

6

Nutrients in aquatic environments

This Chapter

This chapter summarises investments supported by the NAP and the regional component of the Trust that have a major focus on the nutrients in aquatic environments matter for target. The first section of the chapter summarises priority action investments approved to the 30 June 2004. It also provides a summary of the type of activities supported by these investments and progress in the achievements of these activities to the 31 March 2004

The second section summarises investments having a major focus on nutrients in aquatic environments from regional strategies based on accredited regional plans to 30 June 2004. This section details the specific nutrients in aquatic environments targets and related management action targets from approved investments. It also provides a summary of the type of activities supported by these investments and progress in the achievements of these activities to the 31 March 2004.

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Glossary

Table 6.1.1 Priority actions having a major focus on nutrients in aquatic environments approved to June 2004*

State	Region	2003-04 Approvals (\$)		Total Approvals to June 2004 (\$)	
		NAP	Trust	NAP	Trust
Queensland	South East	287,000		287,000	
	Torres Strait		117,000		117,000
South Australia	Mount Lofty Ranges				220,000
Tasmania	North Tasmania		134,600		134,600
	North West		201,700		201,700
Victoria	Glenelg Hopkins				82,000
Western Australia	Northern Agricultural		90,000		90,000
	Rangelands		75,000		75,000
	South Coast	53,500		53,500	
	South West				145,000
Total		340,500	618,300	340,500	1,065,300

* Figures reflect Australian Government and State/Territory Government approvals for NAP and only Australian Government approvals for the Trust. State/Territory Government cash and in-kind funding for the Trust is not included.

Table 6.1.2 Reported expenditure for priority actions having a major focus on nutrients in aquatic environments

State	Region	Budgeted Activity Expenditure (\$)				Reported Activity Expenditure (\$)			
		July 03 - March 04		Total to March 04		July 03 - March 04		Total to March 04	
		NAP	Trust	NAP	Trust	NAP	Trust	NAP	Trust
Queensland	South East	287,000		287,000					
South Australia	Mount Lofty Ranges		125,000		125,000		50,000	50,000	
Victoria	Glenelg Hopkins				82,000		61,500	61,500	
Western Australia	South West		145,000		145,000		124,121	124,121	
Total		287,000	270,000	287,000	352,000		235,621	235,621	

Activities and achievements

Funded activities

Funding for the types of priority action activities having a major focus on nutrients in aquatic environments supported by the NAP and the regional component of the Trust, is shown in Table 6.1.3.

Table 6.1.3 Types of activities supported by priority actions having a major focus on nutrients

Activity Type	Budgeted Activity Expenditure (\$)				Reported Activity Expenditure (\$)			
	July 03 - March 04		Total to March 04		July 03 - March 04		Total to March 04	
	NAP	Trust	NAP	Trust	NAP	Trust	NAP	Trust
Resource assessment	287,000		287,000					
Capacity building		145,000		145,000		124,121		124,121
On-ground activities		125,000		207,000		111,500		111,500
Total	287,000	270,000	287,000	352,000		235,621		235,621

Funding for priority action activities having a major focus on nutrients in aquatic environments supported by NAP and the regional component of the Trust is described in Table 6.1.4.

Table 6.1.4 Funding for priority action activities having a major focus on nutrients in aquatic environments

Region	Activity Title	Budgeted Activity Expenditure (\$)				Reported Activity Expenditure (\$)			
		July 03 - March 04		Total to March 2004		July 03 - March 04		Total to March 2004	
		NAP	Trust	NAP	Trust	NAP	Trust	NAP	Trust
Queensland									
South East	Coordination, Development & Implementation of Base Line Information & Protocols for Regional Targets	287,000		287,000					
South Australia									
Mount Lofty Ranges	Words into Action: On ground implementation of the Sixth Creek Catchment Plan		125,000		125,000		50,000		50,000
Victoria									
Glenelg Hopkins	Regional Basin Managing Volcanic Plains Grasslands				82,000		61,500		61,500
Western Australia									
South West	Western Dairying for Tomorrow – sustaining our natural resources		145,000		145,000		124,121		124,121
Total		287,000	270,000	287,000	352,000	-	235,621	-	235,621

