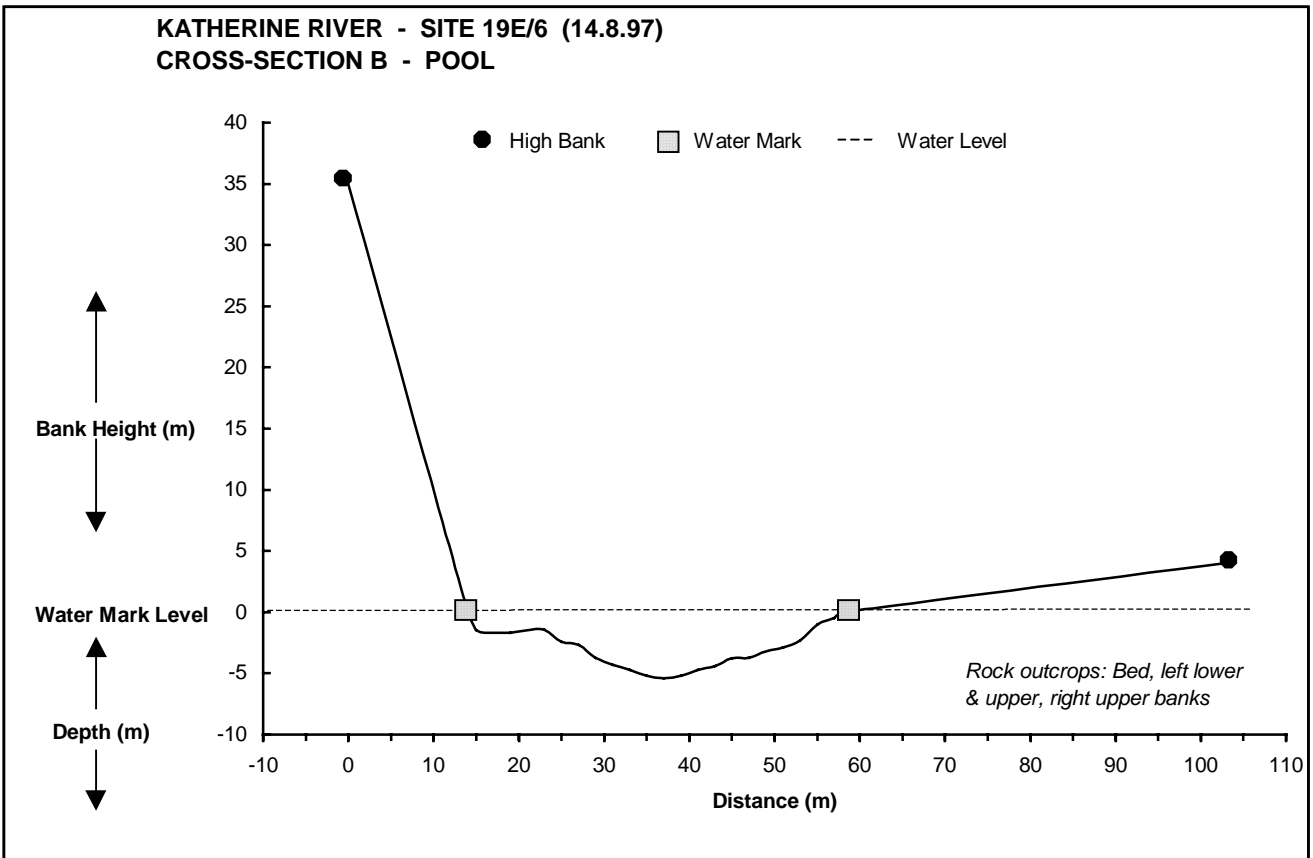
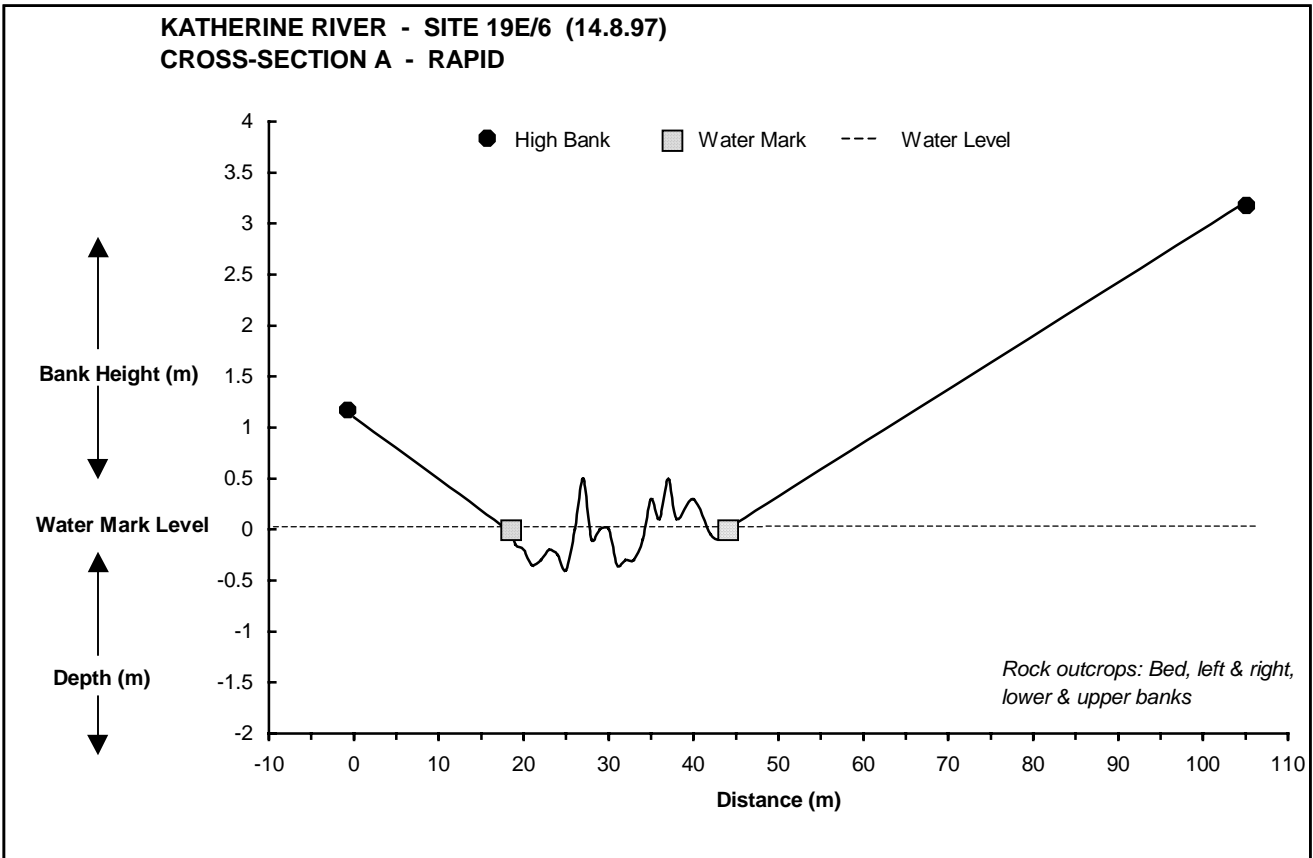


Figure 10.146 Cross-section Surveys for Site 19e/6 – Katherine River

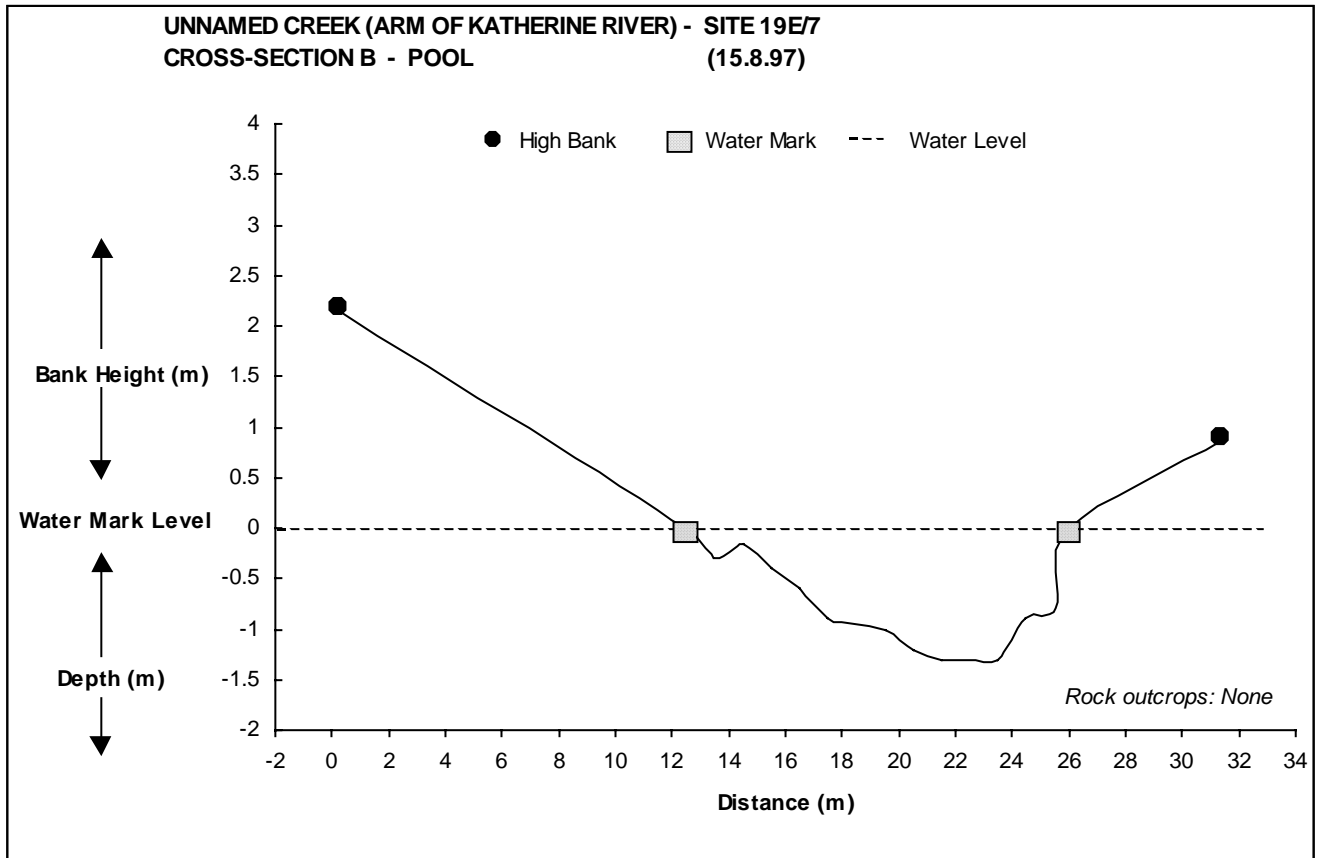
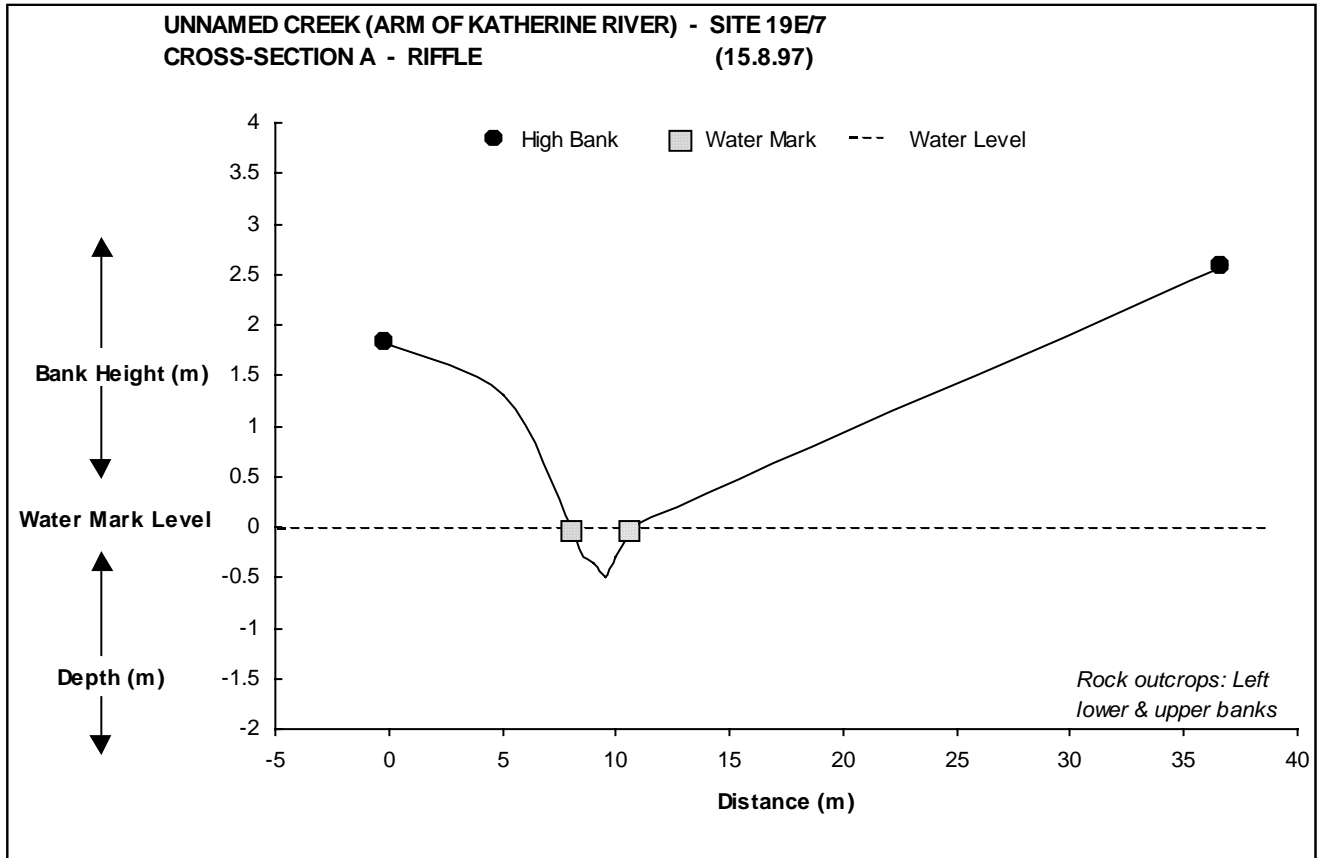
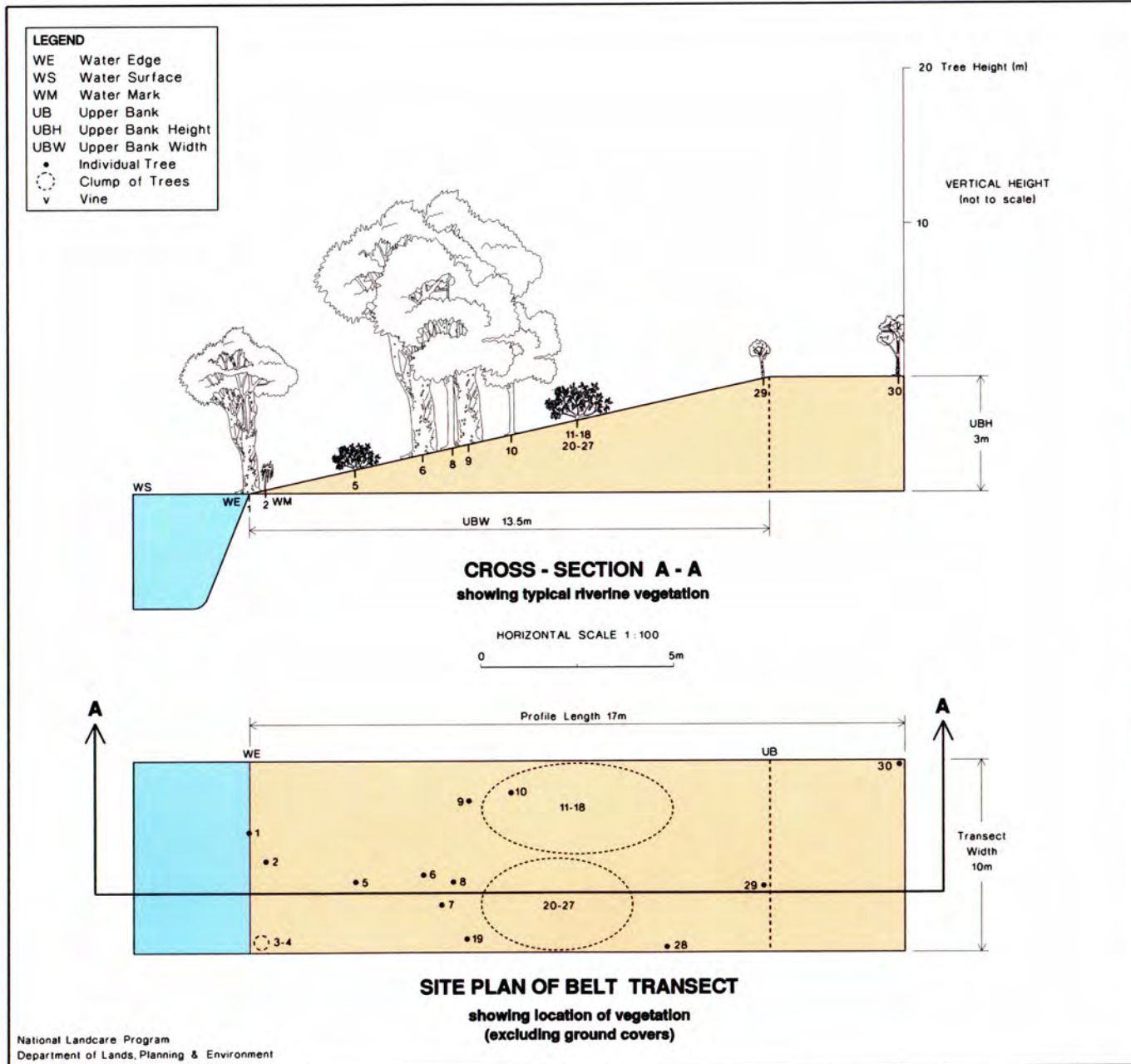


Figure 10.147 Cross-section Surveys for Site 19e/7 – Unnamed Creek (Arm of Katherine River)



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1, 6, 7, 9, 19	11-17	<i>Melaleuca argentea</i>
2-4	2-5	<i>Pandanus aquaticus</i>
5, 11-18, 20-27	1.8-2.5	<i>Phyllanthus reticulatus</i>
8, 10	10-14	<i>Syzygium armstrongii</i>
28	3	<i>Acacia holosericea</i>
29	2.5	<i>Melaleuca viridiflora</i>
30	4	<i>Eucalyptus microtheca</i>

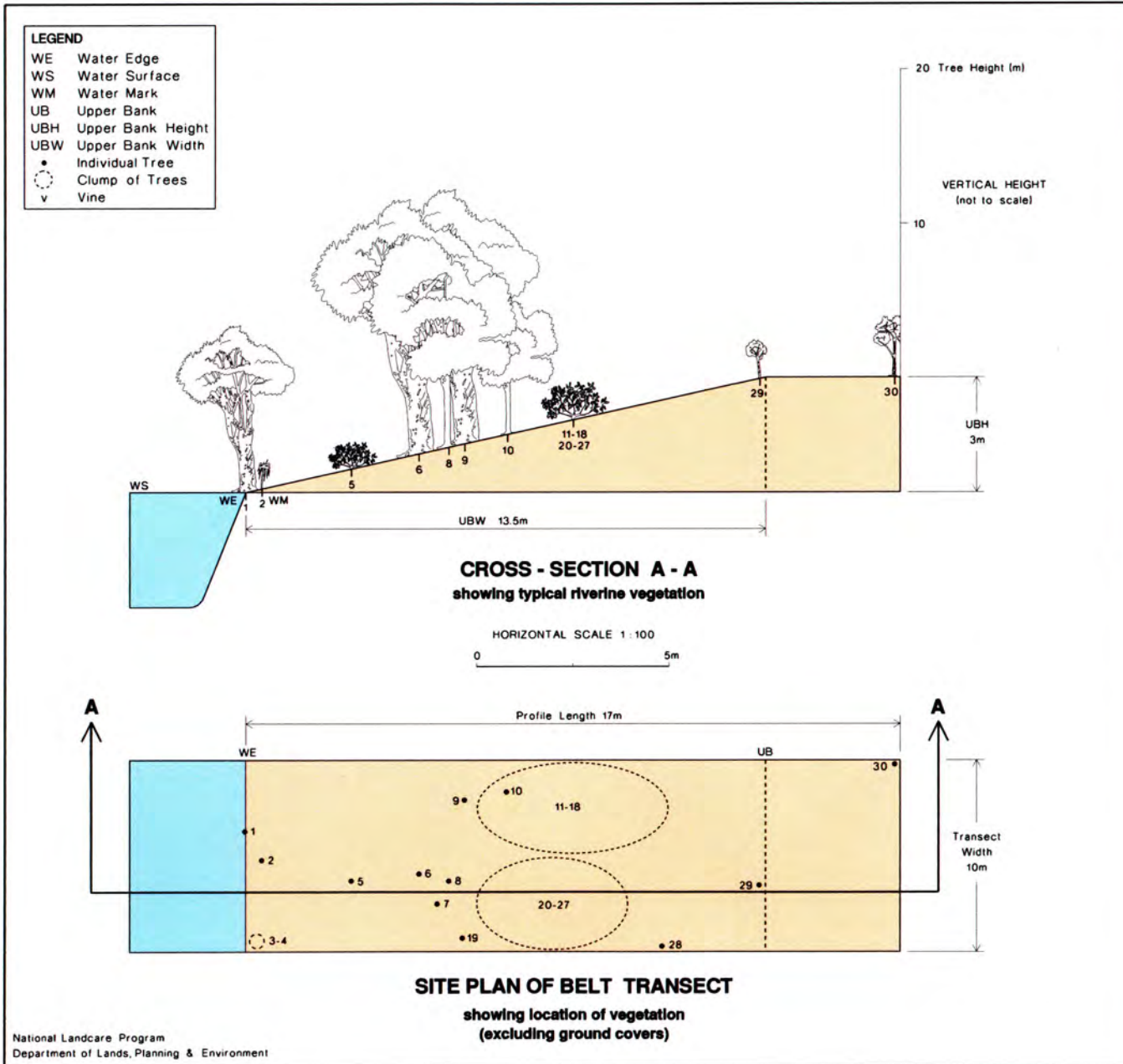
- OTHER SPECIES LOCATED AT SITE:**
- Forbs:** *Blumea saxatilis*, *Coldenia procumbens*, *Cyperus aquatilis*, *Fimbristylis denudata*, *Hypoestes floribunda*, *Melochia pyramidata*, *Nelsonia campestris*
- Grasses:** *Bracharia* sp., *Cynodon dactylon*
- Tree/Shrubs:** *Acacia difficilis*, *Antidesma ghaesembilla*
- Trees:** *Casualia brachiata*, *Eucalyptus camaldulensis*, *Ficus coronata*, *Nauclea orientalis*, *Terminalia platyphyla*
- Vines:** *Gymnanthera oblonga*, **Passiflora foetida*
- Weeds:** **Hyptis suaveolens* (Noxious)
- * Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 - Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

KATHERINE RIVER	Date 12.8.97
Sub-section 19E Site 3	Figure 10.148



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1, 6, 7, 9, 19	11-17	<i>Melaleuca argentea</i>
2-4	2-5	<i>Pandanus aquaticus</i>
5, 11-18, 20-27	1.8-2.5	<i>Phyllanthus reticulatus</i>
8, 10	10-14	<i>Syzygium armstrongii</i>
28	3	<i>Acacia holosericea</i>
29	2.5	<i>Melaleuca viridiflora</i>
30	4	<i>Eucalyptus microtheca</i>

- OTHER SPECIES LOCATED AT SITE:**
- Forbs:** *Blumea saxatilis*, *Coldenia procumbens*, *Cyperus aquatilis*, *Fimbristylis denudata*, *Hypoestes floribunda*, *Melochia pyramidata*, *Nelsohia campestris*
- Grasses:** *Brachiaria* sp., *Cynodon dactylon*
- Tree/Shrubs:** *Acacia difficilis*, *Antidesma ghaesembilla*
- Trees:** *Carallia brachiata*, *Eucalyptus camaldulensis*, *Ficus coronata*, *Nauclea orientalis*, *Terminalia platyphyla*
- Vines:** *Gymnanthera oblonga*, *Passiflora foetida*
- Weeds:** **Hyptis suaveolens* (Noxious)
- *Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 - Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

KATHERINE RIVER	Date 12.8.97
Sub-section 19E Site 3	Figure 10.148

Table 10.52 Major Vegetation Species Recorded at Sites 1, 2, 4, 6 and 7 located within Sub-section 19e – Upper Katherine River

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Sites Where Recorded (Sub-section No. / Site No.)
<i>Acacia difficilis</i>	Low tree / shrub		19e/7
<i>Acacia holosericea</i>	Low tree / shrub		19e/1, 19e/4, 19e/6, 19e/7
<i>Acacia sp.</i>	Low tree / shrub		19e/2
<i>Acacia umbellata</i>	Low tree / shrub		19e/6
<i>Antidesma ghaesembilla</i>	Low tree / shrub		19e/4
<i>Arundinella nepalensis</i>	Grass		19e/1
<i>Barringtonia acutangula</i>	Low tree / shrub		19e/1, 19e/2
<i>Brachiaria sp.</i>	Grass		19e/7
<i>Calytrix brownii</i>	Low tree / shrub		19e/6
<i>Capparis umbonata</i>	Low tree / shrub		19e/6
<i>Carallia brachiata</i>	Tree		19e/1, 19e/2, 19e/6
<i>Centipeda minima</i>	Forb		19e/6
<i>Chara or Nitella sp.</i>	Forb		19e/7
<i>Chrysopogon fallax</i>	Grass		19e/4
<i>Cynodon dactylon</i>	Grass		19e/4, 19e/6, 19e/7
<i>Cyperus haspan</i>	Forb		19e/7
<i>Ectrosia leporina</i>	Grass		19e/4, 19e/7
<i>Elaeocarpus arnhemicus</i>	Tree		19e/1
<i>Eragrostis sp.</i>	Grass		19e/4
<i>Eucalyptus camaldulensis</i>	Tree		19e/2, 19e/4, 19e/6, 19e/7
<i>Ficus coronulata</i>	Tree		19e/1, 19e/6
<i>Fimbristylis composita</i>	Forb		19e/6
<i>Fimbristylis denudata</i>	Forb		19e/6
<i>Germainia truncatiglumis</i>	Grass		19e/7
<i>Goodenia purpurascens</i>	Forb		19e/6
<i>Grevillea pteridifolia</i>	Tree		19e/6, 19e/7
<i>Gymnanthera oblonga</i>	Climber		19e/1, 19e/4
<i>Heteropogon contortus</i>	Grass		19e/7
<i>Hyptis suaveolens</i>	Forb	E/N	19e/1, 19e/7
<i>Limnophila brownii</i>	Forb		19e/7
<i>Limnophila sp.</i>	Forb		19e/7

