



Don't drop it!  
Put it in your pocket!

**State of the Environment Report  
2001 to 2004  
Waverley Council**

**Key Environmental Goal:  
To achieve an enhanced natural and built environment  
in an ecologically sustainable manner**



© Waverley Council 2004

Waverley Council would like to thank all of the Council staff, Councillors, State Agency Officers, and Community groups who contributed their time, information, ideas, and enthusiasm to the development of this comprehensive report.

*Cover Image:* Designed by Alice Wheeler, aged 11, of Bronte Public School. Winning entry of Council's "School Stormwater Sign Design Competition"



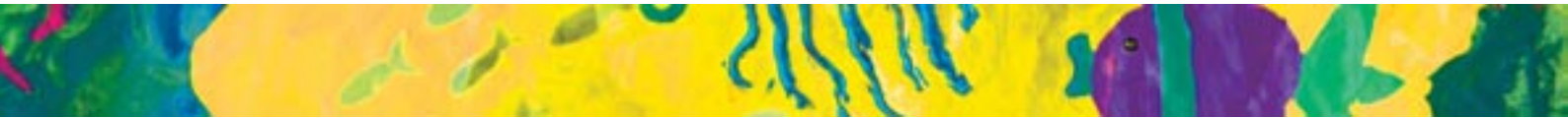
# STATE OF THE ENVIRONMENT 2001-04

## Contents

<b>2</b>	<b>LAND</b>	
<b>2.1</b>	<b>Introduction .....</b>	<b>6</b>
<b>2.2</b>	<b>Environmental Trends .....</b>	<b>6</b>
<b>2.3</b>	<b>Aims .....</b>	<b>6</b>
<b>2.4</b>	<b>Community Feedback .....</b>	<b>6</b>
<b>2.5</b>	<b>State of Our Land .....</b>	<b>7</b>
2.5.1	Landform .....	7
2.5.2	Geology.....	7
2.5.3	Soil Landscapes .....	7
2.5.4	Land Use .....	10
<b>2.6</b>	<b>Pressures on Our Land.....</b>	<b>12</b>
2.6.1	Urban Development .....	12
2.6.2	Waverley Council Development Control Processes .....	12
2.6.3	Land and Environment Court.....	12
2.6.4	Land Degradation .....	13
<b>2.7</b>	<b>Response to these Pressures.....</b>	<b>14</b>
2.7.1	Planning Instruments, Policies, and Management Plans.....	14
2.7.2	Urban Improvements.....	18
2.7.3	Funding.....	19
2.7.4	Committee Updates .....	19
<b>2.8</b>	<b>Recommendations for the Management Plan.....</b>	<b>19</b>
<b>3</b>	<b>AQUATIC SYSTEMS</b>	
<b>3.1</b>	<b>Environmental Trends .....</b>	<b>22</b>
<b>3.2</b>	<b>Aims .....</b>	<b>22</b>
<b>3.3</b>	<b>Community Feedback .....</b>	<b>22</b>
<b>3.4</b>	<b>State of Our Aquatic Systems .....</b>	<b>22</b>
3.4.1	Rainfall .....	22
3.4.2	Catchments.....	23
3.4.3	Groundwater.....	24
3.4.4	Coastal Environments .....	24
3.4.5	Water Consumption.....	27

<b>3.5</b>	<b>Pressures</b> .....	<b>27</b>
3.5.1	Sewerage .....	27
3.5.2	Stormwater .....	28
3.5.3	Trade Waste Permits .....	28
3.5.4	Potential Acid Sulfate Soils.....	28
3.5.5	Climate Change .....	28
3.5.6	Recreation.....	28
<b>3.6</b>	<b>Response</b> .....	<b>29</b>
3.6.1	Catchment Management .....	29
3.6.4	Groundwater Extraction .....	30
3.6.5	Water Quality Monitoring.....	31
3.6.6	ICLEI Water Campaign .....	32
3.6.7	Sydney Water Every Drop Counts .....	32
3.6.8	Bush Regeneration .....	32
3.6.9	Visitor Impacts in the Coastal Zone project.....	32
3.6.10	Plastic Bag Exchange .....	32
3.6.11	Pooch Pouch.....	32
<b>3.7</b>	<b>Education</b> .....	<b>33</b>
3.7.1	Water Week.....	33
3.7.2	Greenwave Business Program.....	33
3.7.3	Sustainable Schools Challenge .....	33
3.7.4	Butt Busters .....	33
3.7.5	Bondi to Bronte Interpretive Signage (BBIS) Project .....	34
3.7.6	Marine Discovery Centre .....	34
<b>3.8</b>	<b>Planning</b> .....	<b>34</b>
3.8.1	Internal Staff Workshops.....	34
3.8.2	Catchment Plans .....	34
3.8.3	Southern Sydney Catchment Board “Catchment Blueprint” .....	34
3.8.4	Integrated Stormwater Management Plan .....	34
<b>3.9</b>	<b>Funding</b> .....	<b>35</b>
3.9.1	Environment Levy.....	35
3.9.2	Visitor Impacts in the Coastal Zone .....	35
3.9.3	Bronte Catchment Citizens Jury (EPA) .....	35
<b>3.10</b>	<b>Committees</b> .....	<b>35</b>
3.10.1	Officer Stormwater Working Party .....	35
3.10.2	SSROC Environmental Managers Group .....	35
<b>3.11</b>	<b>Awards</b> .....	<b>36</b>
3.11.1	Local Government Excellence in the Environment .....	36
<b>3.12</b>	<b>Recommendations to Management Plan</b> .....	<b>36</b>
<b>APPENDIX 3.1: Rock Platform Flora and Fauna</b> .....		<b>37</b>