Achievements

The outputs, or products and services produced by these activities, are summarised in four tables according to the types of outputs described in Chapter 1. Summaries of the outputs related to resource assessment, planning, capacity building and on-ground activities are shown in Table 6.1.5, Table 6.1.6, Table 6.1.7 and Table 6.1.8

Table 6.1.5 Priority action resource assessment outputs related to nutrients in aquatic environments

Standard Output	July 03 - March 04			Total to March 04		
	NAP	Trust	Joint	NAP	Trust	Joint
Baseline, trend or condition studies for targets						
Number of sites monitored			9			9

Table 6.1.6 Priority action planning outputs related to nutrients in aquatic environments

Standard Output	July 03 - March 04			Total to March 04		
	NAP	Trust	Joint	NAP	Trust	Joint
Improved practice codes or guidelines						
Number developed			1			1

Table 6.1.7 Priority action capacity building outputs related to nutrients in aquatic environments

Standard Output	July 03 - March 04			Total to March 04		
	NAP	Trust	Joint	NAP	Trust	Joint
Awareness raising activities						
Number of demonstrations, field days, study tours and other non-training forums held			5			5
Number of participants in person-days at demonstrations, field days, study tours and other non-training forums			30			30
Number of media opportunities including websites developed			1			1
Facilitation motivation and support activities						
Number of active positions (FTE) supported	2		2	2		2
Skills and training activities						
Number of training sessions, workshops seminars and other events held			8			8
Number of participants in person-days at training sessions, workshops seminars and other events			500			500

Table 6.1.8 Priority action on-ground activities outputs related to nutrients in aquatic environments

Standard Output	July 03 - March 04			Total to March 04		
	NAP	Trust	Joint	NAP	Trust	Joint
Significant pest plant control						
Area (hectares) of pest plant control			80			80

6.2 REGIONAL INVESTMENTS HAVING A MAJOR FOCUS ON NUTRIENTS IN AQUATIC ENVIRONMENTS

Approvals and reported expenditure

Funding through regional investment strategies based on accredited regional plans commenced after 30 June 2003. Initial investment strategies based on accredited regional plans have been approved for all regions in the Australian Capital Territory, New South Wales, South Australia and Victoria. Up to 30 June 2004, investments having a major focus on nutrients in aquatic environments total approximately \$3.4m. Figure 6.2.1 shows the regions having a major focus on nutrients in aquatic environments through this funding. Table 6.2.1 and Table 6.2.2 respectively show the approved funding and the reported expenditure by region through its investment strategy.

Figure 6.2.1 Regions with regional investments having a major focus on nutrients in aquatic environments