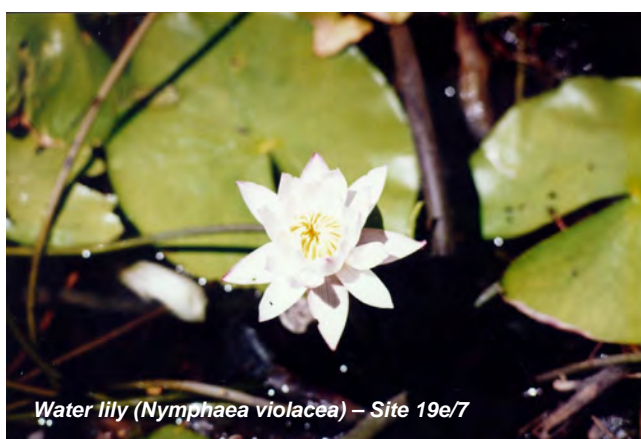
* Declared Noxious Weed within the Northern Territory

Continued

Table 10.52 Major Vegetation Species Recorded at Sites 1, 2, 4, 6 and 7 located within Sub-section 19e – Upper Katherine River (continued)

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Sites Where Recorded (Sub-section No. / Site No.)
<i>Litsea glutinosa</i>	Tree		19e/7
<i>Ludwigia octovalvis</i>	Forb		19e/7
<i>Melaleuca argentea</i>	Tree		19e/2, 19e/6
<i>Melaleuca leucadendra</i>	Tree		19e/1, 19e/4, 19e/7
<i>Melochia corchorifolia</i>	Forb (check)		19e/1
<i>Mnesithea rottboellioides</i>	Grass		19e/7
<i>Nelsonia campestris</i>	Forb		19e/1, 19e/4
<i>Nymphaea violacea</i>	Forb		19e/7
<i>Nymphoides hydrocharoides</i>	Forb		19e/7
<i>Pandanus aquaticus</i>	Tree		19e/2, 19e/4, 19e/6, 19e/7
<i>Pandanus spiralis</i>	Tree		19e/1, 19e/6, 19e/7
<i>Panicum mindanaense</i>	Grass		19e/1
<i>Panicum sp.</i>	Grass		19e/4, 19e/7
<i>Passiflora foetida</i>	Forb	E	19e/1, 19e/2, 19e/4, 19e/6, 19e/7
<i>Phyllanthus reticulatus</i>	Low tree / shrub		19e/1, 19e/4
<i>Pouteria sericea</i>	Tree		19e/6
<i>Setaria apiculata</i>	Grass		19e/7
<i>Sorghum sp.</i>	Grass		19e/7
<i>Syzygium armstrongii</i>	Tree		19e/1, 19e/4, 19e/6
<i>Syzygium eucalyptoides</i>	Low tree / shrub		19e/6
<i>Syzygium suborbiculare</i>	Tree		19e/6, 19e/7
<i>Terminalia platyphylla</i>	Tree		19e/1
<i>Triodia microstachys</i>	Grass		19e/6
<i>Utricularia fulva</i>	Forb		19e/7
<i>Xyris complanata</i>	Forb		19e/7

* Declared Noxious Weed within the Northern Territory



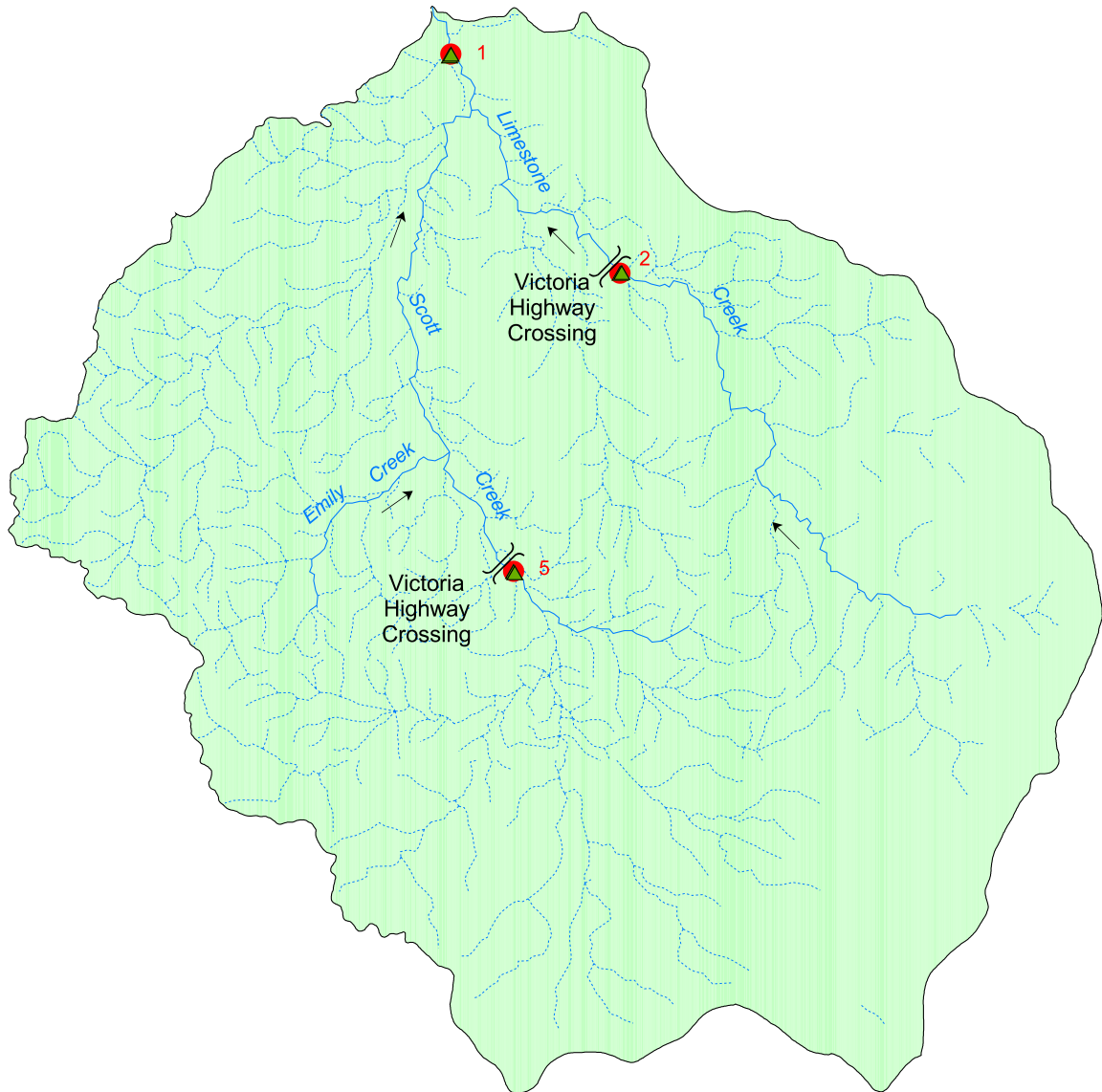
10.14 Limestone Creek

Sub-section 20 includes the catchment area of Limestone and Scott Creeks. Three sites have been fully assessed in this sub-section, two of which are located on Limestone Creek and the third on Scott Creek (refer Table 10.53 and Map 54).

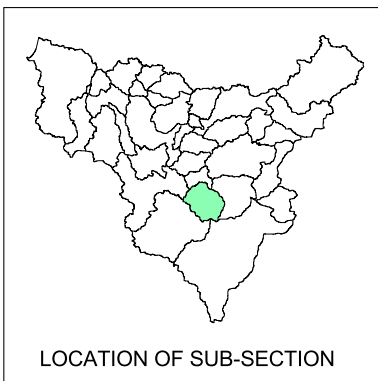
Table 10.53 Summary of Survey Information for Sub-section 20 – Limestone Creek

Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
1	Limestone Creek	A	Riffle	√		
		B	Pool	√		
2	Limestone Creek	A	Riffle	√		
		B	Pool	√		
5	Scott Creek	A	Riffle	√		
		B	Pool	√		





Area - 1,275 km²



LEGEND	
● 5	Site
▲	Sample Point
(VP)	Vegetation Profile
—	Longitudinal Profile Survey
—	River
—	Creek
←	Flow direction

 TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

LIMESTONE AND SCOTT CREEKS

SUB-SECTION 20

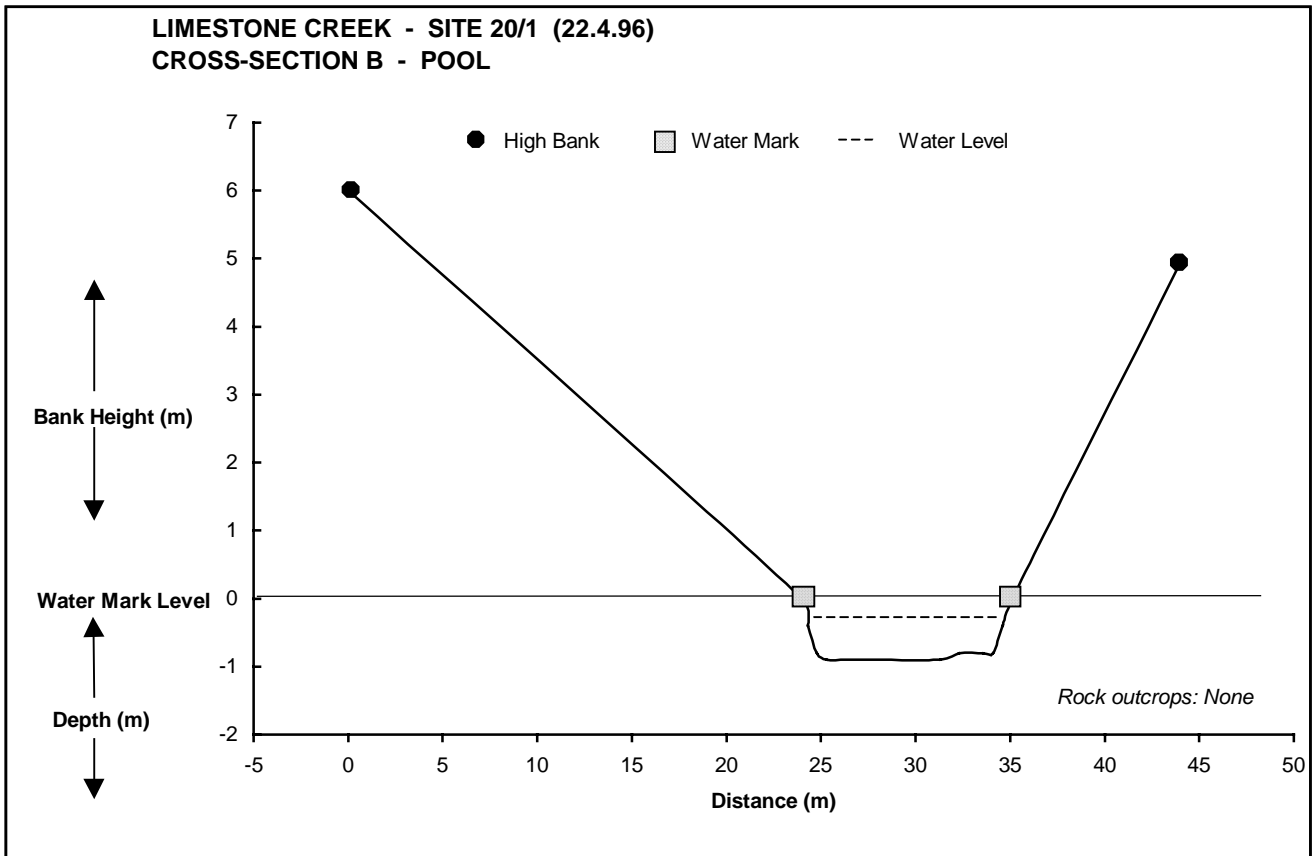
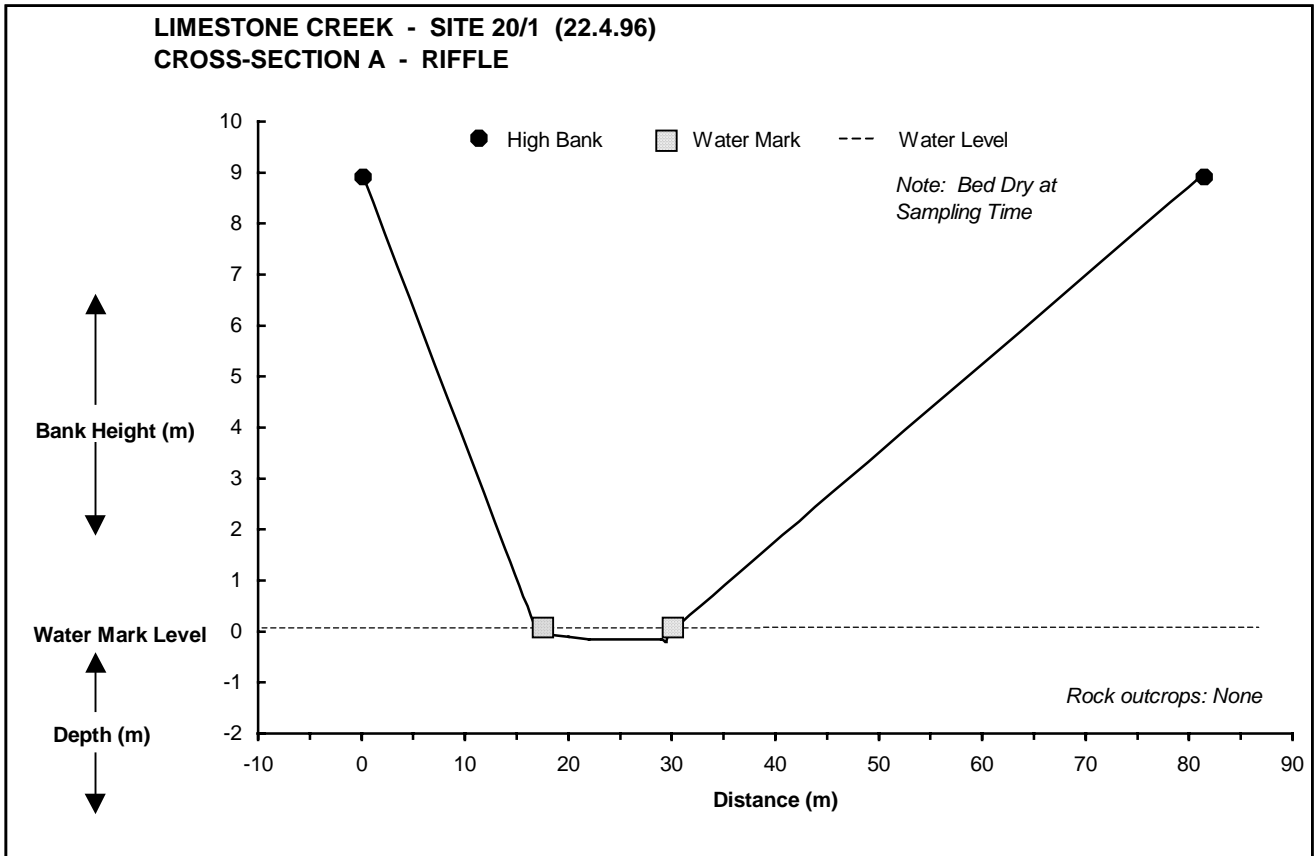


Figure 10.150 Cross-section Surveys for Site 20/1 – Limestone Creek

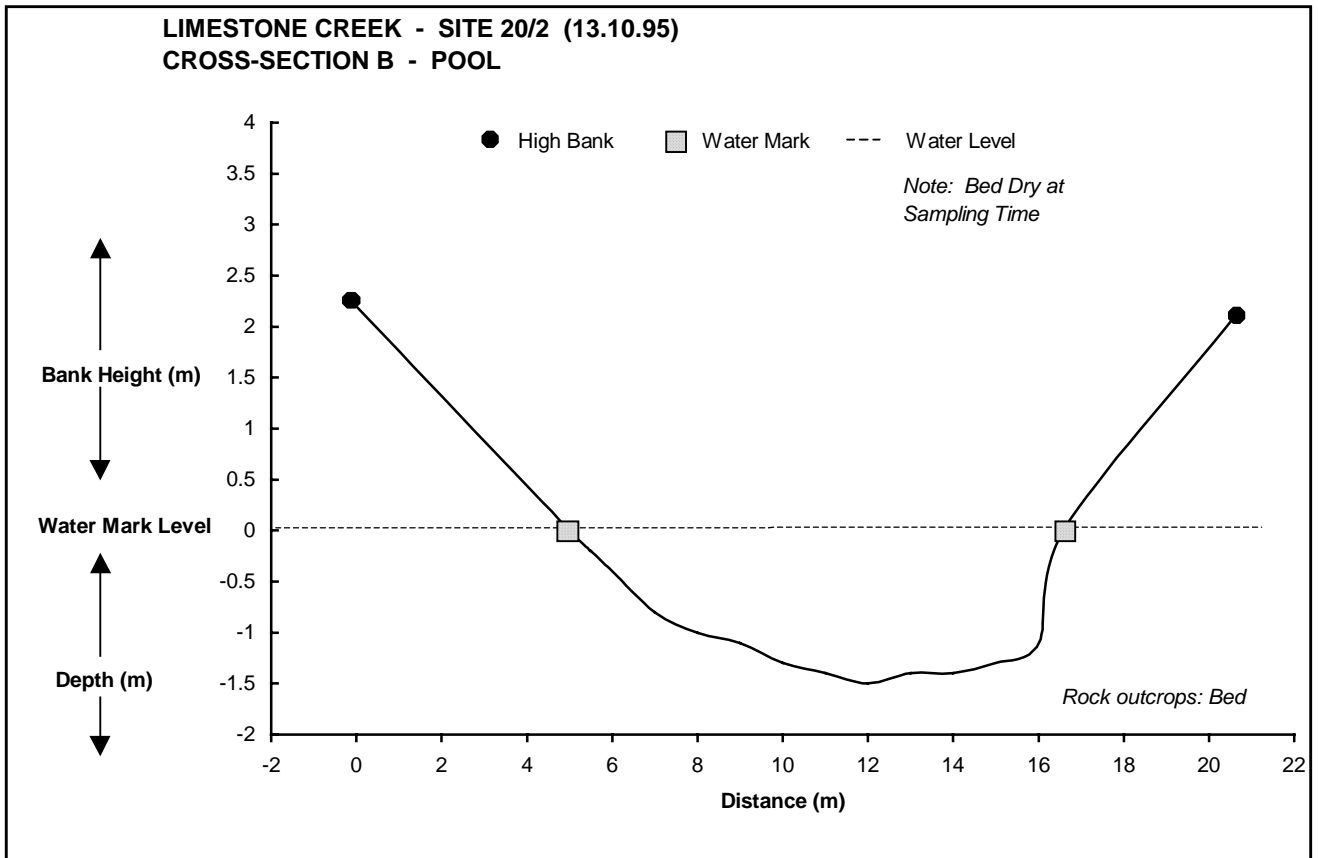
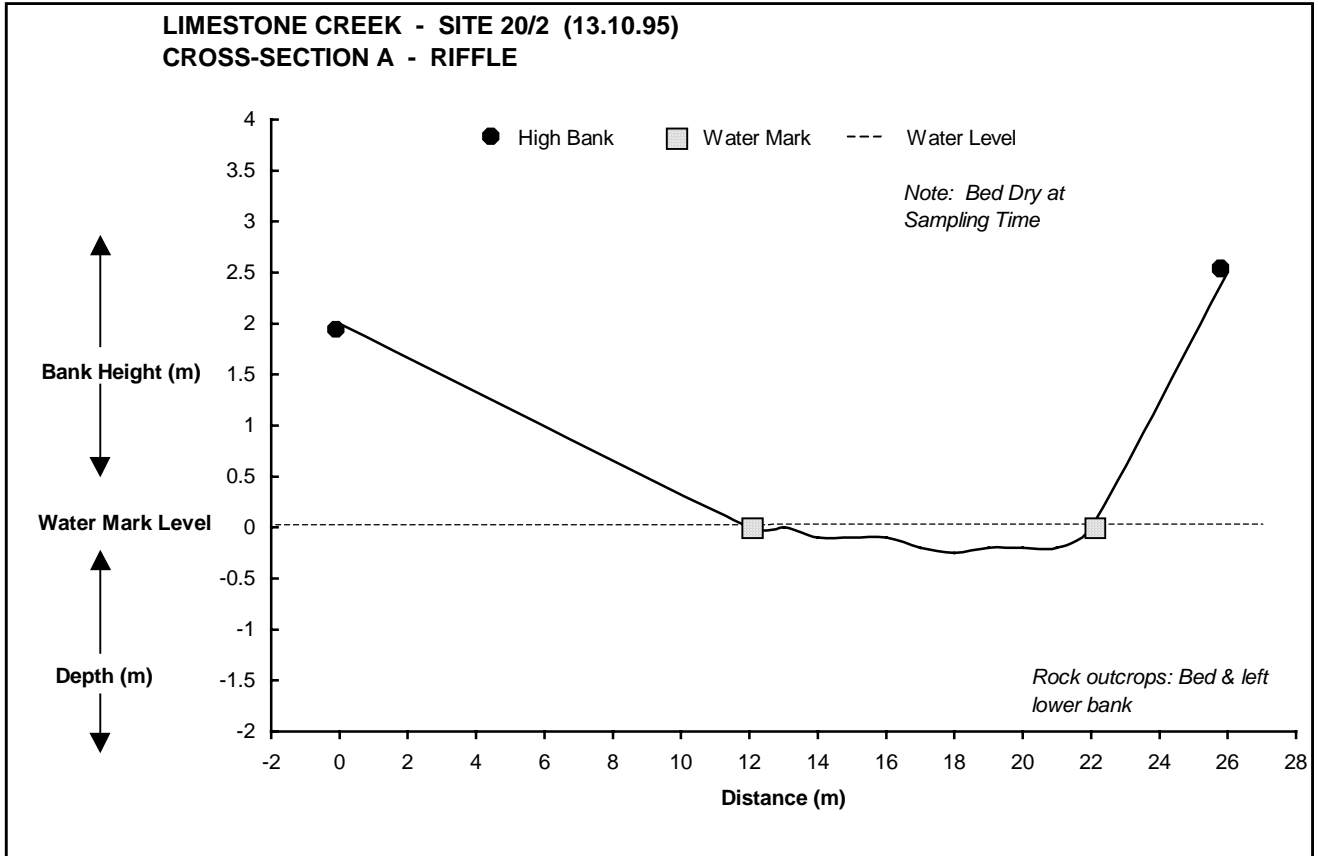


