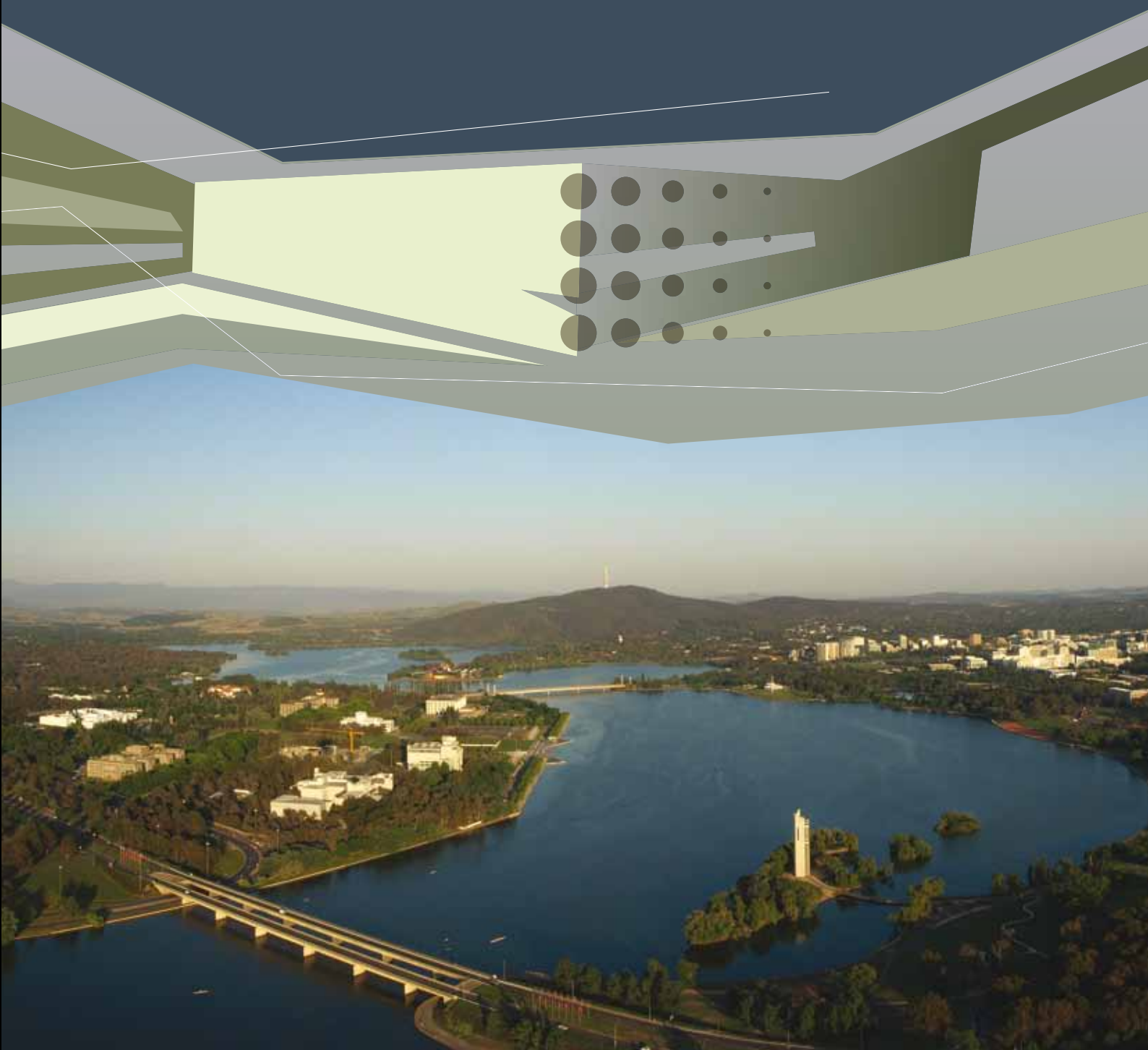


# Appendix F





APPENDIX F:  
Requirements for  
Murrumbidgee and Molonglo  
River Corridors.



## Appendix F

### Requirements for Murrumbidgee River Corridor

#### Background

The Murrumbidgee River Corridor Policy Plan (Figure 1) is a statement of the National Capital Planning Authority's proposals for future land and water use in the river corridor.

The Murrumbidgee River Corridor system comprises interrelated values, land and water uses, and streamflow and water quality characteristics.

The river corridor includes a continuous terrestrial and aquatic ecosystem, a migratory route for fish and birds, a recreational resource, a source of water for domestic stock and irrigation purposes, a source of sand and gravel, and a drainage system for the transfer of rural and urban run-off and wastewater discharges through the ACT. Each of these components has implications for the use and management of the river, its banks, riverine ecosystems and corridor land uses.

The ability of the river to sustain a particular water use depends on the nature of river uses upstream and the quality of catchment run-off. Consequently, any change in land and water use on one part of the river may impact on downstream users. Conversely, the determination of water uses at any point has implications for all river and land uses upstream. Thus any policies for the river must be considered in conjunction with the land uses for adjacent areas and for areas upstream and downstream.

Because of the finite nature of the resource, a unified approach must be taken in planning, development and management of the river system and the complex land and water relationships need to be fully recognised. The policies set out below respond to these demands. This is addressed below.

The Policy Plan consists of General and Specific Policies:

*General Policies* – are broadly based and define the National Capital Planning Authority's key objective and the primary values for the river corridor as a whole which are reflected in the Policy Plan.

*Specific Policies* – relate to the particular components, locations and issues within the river corridor and are presented as a series of policy statements referring directly to areas defined on the Policy Plan. These areas have been identified on the basis of their existing characteristics and the predominant future use considered to be suitable in the context of the General Policies.

Following more detailed evaluation and assessment of future recreational pressures more detailed proposals will be prepared for the different parts of the river corridor.

#### General Policies

##### Preamble

The Murrumbidgee River Corridor is an important element in the Canberra landscape and provides a diverse ecological, scenic, cultural and recreational resource. Conservation of the natural and cultural values is the primary goal in a system in which recreation is the key use.

The river is increasingly being used by both residents and visitors for a variety of recreation activities, particularly sightseeing, swimming, picnicking, nature study, fishing, canoeing and walking. It is essential that appropriate levels of recreation be planned for and managed in a manner which allows achievement of the primary goal.

