

6

TRENDS BETWEEN THE 1997 AND 2004 ENVIRONMENTAL HEALTH NEEDS SURVEYS

6.1 OVERARCHING TRENDS: A COMPARISON WITH THE 1997 EHNS

Three forms of trends in core indicators between the 1997 and 2004 EHNS were examined in this report:

- trends in community satisfaction with essential services (sub-section 6.1.1), involving comparisons of all communities (i.e. those that participated in each survey);
- trends in core indicators (sub-section 6.1.2), involving comparisons of the same communities (i.e. only those communities that participated in both surveys); and,
- trends in priority scores (sub-section 6.1.3), involving comparisons of all communities (i.e. those that participated in each survey).

Where possible, there are analyses presented on each of the core indicators, except for emergency management (which was not surveyed in 1997). Also, the formulae for housing and for dust has been calculated with both 'new' and 'old' formulae for sub-section 6.1.3. The new formulae are considered to be more accurate measures of these issues (see Appendix 1).

6.1.1 TRENDS IN COMMUNITY SATISFACTION WITH SERVICES

This set of analyses indicated that, in general, statewide satisfaction scores increased slightly for most indicators, except for a slight decrease for electricity, dust and dog program. Also, percentage scores denoting satisfaction were relatively high in 2004 for essential services: water supply (63%); electricity (61%); sewerage system (66%); and, 'dwelling OK for the household' (65%). Note that smaller communities (population < 20) were less satisfied (50%) than larger communities (66%) with their dwellings.

Table 6-1 shows the positive and negative changes in general satisfaction for a number of key indicators. Some indicators such as water and electricity show the percentage of change in satisfaction. Other indicators such as litter and dust, show changes in the average score – to calculate this, respondents were asked on a scale of 10-50 to indicate their level of satisfaction. Negative scores indicate a decline in satisfaction, while positive scores indicate an improvement. Note that usually less than one half of communities (or households) completed these questions.

Table 6-1: Changes in Satisfaction Between the 1997 and 2004 EHNS

ATSI Region	% Satisfied Water	% Satisfied Electricity	% Satisfied Housing	*Litter Rating	Tip Mgt Rating	Lagoon Overflow Rating	Lagoon Mgt Rating	% Sewerage	Ablution Facilities Rating	Dust Rating	% Have Dog Program
Kullari	-21.5	-23.3	-17.1	-0.4	1.0	17.5	2.5	2.5	0.8	1.1	-36.3
Malarabah	0.2	5.7	-23.2	-0.3	4.1	10.3	2.2	4.4	-1.9	-5.9	6.9
Mulga Mallee	-19.4	12.5	-4.5	3.8	13.3	-8.0	2.0	4.2	5.1	-8.3	48.2
NNY	13.7	5.6	19.9	-2.4	-0.7	1.6	1.8	-4.9	2.5	3.7	15.8
Noongar	-42.9	-14.3	10.3	10.0	-	-	-	85.7	-	-14.3	14.3
W. Desert	25.1	-4.2	15.5	0.0	2.6	2.7	-2.0	9.3	2.6	3.6	25.2
Wunan	15.4	15.1	25.7	3.3	2.5	12.3	2.8	13.1	1.2	-3.7	6.3
Yamatji	16.7	33.3	6.7	8.3	15.8	-	-	33.3	2.5	-3.3	0.0
Statewide	1.7	-1.5	2.6	1.9	3.2	5.4	1.1	4.9	1.2	-1.7	-2.0

* Note: with the rated scores, changes of less than five are not considered to be significant.

6

TRENDS BETWEEN THE 1997 AND 2004 ENVIRONMENTAL HEALTH NEEDS SURVEYS CONTINUED**Water***Table 6-2: Is the Water Supply Satisfactory?*

ATSIC Region	1997		2004		Proportional Change % Satisfied
	n	% Satisfied	n	% Satisfied	
Kullari	20	64.5	31	43.1	-21.5
Malarabah	39	73.6	45	73.8	0.2
Mulga Mallee	6	75.0	5	55.6	-19.4
Ngarda Ngarli Yarndu	12	60.0	14	73.7	13.7
Noongar	1	100.0	4	57.1	-42.9
Western Desert	12	48.0	19	73.1	25.1
Wunan	33	52.4	42	67.7	15.4
Yamatji	3	50.0	4	66.7	16.7
Statewide	126	60.9	164	62.6	1.7

Electricity*Table 6-3: Is the Electricity Supply Satisfactory?*

ATSIC Region	1997		2004		Proportional Change % Satisfied
	n	% Satisfied	n	% Satisfied	
Kullari	17	54.8	23	31.5	-23.3
Malarabah	37	68.5	46	74.2	5.7
Mulga Mallee	4	50.0	5	62.5	12.5
Ngarda Ngarli Yarndu	14	77.8	15	83.3	5.6
Noongar	1	100.0	6	85.7	-14.3
Western Desert	14	58.3	13	54.2	-4.2
Wunan	31	56.4	40	71.4	15.1
Yamatji	4	66.7	5	100.0	33.3
Statewide	122	61.9	153	60.5	-1.5

6

TRENDS BETWEEN THE 1997 AND 2004 ENVIRONMENTAL HEALTH NEEDS SURVEYS CONTINUED**Housing***Table 6-4: Is This Dwelling OK for You and Your Family?*

ATSIC Region	1997		2004		Proportional Change
	n	% Satisfied	n	% Satisfied	% Satisfied
Kullari	137	66.8	173	49.7	-17.1
Malarabah	327	78.4	335	55.2	-23.2
Mulga Mallee	44	72.1	71	67.6	-4.5
Ngarda Ngarli Yarndu	105	54.7	97	74.6	19.9
Noongar	4	66.7	30	76.9	10.3
Western Desert	125	52.7	277	68.2	15.5
Wunan	243	49.9	414	75.5	25.7
Yamatji	54	78.3	62	84.9	6.7
Statewide	1039	62.1	1459	64.7	2.6

Table 6-5: Trends in Satisfaction with Dwellings: Small Communities (Population < 20)

ATSIC Region	1997		2004		Proportional Change
	n	% Satisfied	n	% Satisfied	% Satisfied
Kullari	14	53.8	27	32.9	-20.9
Malarabah	15	57.7	14	42.4	-15.3
Mulga Mallee	1	100.0	-	-	-
Ngarda Ngarli Yarndu	20	66.7	5	100.0	33.3
Noongar	-	-	6	60.0	-
Western Desert	0	0.0	0	0.0	0.0
Wunan	21	38.9	48	76.2	37.3
Yamatji	2	100.0	-	-	-
Statewide	73	51.8	100	49.8	-2.0