Figure 10.151 Cross-section Surveys for Site 20/2 – Limestone Creek

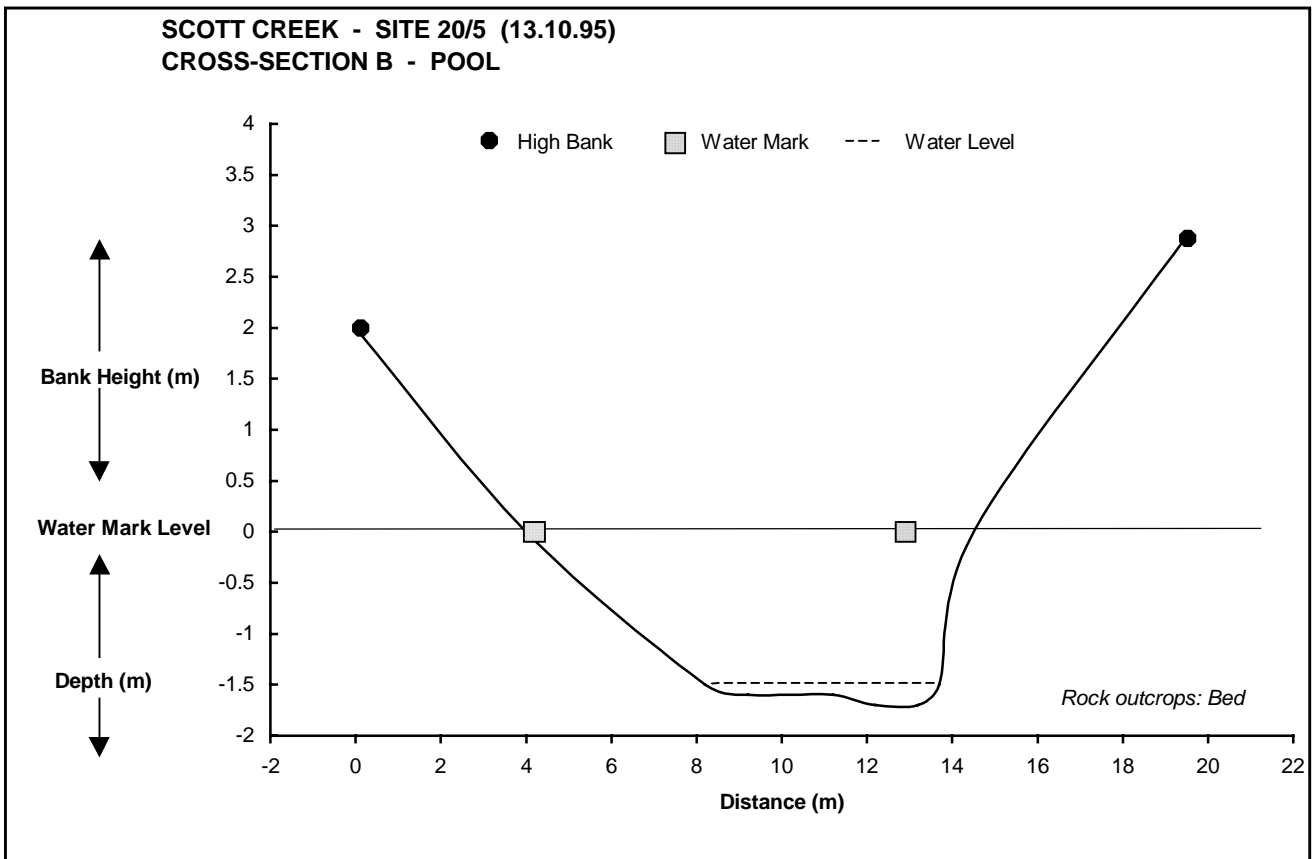
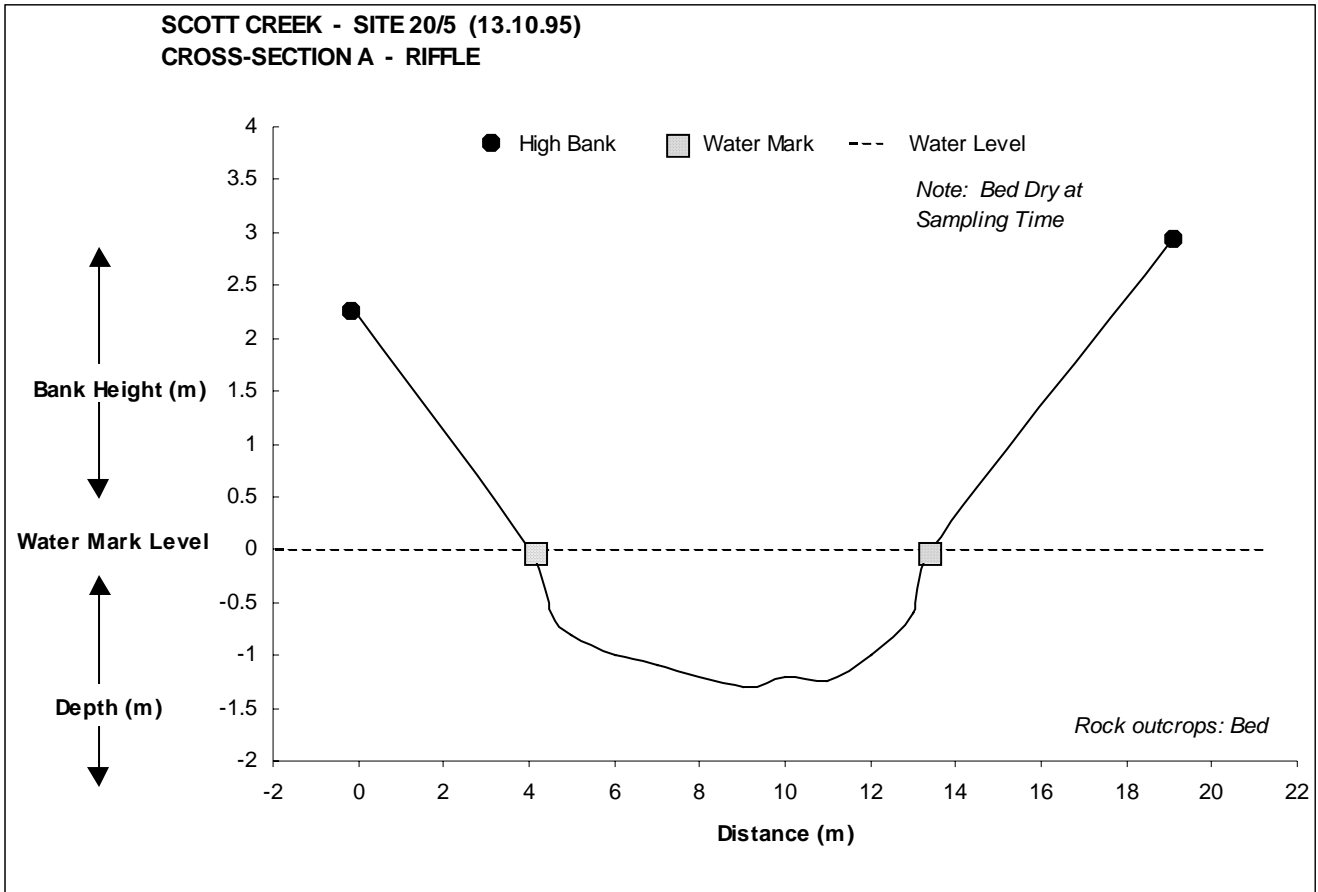


Figure 10.152 Cross-section Surveys for Site 20/5 – Scott Creek

Table 10.54 Major Vegetation Species Recorded at Sites 1, 2 and 5 located within Sub-section 20 – Limestone Creek

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Sites Where Recorded (Sub-section No. / Site No.)
<i>Acacia holosericea</i>	Low tree / shrub		20/1, 20/5
<i>Acacia sp.</i>	Low tree / shrub		20/2
<i>Arundinella nepalensis</i>	Grass		20/2
<i>Canarium australianum</i>	Tree		20/2
<i>Casuarina cunninghamiana</i>	Tree		20/1
<i>Celtis philippinesis</i>	Tree		20/2
<i>Chara sp.</i>	Forb		20/5
<i>Cynodon dactylon</i>	Grass		20/1
<i>Dichanthium fecundum</i>	Grass		20/2
<i>Diospyros humilis</i>	Tree		20/2
<i>Eragrostis speciosa</i>	Grass		20/5
<i>Eragrostis tenellula</i>	Grass		20/2
<i>Eucalyptus camaldulensis</i>	Tree		20/1, 20/2, 20/5
<i>Eucalyptus patellaris</i>	Tree		20/5
<i>Excoecaria parvifolia</i>	Tree		20/1
<i>Ficus coronulata</i>	Tree		20/1, 20/2, 20/5
<i>Flacourtia territorialis</i>	Low tree / shrub		20/1
<i>Heteropogon contortus</i>	Grass		20/2, 20/5
<i>Hyptis suaveolens</i>	Forb	E/N	20/1, 20/2, 20/5
<i>Imperata cylindrica</i>	Grass		20/5
<i>Lophostemon grandiflorus</i>	Tree		20/1, 20/2, 20/5
<i>Melaleuca leucadendra</i>	Tree		20/1, 20/5
<i>Nauclea orientalis</i>	Tree		20/1
<i>Nelsonia campestris</i>	Forb		20/2, 20/5
<i>Pandanus spiralis</i>	Tree		20/5
<i>Passiflora foetida</i>	Forb	E	20/1, 20/2, 20/5
<i>Phyllanthus reticulatus</i>	Low tree / shrub		20/2
<i>Sida acuta</i>	Forb	E/N	20/1
<i>Terminalia platyphylla</i>	Tree		20/1, 20/2, 20/5
<i>Timonius timon</i>	Tree		20/5
<i>Xanthium occidentale</i>	Forb	E/N	20/1

* Declared Noxious Weed within the Northern Territory

10.15 King and Dry Rivers

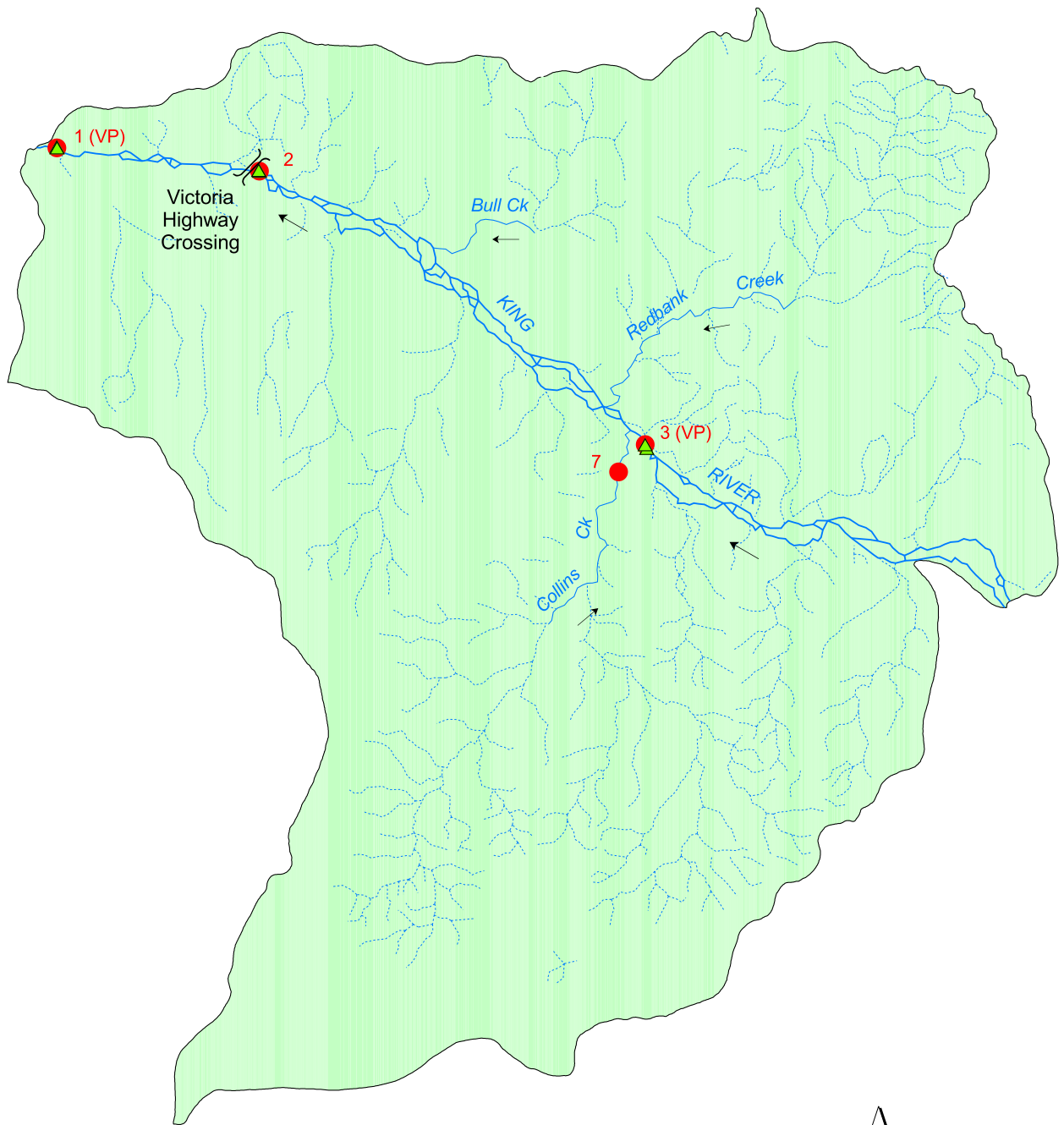
10.15.1 King River – Below Dry River

Sub-section 21a includes the catchment area of King River, downstream of the junction with Dry River. Of the four sites within this sub-section, three sites have been fully assessed and are located on King River (refer Table 10.55 and Map 55).

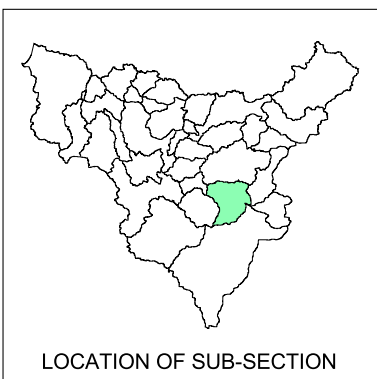
Table 10.55 Summary of Survey Information for Sub-section 21a – King River Below Dry River

Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
1	King River	A	Riffle	√	√	
		B	Pool	√		
2	King River	A	Riffle	√		
		B	Pool	√		
3	King River	A	Pool	√	√	
		B	Riffle	√		





Area - 1,636 km²



LEGEND	
● 5	Site
▲	Sample Point
(VP)	Vegetation Profile
—	Longitudinal Profile Survey
—	River
—	Creek
←	Flow direction

 TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

KING RIVER Below Dry River

SUB-SECTION 21a

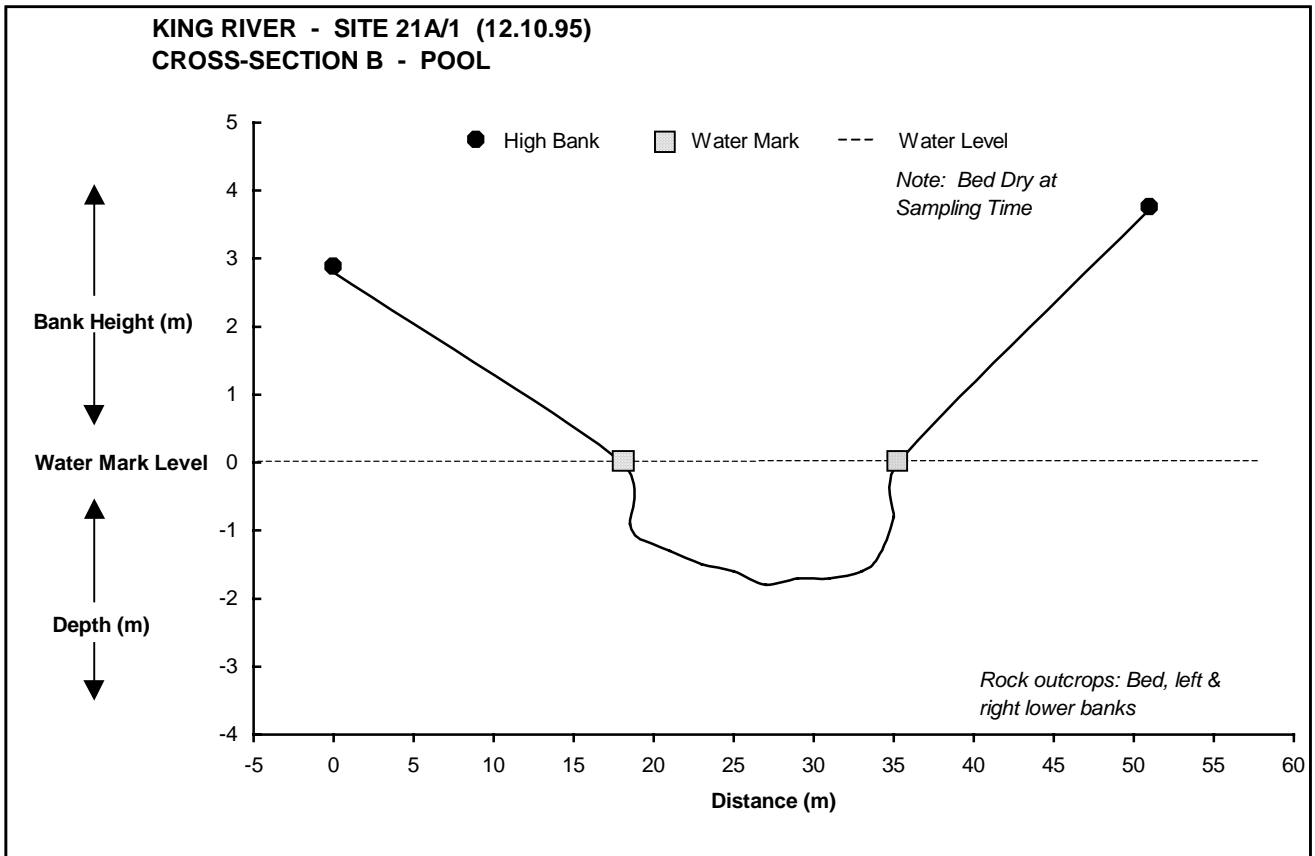
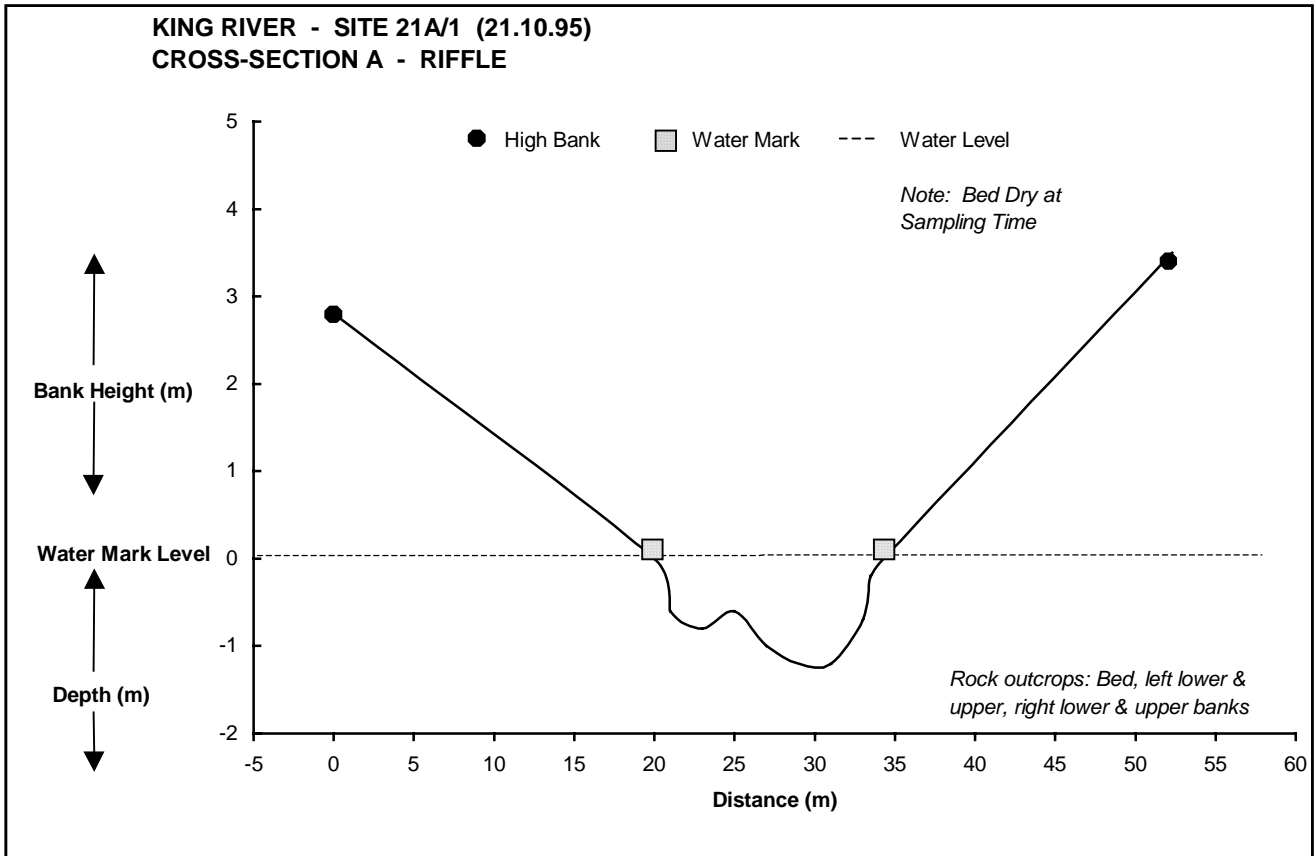


Figure 10.153 Cross-section Surveys for Site 21a/1 – King River

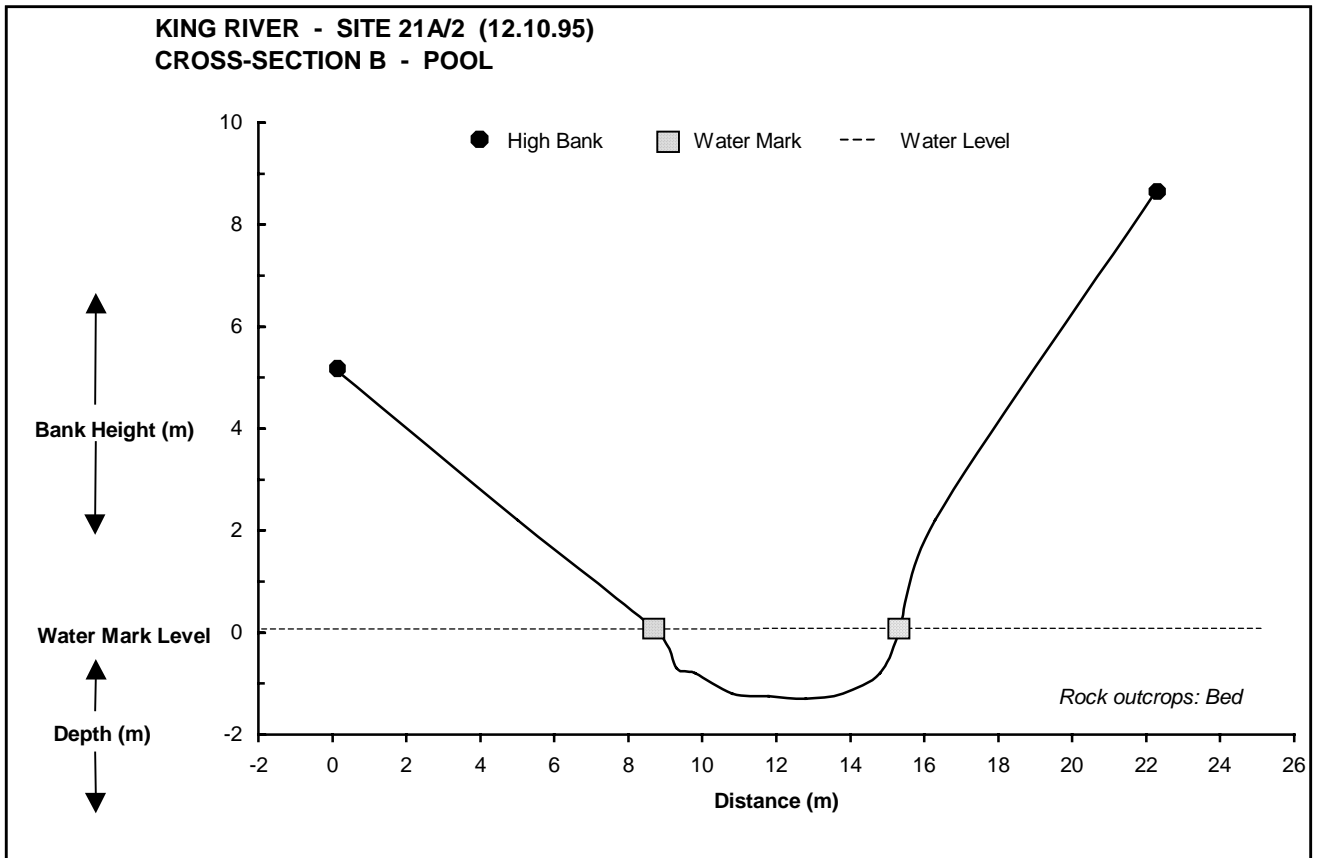
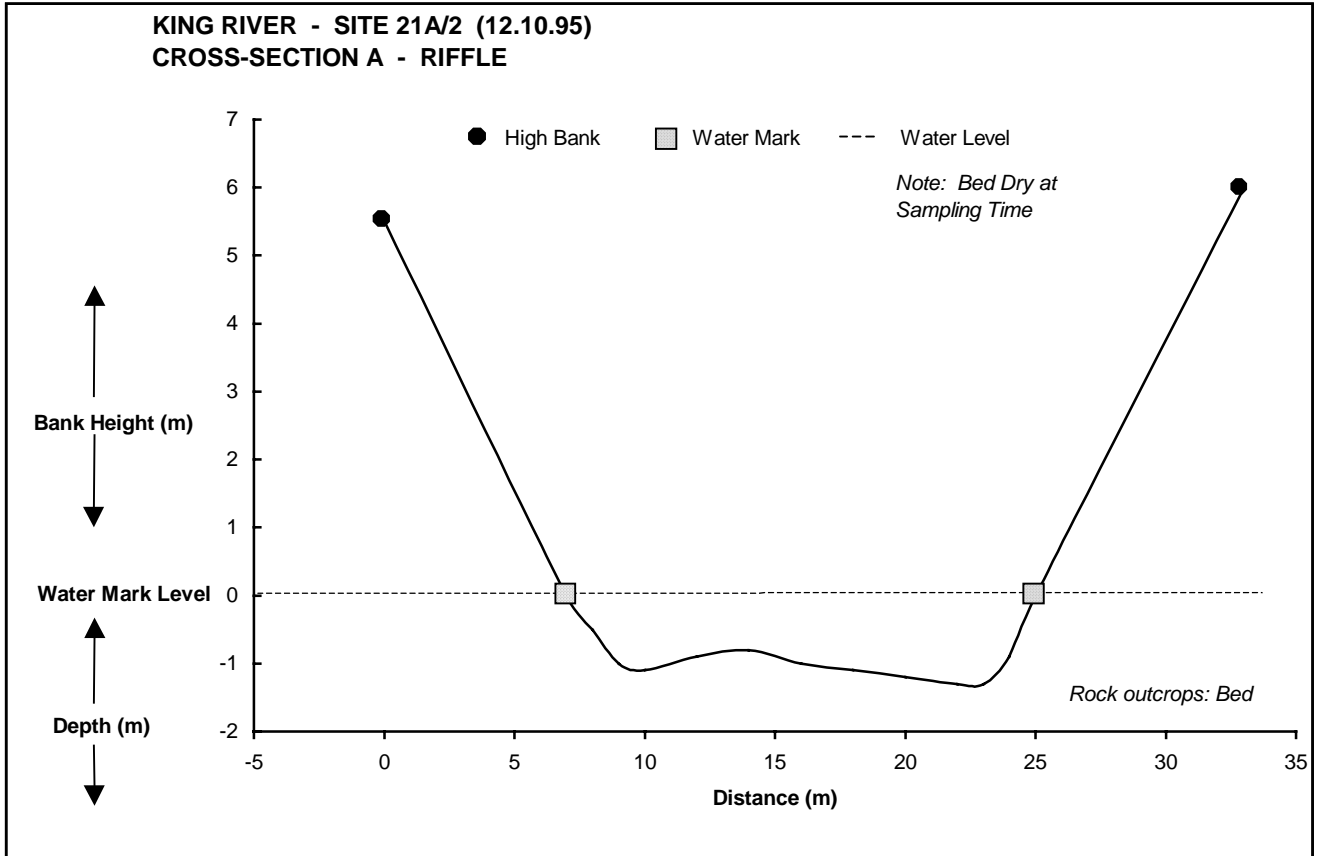