<b>4</b>	<b>BIODIVERSITY</b>	
<b>4.1</b>	<b>Environmental Trends</b>	<b>39</b>
<b>4.2</b>	<b>Aims</b>	<b>39</b>
<b>4.3</b>	<b>Community Feedback</b>	<b>39</b>
<b>4.4</b>	<b>State of Waverley's Biodiversity</b>	<b>40</b>
4.4.1	Flora	40
4.4.2	Fauna	44
4.4.3	Endangered and Threatened Species	45
4.4.4	Wildlife Corridors	48
<b>4.5</b>	<b>Pressures</b>	<b>48</b>
4.5.1	Stormwater Runoff	48
4.5.2	Invasive Weed Species	48
4.5.3	Introduced Animals	48
4.5.4	Companion Animals	49
<b>4.6</b>	<b>Response</b>	<b>49</b>
4.6.1	Bushcare	49
<b>APPENDIX 4.1:</b>	<b>Weeds</b>	<b>50</b>
<b>APPENDIX 4.2:</b>	<b>Bird species identified in Waverley LGA</b>	<b>52</b>
<b>APPENDIX 4.3:</b>	<b>Waverley's Fauna</b>	<b>54</b>
<b>APPENDIX 4.4:</b>	<b>Bushcare Groups</b>	<b>57</b>
<b>5</b>	<b>AIR</b>	
<b>5.1</b>	<b>Environmental Trends</b>	<b>59</b>
<b>5.2</b>	<b>Aims</b>	<b>59</b>
<b>5.3</b>	<b>Community Feedback</b>	<b>59</b>
<b>5.4</b>	<b>State of our Air</b>	<b>60</b>
5.4.1	Pollution	60
5.4.2	Energy Consumption	60
<b>5.5</b>	<b>Pressures</b>	<b>61</b>
5.5.1	Global Warming	61
5.5.2	Ozone Depletion	61
5.5.3	Pollutants	62
5.5.4	Transport – JTW data, modes	63
5.5.5	Odours	64
<b>5.6</b>	<b>Response</b>	<b>65</b>
5.6.1	Planning Instruments, Policies and Action Plans	65
<b>5.7</b>	<b>Funding</b>	<b>68</b>
5.7.1	Energy Wise Retrofit Project	68
5.7.3	Education Initiatives	69
<b>5.8</b>	<b>Recommendations for Management Plan</b>	<b>69</b>



<b>6</b>	<b>WASTE</b>	
<b>6.1</b>	<b>Environmental Trends</b>	<b>71</b>
<b>6.2</b>	<b>Our Aims</b>	<b>71</b>
<b>6.3</b>	<b>Community Feedback</b>	<b>72</b>
<b>6.4</b>	<b>State of our Waste Systems</b>	<b>72</b>
6.4.1	Waste Reprocessing Facilities/Landfill	72
6.4.2	Municipal Waste	72
6.4.3	Waverley Council Waste Management Services	72
<b>6.5</b>	<b>Pressures on our Waste Systems</b>	<b>73</b>
6.5.1	Garbage collection services	73
6.5.2	Recycling Services	73
6.5.3	Green waste services	74
6.5.4	Free rubbish removal service (Cleanup collection)	74
6.5.5	Paid pick up service	74
6.5.6	Household hazardous waste	75
6.5.7	Public Place Management	75
6.5.8	Street cleaning and litter bin services	75
6.5.9	Public Place Recycling	76
<b>6.6</b>	<b>Response to these Pressures</b>	<b>76</b>
6.6.1	Planning Instruments, Policies, and Management Plans	76
6.6.2	Council Works	77
6.6.3	Education Initiatives	78
6.6.4	Funding	78
<b>6.7</b>	<b>Recommendations for the Management Plan</b>	<b>78</b>
<b>7</b>	<b>NOISE</b>	
<b>7.1</b>	<b>Environmental Trends</b>	<b>80</b>
<b>7.2</b>	<b>Aims</b>	<b>80</b>
<b>7.3</b>	<b>Community Feedback</b>	<b>80</b>
<b>7.4</b>	<b>Noise in our Environment</b>	<b>80</b>
7.4.1	Regulation of Noise	80
7.4.2	Levels of Noise	81
<b>7.5</b>	<b>Pressures on the Environment From Noise</b>	<b>81</b>
7.5.1	Complaints	81
<b>7.6</b>	<b>Response</b>	<b>82</b>
7.6.1	Education	82
7.6.2	Planning	82
<b>7.7</b>	<b>Recommendations for Management Plan</b>	<b>82</b>