Table 6-6: Trends in Satisfaction with Dwellings: Large Communities (Population >= 20)

ATSIC Region	1997		2004		Proportional Change
	n	% Satisfied	n	% Satisfied	% Satisfied
Kullari	123	68.7	146	54.9	-13.8
Malarabah	312	79.8	321	55.9	-23.9
Mulga Mallee	43	71.7	71	67.6	-4.0
Ngarda Ngarli Yarndu	85	52.5	92	73.6	21.1
Noongar	4	66.7	24	82.8	16.1
Western Desert	125	53.2	277	69.6	16.4
Wunan	222	51.3	366	75.5	24.2
Yamatji	52	77.6	62	84.9	7.3
Statewide	966	63.0	1359	66.1	3.1

6

TRENDS BETWEEN THE 1997 AND 2004 ENVIRONMENTAL HEALTH NEEDS SURVEYS CONTINUED**Solid Waste Disposal***Table 6-7: Rate the Level of Litter Around the Area (Average Score)*
(scale from 50 = none to 10 = excessive)

ATSIC Region	n (1997)	1997	n (2004)	2004	Proportional Change
Country Noongar	0	-	4	47.5	-
Kullari	30	41.7	73	41.2	-0.4
Malarabah	55	39.1	65	38.8	-0.3
Mulga Mallee	8	31.3	8	35.0	3.8
Ngarda Ngarli Yarndu	20	33.0	17	30.6	-2.4
Noongar	1	30.0	1	40.0	10.0
Western Desert	26	30.8	26	30.8	0.0
Wunan	63	37.0	61	40.3	3.3
Yamatji	6	31.7	6	40.0	8.3
Statewide	209	36.7	261	38.5	1.9

Table 6-8: Tip Management (Average Score)
(scale from 40 = very satisfactory to 10 = very unsatisfactory)

ATSIC Region	n (1997)	1997	n (2004)	2004	Proportional Change
Country Noongar	0	-	1	20.0	-
Kullari	19	26.8	60	27.8	1.0
Malarabah	48	25.4	59	29.5	4.1
Mulga Mallee	3	16.7	8	30.0	13.3
Ngarda Ngarli Yarndu	17	24.7	15	24.0	-0.7
Noongar	1	20.0	0	-	-
Western Desert	23	23.9	26	26.5	2.6
Wunan	50	24.0	49	26.5	2.5
Yamatji	4	17.5	3	33.3	15.8
Statewide	165	24.5	221	27.7	3.2

Sanitation*Table 6-9: Lagoon Overflow Level (Average Score)*
(scale from 50 = none to 10 = excessive)

ATSIC Region	n (1997)	1997	n (2004)	2004	Proportional Change
Country Noongar	0	-	0	-	-
Kullari	2	20.0	4	37.5	17.5
Malarabah	9	33.3	11	43.6	10.3
Mulga Mallee	5	48.0	3	40.0	-8.0
Ngarda Ngarli Yarndu	9	44.4	5	46.0	1.6
Noongar	0	-	0	-	-
Western Desert	5	40.0	11	42.7	2.7
Wunan	10	35.0	11	47.3	12.3
Yamatji	0	-	2	40.0	-
Statewide	40	38.3	47	43.6	5.4

6

TRENDS BETWEEN THE 1997 AND 2004 ENVIRONMENTAL HEALTH NEEDS SURVEYS CONTINUED

Table 6-10: Lagoon Management Score (Average Score)
(scale from 40 = very satisfactory to 10 = very unsatisfactory)

ATSIC Region	n (1997)	1997	n (2004)	2004	Proportional Change
Country Noongar	0	-	0	-	-
Kullari	2	30.0	4	32.5	2.5
Malarabah	8	28.8	11	30.9	2.2
Mulga Mallee	5	28.0	3	30.0	2.0
Ngarda Ngarli Yarndu	9	32.2	5	34.0	1.8
Noongar	0	-	0	-	-
Western Desert	5	30.0	10	28.0	-2.0
Wunan	10	29.0	11	31.8	2.8
Yamatji	0	-	2	30.0	-
Statewide	39	29.7	46	30.9	1.1

Table 6-11: Does the Sewerage System Meet the Needs of the Community?

ATSIC Region	1997		2004		Proportional Change % Yes
	n	% Yes	n	% Yes	
Kullari	13	44.8	35	47.3	2.5
Malarabah	31	68.9	44	73.3	4.4
Mulga Mallee	5	62.5	6	66.7	4.2
Ngarda Ngarli Yarndu	14	73.7	11	68.8	-4.9
Noongar	0	0.0	6	85.7	85.7
Western Desert	10	66.7	19	76.0	9.3
Wunan	32	60.4	47	73.4	13.1
Yamatji	3	50.0	5	83.3	33.3
Statewide	108	61.4	173	66.3	4.9

Table 6-12: How Well are the Ablution Facilities Maintained? (Average Score)
(scale from 40 = very satisfactory to 10 = very unsatisfactory)

ATSIC Region	n (1997)	1997	n (2004)	2004	Proportional Change
Country Noongar	0	-	3	33.3	-
Kullari	23	30.0	48	30.8	0.8
Malarabah	34	30.6	45	28.7	-1.9
Mulga Mallee	5	22.0	7	27.1	5.1
Ngarda Ngarli Yarndu	14	25.0	12	27.5	2.5
Noongar	1	30.0	0	33.3	-
Western Desert	16	24.4	20	27.0	2.6
Wunan	42	27.6	44	28.9	1.2
Yamatji	4	27.5	5	30.0	2.5
Statewide	139	27.9	184	29.1	1.2

6

TRENDS BETWEEN THE 1997 AND 2004 ENVIRONMENTAL HEALTH NEEDS SURVEYS CONTINUED**Dust***Table 6-13: Rate the Level of Dust (Average Score)*

(scale from 50 = none to 10 = excessive)

ATSIC Region	n (1997)	1997	n (2004)	2004	Proportional Change
Country Noongar	0		4	20.0	-
Kullari	32	27.5	74	28.6	1.1
Malarabah	55	28.7	68	22.8	-5.9
Mulga Mallee	8	25.0	9	16.7	-8.3
Ngarda Ngarli Yarndu	20	21.0	19	24.7	3.7
Noongar	1	40.0	3	25.7	-14.3
Western Desert	26	21.5	27	25.2	3.6
Wunan	65	28.9	63	25.2	-3.7
Yamatji	6	26.7	6	23.3	-3.3
Statewide	213	26.9	273	25.2	-1.7