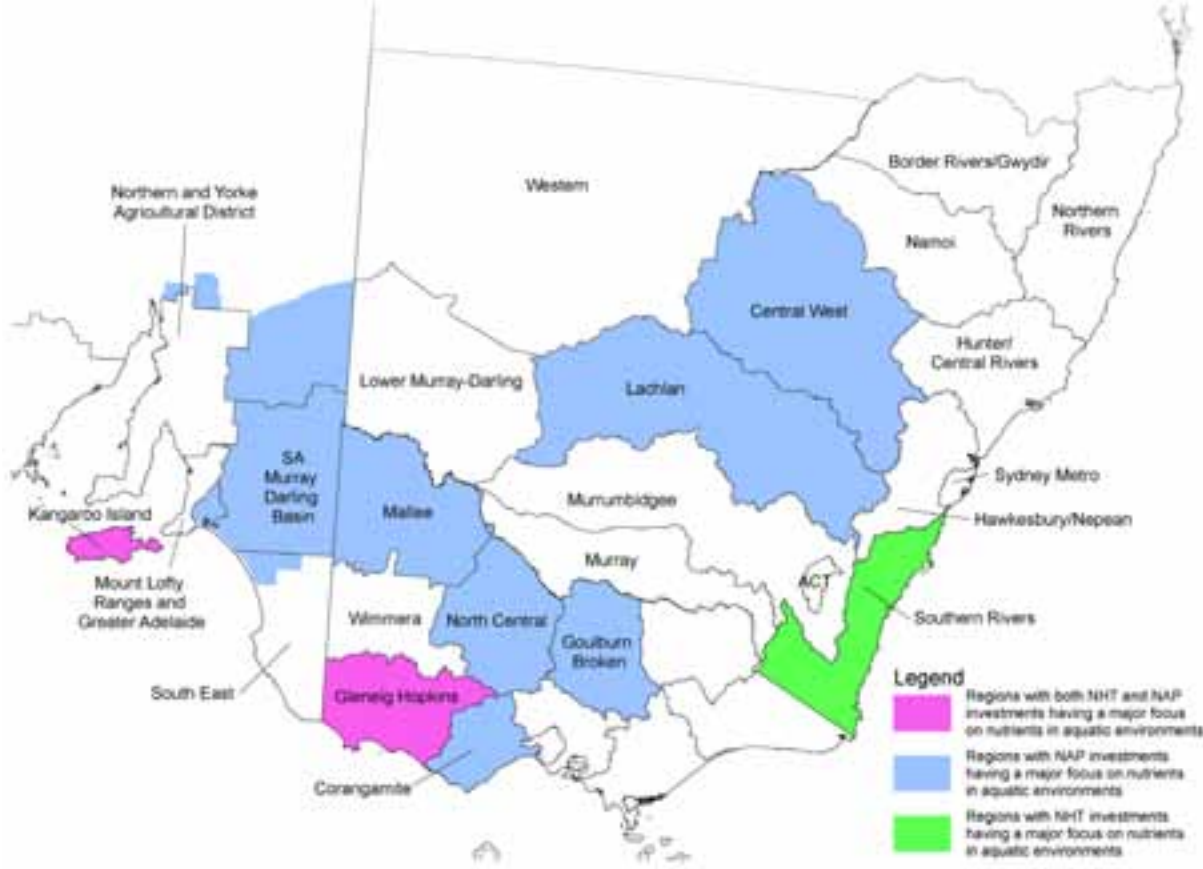


Table 6.2.1 Regional investments having a major focus on nutrients in aquatic environments approved to June 2004*

State	Region	2003-04 Approvals (\$)		Total Approvals to June 2004 (\$)	
		NAP	Trust	NAP	Trust
New South Wales	Central West	420,000		420,000	
	Lachlan	704,000		704,000	
	Southern Rivers		40,000		40,000
South Australia	Kangaroo Island	10,250	10,250	10,250	10,250
	SA Murray Darling Basin	340,000		340,000	
Victoria	Corangamite	368,000		368,000	
	Glenelg Hopkins	300,800	63,400	842,800	63,400
	Goulburn Broken	100,000		100,000	
	Mallee	490,100		490,100	
	North Central	60,000		60,000	
Total		2,793,150	113,650	3,335,150	113,650

* Figures reflect Australian Government and State/Territory Government approvals for NAP and only Australian Government approvals for the Trust. State/Territory Government cash and in-kind funding for the Trust is not included.