<b>8</b>	<b>ABORIGINAL AND NON-ABORIGINAL HERITAGE</b>	
<b>8.1</b>	<b>Environmental Trends</b>	<b>84</b>
<b>8.2</b>	<b>Aims</b>	<b>84</b>
<b>8.3</b>	<b>Community Feedback</b>	<b>84</b>
<b>8.4</b>	<b>State of our Aboriginal Heritage</b>	<b>85</b>
<b>8.5</b>	<b>Pressures</b>	<b>85</b>
<b>8.6</b>	<b>Response</b>	<b>85</b>
8.6.1	Planning Instruments, Policies, and Management Plans	85
<b>8.7</b>	<b>Recommendations for Management Plan</b>	<b>86</b>
<b>9</b>	<b>SOCIAL ENVIRONMENT</b>	
<b>9.1</b>	<b>Environmental Trends</b>	<b>88</b>
<b>9.2</b>	<b>Aims</b>	<b>88</b>
<b>9.3</b>	<b>Community Feedback</b>	<b>88</b>
<b>9.4</b>	<b>State of Our Environment</b>	<b>89</b>
9.4.1	Demography	89
9.4.2	Our Community	89
9.4.3	Tourism	90
9.4.4	Precinct Committees	90
9.4.5	Community Services	91
9.4.6	Community Housing	91
9.4.7	Bondi Pavilion	91
<b>9.5</b>	<b>Pressures</b>	<b>92</b>
9.5.1	Development	92
9.5.2	Housing	92
9.5.3	Unemployment	92
9.5.4	Tourism	92
9.5.5	Crime	92
9.5.6	Child Care	92
9.5.7	Young People	92
<b>9.6</b>	<b>Response</b>	<b>93</b>
9.6.1	Affordable Housing	93
9.6.2	Employment	93
9.6.3	Young People	93
9.6.4	Seniors	94
9.6.5	People from Culturally & Linguistically Diverse (CALD) Backgrounds	94
9.6.6	Youth Events	94
9.6.7	Other Community Events	94
9.6.8	Planning	95
9.6.9	Funding	96
<b>9.7</b>	<b>Recommendations for Management Plan</b>	<b>97</b>





## SECTION ONE

# Introduction & Indicators

1.1	Legal Context.....	2
1.2	Report Purpose.....	2
1.3	Structure of this Report.....	2
1.4	Waverley Council Sustainability Indicators .....	2
1.5	The indicators that are used have met the following criteria:.....	2
1.6	Waverley Sustainability Indicators Report Card .....	3
1.7	Waverley Council Area.....	4



# Introduction & Indicators

## 1.1 LEGAL CONTEXT

This is the tenth consecutive State of the Environment Report (SoE) prepared by Waverley Council for the Waverley Local Government Area. The report covers the period from 1 July 2000 to 30 June 2004.

This SoE report has been prepared as a comprehensive document as required under Section 428(c) of the *Local Government Act 1993* and the *Local Government (General) Regulation 1993*.

## 1.2 REPORT PURPOSE

The aim of this State of the Environment Report is to provide accurate and updated information for Council, residents, and government agencies on the state of the Waverley environment, and all environmental management responses implemented throughout the Waverley area throughout the reporting period.

Comparing SoE reports from year to year enables Council to see improvements in all sectors of the local environment and to identify areas that need attention in the future. The aim of this report is to guide planning action toward ecologically sustainable development in our local area.