Dog Program*Table 6-14: Does the Community have A Dog Program?*

ATSIC Region	1997		2004		Proportional Change
	n	% Yes	n	% Yes	
Kullari	22	68.8	24	32.4	-36.3
Malarabah	31	56.4	43	63.2	6.9
Mulga Mallee	3	37.5	6	85.7	48.2
Ngarda Ngarli Yarndu	9	47.4	12	63.2	15.8
Noongar	0	0.0	1	14.3	14.3
Western Desert	15	60.0	23	85.2	25.2
Wunan	44	68.8	48	75.0	6.3
Yamatji	6	100.0	6	100.0	0.0
Statewide	130	61.9	163	59.9	-2.0

6.1.2 TRENDS IN THE SAME COMMUNITIES SURVEYED IN 2004 AND 1997

Between 150 and 175 communities on average answered questions in both surveys related to the core indicators. There tended to be expressions of satisfaction with essential services in both surveys, with the majority of communities being satisfied with their water supply, for example (75 satisfied versus 21 unsatisfied; a further 41 communities reported an improvement in their water quality, while 27 reported a decline), as well as with power supply (75 satisfied versus 16 unsatisfied; a further 37 communities reported an improvement in their power supply, while 27 reported a decline). Separate results are presented for larger communities (50 to 99; ≥ 100) where trends are evident. Data are presented in tables where communities participated in both surveys for the questions at issue; for other questions, only a summary result is noted.

6

TRENDS BETWEEN THE 1997 AND 2004 ENVIRONMENTAL HEALTH NEEDS SURVEYS CONTINUED

Water

Adequate Water Source

- Two of the communities that had an inadequate water source in 1997 also had inadequate water in 2004; these were Coonana and Geboowana.
- Seven of the communities from 1997 with inadequate water now have adequate sources,
- Three communities (listed below) who had adequate water in 1997 were inadequate in 2004.

ATSIC Region	Community
Malarabah	Pantijan
Wunan	Pago
Ngarda Ngarli Yarndu	Mingullatharndo

Table 6-15: Number of Communities with Adequate Water in Both Surveys

ATSIC Region	Population			Total
	< 50	50-100	> 100	
Kullari	18	5	4	27
Malarabah	19	19	8	46
Mulga Mallee	2	3	3	8
Ngarda Ngarli Yarndu	9	4	2	15
Perth Noongar	0	1	0	1
Western Desert	2	6	13	21
Wunan	26	9	10	45
Yamatji	0	0	2	2
Total	76	47	42	165

Water Disinfection

135 communities that are not connected to a town supply knew if their water source was disinfected in both the 1997 and 2004 surveys. Table 6-16 shows the number of communities and their responses to both surveys.

- Two communities, Yiyili and Mingullatharndo, reported not disinfecting their water in the 2004 survey, but they did disinfect their supply in the 1997 survey.
- 57 communities statewide were still not disinfecting their water.
- 39 were disinfecting their water in 2004 but were not in 1997.
- 37 communities reported disinfecting their water supply in both surveys.

6

TRENDS BETWEEN THE 1997 AND 2004 ENVIRONMENTAL HEALTH NEEDS SURVEYS CONTINUED

Table 6-16: Number of Communities Reporting Disinfection of Drinking Water in Both Surveys

ATSIC Region	Population			Total
	< 50	50-100	> 100	
Kullari	1	0	4	5
Malarabah	1	2	4	7
Mulga Mallee	0	0	1	1
Ngarda Ngarli Yarndu	2	1	1	4
Western Desert	0	2	9	11
Wunan	0	2	6	8
Yamatji	0	0	1	1
Total	4	7	26	37

Water Testing

There were 120 communities (that were not connected to a town supply) that reported knowing whether their water was tested or not in both the 1997 and 2004 surveys (see Tables 6-17a and 6-17b).

- Four communities reported not testing their water in the 2004 survey but were testing it in 1997. These are Bedunburu, Yiyili, Bow River and Balginjirr
- 46 communities reported not having their water supply tested in both the 1997 and 2004 surveys.
- 23 reported that they were testing it in 2004 but were not testing it in 1997.
- 47 communities reported testing their sources in both 1997 and 2004 surveys.

Comparison of Water Testing Rates by ATSIC Region

*Table 6-17a:
Number of Communities Reporting no Monthly Testing of Water in Both Surveys*

ATSIC Region	Population			Total
	< 50	50-100	> 100	
Kullari	14	0	0	14
Malarabah	7	1	0	8
Ngarda Ngarli Yarndu	2	0	0	2
Wunan	22	0	0	22
Total	45	1	0	46

*Table 6-17b:
Number of Communities Reporting having Monthly Testing of Water in Both Surveys*

ATSIC Region	Population			Total
	< 50	50-100	> 100	
Kullari	0	1	4	5
Malarabah	2	7	5	14
Mulga Mallee	1	0	1	2
Ngarda Ngarli Yarndu	2	1	1	4
Western Desert	0	0	10	10
Wunan	0	3	7	10
Yamatji	0	1	1	2
Total	5	13	29	47

6

TRENDS BETWEEN THE 1997 AND 2004 ENVIRONMENTAL HEALTH NEEDS SURVEYS CONTINUED

Community Satisfaction with the Water Supply

There were 164 communities that reported on their levels of satisfaction with their water supply in 1997 and also reported on this in 2004. Tables 6-18a and 6-18b show how their satisfaction levels changed between the surveys:

- 21 communities reported no improvement in their unsatisfactory water quality between 1997 and 2004
- 27 communities reported a decline in water quality.
- 41 reported an improvement in their water quality.
- 75 reported satisfactory water quality in both surveys.

Comparison of Water Satisfaction Rates by ATSI Region

Table 6-18a:
Number of Communities that Reported having an Unsatisfactory Water Supply in Both Surveys

ATSI Region	Population			Total
	< 50	50-100	> 100	
Kullari	2	2	1	5
Malarabah	0	1	1	2
Mulga Mallee	0	1	0	1
Ngarda Ngarli Yarndu	0	1	0	1
Western Desert	0	1	2	3
Wunan	6	1	1	8
Yamatji	1	0	0	1
Total	9	7	5	21

Table 6-18b:
Number of Communities that Reported having a Satisfactory Water Supply in Both Surveys

ATSI Region	Population			Total
	< 50	50-100	> 100	
Kullari	7	2	2	11
Malarabah	9	10	5	24
Mulga Mallee	1	1	2	4
Ngarda Ngarli Yarndu	4	2	2	8
Perth Noongar	0	1	0	1
Western Desert	0	2	4	6
Wunan	11	3	6	20
Yamatji	5	13	29	47
Total	32	21	21	75

Electricity

Electricity Source

The number of communities reporting about their power supply in the 1997 survey and then again in 2004 is 177. Ngyallawilli reported having no source of electricity in both surveys. Cattle Creek and Dingo Springs both reported using community generators in 1997 and in 2004 report having no source of electricity. Out of the eight communities with no power in 1997, seven of them reported having power supplies in 2004. Only one of those communities has been connected to a town supply.