Table 6.2.2 Reported expenditure for regional investment having a major focus on nutrients in aquatic environments

State	Region	Budgeted Activity Expenditure (\$)				Reported Activity Expenditure (\$)			
		July 03 - March 04		Total to March 04		July 03 - March 04		Total to March 04	
		NAP	Trust	NAP	Trust	NAP	Trust	NAP	Trust
New South Wales	Central West	274,500		274,500					
	Lachlan	262,500		262,500					
	Southern Rivers		40,000		40,000				
Victoria	Corangamite	368,000		368,000		187,500		187,500	
	Glenelg Hopkins	300,800	63,400	842,800	63,400	408,369	45,667	644,577	45,667
	Goulburn Broken	100,000		100,000		75,000		75,000	
	Mallee	490,100		490,100		128,463		128,463	
	North Central	60,000		60,000		30,000		30,000	
Total		1,855,900	103,400	2,397,900	103,400	829,332	45,667	1,065,540	45,667

Activities and achievements

Funded activities

Funding for the types of regional investment activities having a major focus on nutrients in aquatic environments supported by the NAP and the regional component of the Trust, is shown in Table 6.2.3.

Table 6.2.3 Types of activities supported by regional investments having a major focus on nutrients in aquatic environments

Activity Type	Budgeted Activity Expenditure (\$)				Reported Activity Expenditure (\$)			
	July 03 - March 04		Total to March 04		July 03 - March 04		Total to March 04	
	NAP	Trust	NAP	Trust	NAP	Trust	NAP	Trust
Resource assessment	509,100		1,051,100		412,470		648,678	
Capacity building	492,500		492,500		150,000		150,000	
On-ground activities	854,300	103,400	854,300	103,400	266,862	45,667	266,862	45,667
Total	1,855,900	103,400	2,397,900	103,400	829,332	45,667	1,065,540	45,667

Funding for regional investment activities having a major focus on nutrients in aquatic environments is described in Table 6.2.4.

Table 6.2.4 Funding for regional investment activities having a major focus on nutrients in aquatic environments

Region	Activity Title	Budgeted Activity Expenditure (\$)				Reported Activity Expenditure (\$)			
		July 03 - March 04		Total to March 2004		July 03 - March 04		Total to March 2004	
		NAP	Trust	NAP	Trust	NAP	Trust	NAP	Trust
New South Wales									
Central West	Innovative Agricultural Systems	192,500		192,500					
	Nutrient Management Program	82,000		82,000					
Lachlan	Management of Nutrients	262,500		262,500					
Southern Rivers	Sustainable Dairy Partnership		40,000		40,000				
Victoria									
Corangamite	Sustainable Dairy Effluent Management in Corangamite Region	300,000		300,000		150,000		150,000	
	Swan Bay Action Plan	68,000		68,000		37,500		37,500	

Region	Activity Title	Budgeted Activity Expenditure (\$)				Reported Activity Expenditure (\$)			
		July 03 - March 04		Total to March 2004		July 03 - March 04		Total to March 2004	
		NAP	Trust	NAP	Trust	NAP	Trust	NAP	Trust
Glenelg Hopkins	Assessment of revegetated discharge sites on the Dundas Tablelands			55,000		25,698		46,434	
	Formulation of an Estuary Management Plan for the Portland Basin	100,800	63,400	100,800	63,400	75,600	45,667	75,600	45,667
	Lower Hopkins Basin - Effective Management of Dairy Effluent			209,000		26,812		200,062	
	Lower Hopkins Basin - Nutrient Fluxes from dairy farms in SW Victoria			50,000		5,834		48,056	
	Lower Hopkins Basin - Organic composting of dairy waste and green material			120,000		43,471		43,471	
	Lower Hopkins Basin - Testing effects of nutrient loads on near pristine freshwater			84,000		63,000		63,000	
	Responsible use of nutrients	200,000		200,000		149,992		149,992	
	Sustainable Electrolysis Water Treatment			24,000		17,962		17,962	
Goulburn Broken	Whole Farm Approach to Effluent Management	100,000		100,000		75,000		75,000	