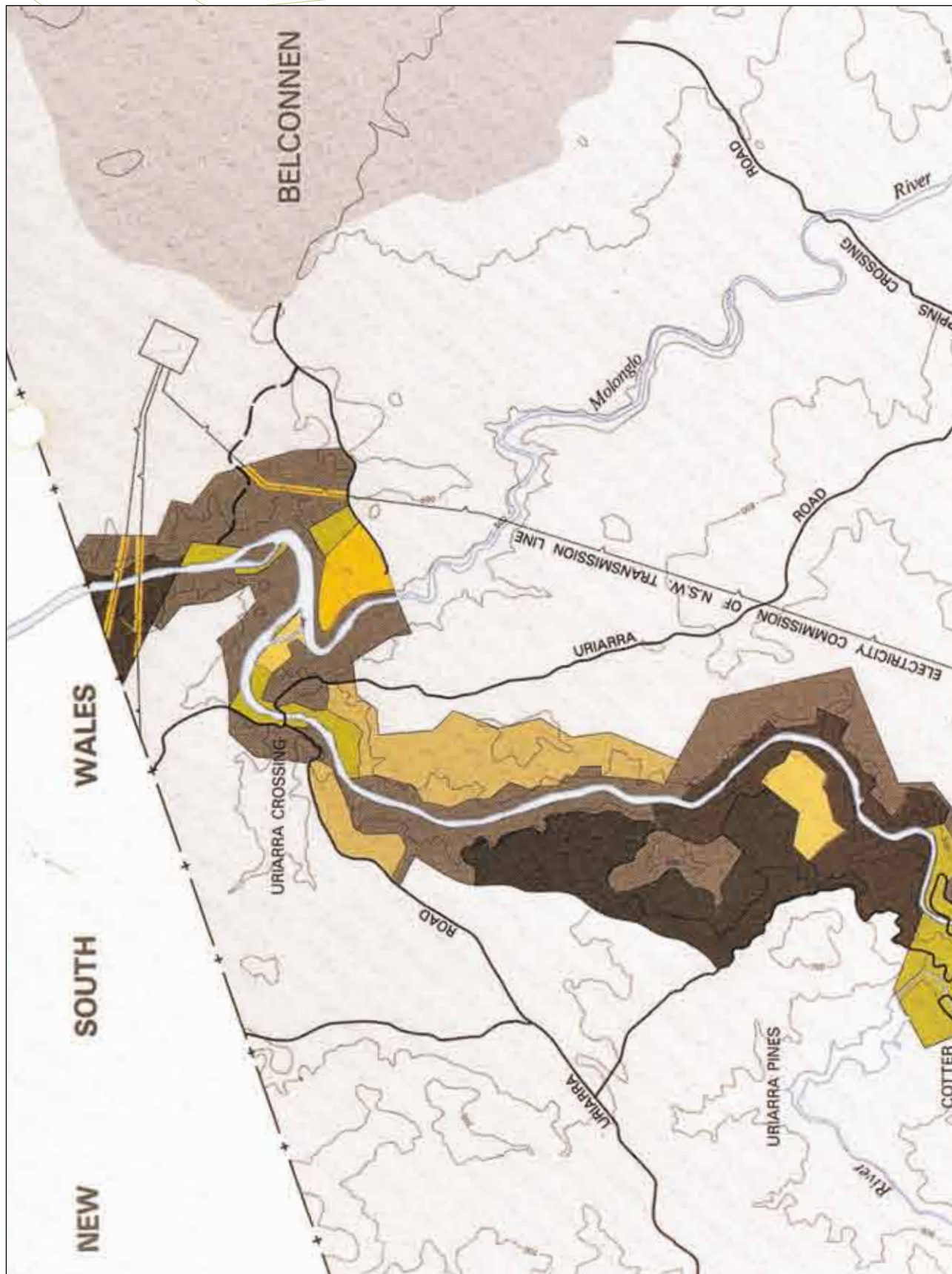
The finite and often sensitive nature of the resource requires that its planning, development and management have a unified approach and fully recognise the limitations that must be applied, if essential environmental, cultural, landscape and recreational qualities are to be maintained.

The ACT Government is responsible for management of the corridor. The provisions of a Management Plan are to be prepared in the context of the Policy Plan.

### **Policies**

1. **Key Objective**  
To conserve the essential landscape and environmental character of the river and its natural and cultural values and to provide a balanced range of river and off-river recreation and other uses in a manner that reinforces and protects the river corridor as a unified system.
2. **Streamflow and Water Quality**  
To maintain the streamflow, and to protect the water quality of the river from any adverse external influences, and ensure compatibility between land uses, water uses and the natural character of the river.
3. **Nature Conservation**  
To protect the ecological resources of the river and river corridor, preserving natural areas in a relatively undisturbed state, maintaining a diversity of habitats, protecting significant natural sites and native plants and animals, and sustaining the ecological integrity and continuity of the river system for migrating fish and other wildlife populations.
4. **Landscape**  
To maintain and enhance the scenic and landscape character of the corridor and associated areas, preserving that which is valuable and enhancing unsatisfactory areas; and to ensure that any development is unobtrusive and compatible with its surroundings and the intrinsic landscape qualities of the river corridor.
5. **Cultural Heritage**  
To protect and conserve the cultural heritage resources, including their landscape context.
6. **Recreation**  
To provide opportunities for a balanced range of recreational activities appropriate to the characteristics of the river and adjacent land and in the context of the provision of recreation in the ACT.
7. **Transport and Access**  
To provide for public access to the river corridor for Canberra residents and tourists in a manner compatible with the other planning policies, and which recognises the need for choice and diversity for the different sections of the community. Make provision for a system of walking and interpretation trails within the river corridor.

Figure 1 Murrumbidgee River Corridor Policy Plan













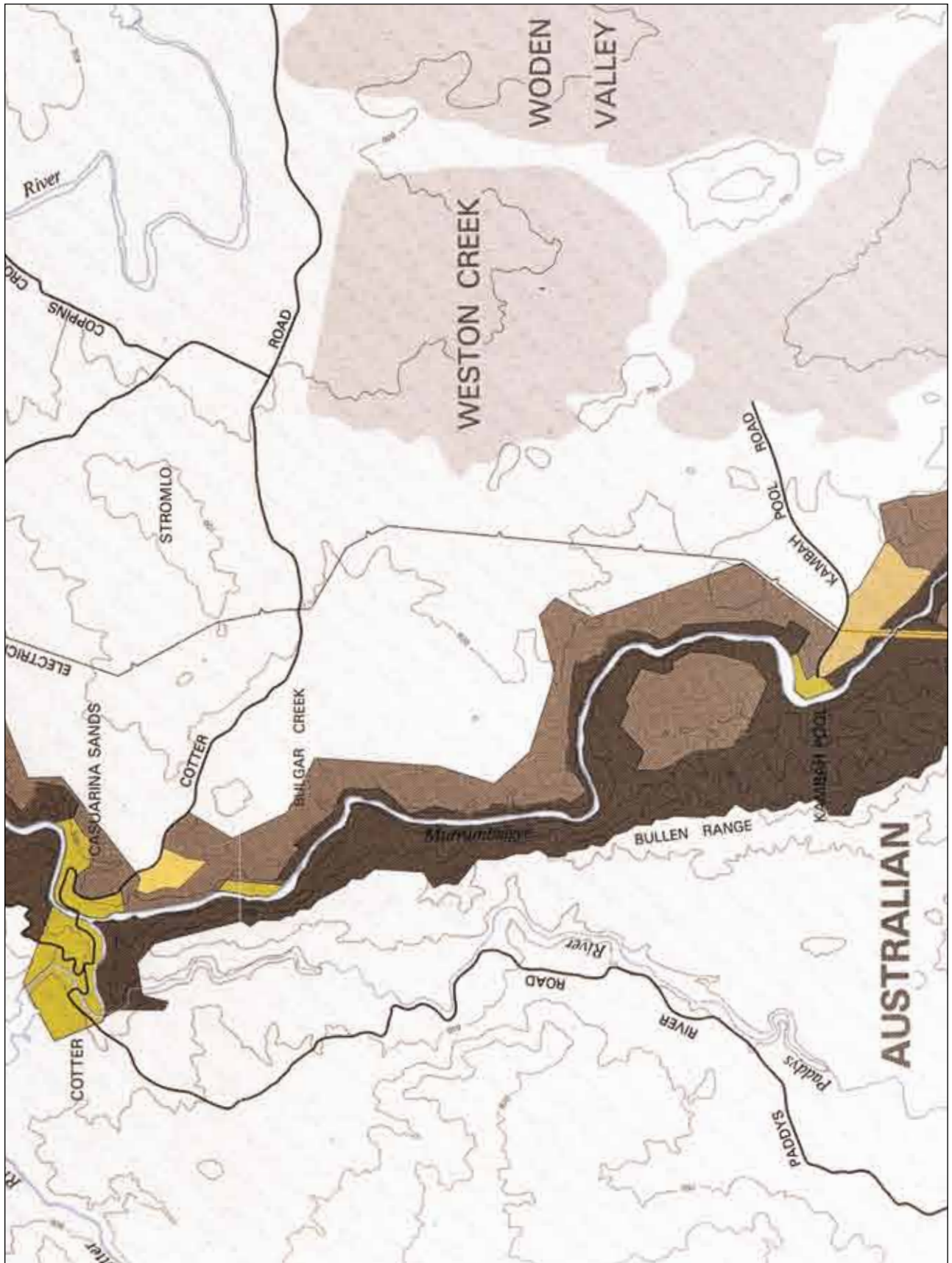
- |   |                                      |   |                             |   |                         |
|---|--------------------------------------|---|-----------------------------|---|-------------------------|
|  | Nature Conservation Core Area        |  | Pine Plantation             |  | Lanyon Homestead/Garden |
|  | Recreation Area                      |  | Special Development Area    |  | Grazing                 |
|  | Rural Landscape Conservation Reserve |  | Vegetation Restoration Area |  | Urban Area              |
|   |                                      |   |                             |  | Public Utility          |