Figure 10.154 Cross-section Surveys for Site 21a/2 – King River

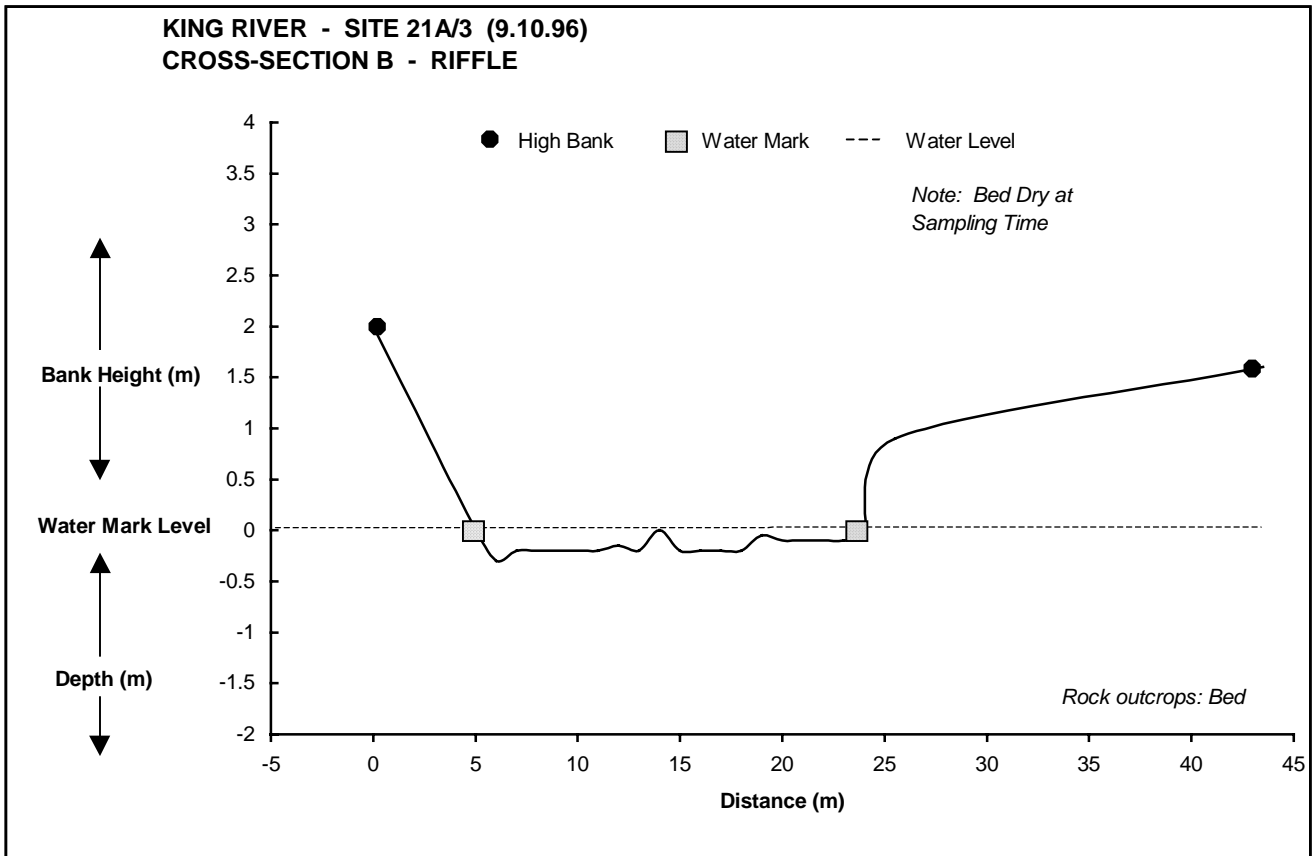
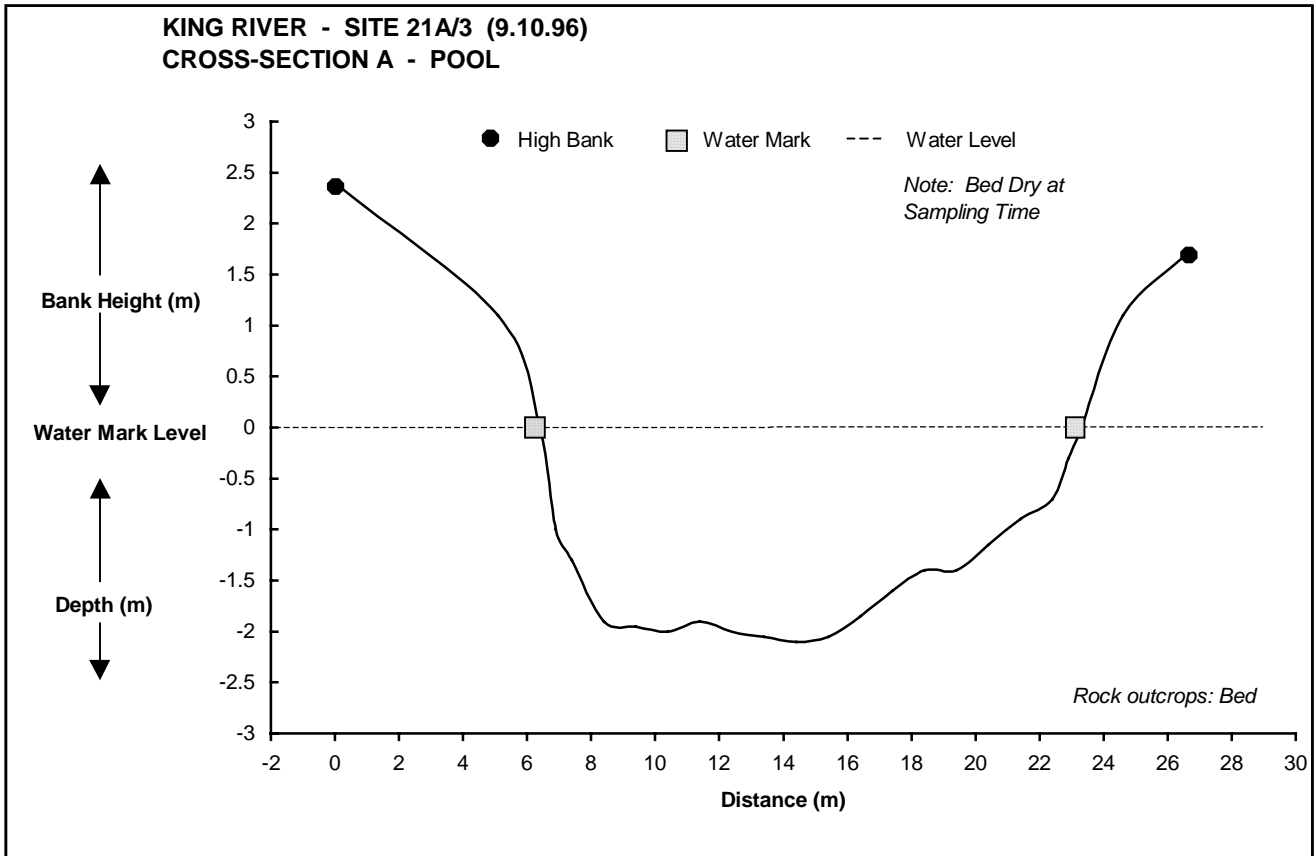
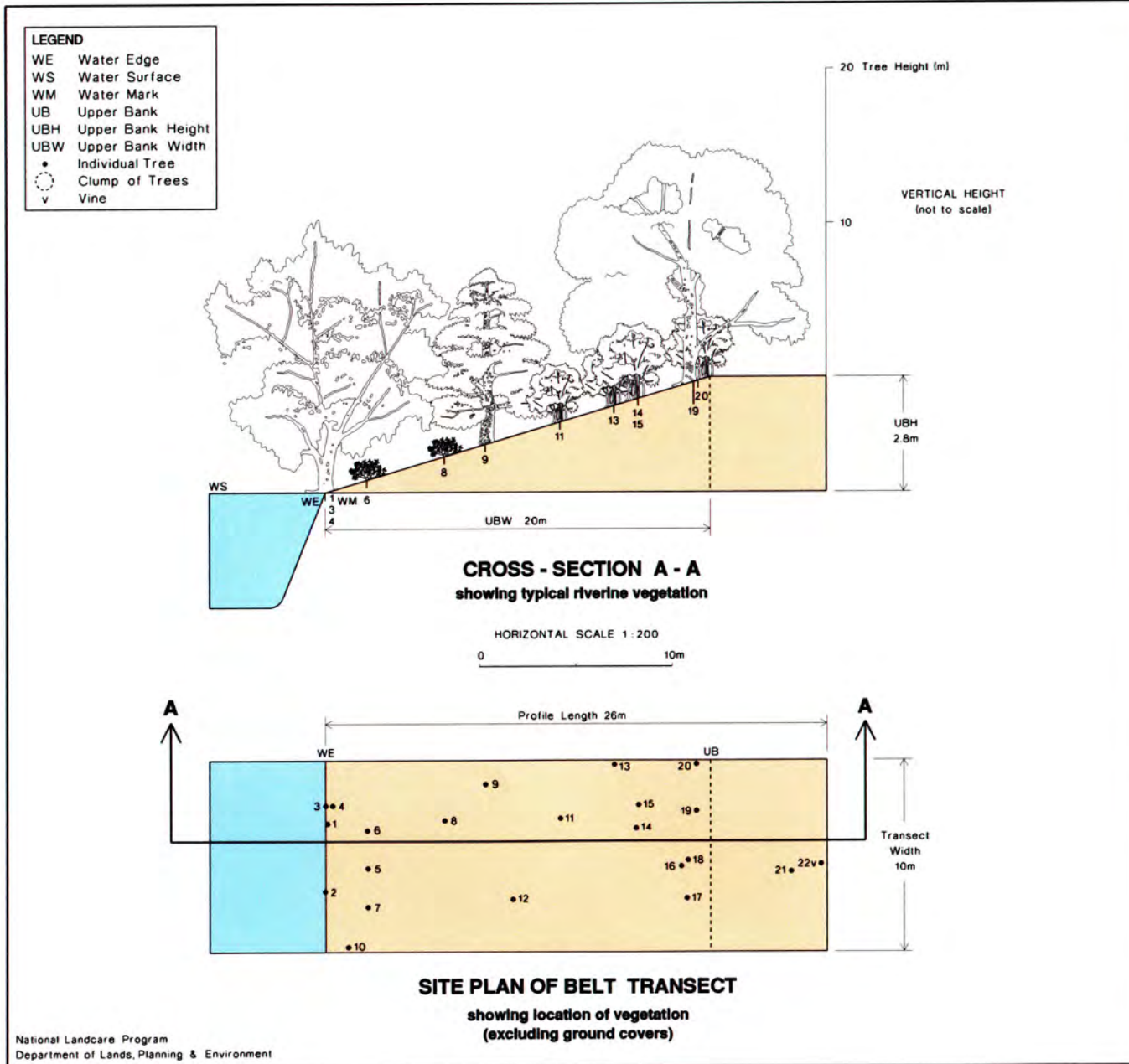


Figure 10.155 Cross-section Surveys for Site 21a/3 – King River



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1-4, 8	1.3-18	<i>Casuarina cunninghamiana</i>
5, 7, 12	2.2-3	<i>Cathormion umbellatum</i>
6	1.4	<i>Flacourtia territorialis</i>
9, 16-18	9.5-12	<i>Nauclea orientalis</i>
10, 11, 13-15, 20	4-5.2	<i>Barringtonia acutangula</i>
19, 21, 22	12.5-16	<i>Lophostemon grandiflorus</i>

OTHER SPECIES LOCATED AT SITE:

- Grasses:** *Chrysopogon fallax*, *Cynodon dactylon*, *Dichanthium fecundum*, *Mnesithea rotboelliioides*, *Panicum mindanaense*
- Shrubs:** *Sida spinosa*
- Tree/Shrub:** *Acacia holoserices*
- Trees:** *Eucalyptus camaldulensis*, *Melaleuca leucadendra*
- Vines:** *Flagellaria indica*

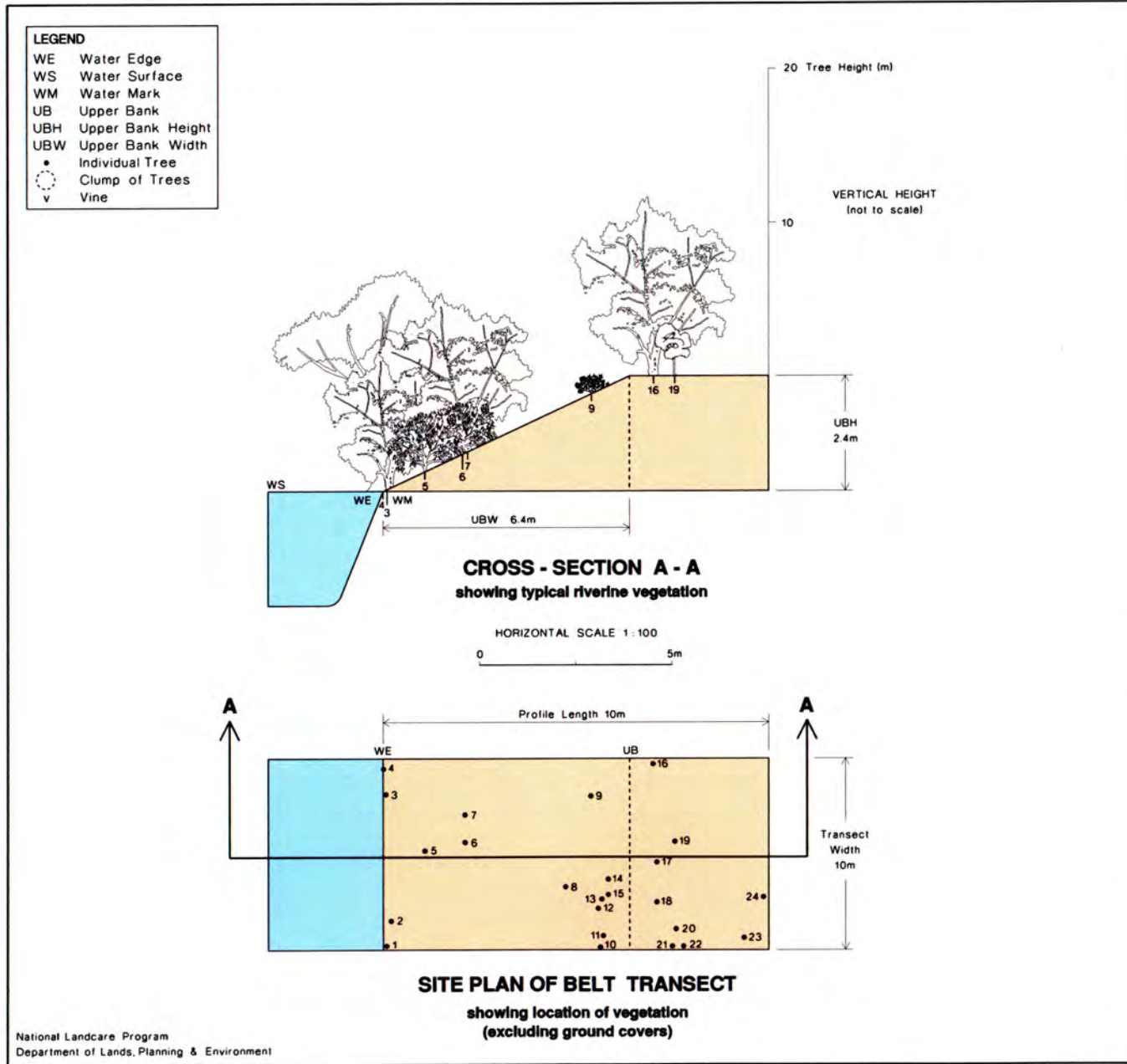
* Exotic species

NOTES

- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
- Cross-section A-A includes all vegetation above the line marked through the belt transect.
- The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
- Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT
RIVERINE VEGETATION PROFILE

KING RIVER	Date 12.10.95
Sub-section 21A Site 1	Figure 10.156



National Landcare Program
Department of Lands, Planning & Environment

TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1, 2, 9	1.3-3	<i>Cathartion umbellatum</i>
3, 7, 16	9.5-12	<i>Casuarina cunninghamiana</i>
4	15	<i>Eucalyptus camaldulensis</i>
5, 6, 11, 18, 21, 22, 24	3-6	<i>Stychnos lucida</i>
8	2.5	<i>Acacia holosericea</i>
10, 23	2-9	<i>Exocarpos latifolius</i>
12, 17, 20	6.5-12	<i>Excoecaria parvifolia</i>
13-15, 19	1.5-3.5	<i>Alatalya hemiglauca</i>

OTHER SPECIES LOCATED AT SITE:

Grasses: *Cynodon dactylon*
Heteropogon contortus
Mnesithea rotibollioides

Shrubs: *Grewia retusifolia*

Trees: *Metaleuca argentea*
Terminalia platyphylla

Vines: **Passiflora foetida*

*Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 - Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

KING RIVER	Date 9.10.96
Sub-section 21A Site 3	Figure 10.157

Table 10.56 Major Vegetation Species Recorded at Site 2 on King River located within Sub-section 21a

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Site Where Recorded (Sub-section No. / Site No.)
<i>Acacia holosericea</i>	Low tree / shrub		21a/2
<i>Casuarina cunninghamiana</i>	Tree		21a/2
<i>Cathormion umbellatum</i>	Low tree / shrub		21a/2
<i>Cynodon dactylon</i>	Grass		21a/2
<i>Eragrostis tenellula</i>	Grass		21a/2
<i>Eucalyptus camaldulensis</i>	Tree		21a/2
<i>Flacourtia territorialis</i>	Low tree / shrub		21a/2
<i>Glinus oppositifolius</i>	Forb		21a/2
<i>Heliotropium ovalifolium</i>	Forb		21a/2
<i>Hibiscus meraukensis</i>	Forb		21a/2
<i>Melaleuca argentea</i>	Tree		21a/2
<i>Nelsonia campestris</i>	Forb		21a/2
<i>Pandanus aquaticus</i>	Tree		21a/2
<i>Passiflora foetida</i>	Forb	E	21a/2
<i>Terminalia platyphylla</i>	Tree		21a/2

* Declared Noxious Weed within the Northern Territory



Riparian vegetation along King River at Site 21a/2 (above Victoria Highway crossing)

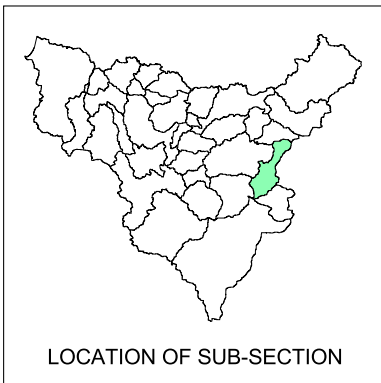
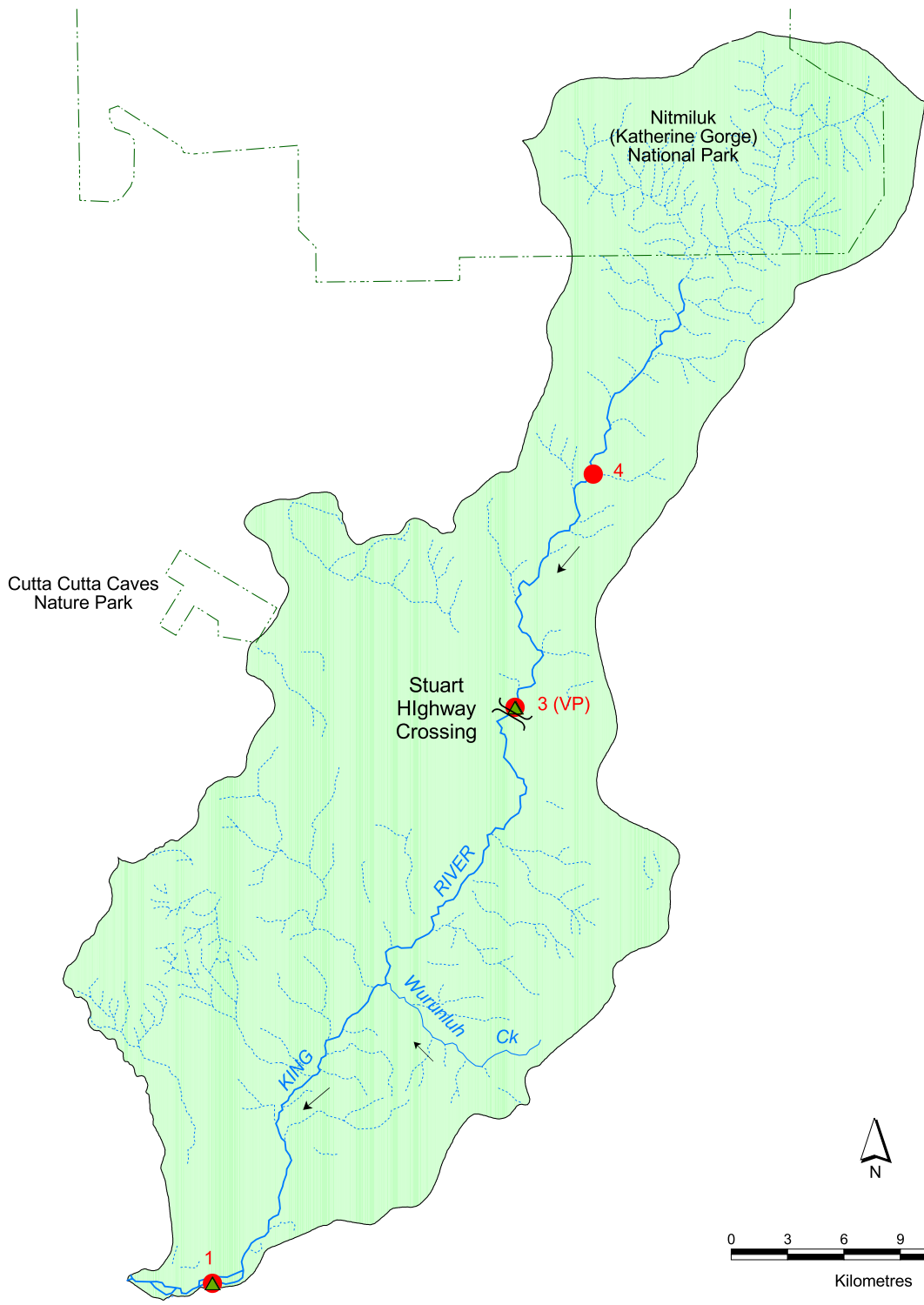
10.15.2 King River – Above Dry River

Sub-section 21b includes the catchment area of King River, upstream of the junction with Dry River. Of the three sites located on King River within this sub-section, two sites have been fully assessed (refer Table 10.57 and Map 56).

Table 10.57 Summary of Survey Information for Sub-section 21b – King River Above Dry River

Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
1	King River	A	Riffle	√		
		B	Pool	√		
3	King River	A	Pool	√	√	
		B	Riffle	√		
4	King River					√





LEGEND

- 5 Site
- ▲ Sample Point
- (VP) Vegetation Profile
- Longitudinal Profile Survey
- River
- Creek
- ← Flow direction

 TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

KING RIVER
Above Dry River

SUB-SECTION 21b

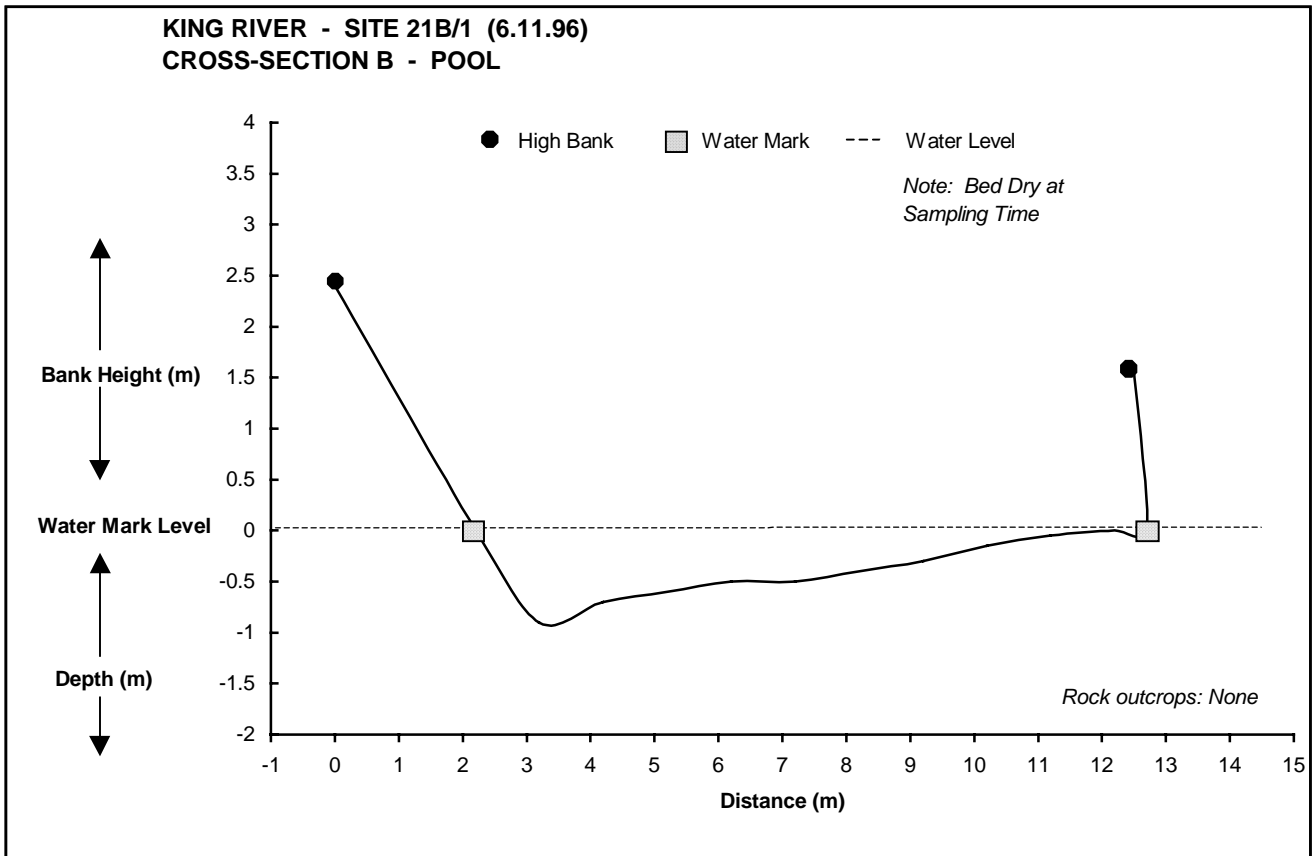
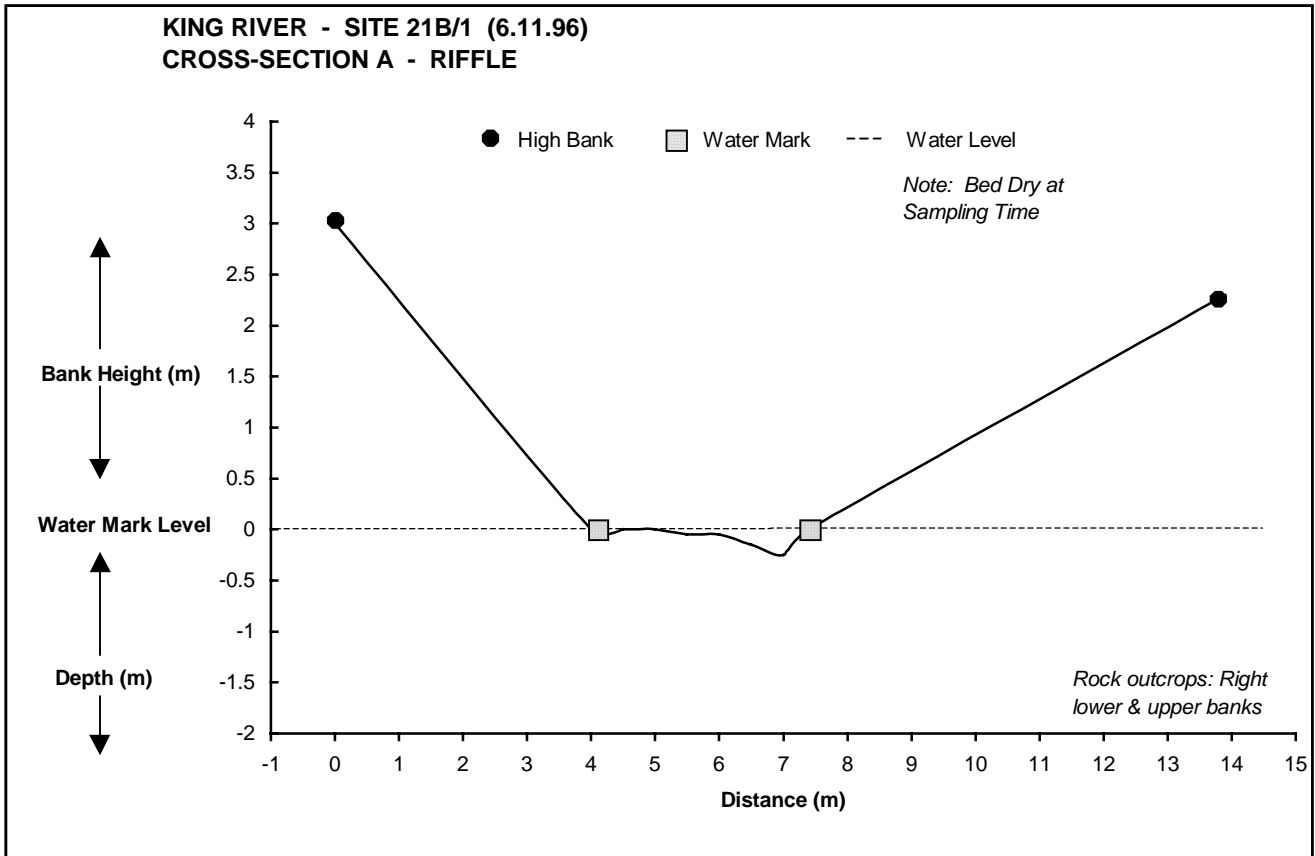