Region	Activity Title	Budgeted Activity Expenditure (\$)				Reported Activity Expenditure (\$)			
		July 03 - March 04		Total to March 2004		July 03 - March 04		Total to March 2004	
		NAP	Trust	NAP	Trust	NAP	Trust	NAP	Trust
Mallee	Coordination of biophysical monitoring and analysis for biodiversity, irrigation drainage and nutrients, water quality and ground water for catchment condition reporting	249,100		249,100		49,701		49,701	
	Reducing Nutrient Inflows to the Murray River and other environmental assets through investigations	186,000		186,000		43,963		43,963	
	Victorian Mallee Salinity and Water Quality Management Plan - Water Quality Implementation 2) Blue-green Algae Mitigation in Weir Pools	55,000		55,000		34,799		34,799	
North Central	Regional monitoring and review of waterway works and nutrient management activities	60,000		60,000		30,000		30,000	
Total		1,855,900	103,400	2,397,900	103,400	829,332	45,667	1,065,540	45,667

Achievements

The outputs, or products and services produced by these activities, are summarised in four tables according to the types of outputs described in Chapter 1. Summaries of the outputs related to resource assessment, planning, capacity building and on-ground activities are shown in Table 6.2.5 and Table 6.2.6.

Table 6.2.5 Regional investment resource assessment outputs related to nutrients in aquatic environments

Standard Output	July 03 - March 04			Total to March 04		
	NAP	Trust	Joint	NAP	Trust	Joint
Baseline, trend or condition studies for targets						
Number of sites monitored	23			23		
Number of studies undertaken	1			1		
Decision support tools I						
Number models, information management systems and other decision support tools developed	1			1		
Investigations (survey, inventory and mapping and data analysis)						
Number undertaken	3			3		
Area (hectares) surveyed	2600000			2600000		

Table 6.2.6 Regional investment planning outputs related to nutrients in aquatic environments

Standard Output	July 03 - March 04			Total to March 04		
	NAP	Trust	Joint	NAP	Trust	Joint
Improved practice codes or guidelines						
Number developed	1			1		

Nutrients in aquatic environments targets

Resource condition targets related to approved investment activities

Nutrients in aquatic environments targets are shown in Table 6.2.7.

Table 6.2.7 Resource condition targets for nutrients in aquatic environments

Region	Resource condition target
New South Wales	
Central West	By 2012, improve surface and groundwater system health across the catchment as measured by faecal coliform levels to achieve primary contact levels at key recreational sites and homestead protection levels at all other sites
	By 2012, improve surface and groundwater system health across the catchment as measured by: 20% reduction in the frequency of high alert blue green algal blooms
Lachlan	By 2012, maintain and/or restore the health and function of the surface water and groundwater systems by 10% reduction in the frequency of high-alert blue-green algal blooms
Sydney Metro	By 2003, achieve water quality consistent with the ANZECC guidelines for recreational uses and protection of the aquatic ecosystem and to ensure that aquatic ecosystems are used within their capabilities
South Australia	
Aboriginal Lands	Nutrient, bacterial and sedimentation levels reduced to predicted natural levels in water resources used by community groups by June 2008

Region	Resource condition target
Rangelands	No net loss (extent and condition) of remnant vegetation communities and an increase in areas managed to enhance habitat quality by 2014
	Review of research and data collation needs to improve the understanding and sustainable use of water resources in the Rangelands
	No further loss of threatened communities, populations or species and a measurable population increase by 2014
	Review of research and data collation needs to improve biodiversity management and prevent further habitat loss or ecosystem modification, completed by 2006
	Point and diffuse source pollution risks to surface and groundwater resources identified by 2005 and control targets developed and implemented by 2007
	Strategic planning and policy framework established to manage biodiversity and important habitat areas by 2007
SA Murray Darling Basin	Maintain blue green algal levels below the national standard threshold level for all sections of the Murray river and the lower lakes by 2020
	The turbidity level in the River Murray is to be equal or less than 80 NTU 90% of the time by 2020
	The phosphorous concentration in the River Murray is to be less than or equal to 0.05mg/L 90% of the time by 2020
	The nitrogen concentration in the River Murray is to be less than or equal to 1.0mg/L 90% of the time by 2020
	A median concentration of total phosphorus in the River Murray and its lakes, wetlands and flood plain <200mg/L
	A median concentration of total nitrogen in the River Murray and its lakes, wetlands and flood plain <200mg/L
	A median concentration of total nitrogen in the River Murray and its lakes, wetlands and flood plain <200mg/L
	The E.coli count in the River Murray is to be less than or equal to 150 ec/100mL for 90% of the time by 2020
Victoria	
Corangamite	By 2020 nitrogen, phosphorous and sediment loads at the end of valley target sites in the four river basins will be 30% less than 2003 levels
	Develop a process to identify and establish Resource Condition Targets for community participation by 2004
Glenelg Hopkins	The Glenelg Hopkins CMA Nutrient Management Plan, through the implementation of priority activities, aims to reduce the nutrient level in local waterways by 54.5% total phosphorus (TP)
Goulburn Broken	Reduce potential phosphorus loads by 65% by 2016 by reducing phosphorus loads from: Irrigation drains by 50% (84.5 tonnes); Dryland and diffuse sources by 20% (22 tonnes); Wastewater management facilities by 80%; Urban stormwater (9.84 tonnes)