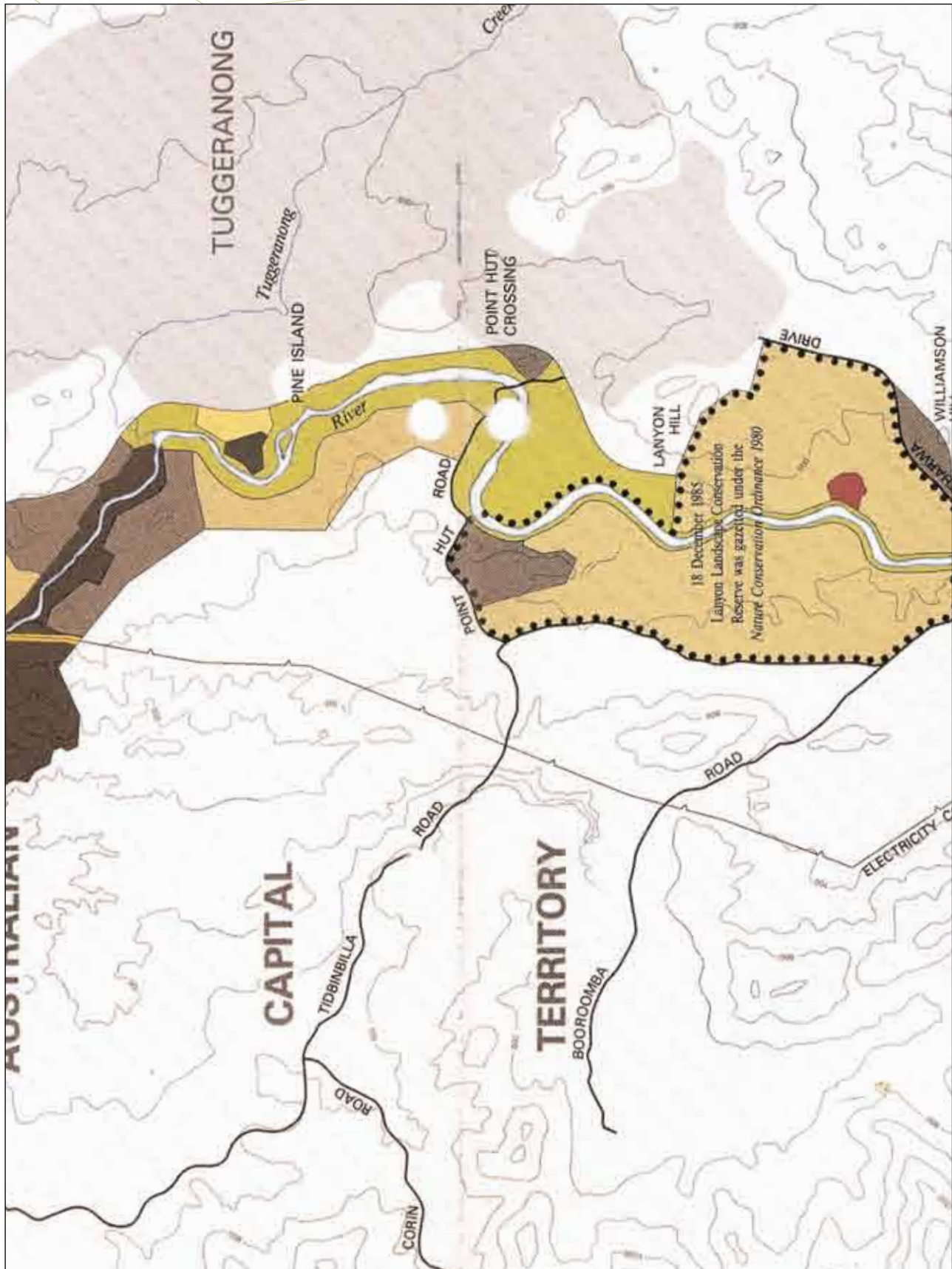
Figure 1 Murrumbidgee River Corridor Policy Plan



- The boundary of the Murrumbidgee River Corridor as included in the *Register of National Estate* on 25 March 1986