Figure 10.158 Cross-section Surveys for Site 21b/1 – King River

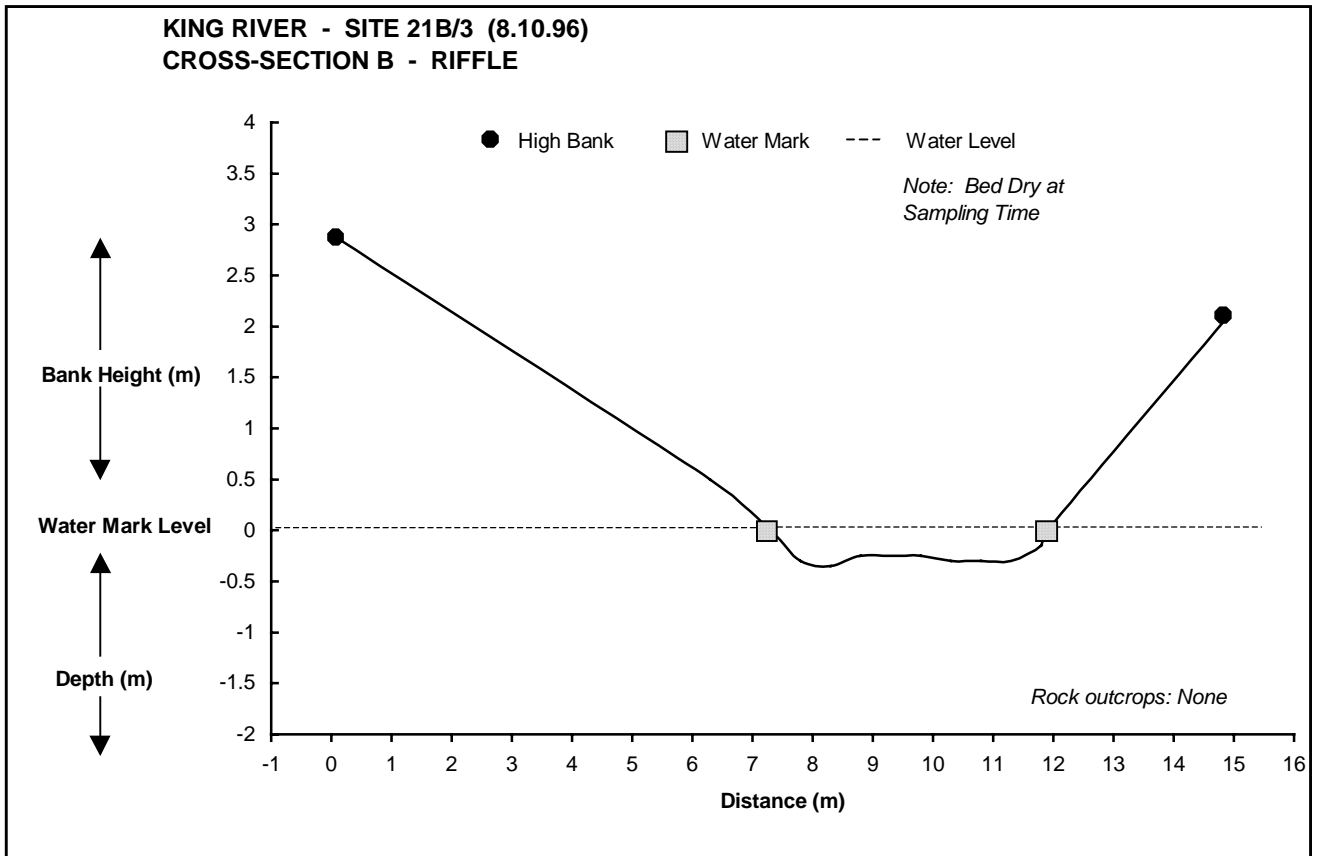
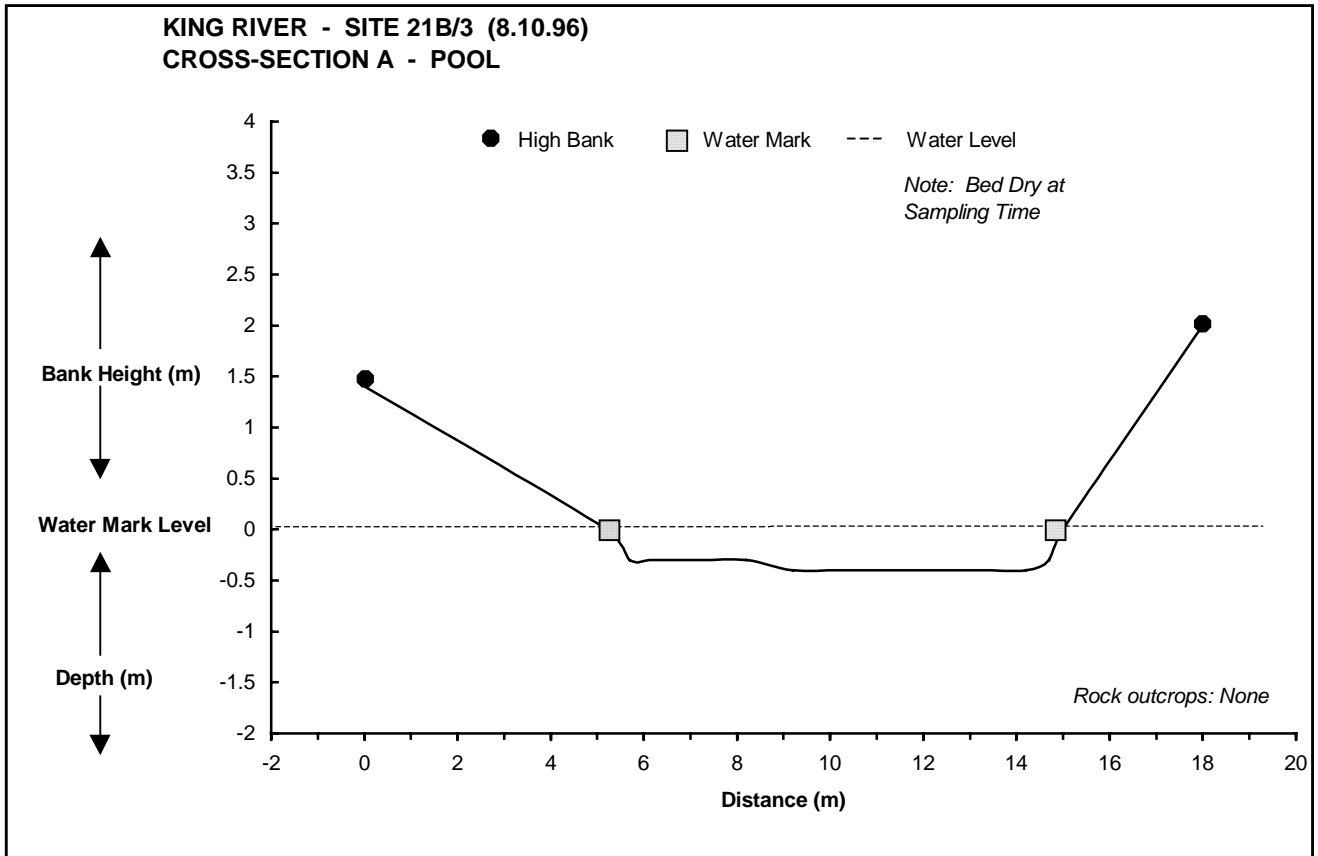
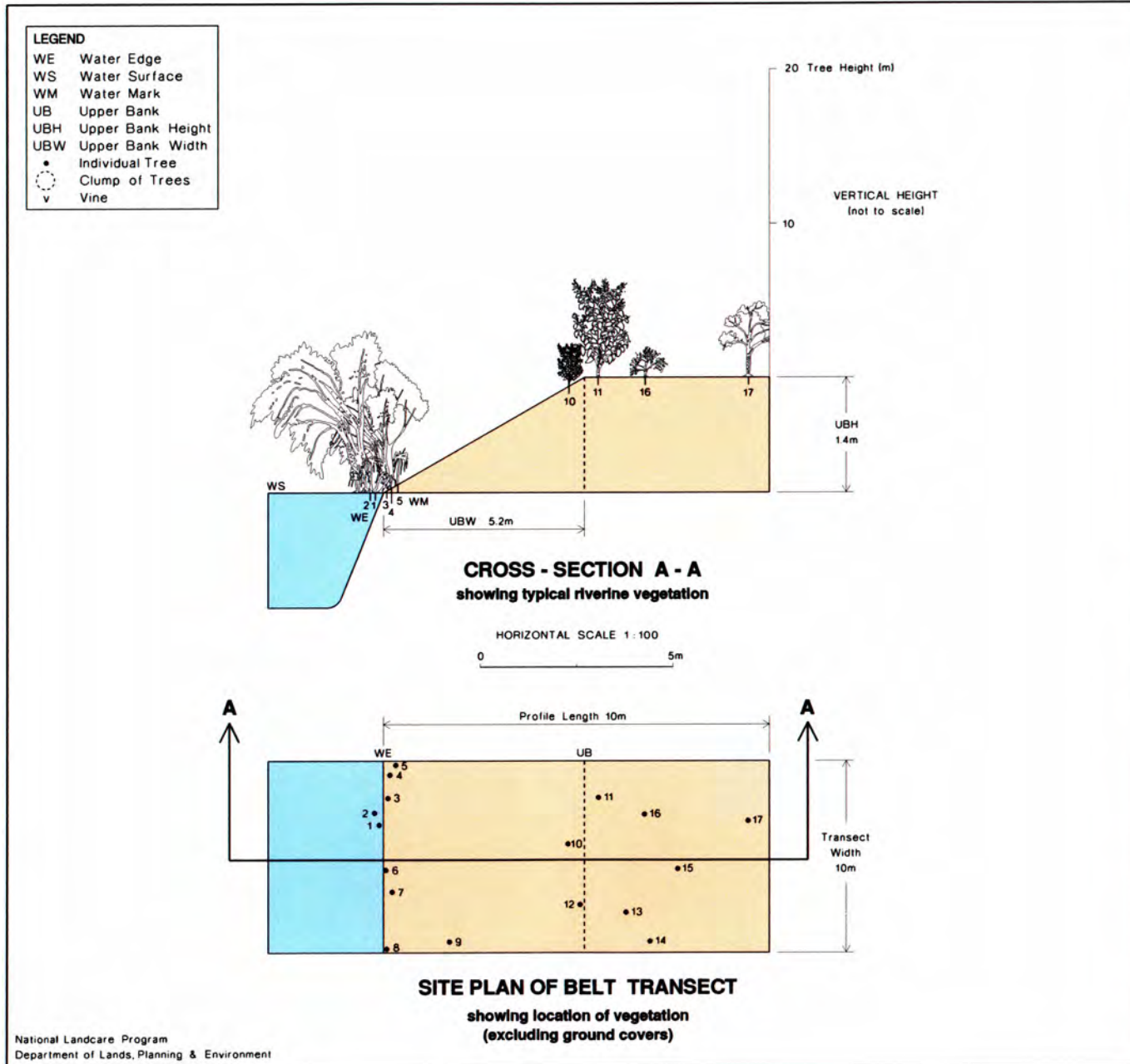


Figure 10.159 Cross-section Surveys for Site 21b/3 – King River



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1, 5, 7, 8	1.3-3	<i>Pandanus aquaticus</i>
2, 3	7-11	<i>Melaleuca leucadendra</i>
4, 6, 12	4-15	<i>Eucalyptus camaldulensis</i>
9	5	<i>Acacia holosericea</i>
10, 11, 13	2.2-6.5	<i>Acacia dimidiata</i>
14, 15	3.5-4	<i>Grevillea pteridifolia</i>
16, 17	2-5	<i>Eucalyptus clavigera</i> or <i>Eucalyptus latifolia</i>

OTHER SPECIES LOCATED AT SITE:

- Grasses:** *Chrysopogon lallax*
Ecitrosia leporina
Heteropogon contortus
Sorghum sp.
- Trees:** *Pandanus spiralis*
- Vines:** *Passiflora foetida*

* Exotic species

NOTES

- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
- Cross-section A-A includes all vegetation above the line marked through the belt transect.
- The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
- Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

KING RIVER	Date 8.10.96
Sub-section 21B Site 3	Figure 10.160

Table 10.58 Major Vegetation Species Recorded at Site 1 on King River located within Sub-section 21b

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Site Where Recorded (Sub-section No. / Site No.)
<i>Acacia holosericea</i>	Low tree / shrub		21b/1
<i>Aristida holathera</i>	Grass		21b/1
<i>Dichanthium fecundum</i>	Grass		21b/1
<i>Eragrostis cumingii</i>	Grass		21b/1
<i>Eucalyptus camaldulensis</i>	Tree		21b/1
<i>Eulalia aurea</i>	Grass		21b/1
<i>Melaleuca argentea</i>	Tree		21b/1
<i>Mnesithea rottboellioides</i>	Grass		21b/1
<i>Pandanus spiralis</i>	Tree		21b/1
<i>Passiflora foetida</i>	Forb	E	21b/1
<i>Sporobolus pulchellus</i>	Grass		21b/1

* Declared Noxious Weed within the Northern Territory



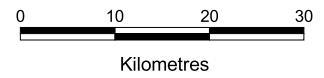
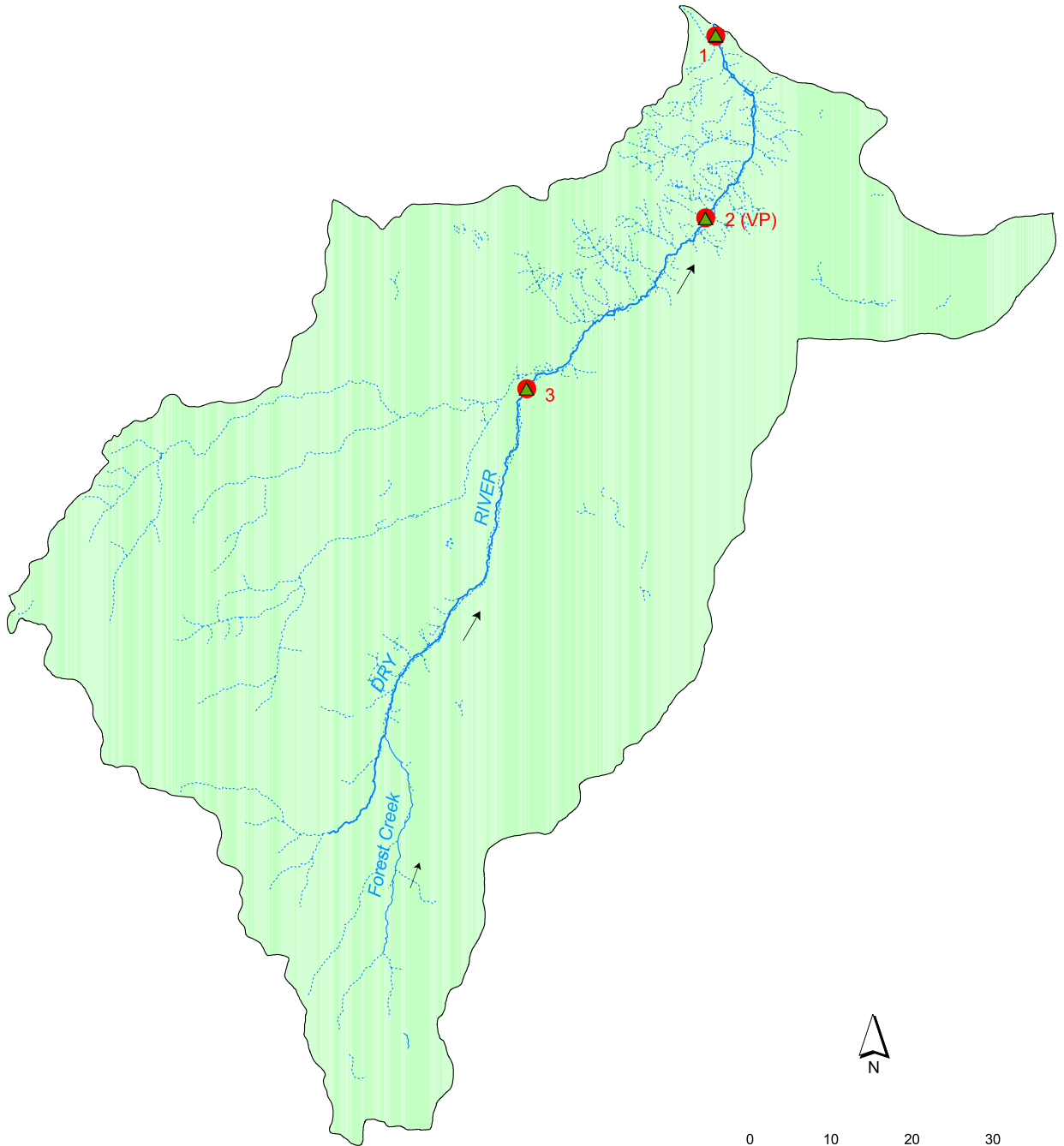
10.15.3 Dry River

Sub-section 22 includes the catchment area of Dry River. Three sites, located on Dry River, have been fully assessed within this sub-section (refer Table 10.59 and Map 57).

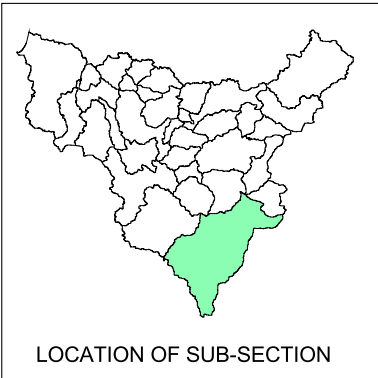
Table 10.59 Summary of Survey Information for Sub-section 22 – Dry River

Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
1	Dry River	A	Riffle	√		
		B	Pool	√		
2	Dry River	A	Pool	√	√	
		B	Riffle	√		
3	Dry River	A	Pool	√		
		B	Run	√		





Area - 7,208 km²



LEGEND	
● 5	Site
▲	Sample Point
(VP)	Vegetation Profile
— (Yellow)	Longitudinal Profile Survey
— (Blue)	River
— (Light Blue)	Creek
←	Flow direction



TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

DRY RIVER

SUB-SECTION 22

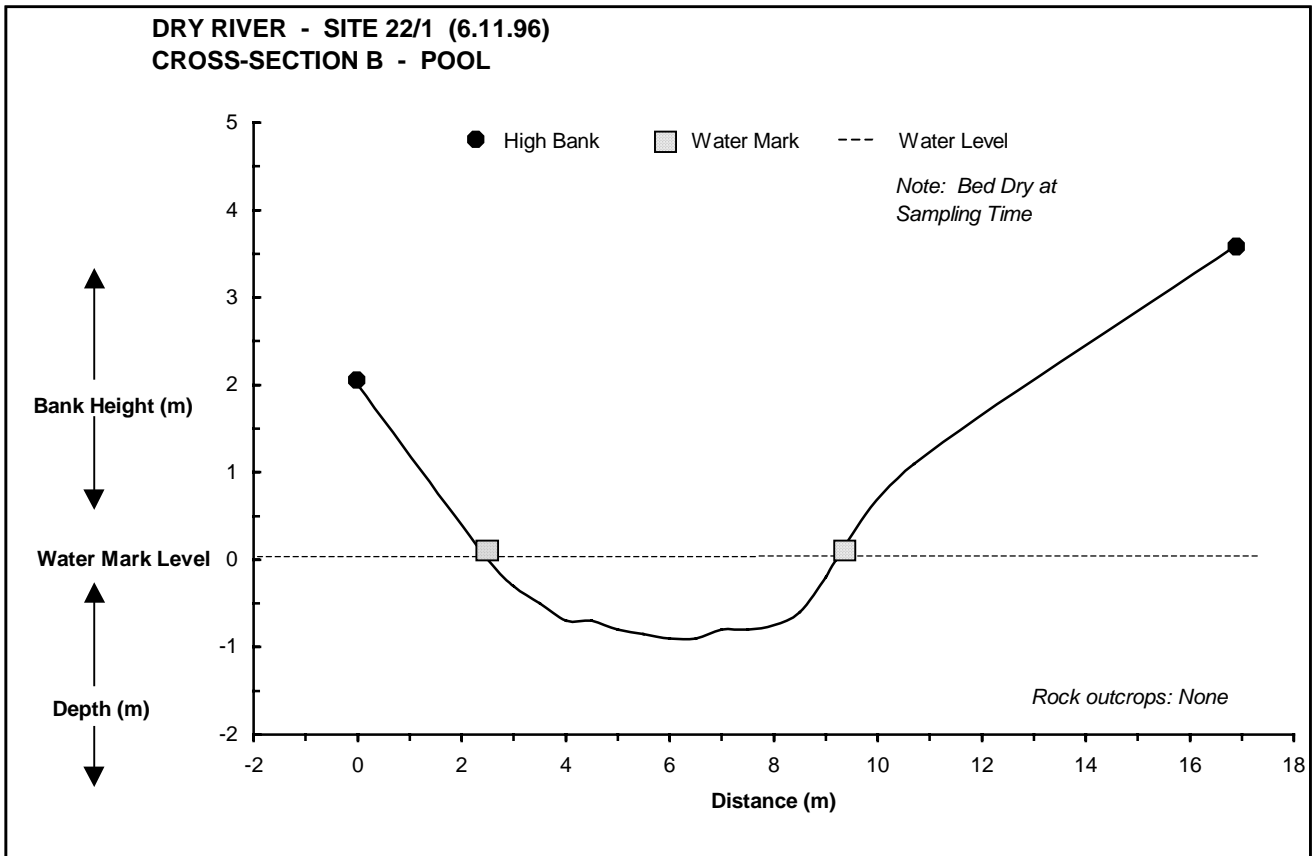
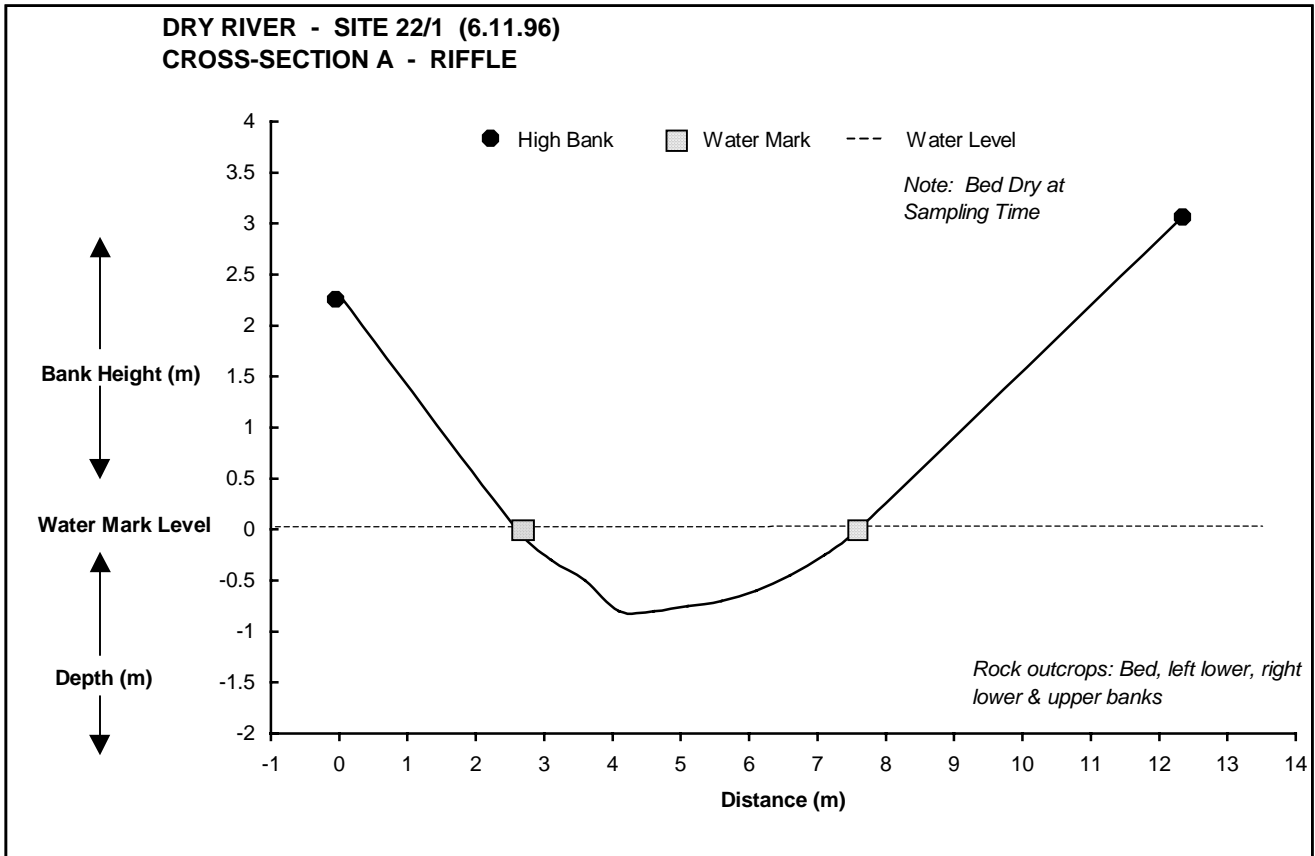