Interruptions to Power Supplies

There were 115 communities not currently connected to town power that responded to the question on 'regular power interruptions' in both surveys:

- Table 6-19a shows the number of communities that reported power interruptions (43) in both surveys
- Table 6-19b shows those that reported no power interruptions (28) in both surveys
- 27 communities reporting regular interruptions in 1997 no longer reported these in 2004,
- 17 communities not reporting regular interruptions in 1997 were reporting these in 2004.

6

TRENDS BETWEEN THE 1997 AND 2004 ENVIRONMENTAL HEALTH NEEDS SURVEYS CONTINUED

Comparison of Communities Reporting Power Interruptions by ATSIC Region

Table 6-19a:
Number of Communities that Reported having Regular Interruptions in Power in Both Surveys

ATSIC Region	Population			Total
	< 50	50-100	> 100	
Kullari	2	0	0	2
Malarabah	3	7	2	12
Ngarda Ngarli Yarndu	3	1	1	5
Western Desert	0	2	8	10
Wunan	8	3	3	14
Total	16	13	14	43

Table 6-19b:
Number of Communities that Reported not having Regular Power Interruptions in Both Surveys

ATSIC Region	Population			Total
	< 50	50-100	> 100	
Kullari	8	2	3	13
Malarabah	3	3	1	7
Ngarda Ngarli Yarndu	1	0	0	1
Western Desert	0	1	0	1
Wunan	4	0	1	5
Yamatji	0	0	1	1
Total	16	6	6	28

Community Satisfaction with Power Supply

There were 155 communities that reported unsatisfactory power in both the 1997 and the 2004 surveys. Tables 6-20a and 6-20b show changing satisfaction levels with the community's power supply between 1997 and 2004:

- 16 communities reported unsatisfactory power supply in both surveys
- 27 communities reported a decline in their satisfaction with the community power
- 37 communities reported an improvement
- 75 communities reported continuing satisfaction with their power.

Comparison of Communities Reporting Satisfactory Power Supply by ATSIC Region

Table 6-20a:
Number of Communities that Reported having an Unsatisfactory Electricity Supply in Both Surveys

ATSIC Region	Population			Total
	< 50	50-100	> 100	
Kullari	4	0	1	5
Malarabah	1	2	0	3
Mulga Mallee	0	1	0	1
Western Desert	0	1	1	2
Wunan	5	0	0	5
Total	10	4	2	16

Table 6-20b:
Number of Communities that Reported having a Satisfactory Electricity Supply in Both Surveys

ATSIC Region	Population			Total
	< 50	50-100	> 100	
Kullari	5	2	0	7
Malarabah	10	11	3	24
Mulga Mallee	0	1	2	3
Ngarda Ngarli Yarndu	5	2	2	9
Perth Noongar	0	1	0	1
Western Desert	0	4	3	7
Wunan	10	7	5	22
Yamatji	1	0	1	2
Total	31	28	16	75

6

TRENDS BETWEEN THE 1997 AND 2004 ENVIRONMENTAL HEALTH NEEDS SURVEYS CONTINUED

Housing

Despite some improvements, analyses indicated that housing repairs require more attention, as shown by the following trends:

- increases in 'installed facilities' statewide, from 76% to 92% (Table 6-23)
- increases in the percentages of facilities 'not working', from 7.5% to 10% (Table 6-24);
- in an examination of reasons for 'why dwellings were unoccupied' (Table 6-27), one was 'due to major repairs' needed, which increased from 28% to 34%.

By 2004, there was a noticeable improvement in the type of housing and available facilities, mostly due to temporary dwellings being replaced by permanent housing with better facilities. However, the survey indicates that more effort needs to be made on maintenance, as the proportion of non-functioning facilities is rising.

Table 6-21: Comparison of Numbers and Proportion of Dwelling Types

Dwelling Type	1997 Total		2004 Total	
	No.	%	No.	%
Separate House	2020	74.6	2233	79.7
Semi-detached, duplex	58	2.1	63	2.2
Flat, Apartment	41	1.5	32	1.1
Caravan	62	2.3	24	0.9
Improvised Shelters	316	11.7	135	4.8
Donga with Facilities	65	2.4	60	2.1
Donga without Facilities	58	2.1	24	0.9
Other *	89	3.3	230	8.3
Total	2709	100	2801	100

* Other includes transportables or dongas. These did not specify whether they were houses with facilities, were incomplete houses, were houses under construction or if they were other miscellaneous dwellings.

There has been a slight improvement in the type of housing available across the State, as the proportion of permanent housing has risen while that of temporary shelters has fallen.

Table 6-22: Comparison of the Percentage of Dwellings with High Repair Needs

	% External Surfaces	% Doors and Windows	% Internal Taps	% Internal Wet Areas	% Internal Internal Surfaces	% Other Power Fixtures
1997	8.3	14.2	2.3	8.9	10	6.3
2004	9.8	26.3	6.1	25.5	16.3	14.5

Table 6-22 indicates that there is an increased need for housing repairs, especially in bathrooms, toilets and other internal areas.

6

TRENDS BETWEEN THE 1997 AND 2004 ENVIRONMENTAL HEALTH NEEDS SURVEYS CONTINUED

Table 6-23: Comparison of the Percentage of Availability of Installed Facilities

Functionality of Dwelling Facilities	% Installed	
	1997	2004
Sanitary Plumbing	78.8	90.0
Sewerage Disposal	71.6	78.4
Hot Water	76.2	92.2
Kitchen Sink	79.6	95.2
Bath and/or Shower	78.8	95.3
Toilet Cistern	77.5	95.3
Toilet Bowl	78.3	95.4
Laundry Trough	76.1	93.2
Laundry Waste Outlet	64.4	89.7
Average (of columns)	75.7	91.6

By 2004, there has been a significant increase in installed facilities (Table 6-23). However, after excluding dwellings that have no such facilities, the percentage non-working facilities had risen (Table 6-24).

Table 6-24: 1997 - 2004 Comparison of the Percentage of Functioning Facilities

Functionality of Dwelling Facilities	% Not Working	
	1997	2004
Sanitary Plumbing	4.4	8.1
Sewerage Disposal	4.1	6.9
Hot Water	25.9	14.9
Kitchen Sink	6.3	9.7
Bath and/or Shower	5.6	17.8
Toilet Cistern	5.8	11.0
Toilet Bowl	4.7	10.4
Laundry Trough	4.7	6.4
Laundry Waste Outlet	6.4	6.1
Average (of columns)	7.5	10.1

* Facilities requiring minor repairs were considered to be working.