Figure 1 Murrumbidgee River Corridor Policy Plan











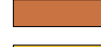

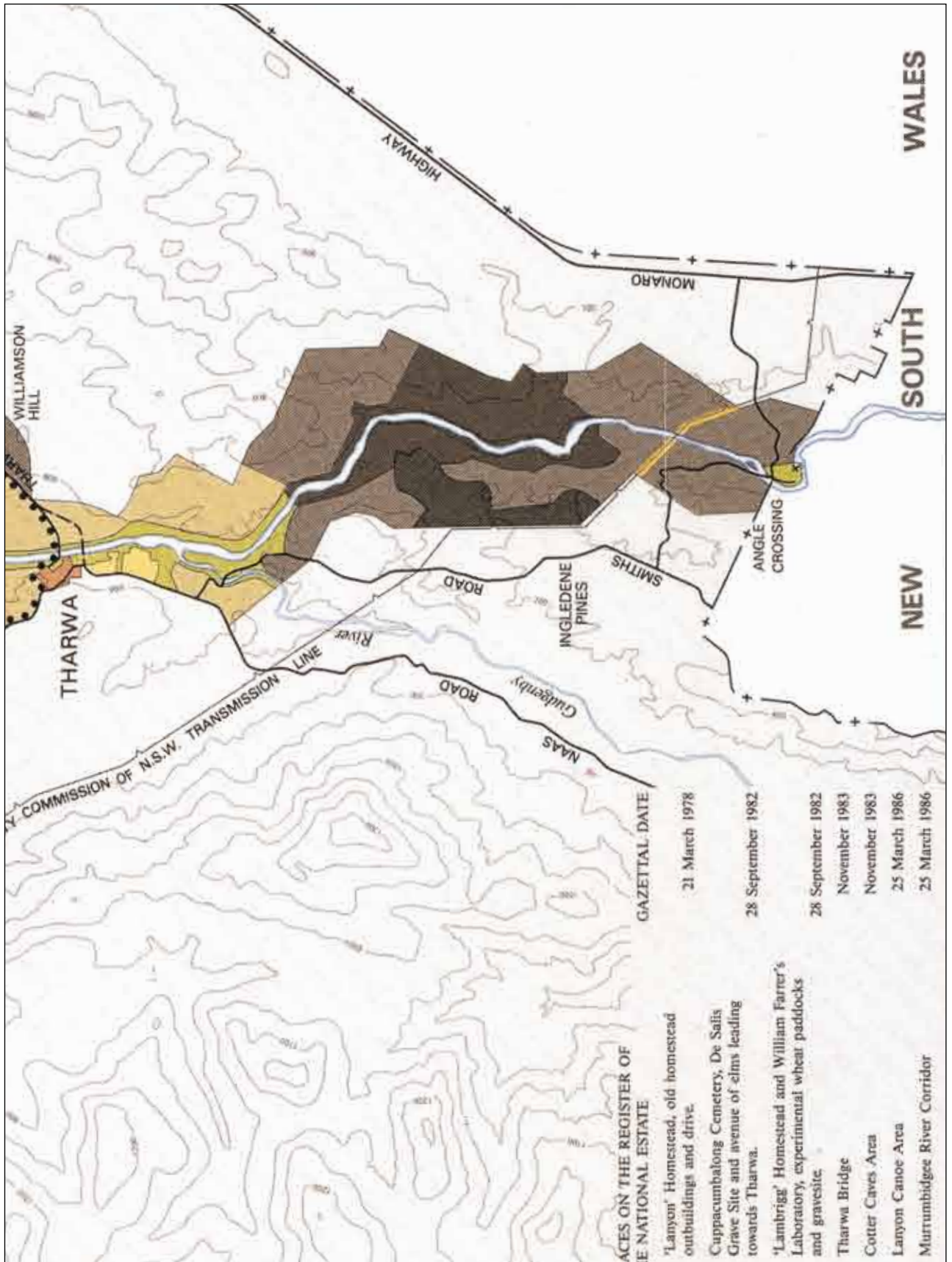

- |   |                                      |   |                             |   |                         |
|---|--------------------------------------|---|-----------------------------|---|-------------------------|
|  | Nature Conservation Core Area        |  | Pine Plantation             |  | Lanyon Homestead/Garden |
|  | Recreation Area                      |  | Special Development Area    |  | Grazing                 |
|  | Rural Landscape Conservation Reserve |  | Vegetation Restoration Area |  | Urban Area              |
|   |                                      |   |                             |  | Public Utility          |

Figure 1 Murrumbidgee River Corridor Policy Plan



- The boundary of the Murrumbidgee River Corridor as included in the *Register of National Estate* on 25 March 1986



- 
8. Education, Scientific Study and Research  
To provide opportunities for appropriate environmental education, interpretation, research and Scientific programmes; these should also enrich and broaden the recreational experience.
  9. Timber Production  
To use and manage the existing softwood plantations of the river corridor for continuing commercial timber production.

## Specific Policies

The river corridor was included on the Register of the National Estate (March 1986) and the Lanyon area was declared a Landscape Conservation Reserve under the *Nature Conservation Act 1980* (December 1985). Additional studies have identified a number of river gorge areas with high nature conservation values and these are proposed to be reserved under the latter Act.

Gazettal of Nature Reserves is a management matter and the issue is covered under specific policies relating to Nature Conservation Core Areas, Special Rural Landscape Areas and Vegetation Restoration. Details of areas proposed for gazettal are given in the section Areas to be Gazetted Nature Reserves under the *Nature Conservation Act 1980* which should be read in conjunction with the policy statements referred to above. The boundaries of these Reserves have been agreed to by former National Capital Development Commission (NCDC) and the former ACT Administration.

Specific policies relate to particular locations and significant issues and indicate not only land use and water use intentions, but also performance criteria reflecting the overriding concern for conservation of natural and cultural values of the river corridor.

## Murrumbidgee River

### Preamble

The Murrumbidgee river provides the key tangible link throughout the area covered by the Policy Plan. The entire river is ecologically important for the conservation of habitat (aquatic and terrestrial) and fauna (particularly native fish).

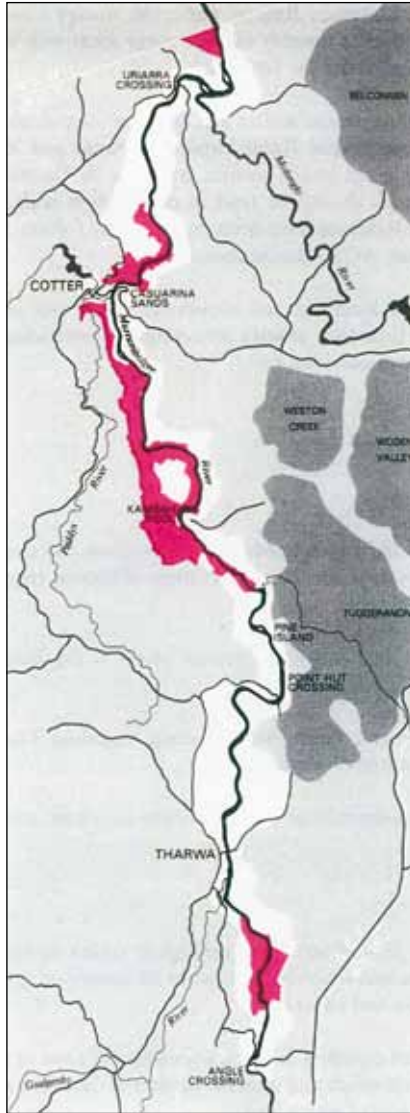
In addition the river provides the high quality resource which is the basis for appropriate recreational activities.

Between the Gudgenby confluence and Point Hut Crossing, including Tharwa Village, the river is used for domestic water supply and discharge of wastewater.


Since the river relates closely to its surroundings, policies for the river itself must be considered in conjunction with the adjacent land.

### Policies

1. The existing aquatic and related terrestrial ecological values of the river (particularly routes for the migration of fish, birds and other organisms) to be conserved, protected and, where applicable, used for public appreciation and education.