Figure 10.161 Cross-section Surveys for Site 22/1 – Dry River

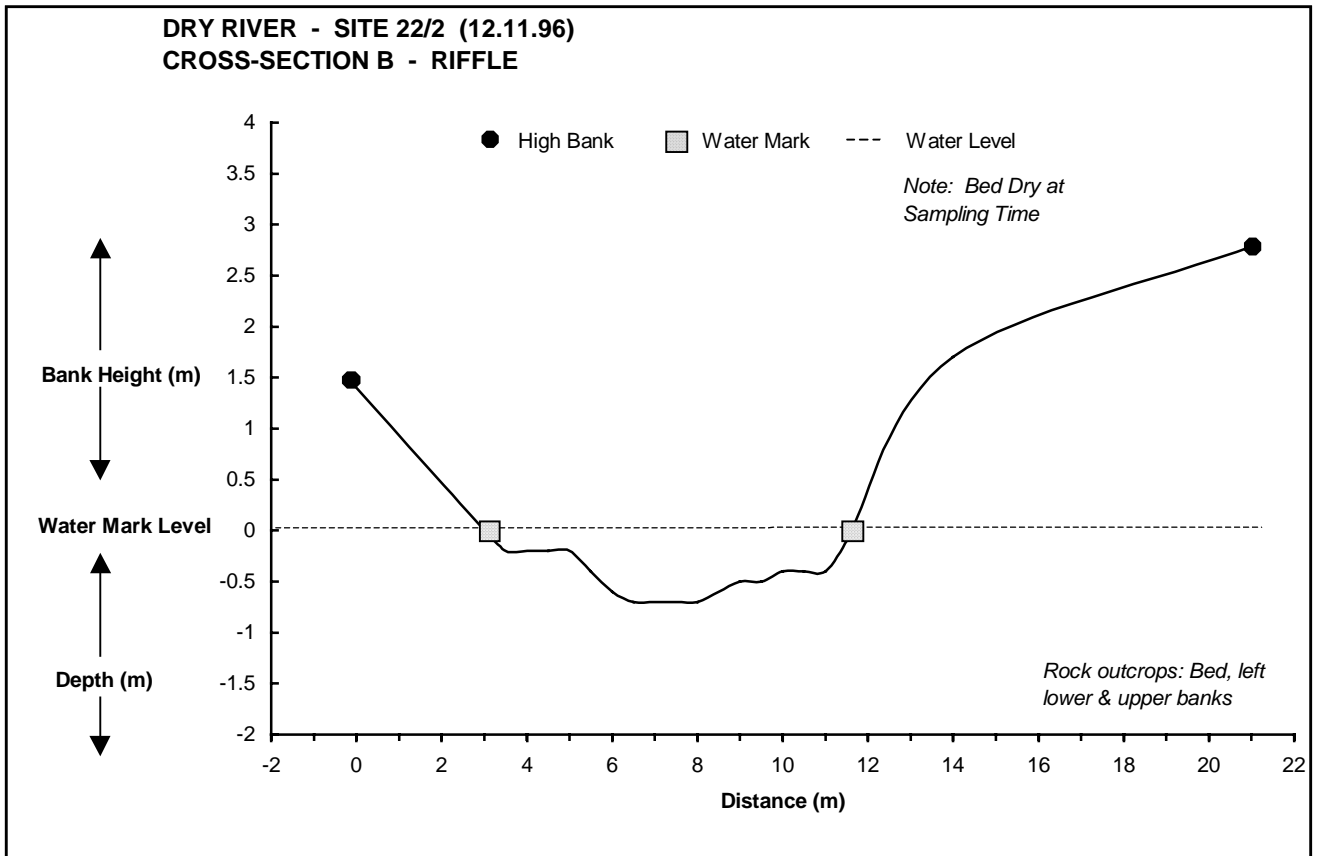
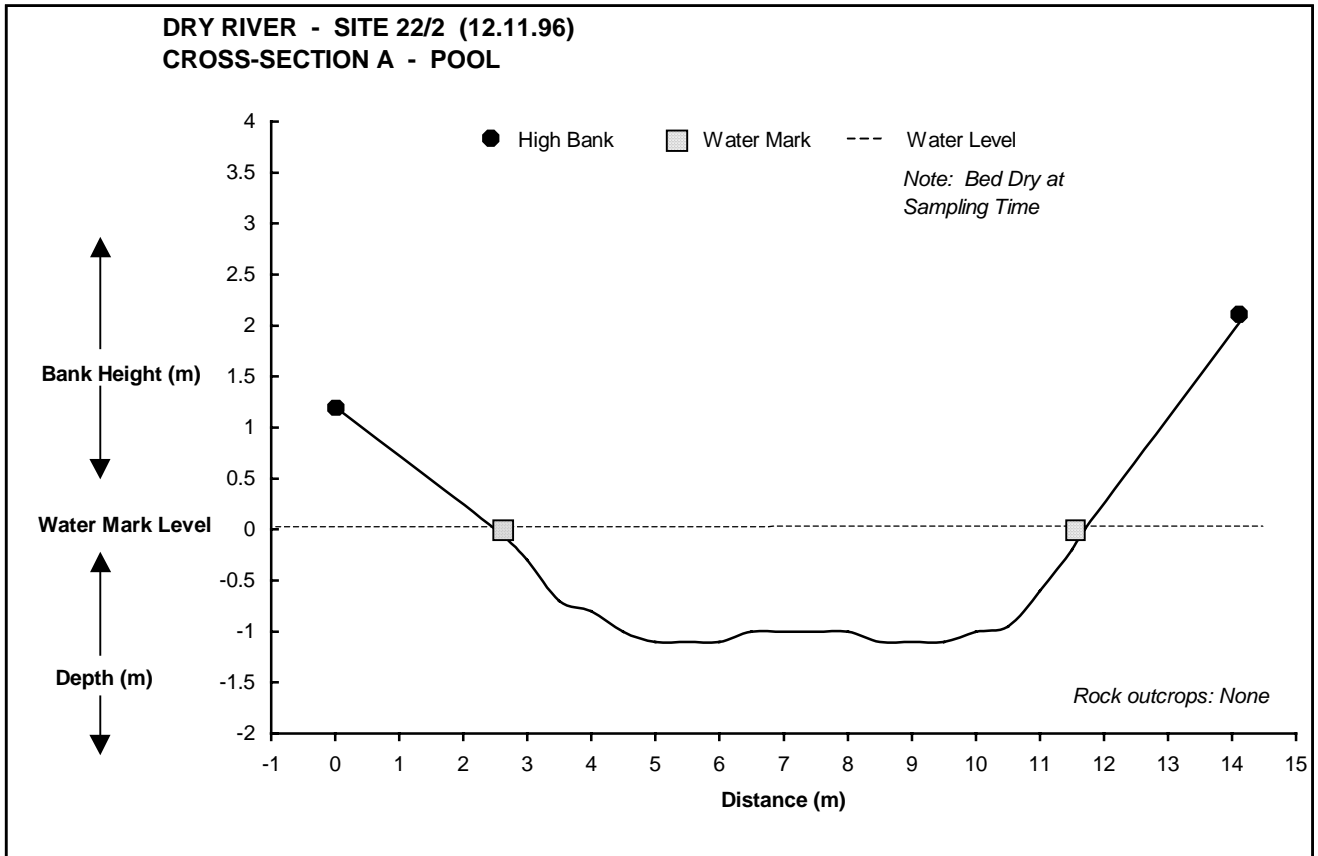


Figure 10.162 Cross-section Surveys for Site 22/2 – Dry River

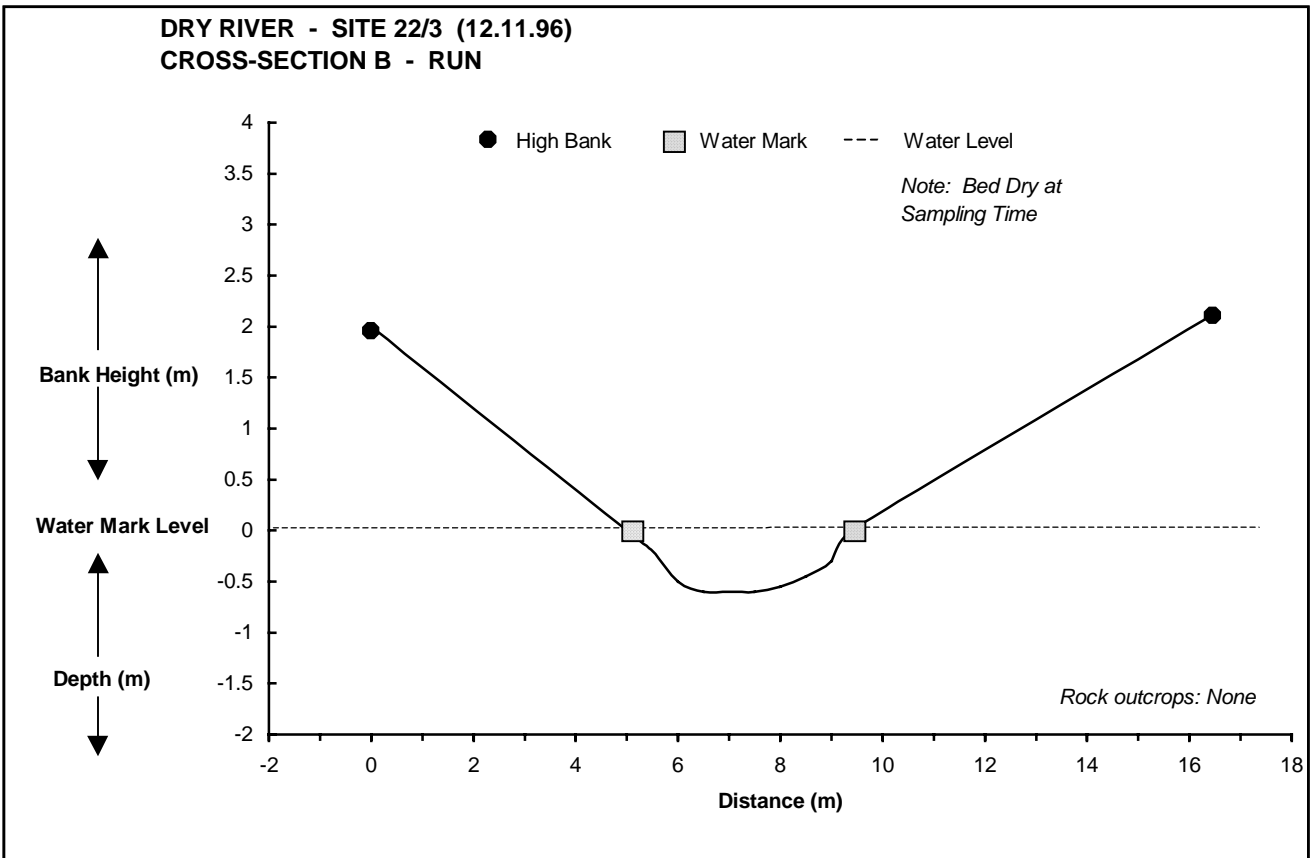
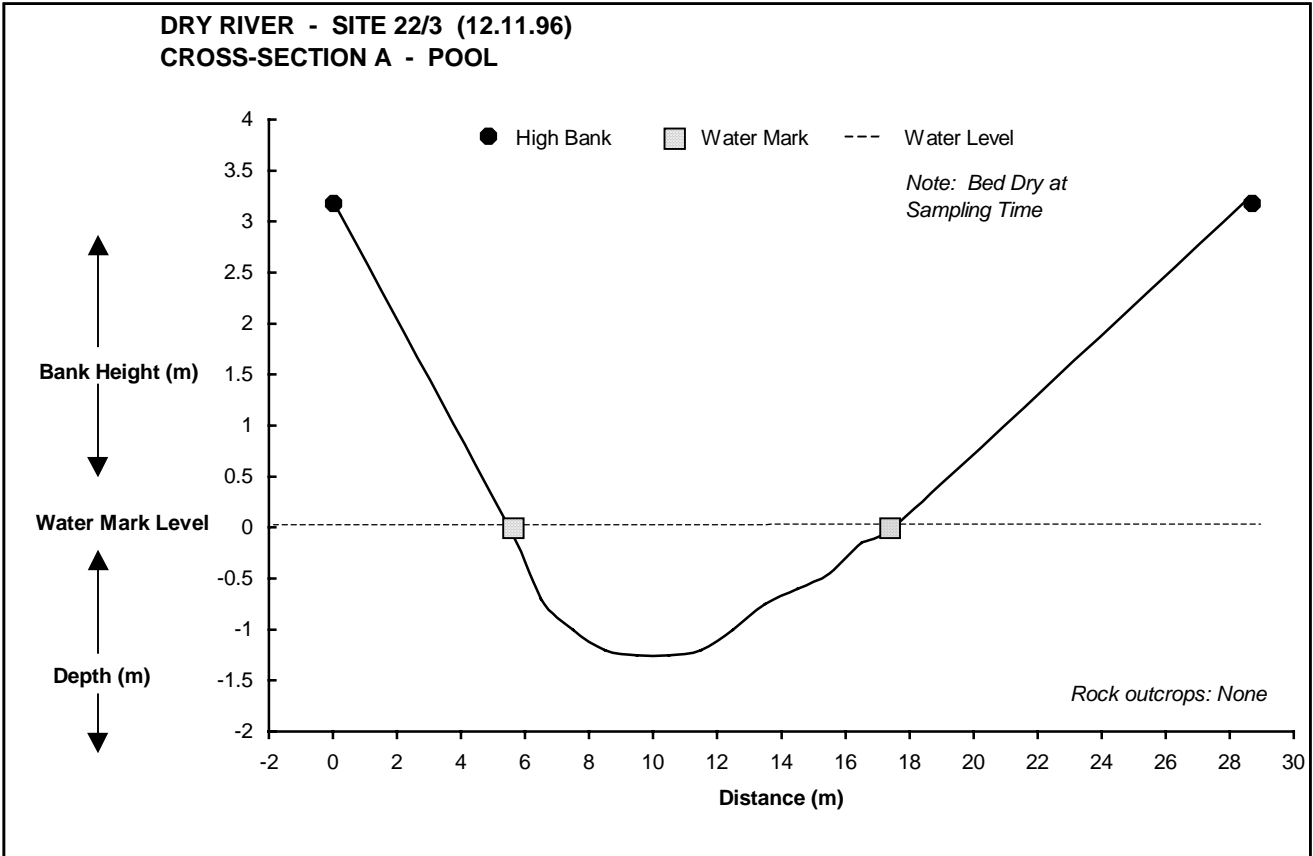
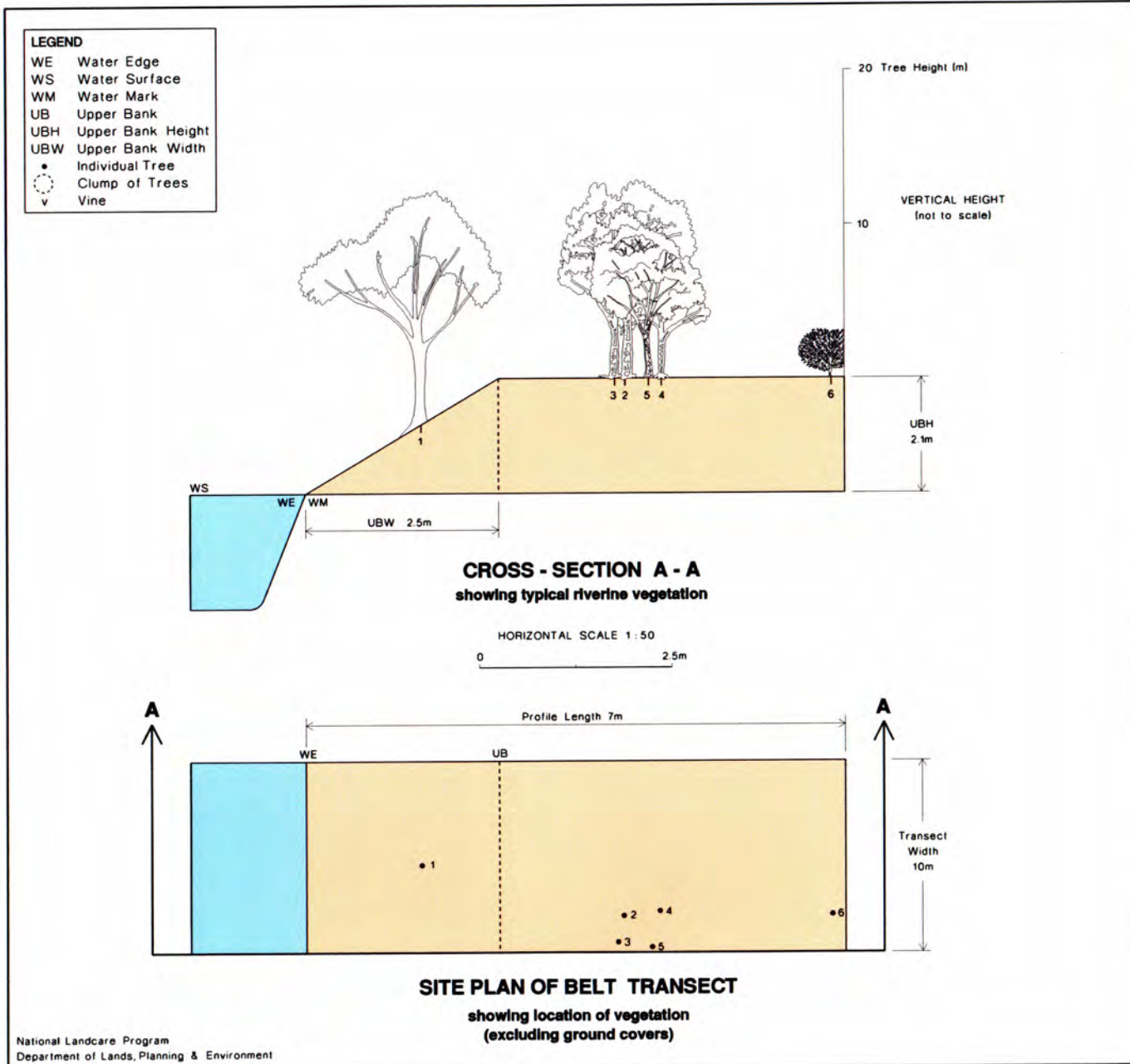


Figure 10.163 Cross-section Surveys for Site 22/3 – Dry River



National Landcare Program
Department of Lands, Planning & Environment

TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1	16	<i>Eucalyptus camaldulensis</i>
2, 3	11-13	<i>Eucalyptus papuana</i>
4	8	<i>Eucalyptus clavigera</i>
5	10	<i>Terminalia platyphyla</i>
6	3.2	<i>Acacia holosericea</i>

OTHER SPECIES LOCATED AT SITE:

Forbs: *Nelsonia campestris*

Grasses: *Cynodon dactylon*
Eulalia aurea
Mnesithea rotboellioides

Shrubs: *Grewia retusifolia*
Phyllanthus reticulatus

Tree/Shrubs: *Antidesma ghaesembilla*
Melaleuca viridiflora

Trees: *Excoecaria parvifolia*

* Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 - Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

DRY RIVER	Date 12.11.96
Sub-section 22 Site 2	Figure 10.164

Table 10.60 Major Vegetation Species Recorded at Sites 1 and 3 on Dry River located within Sub-section 22

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Sites Where Recorded (Sub-section No. / Site No.)
<i>Acacia holosericea</i>	Low tree / shrub		22/3
<i>Alternanthera nodiflora</i>	Forb		22/1
<i>Antidesma ghaesembilla</i>	Low tree / shrub		22/3
<i>Atalaya hemiglauca</i>	Low tree / shrub		22/1
<i>Casuarina cunninghamiana</i>	Tree		22/1
<i>Cathormion umbellatum</i>	Low tree / shrub		22/1
<i>Chrysopogon fallax</i>	Grass		22/1
<i>Cynodon dactylon</i>	Grass		22/3
<i>Eucalyptus camaldulensis</i>	Tree		22/3
<i>Eucalyptus microtheca</i>	Tree		22/1
<i>Eulalia aurea</i>	Grass		22/3
<i>Excoecaria parvifolia</i>	Tree		22/1, 22/3
<i>Lophostemon grandiflorus</i>	Tree		22/1
<i>Melaleuca clavigera</i>	Tree		22/3
<i>Melaleuca viridiflora</i>	Low tree / shrub		22/3
<i>Melochia pyramidata</i>	Forb	E	22/1
<i>Mnesithea rottboellioides</i>	Grass		22/3
<i>Paspalidium distans</i>	Grass		22/1
<i>Passiflora foetida</i>	Forb	E	22/1
<i>Strychnos lucida</i>	Tree		22/1
<i>Terminalia platyphylla</i>	Tree		22/3

* Declared Noxious Weed within the Northern Territory



View along reach at Site 22/2 on Dry River (downstream of Gauge Station 8140011)



View along reach at Site 22/3 on Dry River

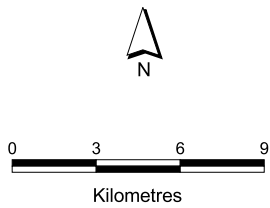
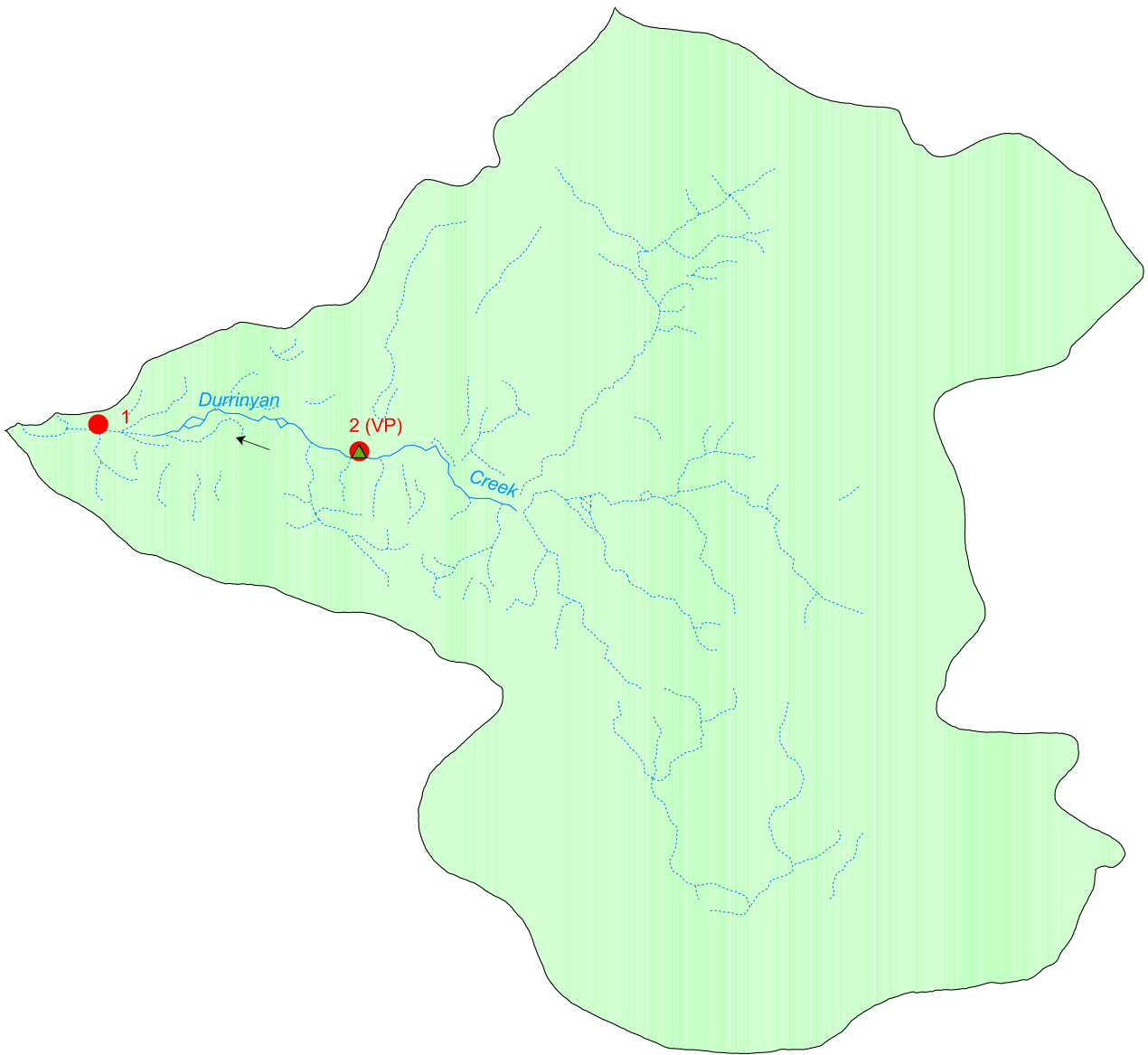
10.15.4 Durrinyan Creek

Sub-section 23 includes the catchment area of Durrinyan Creek. Of the two sites located in this sub-section, one site was fully assessed (refer Table 10.61 and Map 58).