Except for hot water systems (which show that a greater proportion are functioning in 2004) and laundry waste outlets (which show no real change), there was a generally higher level of facilities not working. And so, while more dwellings have facilities compared to 1997, there was a need for greater maintenance and repairs evident by 2004.

6

TRENDS BETWEEN THE 1997 AND 2004 ENVIRONMENTAL HEALTH NEEDS SURVEYS CONTINUED

Table 6-25: Comparison of the Percentage of Working Facilities in Adequate Dwellings

ATSIC Region	No Problems		Number of Facilities not Functioning						Total Dwellings 1997	Total Dwellings 2004
	1997	2004	1-2 Facilities		3-5 facilities		6+			
			1997	2004	1997	2004	1997	2004		
Kullari	73.3	74.3	25.9	20.6	0.8	4.1	0.0	0.9	247	218.0
Malarabah	64.6	68.0	29.5	23.6	2.9	6.4	3.1	2.0	491	641.0
Mulga Mallee	79.6	72.2	14.3	19.4	5.1	4.9	1.0	3.5	98	144
NNY	79.2	56.9	17.0	26.1	2.5	11.2	1.3	5.9	159	188
Noongar	85.7	78.4	14.3	5.9	0.0	2.0	0.0	13.7	7	51
Western Desert	79.9	60.1	16.0	25.7	2.1	12.1	2.1	2.1	338	486
Wunan	69.4	73.1	28.3	22.2	1.2	3.9	1.2	0.8	421	483
Yamatji	84.7	82.7	11.8	12.0	3.5	2.7	0.0	2.7	85	75
Total	72.7	68.1	23.5	22.6	2.2	7.0	1.6	2.4	1846	2286

Table 6-25 shows a slight increase by 2004 in the number of dwellings that have all of their basic facilities functioning.

Table 6-26: A Simplified Comparison of the Percentage of Working Facilities in Adequate Dwellings

ATSIC Region	Facilities not working			
	No Problems/1-2 facilities*		>=3 facilities	
	1997	2004	1997	2004
Kullari	99.2	95.0	0.8	5.0
Malarabah	94.1	91.6	5.9	8.4
Mulga Mallee	93.9	91.7	6.1	8.3
NNY	96.2	83.0	3.8	17.0
Noongar	100.0	84.3	0.0	15.7
Western Desert	95.9	85.8	4.1	14.2
Wunan	97.6	95.2	2.4	4.8
Yamatji	96.5	94.7	3.5	5.3
Total	96.2	90.7	3.8	9.3

Note*: refer to Table 6-25 for the percentage of dwellings with no problems.

The proportion of houses with less than three facilities not working, versus those with more than three facilities not working, has remained similar between 1997 and 2004 (see Table 6-26), but dwellings with less than three facilities not working appear to have received more attention overall.

6

TRENDS BETWEEN THE 1997 AND 2004 ENVIRONMENTAL HEALTH NEEDS SURVEYS CONTINUED

Table 6-27: Results for Why Dwellings are Unoccupied.

ATSI Region	% Cultural		% Major Repairs		% Needs Demolition		% Other *		No. of Dwellings Unoccupied	
	1997	2004	1997	2004	1997	2004	1997	2004	1997	2004
Country Noongar	-	-	-	71.4	-	-	-	28.6	-	7
Kullari	64.7	2.4	5.9	11.9	-	4.8	29.4	64.3	34	42
Malarabah	10.3	1.8	44.8	10.5	5.2	8.8	39.7	60.5	58	114
Mulga Mallee	14.3	6.9	-	51.7	-	-	85.7	17.2	7	29
NNY	15.4	20.6	46.2	41.2	7.7	7.4	30.8	16.2	26	68
Perth Noongar	-	-	100.0	82.6	-	-	-	-	7	23
Western Desert	8.2	8.5	28.8	56.4	16.4	13.8	46.6	12.8	73	94
Wunan	25.0	33.9	17.7	17.7	21.9	12.9	35.4	21.0	96	62
Yamatji	-	-	20.0	40.0	-	20.0	80.0	30.0	10	10
Statewide **	20.3	10.7	28.0	33.9	12.2	8.9	39.5	31.8	311	449

* Occupants being temporarily away (visiting, holidays, work) were other common reasons for a dwelling to be unoccupied

** 15% of respondents to this question in 2004 answered that they were unsure why the dwelling was unoccupied

Solid Waste Disposal

Periods in which Rubbish was not Collected

All communities who reported that there were no periods of rubbish not being collected in the 1997 survey were reporting periods in 2004 where their rubbish was not being collected. Approximately half of those (20 out of 38) who reported such periods in 1997 were still reporting these in 2004.

Rubbish Tip Type

Cosmo Newberry (population 120) in the Western Desert region reported a surface tip in both 1997 and 2004. Two communities who reported having no tips in 1997 had dug pits in 2004, and 15 out of 20 communities reporting surface tips in 2004 had dug pits or trenches.

Whether the Tip Area is Suitable

Of the 11 communities responding that the tip was not in a suitable site in 1997, all responded that it was suitable in 2004. There were 18 communities reporting in 2004 that their tip area was no longer in a suitable site; those with a population ≥ 100 are listed below:

ATSI Region	Community
Kullari	Beagle Bay
Wunan	Mindibungu
Western Desert	Wingellina
Malarabah	Wangkatjungka

Rubbish Tip Capacity

There were many changes in the reported capacity of rubbish tips, but no general trend was found.

Rubbish Tip Management

There were many changes with the management of their tips, with communities reporting both greater and lesser satisfaction levels.

6

TRENDS BETWEEN THE 1997 AND 2004 ENVIRONMENTAL HEALTH NEEDS SURVEYS CONTINUED

Litter levels

Trends in litter levels between 1997 and 2004 are summarised in the four tables below.