 Nature Conservation Core Area

- 
2. Land uses and management practices in areas adjoining the river to be controlled to limit domestic and other discharges to levels which maintain the pattern of river flow and water quality in consistency with the protection of designated water uses.
  3. Developments and management practices adjacent to the river channel and within the flood plain to be controlled to ensure stability of the channel, river banks and flood plain and to control flooding.
  4. Previously disturbed areas and eroded river banks and flood plains to be stabilised and regenerated, and usage and access to be controlled to levels consistent with maintaining bank and channel stability, ecological landscape quality, and sites of significance.
  5. Extraction of sand and gravel to be considered periodically in reaches where it is deposited, in order to maintain stream channel and flood plain stability, to protect aquatic habitats and recreation areas and to control flooding. Extraction to be undertaken in a manner consistent with protection of designated downstream land and water uses and in accordance with the Commonwealth's *Environment Protection (Impact of Proposals) Act 1974* and with an agreed management and restoration plan.
  6. A monitoring programme to be implemented to ensure that use of the river corridor has no adverse effects and water quality objectives are achieved.
  7. The key designated water uses of the river are aquatic habitat and fish migratory route. The tables later in this Policy Plan give an understanding of the term 'designated water use' and for the other designated uses and their associated water quality objectives.

## Nature Conservation Core Areas (Including Gorge Areas in the River Corridor)

### Preamble

The entire river corridor functions as a continuous ecological system and is therefore important in terms of nature conservation. However, in and around the river gorges there are specific areas of relatively undisturbed native vegetation that are environmentally significant and of high scenic quality, where the primary purpose is nature conservation and public appreciation of native flora and fauna in their natural environment.

These nature conservation core areas will be included in Nature Reserves declared under the *Nature Conservation Act 1980*. Additional areas requiring vegetation restoration or which provide secure management boundaries will also be included as buffer areas. These will require further detailed work leading to implementation actions and management appropriate to each sub-zone. Although designated for nature conservation, the gorge areas and other associated parts of the river lend themselves to low intensity recreation that requires a natural setting.

### Policies

1. The river corridor to be managed with the aim of preserving and protecting existing natural areas, protecting the routes for migrating fish, birds and other organisms, regenerating previously disturbed areas and controlling use and access so as to restrict environmental damage to a level which does not detract significantly from the values of the area.

2. The river gorge areas – downstream of Guises Creek, Red Rocks, Bullen Range, downstream of Casuarina Sands and on the northern ACT Border – to be retained as nature conservation core areas and together with some adjacent buffer areas to be included in Reserves declared under the *Nature Conservation Act 1980*. Any development to be kept to the minimum level required for public appreciation and, wherever practicable, to be confined to the perimeter of the reserved area.

Within nature conservation core areas only low-intensity recreational uses such as walking, fishing and nature appreciation to be allowed. Vehicular access, trail bikes, equestrian activities and grazing of domestic stock, sand mining and abstraction of water to be excluded.

4. Areas adjoining the river to be managed to avoid adverse effect on the river's nature conservation values. This may involve restricted access, control of grazing and restrictions on the use of fertiliser, pesticides, pasture improvement, irrigation, etc.
5. The key water use to apply in nature conservation core areas is preservation of aquatic habitat. Other designated uses and their associated water quality objectives are detailed in the tables.

## Recreation Areas

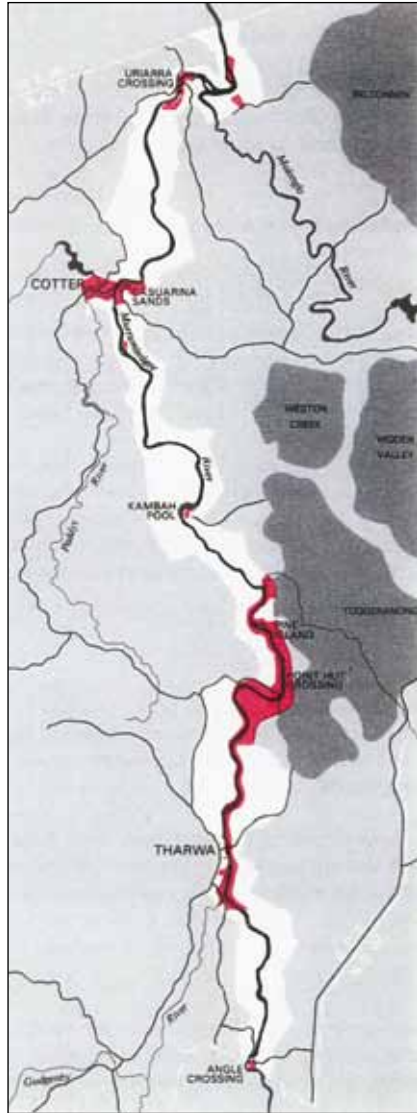
### Preamble

Recreation is the key land use in the Murrumbidgee River Corridor in which conservation of natural and cultural values is the primary goal. People differ in their preferences for recreation areas. Some seek out quiet places where there is minimal development, while others prefer areas more intensively developed where there are crowds and 'more things to do'. Planning should aim to provide for this diversity within the constraints of the existing natural and cultural values of the River Corridor. Planning should also aim at maintaining and reinforcing the established pattern of recreational nodes and linkages.

The extent of development should be related to the ability of an area to absorb recreational development without detriment to its landscape/environmental quality. This will be further explored and will lead to Implementation Plans and management appropriate to each recreation node. Some areas which have the capacity to accommodate more concentrated recreation activity could be used to remove such pressure from more sensitive areas.

### Policies

1. Provision to be made for a spectrum from low to high intensity recreation nodes, located to reduce recreational growth pressures on natural and culturally sensitive areas and aquatic habitats.
2. The established pattern of recreation to be retained and promoted for appropriate riverside activities with provision for public access, water activities, picnicking, nature appreciation, scientific study, education and interpretation.
3. The intensity of development to be suited to the physical and ecological characteristics of the site, its relationship to the National Capital Open Space System and the river system as a whole and to streamflow and water quality criteria.



 Recreation Area

4. High-intensity riverside recreation nodes to be developed only in safe swimming areas where sandy beaches occur and where the terrain is suitable for associated uses, vehicular access and parking. Such nodes are already developed at Cotter, Casuarina Sands and Pine Island.
5. Public access and recreation between the Gudgenby confluence and Point Hut Crossing to complement and be compatible with the surrounding rural landscape and cultural significance of the Lanyon Landscape Conservation Reserve.
6. Public access to the river at the Lanyon Homestead area to be subject to a more detailed study.
7. Sites of cultural and natural significance to be defined and protected in accordance with policies listed under 'Cultural Sites' below.
8. Future developments to include measures to protect stream beds, river banks and margins and restore riverine vegetation.
9. Boating (non-powered) in the river to be permitted if consistent with the protection of aquatic habitats and constraints of existing structures and natural stream bed features.
10. Kiosks and other commercial concessions to be provided only at high intensity recreation nodes, in accordance with appropriate development and management conditions to be formulated.
11. Other high intensity multi-use recreation areas to be developed away from the river to ease the pressure on the river and natural areas.
12. The key water uses to apply in recreation zones are preservation of aquatic habitat in low intensity and swimming in high intensity areas. Other designated uses and their associated water quality objectives are detailed in the tables.