## 1.3 STRUCTURE OF THIS REPORT

This report has been based upon the eight environmental sectors of land, aquatic systems, biodiversity, air, waste, noise, Aboriginal and non-aboriginal heritage, and the social environment. These chapters form the basis of the report. Each chapter introduces each sector with a snap shot of environmental trends with feedback from community consultation on their perceptions of the state of the environment.

The state-pressure-response framework is then used as the basis for each chapter. This is in accordance with the Local Government Act 1993 and the guidelines for SoE reporting produced by the Department of the Local Government (2000). Each environmental sector is described in terms of its current state within Waverley, the pressures placed upon it, and the management responses implemented to manage these pressures.

## 1.4 WAVERLEY COUNCIL SUSTAINABILITY INDICATORS

Indicators are numerical tools used to measure a variety of economic, social, environmental and political trends. Evaluation of an indicator over time allows Council to assess how Council, other government agencies and the community are looking after the environment and working towards the goal of ecologically sustainable development (ESD). The indicators that have been chosen are by no means exhaustive, nor cover every environmental, economic or social consideration. However they provide the starting point for Council's environmental program.

In partnership with our local community, Council has developed 31 sustainability indicators that best represent how the community wants us to measure our progress toward environmental sustainability. By comparing our progress in these key areas from year to year, we can monitor Council's progress toward achieving our corporate goals of sustainability.

## 1.5 THE INDICATORS THAT ARE USED HAVE MET THE FOLLOWING CRITERIA:

- 1.5.1 they reflect something fundamental to the long term economic, environmental or social health of the community;
- 1.5.2 that they are statistically measurable — either the data exists or a practical method of data collection can be created;
- 1.5.3 the indicator represents something that can be influenced by the community or government actions; and
- 1.5.4 are compatible with the Council and community vision for Waverley.

### Key:

Key to Sustainability Indicators	
↑	Positive movement toward sustainability
↓	Negative movement toward sustainability
↔	No movement toward sustainability recorded
-	Not direct indicator of Council's progress
ND	Not determined

## 1.6 WAVERLEY SUSTAINABILITY INDICATORS REPORT CARD

Sustainability Indicator Land	2000/1	2001/2	2002/3	2003/4	Movement Toward Sustainability
Per capita of Open Space	0.0017 ha	0.0017 ha	0.0017 ha	0.0017 ha	↔
Number of Development Applications approved by Council	754	929	1081	1011	-
Residential Density (population per km <sup>2</sup> )	7183	6722	6889	7369	-
Total water consumption in Waverley (kL): Community	ND	ND	6,228,058	6,840,027	↓
Total water consumption in Waverley (kL): Council	159,234	159,397	189,002	134,042	↑
Average compliance with EPA Beachwatch: Faecal Coliform	100%	100%	100%	97%	↓
E Average compliance with EPA Beachwatch: Faecal Coliform	95%	97%	100%	83%	
Number of pollution control devices (including trash racks and pit baskets)	51	60	80	96	↑
Area of Bushland in active care of Council and community (m <sup>2</sup> )	924	1094	1319	1843	↑
Number of native floral species identified in Waverley LGA	154	154	154	154	-
Number of native faunal species identified in the Waverley LGA	93	93	93	93	-
Greenhouse gas emissions (tonnes of CO <sub>2</sub> ) from Council activities	3165	3360	3037	3265	↑
Total energy saved through Council initiated projects (kWh)	3,447,712.42	3,660,130.72	3,308,278.87	3,556,644.88	↑
Number of vehicles per 100 residents	42	43	44	45	↓
Number of resident trips made on public transport (patronage per day)	ND	ND	ND	6643 6780 115	-
• Bus					
• Train					
• Ferry / Light Rail					
Total kilometres of cycleways in the LGA (kilometres)	ND	ND	ND	29.5	-
Total tonnes waste to landfill (no recycling)	18205	17924	22870	23433.4	↑
Total tonnes waste diverted to recycling	7687	6873	7351	7572.4	↑
Tonnes of illegally dumped rubbish removed by Council	250 (KM)	348	404	353	-
Total paper use (reams)	5945	5318	4577	4069	↑
Number of noise complaints	384	161	65	154	↑
Heritage items listed in Waverley LEP	19	19	19	19	↔
Number of traits listed on the NPWS Aboriginal Sites Register	9	9	209	209	↑
Number of affordable housing units	28	39	56	20	↓
Number of community volunteers participating in sustainable activities and related activities:					
• Community clean ups	nd	nd	nd	96	↑
• Bushcare programs	50	69	105	106	↑
• Environmental Levy programs	30	535	859	297	↑
• Environmental Courses			48	419	↑
Number of residents in precinct forums	357	392	354	1486	↑

## 1.7 MAP OF WAVERLEY COUNCIL AREA