Change in Litter Levels 1997 to 2004 by Number of Communities (usual population \geq 50)

Level in 1997	Level in 2004						
	n	None	Low	Moderate	High	Excessive	Missing
None	5	1	2	1	0	0	1
Low	36	8	12	14	2	0	0
Moderate	32	2	9	11	7	1	2
High	18	0	4	8	4	2	0
Excessive	1	0	0	0	1	0	0
Missing	0	0	0	0	0	0	0
Total	92	11	27	34	14	3	3

Percentage Trends in Litter Levels 1997 to 2004 for Communities (usual population \geq 50)

	Decreased	Same	Increased
None	-	20.0	60.0
Low	22.2	33.3	44.4
Moderate	34.3	34.4	25.0
High	66.7	22.2	11.1
Excessive	100.0	0.0	-
Total	34.8	30.4	31.5

Change in Litter Levels 1997 to 2004 by Number of Communities (usual population $<$ 50)

Level in 1997	Level in 2004						
	n	None	Low	Moderate	High	Excessive	Missing
None	27	12	13	0	0	0	2
Low	51	18	19	9	3	1	1
Moderate	19	2	10	5	1	0	1
High	2	0	2	0	0	0	0
Excessive	1	0	1	0	0	0	0
Missing	11	2	9	0	0	0	0
Total	111	34	54	14	4	1	4

Percentage Trends in Litter Levels 1997 to 2004 for Communities (usual population $<$ 50)

	Decreased	Same	Increased
None	-	44.4	48.1
Low	35.3	37.3	25.5
Moderate	63.2	26.3	5.3
High	100.0	0.0	0.0
Excessive	100.0	0.0	-
Total	39.6	32.4	24.3

Sanitation

Sewerage Lagoon not fenced

- Eight communities reported not having fencing around their lagoons in 1997. Of these eight, in 2004 four reported having fencing and the other four reported they that no longer had lagoons present.
- A further five communities in 1997 reported that they did not have a lagoon or that it was not applicable; in 2004 all of these communities reported that their lagoons are not fenced. These five communities had usual populations between 10 and 30 and either used community effluent (via septic tank) or septic tank leach drains as their sewerage treatment systems in 2004.

Sewerage Lagoon Overflow Level

In general, most communities experienced a reduction in the amount of sewerage lagoon overflow compared to 1997. There were three notable exceptions: Kurnangki (Malarabah), who saw no reduction in levels, together with Jigalong (Western Desert) and Iragul (Mulga Mallee), who experienced a worsening in their levels.

Dust

Dust Levels

There were 173 communities that reported on their dust levels in both the 1997 and the 2004 surveys. Tables 6-28a and 6-28b show the number of communities whose dust levels had changed between the two surveys. These numbers reflect those communities whose dust levels changed from a low concern (none, low, moderate) to a high concern (high or excessive):

- 52 communities reported high to excessive dust levels in both surveys.
- 47 communities reported a change from low concern levels in 1997 to high concern levels in 2004.
- 32 communities reported an improvement in dust levels between 1997 and 2004.
- 42 communities had continuing low dust levels.

Wunan and Malarabah have the most communities experiencing a decline in dust levels, with few communities there reporting an improvement by 2004.

6

TRENDS BETWEEN THE 1997 AND 2004 ENVIRONMENTAL HEALTH NEEDS SURVEYS CONTINUED

Comparison of Dust Levels by ATSIC Region

Table 6-28a:
Number of Communities with a High Concern in Both Surveys

ATSIC Region	Population			Total
	< 50	50-100	> 100	
Kullari	4	0	1	5
Malarabah	6	10	3	19
Mulga Mallee	1	1	1	3
Ngarda Ngarli Yarndu	1	2	1	4
Western Desert	0	4	5	9
Wunan	4	2	4	10
Yamatji	0	0	2	2
Total	16	19	17	52

Table 6-28b:
Number of Communities with a Low Concern in Both Surveys

ATSIC Region	Population			Total
	< 50	50-100	> 100	
Kullari	6	3	0	9
Malarabah	8	2	3	13
Mulga Mallee	0	0	0	0
Ngarda Ngarli Yarndu	3	0	1	4
Western Desert	0	0	1	1
Wunan	11	2	1	14
Yamatji	1	0	0	1
Total	29	7	6	42

Dog Program

Dog Program

There were 169 communities that knew whether they had a dog program in both the 1997 and 2004 surveys. Out of those communities which were surveyed both times, there appears to be little difference to the overall numbers of communities that did not have a dog program.

However, Kullari had 10 communities that no longer had a dog program in 2004, as well as no new communities that had a dog program, which suggests a worsening within this region. Tables 6-29a and 6-29b show the changes in dog program levels between 1997 and 2004.

Comparison of Dog Program Levels by ATSIC Region

Table 6-29a:
Number of Communities that Reported having a Dog Program in Both Surveys

ATSIC Region	Population			Total
	< 50	50-100	> 100	
Kullari	3	2	4	9
Malarabah	5	12	8	25
Mulga Mallee	1	1	1	3
Ngarda Ngarli Yarndu	2	0	1	3
Perth Noongar	0	0	9	9
Western Desert	1	2	9	12
Wunan	17	8	2	27
Yamatji	1	0	0	1
Total	30	25	34	89

Table 6-29b:
Number of Communities that Reported not having a Dog Program in Both Surveys

ATSIC Region	Population			Total
	< 50	50-100	> 100	
Kullari	6	2	0	8
Malarabah	10	1	0	11
Mulga Mallee	0	1	0	1
Ngarda Ngarli Yarndu	2	0	0	2
Perth Noongar	0	0	1	1
Wunan	4	0	0	4
Total	22	4	1	27

6

TRENDS BETWEEN THE 1997 AND 2004 ENVIRONMENTAL HEALTH NEEDS SURVEYS CONTINUED

6.1.3 TRENDS IN PRIORITY SCORES

The analysis of trends in priority scores involved comparisons of all communities (i.e. those that participated in each survey). Each of the core indicators was examined to consider both their weighted and the unweighted scores. Weighting of the scores is according to a formula established for the 1997 EHNS (see Appendix 1). For example, if a community had a population of 100, then its score (e.g. for water) would be multiplied by one; if 200, then multiplied by two; etc. The rationale for this weighting was to address the needs of larger communities first; however, smaller communities with similar raw (unweighted) scores would likely not then rank in the top 20 % of communities for that core indicator. The number of communities affected in this manner is noted below for each core indicator.

To help address the concerns of smaller communities for improved essential services, unweighted scores have also been calculated for both the 1997 and 2004 EHNS. The tables present the results for each of the core indicators (for the top 20% of communities). Also, when communities had a weighted score in 1997 and were still listed in 2004, this is noted. For the 2004 EHNS, the weighted scores for the top 20% of communities are presented for each core indicator in Sections 3 (statewide) and 4 (regional); the unweighted scores are listed in Appendix 4.