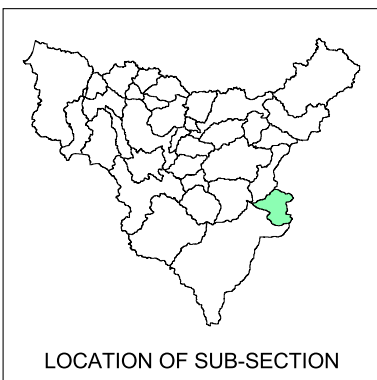
Table 10.61 Summary of Survey Information for Sub-section 23 – Durrinyan Creek

Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
1	Durrinyan Creek					√
2	Durrinyan Creek	A	Pool	√	√	
		B	Run	√		

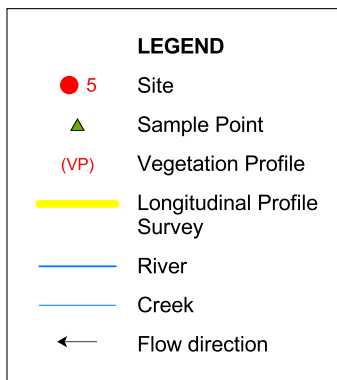




Area - 989 km²



LOCATION OF SUB-SECTION



DURRINYAN CREEK

SUB-SECTION 23

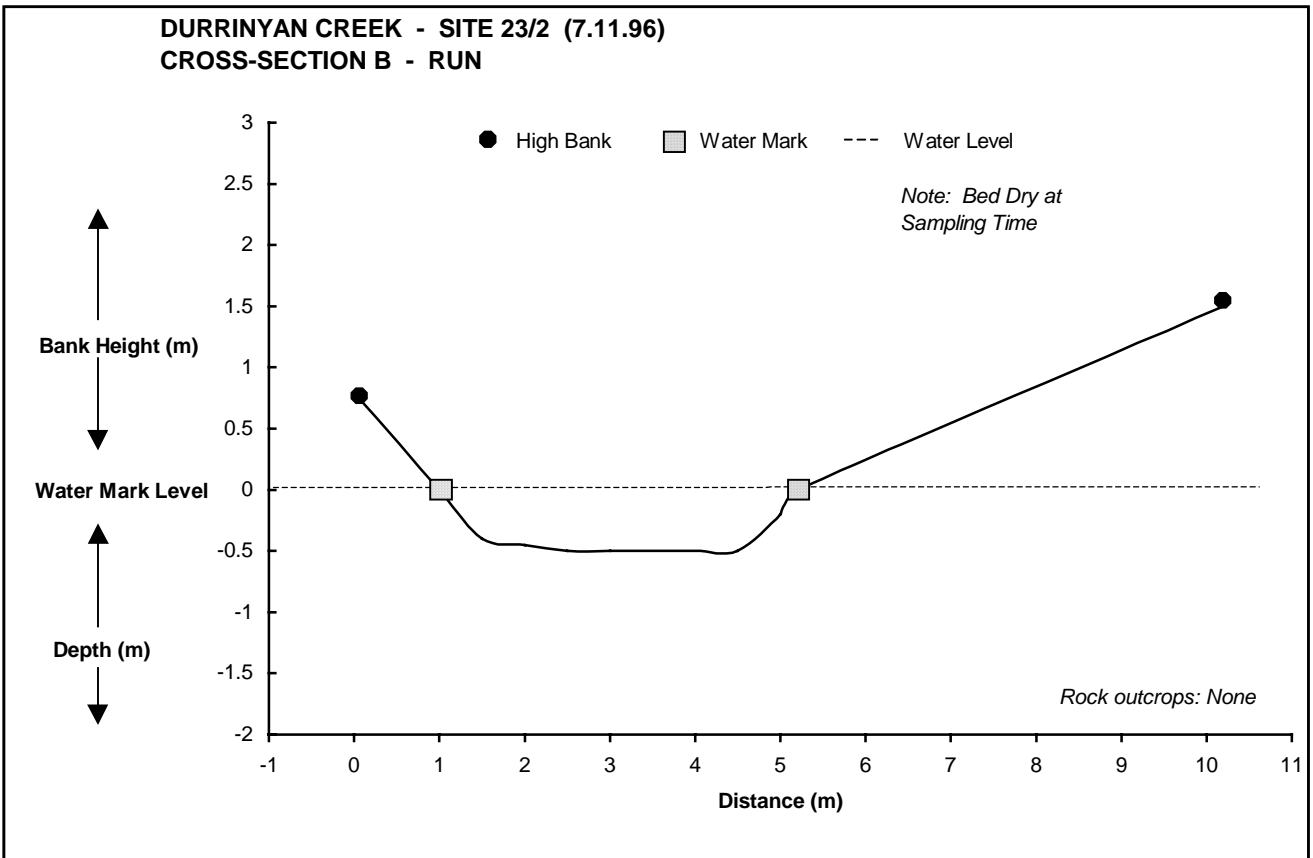
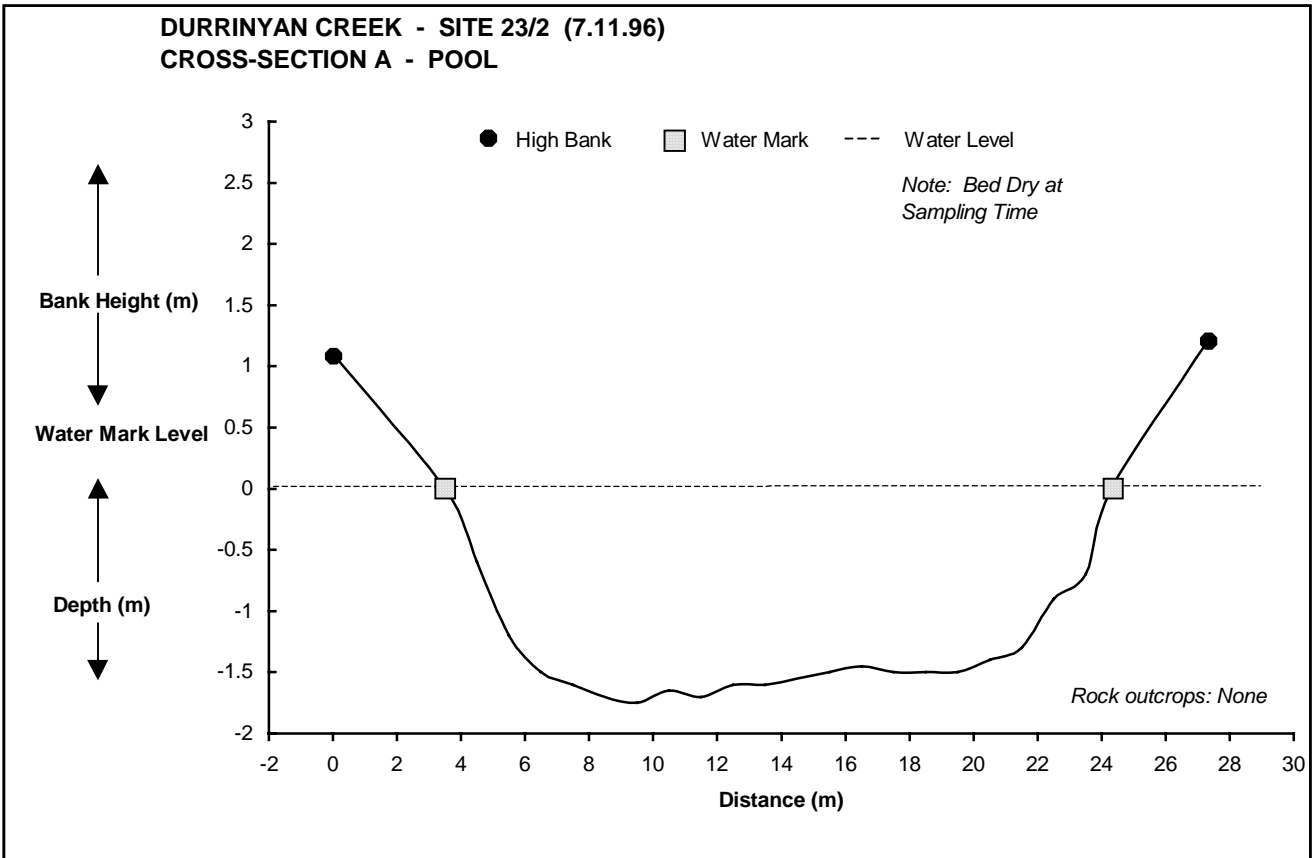
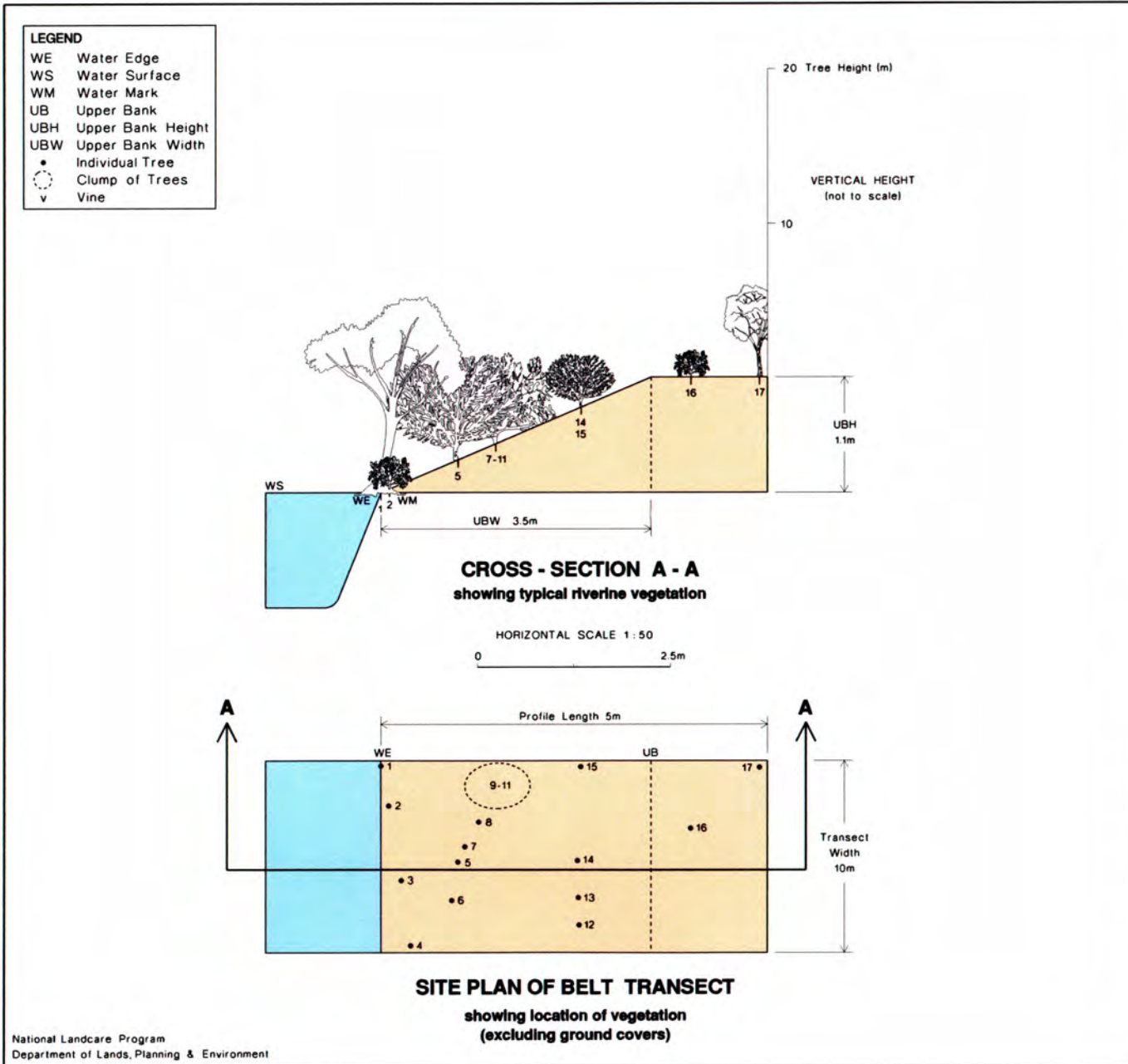


Figure 10.165 Cross-section Surveys for Site 23/2 – Durrinyan Creek



National Landcare Program
Department of Lands, Planning & Environment

TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1	13	<i>Eucalyptus camaldulensis</i>
2, 7-11, 16	1.8-7	<i>Alphitonia excelsa</i>
3, 5, 6, 12-15	1.7-7	<i>Acacia holosericea</i>
4, 17	6-12	<i>Terminalia platyphylla</i>

OTHER SPECIES LOCATED AT SITE:

Forbs: *Glinus lotoides*

Grasses: *Dichanthium fecundum*
Eragrostis speciosa
Eulalia aurea
Mnesithea rotibollioides

Shrubs: *Grewia retusifolia*

Tree/Shrubs: *Atalaya hemiglauca*

• Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 - Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

DURRINYAN CREEK	Date 7.11.96
Sub-section 23 Site 2	Figure 10.166

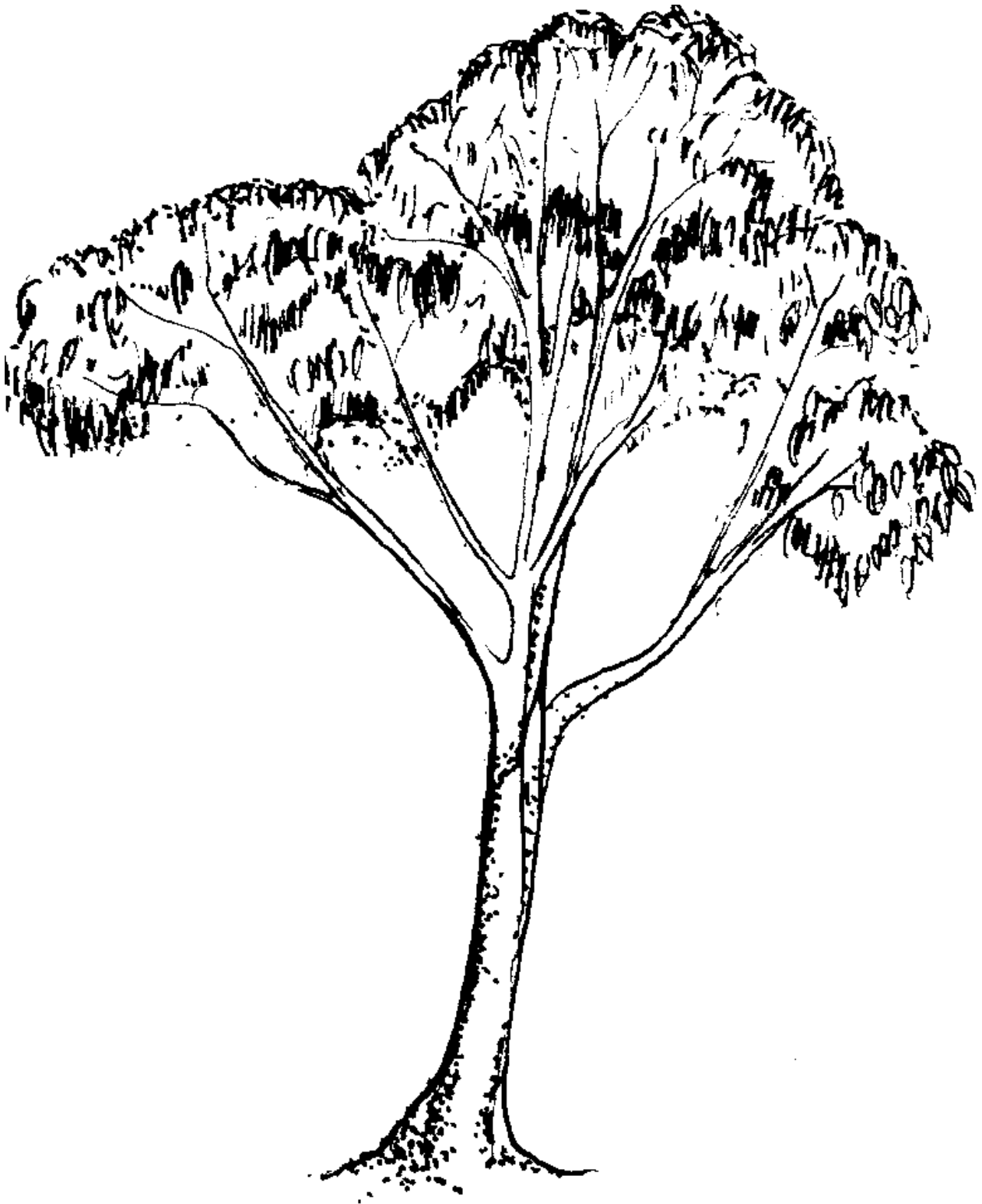
Table 10.62 Major Vegetation Species Recorded at Site 1 on Durrinyan Creek located within Sub-section 23

Plant Name – <i>Genus species</i>	Structural Type	Exotic (E) / Noxious (N)*	Site Where Recorded (Sub-section No. / Site No.)
<i>Eucalyptus microtheca</i>	Tree		23/1
<i>Eulalia aurea</i>	Grass		23/1
<i>Mnesithea rottboellioides</i>	Grass		23/1

* Declared Noxious Weed within the Northern Territory



View along reach on Durrinyan Creek at Site 23/2



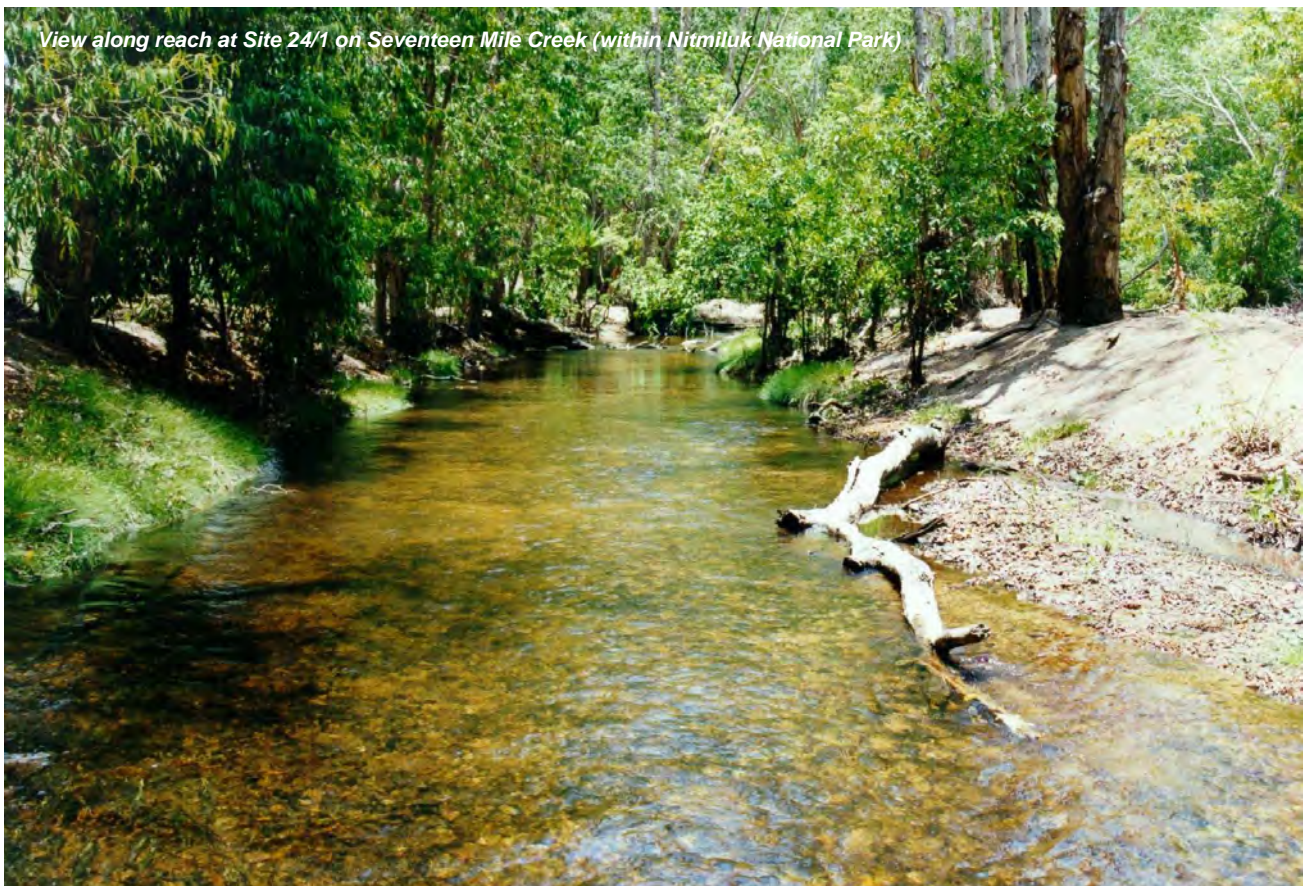
Eucalyptus camaldulensis

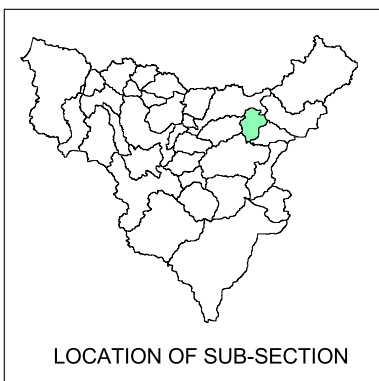
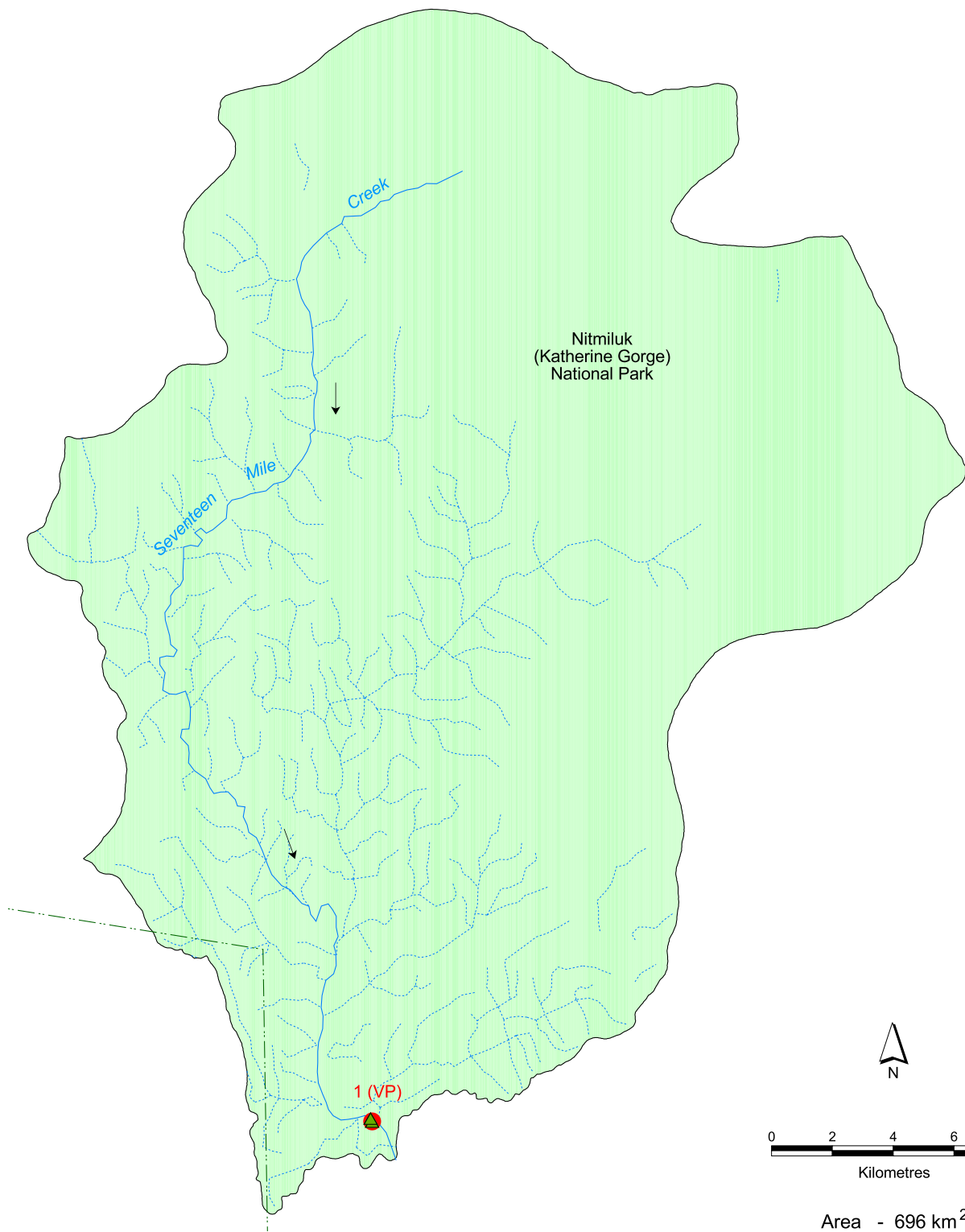
10.16 Seventeen Mile Creek

Sub-section 24 includes the catchment area of Seventeen Mile Creek. One site was fully assessed within this sub-section (refer Table 10.63 and Map 59).