### Special Rural Landscape Areas (in and adjacent to the River Corridor)

#### Preamble


In places where the river flows through flood plains and gentle terrain, the river corridor has been highly modified for agricultural purposes. Here, it has a distinctive rural landscape which is typical of the Southern Tablelands. It is important to retain these rural landscape areas along the river corridor as representative examples of the typical Australian countryside close to the National Capital and as visible links with the ACT's rural past.

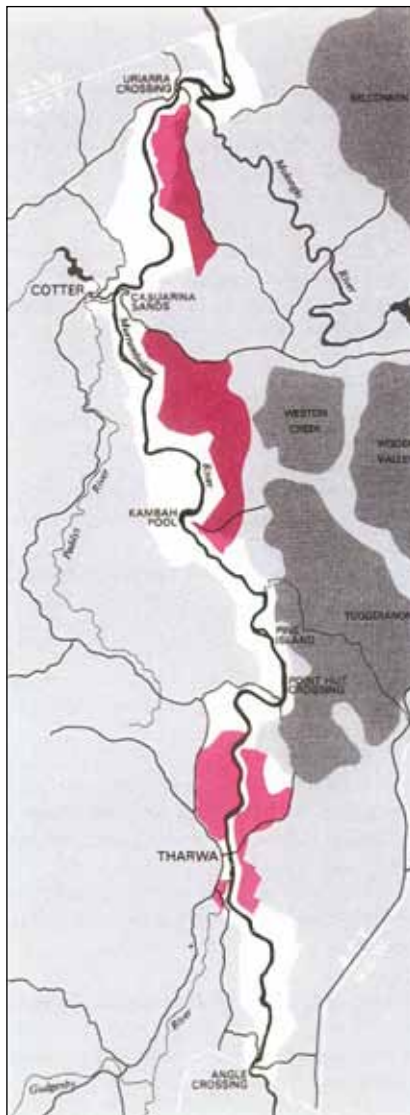
On the alluvial flood plains (Lanyon Landscape Conservation Reserve) agricultural farmland extends to the river, with introduced willows and poplars growing along the banks. In other places, open grassland contrasts with areas of savannah woodlands, where the tree spacing gives the area a parklike appearance (west bank).

The sub-zones of this area require further detailed work which may lead to implementation actions and management appropriate to each sub-zone.

#### Policies

1. Representative examples of the rural landscape, typical of ACT's rural past to be retained and protected, particularly in the Lanyon, Lambrigg, Bulgar Creek, New Station Creek and McQuoid Creek areas.

- 
2. The Lanyon Landscape Conservation Reserve to be protected under the *Nature Conservation Act 1980* pending the availability of more appropriate cultural heritage legislation.
  3. Agriculture and General Farming to be retained along the river corridor, to ensure a variety of landscape patterns ranging from open grassland through to dense forest, or because of ecological/management difficulties involved in revegetation of the land.
  4. Agriculture and General Farming will be set back from the river banks for public access, stabilisation of the banks and the restoration of the riverine vegetation removed by past agricultural practices and sand mining.
  5. Such activities as intensive poultry farming, feed lotting of cattle or the running of goats, deer or other exotic animals, commercial horse studs or racehorse training stables not to be permitted.
  6. Removal of trees and natural vegetation in these rural landscape areas to be controlled and tree regeneration to be encouraged, to retain the open savannah woodland character.
  7. Stocking rates to be controlled, and other management conditions to be specified if necessary to reduce faecal contamination, nutrient, fertiliser and pesticide inputs and to promote soil conservation in and immediately adjacent to the river corridor.
  8. Walking access to the Murrumbidgee River from urban areas to be located and managed to minimise the effects on rural activities.
  9. Appropriate River Corridor uses may be permitted, provided they are compatible with the rural landscape character.
  10. Designated water uses and associated water quality objectives applicable to the above policies are summarised in the tables.



 Special Rural Landscape Area



## Pine Plantations

### Preamble

As well as affording timber for commercial extraction, the pine plantations serve an important landscape function and offer great potential for recreation. Pine forests, if carefully sited and developed, can add interest to the landscape by emphasising the shape of the land form and adding colour and variety to the general scene. No further pine plantations, however, are proposed within the river corridor.

### Policies

1. Pine plantations to be retained as multi-purpose areas for forestry production and recreation and to provide landscape interest and contrast.
2. Tree felling to be managed to minimise the visual effect on the landscape and to increase visual diversity by breaking up large areas of uniform single-age trees.
3. A permanent landscape edge to be maintained along the plantation boundaries of high visibility and along public roads.
4. Native woodland areas to be retained, particularly along plantation edges, public roads and upstream valleys and on the steep slopes to the river.
5. Forestry operations to be compatible with the streamflow and water objectives for the adjoining section of the river. Water uses and objectives are summarised in the tables.

## Special Development Areas

### Preamble

It is expected that there will be a continuing demand for special development areas for commercial and community/recreation/tourist activities including tourist accommodation, camping, rural conference centres and farm holidays and for national capital purposes. Special Development Areas, in which these uses could occur, are designated within the river corridor.

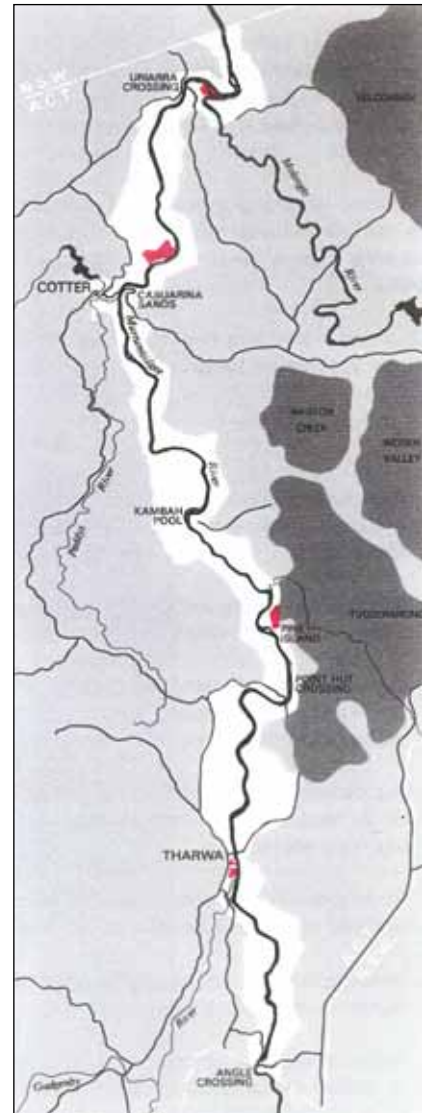
Management Plans will be progressively prepared for these areas leading to development actions and other measures appropriate to each site. In particular development control will be exercised to ensure that materials and design of the development are in sympathy with site characteristics.