Weighted Scores (top 20 % of communities statewide)

When weighted scores were compared between 1997 and 2004 for each core indicator, they tended to decrease, such as the average scores for water (10.6 down to 4.5); electricity (9.3 to 4.5); solid waste (22.4 to 7.8); and, dust - new formula (10.2 to 6.4). Population figures similarly declined for the weighted scores, meaning that there were less people being affected. For example, the total population figures decreased for water (4650 to 2087); and dust - old formula (8520 to 8176), but increased for sanitation (6611 to 7351);

The average size of the communities listed also tended to decrease for weighted scores: water (145 to 67); electricity (223 to 128); solid waste (224 to 175); sanitation (213 to 204); and, dust - new formula (224 to 175). Changes in the adjusted population density measure (PDM) were considered for housing, resulting in some decline (new formula) from 1997 to 2004.

There were few communities that were still listed under the same core indicator in 2004 after being listed in 1997. Of those ones still listed, their average scores also tended to decrease, such as for water, where only three communities were still listed (the average score of these decreased from 15.3 in 1997 to 5.9 in 2004); sanitation (14 still listed; average score decreased from 15.2 to 11.7); solid waste (16 were still listed; the average score was down from 24.3 to 8.5); and, dust - new formula (29 were still listed; the average score decreased from 10.9 to 7.9); There was a slight increase in the average score for electricity, but there were only seven communities still listed. There were also seven communities still listed for the housing indicator (old formula-adjusted PDM) and nine for the new formula.

Unweighted Scores (top 20 % of communities statewide)

Because of their smaller size, communities with similar raw (unweighted) scores would often not rank in the top 20 % of communities statewide for that core indicator. Unweighted scores for 2004 are listed per core indicator in Appendix 4. Note that communities in boldface have not been listed as a weighted priority in sections 3 (statewide) or 4 (per ATSI region); 1997 unweighted scores have been included in Appendix 4, indicating that these same communities had unweighted scores then, which had often risen by 2004.

6

TRENDS BETWEEN THE 1997 AND 2004 ENVIRONMENTAL HEALTH NEEDS SURVEYS CONTINUED

Without assistance, the poor situation for smaller communities with regard to these indicators would likely continue. The following numbers of communities per core indicator were not listed as a weighted priority in 1997, and these same communities have again not been listed as a priority using the 'weighted formula' in 2004: water (18 communities not listed in 1997 and not listed again in 2004); electricity (6); solid waste (11); sanitation (20); dust - old formula (6); dust – new formula (29); and, dog program (1). Note that for housing, the crude PDM can be considered as 'unweighted': there were 22 communities that had this crude PDM score that was not listed in the adjusted PDM figure in 1997 nor in 2004 (using the new formula).

The situation of these communities with high 'unweighted scores' should be assessed on a case by case basis, to see if there are already programs in place (e.g. through RAESP and CHIP) to address their issues. Also, the population size of the communities may need to be verified first, and their situation addressed on a priority basis (per ATSI Region). A list of these communities has been provided in Appendix 4 so that they are considered for assistance to improve their core indicators.

Water

Table 6-30: Top 20% Communities for Weighted and Unweighted Priority Water Scores

Water	1997		2004	
	Weighted	Unweighted	Weighted	Unweighted
Number of communities with a priority score > 0 for the respective indicator	164	164	164	164
Number of communities in the Top 20 per cent range	32	31	31	32
Population Total	4650	887	2087	534
Population Mean	145.3	28.6	67.3	16.7
Range	(4.5 - 40.0)	(10.5 - 26.5)	(2.4 - 10.0)	(12.0 - 26.0)
Mean Score	10.6	17.2	4.5	16.7
Number of communities in both weighted and unweighted categories	11		11	

* Top 20%: refers to approximately the top 20 percent of communities with a priority score. It may be more or less depending on the number of communities having the same cut-off score.

There were 18 communities from the Top 20% Unweighted Priority Scores in 1997 that were not identified as weighted priority either 1997 or 2004.

Table 6-31: Communities that were a Weighted Priority in 1997 and 2004 for Water

Community	ATSI Region	04 Usual Pop	1997 Score	2004 Score
Jigalong	Western Desert	196	23.3	7.8
Balgo hills	Wunan	500	17.3	7.5
Woodstock (Old Village)	Ngarda Ngarli Yarndu	30	5.4	2.4
Total: 3 communities	Mean	242.0	15.3	5.9

Note: there were three communities in the top 20% in 1997 that were not surveyed in 2004.

6

TRENDS BETWEEN THE 1997 AND 2004 ENVIRONMENTAL HEALTH NEEDS SURVEYS CONTINUED**Electricity***Table 6-32: Top 20% Communities for Weighted and Unweighted Priority Electricity Scores*

Electricity	1997		2004	
	Weighted	Unweighted	Weighted	Unweighted
Number of communities with a priority score > 0 for the respective indicator	71	71	117	117
Number of communities in the Top 20 per cent range	14	11	23	8
Population Total	3122	223	2942	73
Population Mean	223.0	20.3	127.9	9.1
Range	(3.2 - 27.2)	9.0	(2.04 - 16)	9.0
Mean Score	9.3	9.0	4.5	9.0
Number of communities in both weighted and unweighted categories	2		1	

* Top 20%: refers to approximately the top 20 percent of communities with a priority score. It may be more or less depending on the number of communities having the same cutoff score.

There were 7 communities from the Top 20% Unweighted Priority Scores in 1997 that weren't identified as a weighted priority in either 1997 or 2004.

Table 6-33: Communities that were a Weighted Priority in 1997 and 2004 for Electricity

Community	ATSIC Region	2004 Usual Pop	1997 Score	2004 Score
One Arm Point	Kullari	400	15.6	16.0
Beagle Bay	Kullari	300	7.9	12.0
Djarind Jin	Kullari	250	8.4	10.0
Yakanarra	Malarabah	160	6.7	6.4
Burringurrah	Yamatji	150	5.9	6.0
Ringers Soak	Wunan	130	4.8	5.2
Total: 6 communities	Mean	231.7	8.2	9.3

Note: there was one community in the top 20% in 1997 that was not surveyed in 2004.

6

TRENDS BETWEEN THE 1997 AND 2004 ENVIRONMENTAL HEALTH NEEDS SURVEYS CONTINUED

Housing

Table 6-34: Top 20% Communities for Adjusted and Crude Population Density Measures for Housing – Old Housing Formula

Housing (Old Formula)	1997		2004	
	Adjusted	Crude	Adjusted	Crude
Number of communities with a priority score > 0 for the respective indicator	173	211	216	259
Number of communities in the Top 20 per cent range	35	42	49	53
Population Total	2809	5526	3906	6546
Population Mean	80.3	131.6	79.3	123.5
Range	(11.3 - 140.0)	(8.9 - 36.0)	(10.0 - 67.0)	(7.9 - 67.0)
Mean Score	20.8	13.5	17.3	14.7
Number of communities in both adjusted and crude categories	7		27	

Table 6-35: Top 20% Communities for Adjusted and Crude Population Density Measures for Housing – New Housing Formula

Housing (New Formula)	1997		2004	
	Adjusted	Crude	Adjusted	Crude
Number of communities with a priority score > 0 for the respective indicator	154	211	193	259
Number of communities in the Top 20 per cent range	32	42	46	53
Population Total	2605	5526	3860	6546
Population Mean	81.4	131.6	83.9	123.5
Range	(13.3 - 68.0)	(8.9 - 36.0)	(10.0 - 50.0)	(7.9 - 67.0)
Mean Score	24.7	13.5	19.5	14.7
Number of communities in both adjusted and crude categories	15		22	

Note: 'adjusted population density measure' is the ratio of people to adequate dwellings, whereas 'crude population density measure' refers to the ratio of people to inhabited dwellings.