Table 10.63 Summary of Survey Information for Sub-section 24 – Seventeen Mile Creek

Site Number	Tributary Name	Sample Point Letter	Habitat Type	Cross-Section Survey	Vegetation Profile	Photographic Site
1	Seventeen Mile Creek	A	Riffle	√	√	
		B	Pool	√		





LEGEND	
● 5	Site
▲	Sample Point
(VP)	Vegetation Profile
—	Longitudinal Profile Survey
—	River
—	Creek
←	Flow direction

 TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

**SEVENTEEN
MILE CREEK**
SUB-SECTION 24

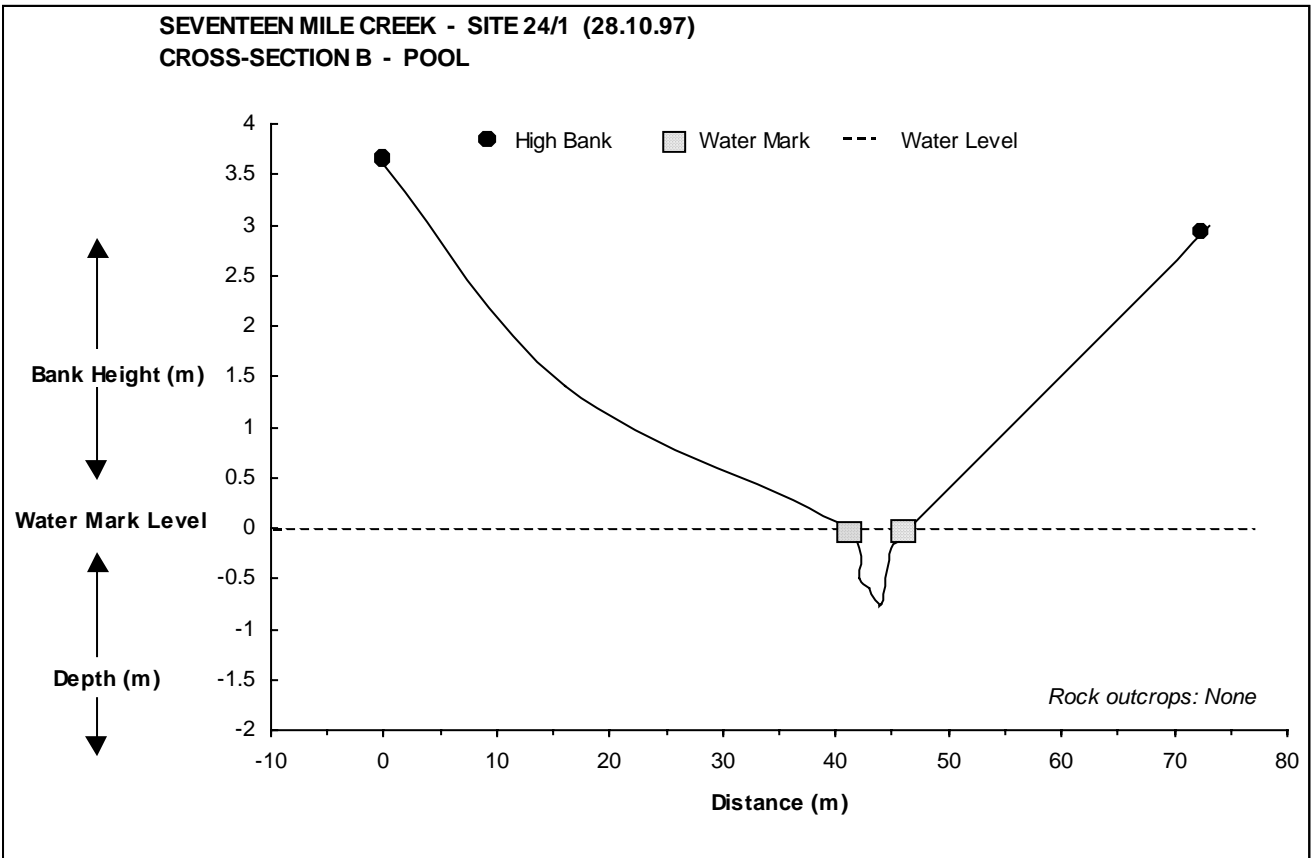
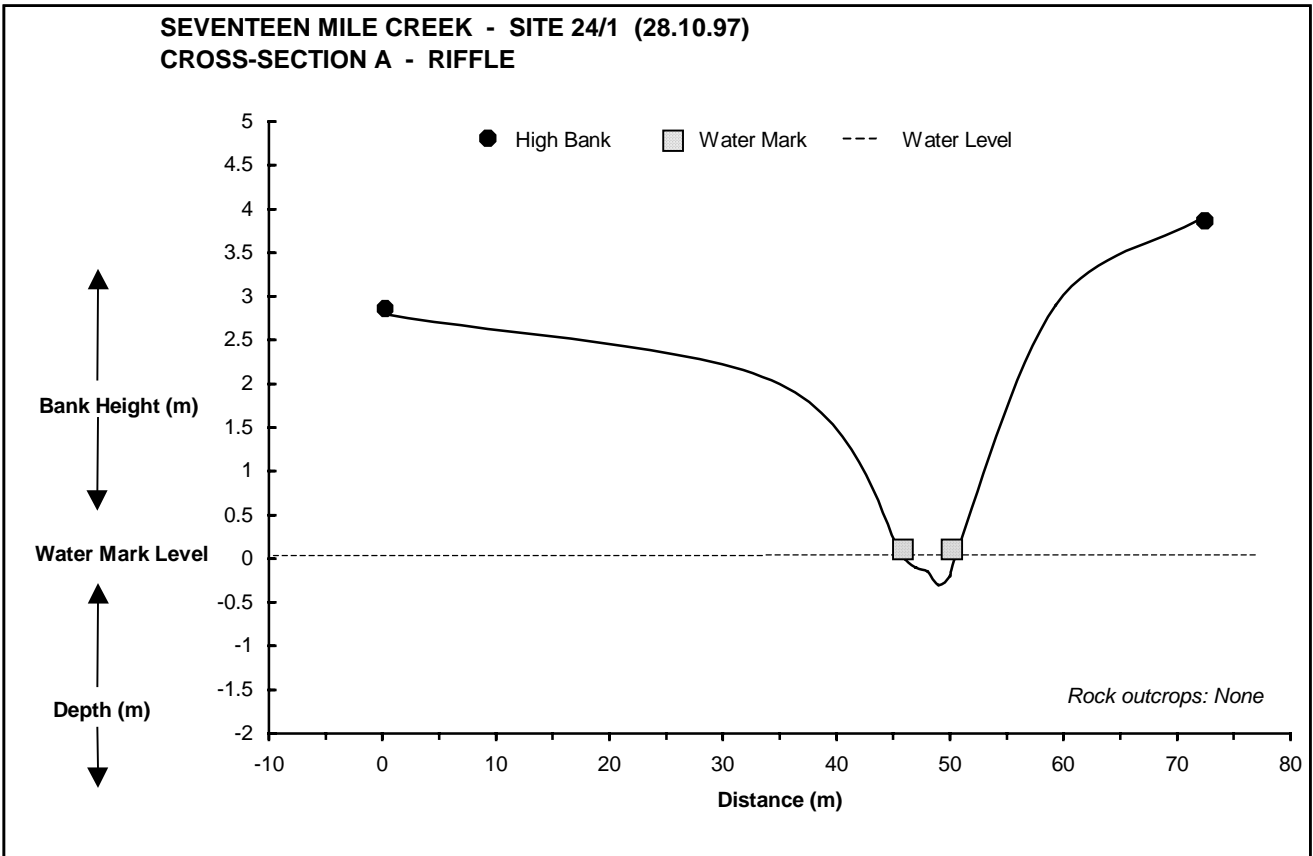
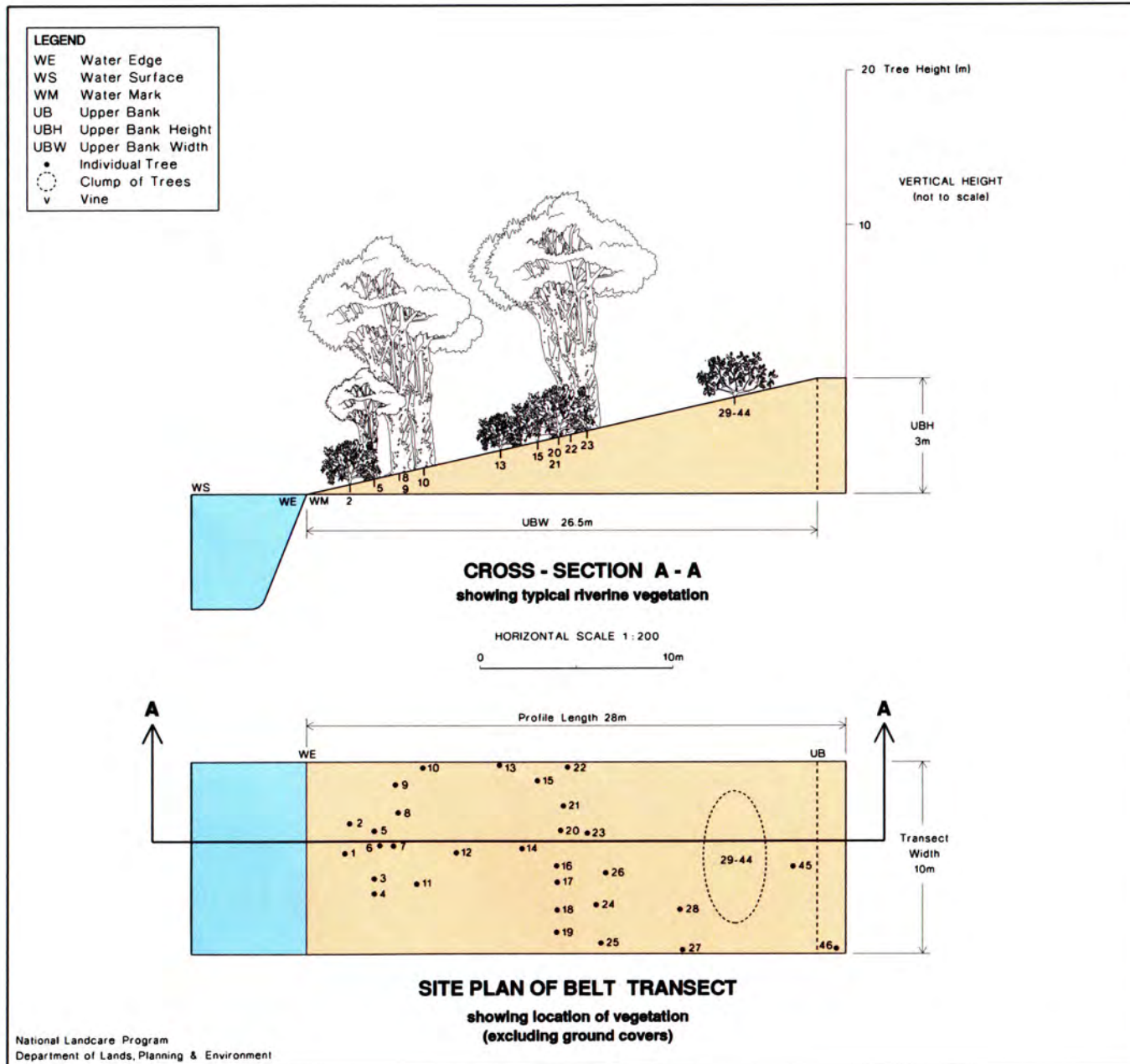


Figure 10.167 Cross-section Surveys for Site 24/1 – Seventeen Mile Creek



TREE ID No.	HEIGHT RANGE (m)	GENUS SPECIES
1, 2, 12-15, 18, 20, 21	2-3.5	<i>Canthium schultzei</i>
3, 11, 16, 17	1.8-15	<i>Syzygium armstrongii</i>
4-10, 19, 22-25	7.5-16.5	<i>Melaleuca argentea</i>
26	2.4	<i>Acacia holosericea</i>
27, 45	1.3-11	<i>Terminalia platyphylla</i>
28	15	<i>Nauclea orientalis</i>
29-44	1.3-3	<i>Antidesma ghaesambilla</i>
45	15	<i>Eucalyptus papuana</i>

- OTHER SPECIES LOCATED AT SITE:**
- Forbs:** *Achyranthes aspera*, *Cyperus javanicus*, *Fimbristylis denudata*, *Nelsoa campestris*
 - Grasses:** *Mnesithea rotboellioides*, *Pseudoraphis spinescens*, *Veliveria pauciflora*
 - Shrubs:** *Flemingia lineata*
 - Tree/shrubs:** *Phyllanthus reticulatus*
 - Trees:** *Lophostemon grandiflorus*, *Pandanus aquaticus*, *Pandanus spiralis*
 - Vines:** *Gymnanthera oblonga*, *Passiflora foetida*
 - Weeds:** **Hyptis suaveolens* (Noxious), **Senna occidentalis* (Noxious), **Sida acuta* (Noxious)
- * Exotic species

- NOTES**
- The drawings are for diagrammatic purposes to show zonation of, and a typical cross-section through, the riverine vegetation.
 - Cross-section A-A includes all vegetation above the line marked through the belt transect.
 - The vegetation profile (belt transect) is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation.
 - Measurements for each tree located in the profile, and groundcovers identified through quadrat sampling, are located in the project's database.

TOP END WATERWAYS PROJECT
DALY RIVER CATCHMENT

RIVERINE VEGETATION PROFILE

SEVENTEEN MILE CREEK		Date 28.10.97
Sub-section 24	Site 1	Figure 10.168



GLOSSARY

Aggradation	The long term build-up of sediment on a length of stream bed, or filling in of the stream channel, so as to raise its overall surface level and form bars.
Alluvial	Anything that is deposited by stream flow.
Aquatic Vegetation	Plants that live or grow in, on, or near water. Structural categories include submerged, floating or emergent aquatic vegetation.
Aquifer	A layer of sand, gravel or porous rock which holds groundwater and allows it to percolate through to wells or springs.
Armour	A surface layer of large gravel particles which overlays and protects finer sediments beneath it from erosion except during high flows.
Avulsion	A sudden change in the course of a stream by which a portion of land is cutoff, as where a stream cuts across and forms an oxbow.
Bank Protection	Materials placed on the face and toe of a bank to protect it from high flow velocities.
Bankfull	The discharge that results in water levels at the tops of the banks in most places along a stream. This is the flow that usually causes channel change.
Bar	A temporary deposit of sediment (ie sand, gravel or other unconsolidated sediment) within a stream channel that protrudes out of the water at water mark.
Bar Types	The 8 bar types include: point, bars with encroaching vegetation, high flow deposits, mid-channel islands, alternate/side irregular, channel bar plain, bars around obstructions and low flow meander infilled channel.
Baseflow	The low flow within a river or creek during the dry season which may be maintained by the discharge of groundwater.
Baseline Monitoring/ Data	To establish a reference point or benchmark of the condition of rivers and creeks against which changes in condition can be monitored over time through follow-up replicate surveys. Collecting baseline data is particularly important where there is little existing information.
Basin	See 'Catchment'
Bed	The bottom of a channel for the passage of water.
Bedload	The larger, heavier material such as coarse sand, gravel and boulders carried by the natural flow of a stream on or immediately above its bed.
Bedrock	Rock in a stream bed or banks that is resistant to erosion over long periods of time.
Bed Stability	The general stability of the stream bed. Aggradation or erosion (degradation) are forms of bed instability.
Billabong	A section of cut off stream channel on a floodplain which is typically saturated with water.
Braided Stream	A stream flowing in several channels that divide and reunite.
Breakout	The place where flood flow has broken through a bank.
Cascade Habitat	A series of small steps, slides or falls characterised by a step height <1m; gradient 5-60°; and strong currents.

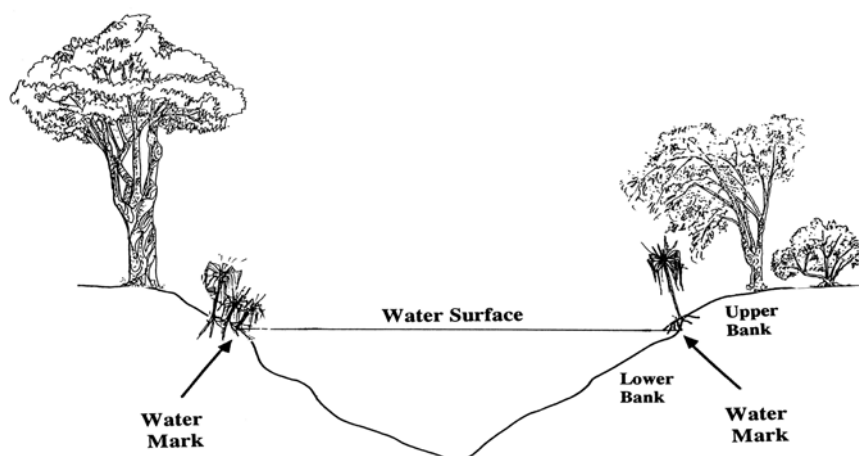
Catchment (river)	An area in which surface runoff collects and from which it is carried by a drainage system, as a river and its tributaries. Also known as drainage basin or watershed.
Causeway or Crossing	A road constructed across the bed of a stream. All stream flow goes over the road.
Channel	The whole area between the two high banks.
Channel Habitat Types	Waterfall, cascade, rapid, riffle, glide, run, pool or backwater
Colluvial	Loose deposits at the foot of a slope or cliff, brought there principally in response to gravity.
Control (bed)	An erosion-resistant section of stream bed that prevents short term bed degradation (ie lowering of a stream bed by erosional processes) and bed slope changes.
Cross-section	A diagram showing the land surface profile across a stream channel, plotted looking downstream.
Cross-section Survey	Depth measurements across the stream at right angles to the bank.
Cut Off Meander	A stream diversion or cut off through the neck of a meander or horseshoe bend where a new, relatively short channel is formed. This can occur artificially or naturally.
Deposition	An accumulation of sediment.
Degradation	The long term vertical erosion of sediment from a length of river bed so as to lower its overall surface level.
Discharge (Q)	The volume of flow per unit of time. Usually expressed as cubic metres per second (m ³ /sec) or megalitres per day (ML/day).
Diurnal Tides	A tide in which there is only one high water and one low water each lunar day.
Drainage Density	Ratio of the total length of all channels in a drainage basin to the basin area.
Drainage Pattern	The configuration of a natural or artificial drainage system; stream patterns reflect the topography and rock patterns of the area.
Electrical Conductivity	A measure of salinity. The higher the electrical conductivity of a stream, the greater the salinity.
Ephemeral Stream	A stream which carries water a considerable portion of the time, but which ceases to flow occasionally or seasonally.
Erosion	A loss of material.
Estuary	That part of a river which has a free connection with the open sea, where freshwater comes into contact with sea water and which is affected by tides.
Exotic Species	Introduced species from other regions or countries (ie not indigenous or endemic to an area).
Flood Channel	A channel across a floodplain that only carries water during floods.
Floodplain	Depositional surface adjacent to a river that is flooded periodically forming broad alluvial or coastal floodplains.
Flow Regime	The long term (annual or greater) character of the timing and amount of flow in a stream.

Fluvial	Related to the flow in a river or stream.
Geomorphology	The study of the processes which shape the landscape.
Glide Habitat	A shallow, slow flowing section of water characterised by a depth <0.1m; gradient 1-3°; small currents; and an unbroken and smooth water surface.
Groundwater	All subsurface water, especially that part that is in the zone of saturation.
Homogeneous Stream Sections	Stream sections which share similar natural features and are in similar condition.
Hydrology	The study of rainfall and runoff processes.
Incise	Erode the bed of a stream, deepen, degrade severely.
Inside Bend	The convex bank on a stream bend as observed from mid-stream.
Instream Habitat	The river itself, the banks and the channel.
Intermittent Stream	See 'Ephemeral Stream'
Left Bank	The left hand bank of a stream when looking downstream.
Levee	An artificial or natural linear ridge on a floodplain, sometimes deposited by a stream on its sides, that holds back flood water.
Longitudinal Profile	A diagram showing the land surface profile along a stream channel, usually along the thalweg (elevation plotted against river distance from the mouth).
Longitudinal Profile Survey	Depth measurements along the streams' thalweg.
Lower Bank	Is that part of the bank between the water mark (or normal dry season inundation level) and the water surface.
Low Flow	The normal discharge in a stream during the dry season, when the tops of most bars are exposed.
Meandering	A channel pattern that looks like a series of tight bends or loops with the river confined to a single channel.
Native Species	Species that are native to a specific region or country (ie are indigenous or endemic to a region).
Noxious Species	A plant declared under the <i>NT Noxious Weeds Act</i> to be a "noxious weed".
Outside Bend	The concave bank on a stream bend as observed from mid-stream.
Overstorey Vegetation	Woody plants >1.3m tall, usually with a single stem (eg Eucalypts, Melaleucas, etc). Shrubs >1.3m tall have also been included with overstorey vegetation.
Oxbow Lake	A horseshoe-shaped channel or lake on a floodplain created by a cut off and the abandonment of a meander loop.
Perennial Stream	A stream which contains water at all times except during extreme drought.
pH	A measure of the concentration of the acidity or alkalinity of the water (hydrogen ions in water).

Point Bar	A bar located on the inside of a bend of a stream.
Point of Inflexion	The point on the upper bank where the bank changes direction and curves over, away from the river channel.
Pool	A deep body of still or slow moving water, generally occurring in the main channel in an alternating sequence with riffles or runs. Pools are characterised by a depth >0.5m, where the stream widens or deepens and the current declines.
Rapid Habitat	A section of fast flowing water characterised by a depth >0.3m; gradient 3-5°; strong currents and rocks emerge to break the water's surface.
Reach	A length of stream channel chosen as the boundary for a survey site and generally representative of the channel habitats and the instream condition. Each reach usually consists of at least two complete pools and riffle/run habitats.
Reach Environs	Lands immediately adjacent to the river and the riparian zone along the reach and includes the floodplain and valley flat.
Recharge	The processes involved in the replenishment of water to the zone of saturation.
Riffle Habitat	A shallow area of a stream, often separating pools, characterised by a depth 0.1-0.3m; gradient 1-3°; moderate currents and an unbroken/unsmooth water surface.
Right Bank	The right hand bank of a stream when looking downstream.
Riparian Zone	Distinct corridor, including the vegetation, along the edge of a stream. This zone is inextricably linked with the stream both in providing litter (eg leaves, branches, etc) to the stream and being affected by the extra moisture that is available.
Riparian Vegetation	A distinct corridor of vegetation located along the edge of a stream or river.
River	A large, natural freshwater surface stream having a permanent or seasonal flow and moving toward a sea, lake, or another river in a definite channel.
Riverine Corridor	The river channel and its riparian land, including part of the adjacent floodplain.
River Morphology	The study of the channel pattern and the channel geometry at several points along a river channel, including the network of tributaries within the drainage basin.
River System	The aggregate of stream channels draining a river basin.
Run Habitat	An area of stream that is too deep to be a riffle and with too large a flow to be a pool. Runs are characterised by a depth >0.3m; gradient 1-3°; small but distinct and uniform current; and an unbroken water surface.
Runoff	That part of rainfall which finds its way into streams after some of it has evaporated, been taken up by plants or seeped into the ground.
Sample Point	Is the point along a reach, at a site, where survey information is collected such as cross-sections. Usually two sample points are selected at each site, one at a pool habitat and one at a shallow habitat-type like a riffle or run.
Scour	Stream bed, bank or floodplain erosion caused by water turbulence shearing or plucking particles away from the surface.
Sediment	Material carried by flowing or mixing water that falls out to the bottom and deposits when the flow or mixing stops. This can include boulders, gravel, sand, silt, clay and organic matter.

Sedimentation	The long term deposition or permanent filling of a stream channel or estuary with sediment.
Semi-diurnal Tides	A tide having two high waters and two low waters during a tidal day.
Siltation	See 'Sedimentation'.
Site	Is a location on a river or creek where information is collected on the condition of the streams. That is, surveys are completed at sample point/s or photographs only are taken.
Spring	a general name for any discharge of deep-seated, hot or cold, pure or mineralised water.
Stable River	The existence in a stream of a balance between erosion and deposition (ie dynamic equilibrium). The channel changes in location but not in pattern, form or slope.
Stratified Sampling	The sample area (ie catchment) is sub-divided into areas which are different (ie sub-sections). Doing this maximises the difference between the areas and minimises the difference within the area. Usually each sub-divided area is sampled randomly.
Stream Order	The designation by a dimensionless integer series (1,2,3,.....) of a relative position of stream segments in the network of a drainage basin.
Stream Profile	The longitudinal profile of a stream.
Sub-catchment	Part of a river catchment that has been sub-divided to show the major tributaries within the catchment.
Sub-section	Part of a sub-catchment that has been further sub-divided according to attributes including geology, stream gradient, altitude, natural and artificial barriers, bed and bank substrates, stream order, landuse and the tidal limit.
Surface Water	All bodies of water on the surface of the earth.
Thalweg	A line down a stream linking the deepest parts and sites of greatest flow.
Tidal	Water level affected by the tide.
Tidal Bore	A high, breaking wave of water, advancing rapidly up an estuary.
Total Alkalinity	A measure of a waters acid-neutralising capacity. The sum of all the titratable bases. It is usually a measure of the bicarbonate / carbonate / hydroxide content of water but can also include contributions from phosphates, borates, silicates or other bases if present.
Total Phosphorus	The sum of the concentrations of soluble and in-soluble phosphorus.
Tributary	A stream that feeds or flows into or joins a larger stream or lake.
Tufa	A spongy, porous limestone formed by precipitation from evaporating springs and river waters, often onto leaves and stems of neighbouring plants. Also known as calcareous tufa.
Turbidity	Visible pollution (dirtiness) due to suspended material in the water causing a reduction in the transmission of light.
Understorey Vegetation	Woody plants <1.3m tall, frequently with many stems arising at or near the base). Ground covers (plants without woody stems, eg grasses, sedges etc) have also been included with understorey vegetation.

Upper Bank	Is that part of the bank between the water mark (see below) and the high bank where it stops rising and flattens off. Also called 'high bank'.
Vegetation Cover	Used to assess the foliage density of each of the vegetation structural categories (eg trees, shrubs, grasses, submerged aquatic vegetation, etc). The cover is estimated in terms of the total imaginary shadow cast by each type of vegetation and is recorded as a percentage. The cover estimates for each type of vegetation are all made independently, and so the total covers do not necessarily add up to 100%.
Vegetation Profile	A survey of riparian vegetation (involving species identification and measurements such as diameter at 1.3m, bole and tree height, and crown width) within a 10m-wide belt transect. This transect is located at right angles to the water's edge and extends to the upper bank or edge of riverine vegetation. The vegetation profiles have also been represented diagrammatically.
Vegetation Width	Width of vegetation from edge of the low flow channel to where the vegetation changes from riparian vegetation to eg woodland vegetation.
Vegetation Zonation	The pattern or zoning of plant communities from the water's edge to the high bank.
Vegetation Structural Categories	The riparian vegetation is broken into structure and size classes including: tall trees >30m, medium trees 10-30m, small trees 2-10m, regenerating trees <2m, woody shrubs <2m, vines, rushes and sedges, phragmites, herbs, grasses, ferns, mangroves, salt marsh and palms. Submerged, floating and emergent aquatic vegetation are also broken into groups.
Velocity	The rate of movement of water in a stream. Usually expressed as metres per second (m/sec).
Water's Edge	The edge of the water at the time of the survey.
Waterfall Habitat	A perpendicular or nearly perpendicular descent of water in a stream. Waterfalls are characterised by a height >1m and gradient >60°.
Water Surface	The surface of the water at the time of the survey.
Water Mark	A mark left on the bank at the 'normal' inundation level for the stream in the dry season (see below), before water levels subside as the dry season progresses. It's location is shown by (i) the edge of terrestrial grasses, ferns (eg <i>Ampelopteris proliferata</i>) and other vegetation (eg <i>Pandanus aquaticus</i>) which cannot tolerate more frequent and prolonged inundation; (ii) by an area of erosion; or (iii) the boundary between different sediment types.



Wetland An area characterised by a high content of soil moisture, such as a swamp or bog.