### Policies


1. Existing sites within special development areas to be retained and measures taken to minimise their impact on the landscape and environmental character, streamflow and water quality.
2. Special development areas to be used for commercial and community/recreation/tourist activities directly related to the use of the river.
3. Special development areas may need to be identified for service corridors essential for the National Capital. Any such proposals would be subject to assessment under the *Environment Protection (Impact of Proposals) Act 1974*.



Pine Plantation



Special Development Site

- 
4. Planning for the Tuggeranong Town Centre and residential areas fronting the river corridor to recognise their possible effects on the river and take steps to protect the total environment and designated uses in this section of the corridor.
  5. Buildings and structures in these areas to be subject to careful design, siting, landscaping and management to ensure that the development does not impair conservation of the natural and cultural values of the river corridor or adversely affect adjoining areas.
  6. Designated water uses and associated water quality objectives applicable to special development areas to be based on the uses detailed in the tables. Each development proposal will be examined in the context of the above policies.

## Vegetation Restoration Areas

### Preamble

Past land use has resulted in alterations to the landscape in many areas. The number and health of trees in the rural landscape has declined as original trees die or age and current grazing practices prevent new growth. There is a need to develop programmes to revegetate some parts of the corridor.

Rehabilitation of the landscape will also be required to provide a suitable setting for recreation sites, access trails and special developments or to extend and enhance nature conservation core areas.

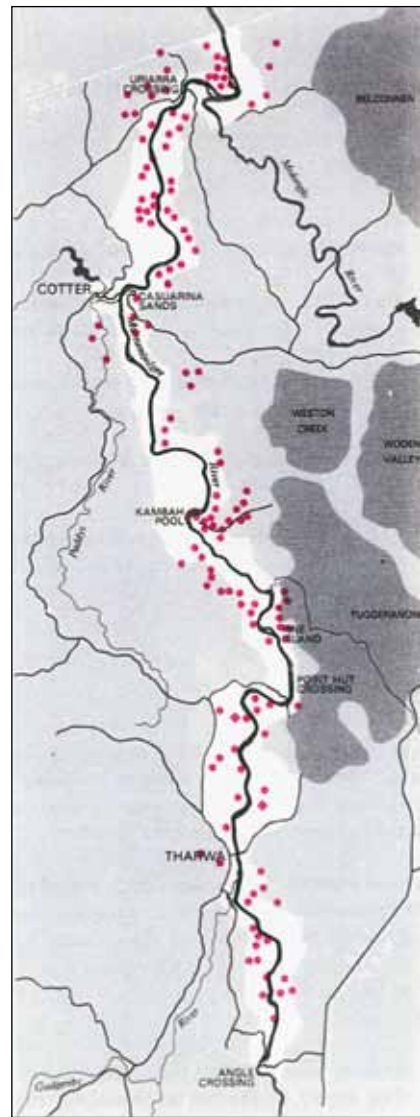
Vegetation Restoration Areas therefore include areas which buffer the nature conservation core areas and some are to be incorporated into Nature Reserves declared under the *Nature Conservation Act 1980*.

### Policies

1. A balance to be established and maintained between forested and partially-cleared areas to give contrast, to retain diversity in the vegetation pattern and to protect important rural and cultural landscape values.
2. Removal of trees and natural vegetation to be controlled and tree regeneration to be encouraged to retain and enhance the riverine environment. Where conditions are unsuitable for natural regeneration, provision to be made for replanting and other methods of tree establishment.
3. Tree species used for replanting to be indigenous to the locality. However, provided they can merge with and not dominate the natural landscape, introduced tree species may be used for functional and limited purposes, such as at high intensity recreation nodes and cultural heritage sites.
4. Introduced plant species to be conserved or replanted in culturally significant locations where this will help to protect the cultural values of the site.
5. Special control measures to be implemented to protect the casuarinas within the river corridor and to encourage regeneration of casuarinas and other trees and shrubs which reinforce the honeyeater migration routes in the river corridor.
6. Low intensity recreational use and/or controlled grazing and other Commonwealth uses may be permitted when revegetation is completed.




Vegetation Restoration Area



Historical/Cultural Site

Archaeological Site

- 
7. Some areas adjacent to nature conservation core areas and where vegetation restoration is required, to be included in Reserves declared under the *Nature Conservation Act 1980* or managed as protective buffer zones.

## Cultural Heritage Resources

### Preamble

The former National Capital Development Commission (NCDC), had already carried out a survey of cultural heritage features and this concluded that many are worth protecting. Where these conclusions are supported by further assessment, every effort should be made to conserve these places to retain authentic links with Canberra's past for research, interpretation, education and public interest. Their contextual landscape settings need to be conserved and uses arranged that will make their conservation possible.

### Policies

1. Sites of cultural significance and their landscape contexts to be conserved and given an appropriate level of protection from incompatible land use or development.
2. Public access and land use compatible with site conservation to be established where appropriate. Public access might not be available to all sites.
3. Planning and management of places entered on the Register of the National Estate and other sites of cultural significance to accord with their approved conservation plans.

## Natural Resources of Special Interest

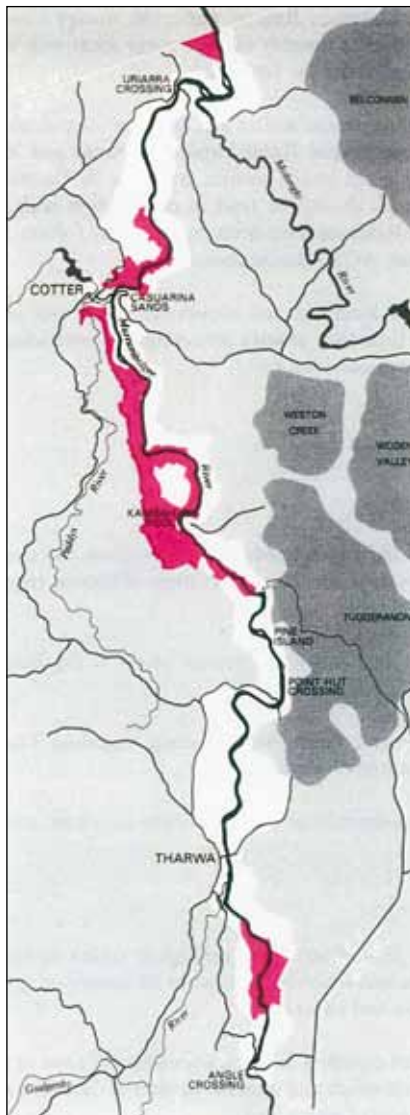
### Preamble

The former NCDC also carried out a survey of natural resources and concluded that many are worth protecting. These included features of special geological, geomorphological, botanical and zoological significance. Many of them are outside the areas identified as nature conservation areas. Where the conclusions of the survey are supported by further assessment, individual features need to be adequately protected to maintain a diversity of natural features for scientific and educational purposes, interpretation and public interest.

The appropriate protection status should be given to all natural resource features of special interest not otherwise protected in formally gazetted nature conservation areas.