Management action targets related to approved investment activities

Accredited regional plans detail management action targets primarily related to nutrients in aquatic environments targets. Management action targets are shown in Table 6.2.8.

Table 6.2.8 Management action targets for nutrients in aquatic environments

Region	Management action target
New South Wales	
Central West	By 2012, establish and maintain effectively managed perennial vegetated buffer strips along a minimum of 20% of the length of streams identified as being contributors of high nutrient loads (maintain if currently greater than 20%)
Hunter - Central Rivers	100% adoption by landholders of best management practices for chicken litter use and dairy effluent management on farming lands by 2005
	Improve stormwater management by 100% adoption of water sensitive urban design in new subdivisions by 2007
	Improve stormwater management by no decline in stormwater quality as measured by nutrient and suspended solids concentration from representative discharge points from 2002
Murrumbidgee	By 2012, assist land managers and communities to along those stream reaches which yield the highest sediment and nutrient loads, control streambank and gully erosion using structural control works covering a total length of 50 km
Southern Rivers	By 2006, best management practice implemented for stormwater and sewage management and best management achieved greater than 90% of the time
	By 2012, primary faecal coliform inputs to priority rivers and lakes will be reduced by at least 40%
South Australia	
Aboriginal Lands	Maintain & enhance infrastructure (e.g. sewage lagoons, rubbish sites) to avoid pollution of surface & ground waters. Support traditional cleaning of rock-holes.
Mount Lofty Ranges	Protection of 10% of priority riparian zones, as identified through Risk Assessment Framework for Water Resource Management by 2007
SA Murray Darling Basin	Increase water use efficiency in the LMRIA to 65% minimum
	Meter all Lower Murray Reclaimed Irrigation Area water diversions from the river
Victoria	
Corangamite	By 2005, develop monitoring, evaluation and research framework for water quality parameters
	By 2005, develop nutrient and sediment targets for major state and regionally significant waterways
	By 2005, identify the major sediment sources and transport mechanisms of high priority catchments in the Barwon, Moorabool, Woady Yallock and Otway Coast river systems
	Develop the Regional Catchment Strategy as a primary point of reference for information on condition, plans and current activity
	Encourage community involvement and ownership of natural resource management issues in the region. Provide information and resources at a local level to help develop appropriate actions
	Improve access to information across levels of government to target specific groups, identifying why issues are important and what people can do
	Make regional knowledge more accessible by developing local nodes and points of personal contact that function as a network of individuals and agencies
	Research, design and communication activity, and share learning between those responsible for natural resource management communication in the region
Glenelg Hopkins	Achieve nutrient level resource condition targets through implementing key actions from The Glenelg Hopkins CMA Nutrient Management Plan
Goulburn Broken	Investigate further waste water management projects to be undertaken
	Manage nutrient rich and turbid water through 20 urban storm water projects to be undertaken by 2016. 5 projects will be completed by 2007