### Policies

1. Features of natural resource interest which lie outside designated nature conservation core areas to be given an appropriate level of protection from incompatible land use and development.
2. Features to be managed to afford appropriate public access and to control the effects of public use. Public access might not be made available to all sites.
3. Significant aquatic and fish habitats to be identified and protected and the continuity of the riverine tree cover to be maintained and enhanced where necessary to protect the routes taken by migratory birds.



- Geological Feature
- Ecological Feature

4. Planning and management of places of natural resource interest entered on the Register of the National Estate shall be in accordance with their approved conservation plans.

## Access

### Preamble

Facilities for recreational and other uses have been developed at a number of locations. The established vehicular and pedestrian access routes link these locations and provide crossings of the river. An integrated system of access is needed to build upon the established framework and while providing access to other parts of the corridor, assist in the protection of sensitive natural and cultural values.

### Policies

1. An integrated system of vehicular, pedestrian, cycle and equestrian access to be established to provide access to and within the river corridor and to connect to hill areas, urban areas and the metropolitan multi-purpose trail system.
2. Vehicular access to be limited to present locations or to new recreation nodes. Location of access routes is to be subject to detailed site planning and land management considerations to minimise the impact on environmentally and culturally sensitive areas and sites. Access to the river to follow in general the established east-west pattern and link to places of interest and exploit views. Linear routes for vehicle, cycle, equestrian and management use that follow the course of the river are to be avoided where possible or be confined to the outer edge of the corridor. Some trails may be a series of loops and provide for return routes to parking areas located away from the river.

## Off-stream Use of River Water

### Preamble

Off-stream use of river water includes water for domestic or stock supply and irrigation. The use of river water for domestic supply necessitates more stringent water quality objectives than those which apply to other uses.

Protection is based on three principles:

- (a) abstraction points are subject to licensing procedures
- (b) water for domestic supply is fully treated prior to consumption
- (c) upstream discharges are controlled to maintain a suitable quality at the abstraction point

### Policies

1. The use of river water for off-stream purposes to be permitted through a licensing system.
2. Off-stream and in-stream development activities to be limited upstream of abstraction points, consistently with sustaining a water quality suitable for use.

Water quality objectives applicable to the use of water for domestic, stock and irrigation supply are summarised in the tables.

## Water Use Designations

The primary beneficial uses of water comprise those uses which are water-quality dependent, and include:

- domestic water supply (full treatment of water)
- habitat for aquatic biota
- migratory route for aquatic fauna
- fishing
- primary contact recreation (swimming)
- secondary contact recreation (boating)
- passive recreation (viewing)
- stock and irrigation water supply.

### Designated Water Uses

Designated Land Uses	Common to Entire River Length	Specific to Designated Land Uses
Nature Conservation	AQUAHAB*, MIGR, BOAT	VIEW, FISH
Recreation		
– high intensity	AQUAHAB*, MIGR, BOAT	SWIM*, VIEW, FISH
– low intensity	AQUAHAB*, MIGR, BOAT	FISH, VIEW
Special Rural Landscape	AQUAHAB, MIGR, BOAT	DOM*, VIEW, IRRIG, STOCK
Special Development Sites	AQUAHAB, MIGR, BOAT	DOM*, VIEW, FISH, IRRIG, STOCK, DISCH, SAND
Natural Resource Sites	AQUAHAB*, MIGR, BOAT	VIEW

\* Key use with most stringent water quality objectives.

### KEY:

DOM	Domestic Water Supply (Full treatment)
AQUAHAB	Significant Aquatic Habitat
MIGR	Regionally Significant Migratory Route
FISH	Fishing
SWIM	Primary Contact Recreation (Swimming)
BOAT	Secondary Contact Recreation (Boating)
VIEW	Passive Recreation (Viewing)
IRRIG	Irrigation Water Supply
STOCK	Stock Water Supply
DISCH	Discharge Zone for Municipal and Industrial Wastes

DRAIN Stream Receiving Drainage from the Urban Area

SAND Sand Extraction Area

### Water Quality Objectives for the Murrumbidgee River within the ACT

Designated Water Uses +						
Water Quality Characteristics	DOM (Raw)	AQUAHAB FISH and MIGR	SWIM	BOAT	VIEW	IRRIG and STOCK
<b>Physical</b>						
Floating Debris or Scum	None	None	None	None	None	
Colour hazen units	50	No increase	No increase		No increase	
Turbidity NTU			50	100	100	
Temperature °C		<5° change	20–30			
Taste and Odour	Unobjectionable					
pH	6.5–9.2					
<b>Chemical</b>						
Salinity TSS. mg /L						200 irr. 2050 st.
Suspended Solids mg/L		80	80	80	80	
Dissolved Oxygen mg /L	>5	>7	>7	>5	>7	
Hardness (CaCo3) mg/L	100					
Alkalinity CaCo3 mg/L	500	>35				
Ammonia mg/L	0.05	0.05				90
Nitrite plus Nitrate mg/L	10					
Calcium mg/L	75					
Chloride mg/L	200					
Copper mg/L	0.05					
Fluoride mg/L	1.5					
Heavy Metals	#					
Detergent (MBAS) mg/L	0.2	0.2	0.2	0.2	0.2	

Water Quality Characteristics	DOM (Raw)	AQUAHAB FISH and MIGR	SWIM	BOAT	VIEW	IRRIG and STOCK
<b>Biological</b>						
Total Phosphorous						
– Lakes mg/L	0.025	0.025	0.015	0.015	0.015	
– Streams mg/L	0.10	0.10	0.05	0.05	0.05	
Algae nuisance	nuis. free	nuis. free	nuis. free	nuis. free	nuis. free	no toxic algae
Chlor. 'a'ug/L	10	10	10	10	10	
E.coli CFU / 100ml		100		200**	1000	1000*

#### Notes

- + The uses are ordered from most stringent water quality on the left of the table to least stringent on the right.
- ∞ Unless shown otherwise, each figure is the maximum acceptable.
- # Levels not to exceed longterm objectives listed in *Desirable Quality for Drinking Water in Australia*, Department of Health, NHMRC and AWRC (1980).
- \* Monthly mean.
- \*\* Waters shall be considered suitable for swimming when:
  - over a 30-day period, the log mean shall not exceed 200 / 100ml, nor shall 10% of samples exceed 400 / 100ml
  - a sanitary survey has proven satisfactory and the Health Authority is satisfied as to the absence of any other potential health hazards.

The secondary beneficial uses of streams comprise those uses which are not quality dependent. They include the discharge of drainage and wastes and the extraction of sand and gravel.

Water uses which apply within the corridor are set out in the following Tables. Some water uses are common to the entire river length in the ACT while others are specific to the designated land use.

The determination of 'designated water uses' is undertaken on the basis of existing and planned land use and metropolitan service needs. The water quality objectives associated with each designated use are detailed in the following Tables.

As a number of water uses are in direct conflict in water quality terms, it is necessary to make an allocation of waters in favour of a particular use. The key water use is then defined as the one corresponding to the most stringent water quality objectives.

Water quality varies widely with river flows. In assessing compliance with water quality objectives, flow records are used to account for extreme events of flood and drought. The *ACT Water Pollution Act 1984* sets limits for discharges to the river in accordance with these objectives. References to certain pollutants include a flow calculation which is specified in the Act.