* Top 20%: refers to approximately the top 20 percent of communities with a priority score. It may be more or less depending on the number of communities having the same cutoff score.

There were 22 communities from the Top 20% Crude PDM Scores in 1997 that weren't identified as an Adjusted PDM priority in either 1997 or 2004 (using the new formula).

6

TRENDS BETWEEN THE 1997 AND 2004 ENVIRONMENTAL HEALTH NEEDS SURVEYS CONTINUED**Housing continued***Table 6-36: Communities that were an Adjusted PDM Priority in 1997 and 2004 for Housing – Old Housing Formula*

Community	ATSI Region	2004 Usual Pop	1997 Score	2004 Score
McGowan Island	Wunan	50	14.0	50.0
4 Mile	Wunan	35	14.0	17.5
Cockatoo Springs	Wunan	30	13.5	15.0
Nulla Nulla	Wunan	25	15.0	12.5
Frog Hollow	Wunan	80	12.0	10.0
Woodstock (Old Village)	Ngarda Ngarli Yarndu	30	68.0	10.0
Cone Bay	Malarabah	50	30.0	10.0
Total: 7 communities	Mean	42.9	23.8	17.9

Table 6-37: Communities that were an Adjusted PDM Priority in 1997 and 2004 for Housing – New Housing Formula

Community	ATSI Region	2004 Usual Pop	1997 Score	2004 Score
Cone Bay	Malarabah	50	30.0	50.0
Koongie Park	Wunan	120	14.3	40.0
Tjuntjuntjara	Western Desert	140	46.5	35.0
Darlu-Darlu	Wunan	26	17.0	26.0
Frog Hollow	Wunan	80	30.0	16.0
Ululla Station	Western Desert	15	25.0	15.0
Cockatoo Springs	Wunan	30	27.0	15.0
Woodstock (Old Village)	Ngarda Ngarli Yarndu	30	68.0	10.0
Kartang Riga	Wunan	20	19.0	10.0
Total: 9 communities	Mean	56.8	30.8	24.1

Note: there were 4 communities in the top 20% in 1997 (new formula) that were not surveyed in 2004.

6

TRENDS BETWEEN THE 1997 AND 2004 ENVIRONMENTAL HEALTH NEEDS SURVEYS CONTINUED

Solid Waste Disposal

Table 6-38: Top 20% Communities for Weighted and Unweighted Solid Waste Disposal Scores

Solid Waste Disposal	1997		2004	
	Weighted	Unweighted	Weighted	Unweighted
Number of communities with a priority score > 0 for the respective indicator	135	135	184	184
Number of communities in the Top 20 per cent range	27	28	38	41
Population Total	6048	1366	6991	2145
Population Mean	224.0	48.8	184.0	52.3
Range	(9.0 - 54.4)	(15.0 - 27.0)	(3.5 - 27.0)	(21.0 - 31.0)
Mean Score	22.4	18.6	7.8	23.2
Number of communities in both weighted and unweighted categories	9		17	

* Top 20%: refers to approximately the top 20 percent of communities with a priority score. It may be more or less depending on the number of communities having the same cut-off score.

There were 11 communities from the Top 20% Unweighted Priority Scores in 1997 that weren't identified as a weighted priority in either 1997 or 2004.

Table 6-39: Communities that were a Weighted Priority in 1997 and 2004 for Solid Waste Disposal

Community	ATSI Region	2004 Usual Pop	1997 Score	2004 Score
Bidyadanga	Kullari	850	54.4	*17.0
Jigalong	Western Desert	196	43.0	11.8
Djarindjin	Kullari	250	12.6	10.0
Oombulgurri	Wunan	250	25.6	10.0
Balgo Hills	Wunan	500	30.7	10.0
Wingellina	Western Desert	160	28.0	9.6
Ringers Soak	Wunan	130	31.2	9.1
Kalumburu	Wunan	450	24	9.0
Mindibungu	Wunan	220	14.4	8.8
One Arm Point	Kullari	400	23.4	8.0
Parngurr	Western Desert	104	16.1	7.3
Mulan	Wunan	150	22.1	6.0
Beagle Bay	Kullari	300	25.6	6.0
Tjuntjuntjara	Western Desert	140	14.9	5.6
Gnangara	Perth Noongar	65	9.8	*4.6
Cosmo Newberry	Western Desert	120	13.2	3.6
Total: 16 communities	Mean	267.8	24.3	8.5

Note: there was one community in the top 20% in 1997 that was not surveyed in 2004.

6

TRENDS BETWEEN THE 1997 AND 2004 ENVIRONMENTAL HEALTH NEEDS SURVEYS CONTINUED**Sanitation***Table 6-40: Top 20% Communities for Weighted and Unweighted Sanitation Scores*

Sanitation	1997		2004	
	Weighted	Unweighted	Weighted	Unweighted
Number of communities with a priority score > 0 for the respective indicator	151	151	180	183
Number of communities in the Top 20 per cent range	31	38	36	49
Population Total	6611	865	7351	824
Population Mean	213.3	22.8	204.2	16.8
Range	(3.7 - 40.8)	(10.0 - 11.3)	(3.0 - 41.7)	(10.0 - 13.3)
Mean Score	11.1	10.0	7.2	10.2
Number of communities in both weighted and unweighted categories	5		9	

* Top 20%: refers to approximately the top 20 percent of communities with a priority score. It may be more or less depending on the number of communities having the same cutoff score.

There were 20 communities from the Top 20% Unweighted Priority Scores in 1997 that weren't identified as a weighted priority in either 1997 or 2004.

Table 6-41: Communities that were a Weighted Priority in 1997 and 2004 for Sanitation

Community	ATSI Region	2004 Usual Pop	1997 Score	2004 Score
Bidyadanga	Kullari	850	40.8	41.7
Warburton	Western Desert	560	24.4	25.4
Beagle Bay	Kullari	300	11.8	14.3
Jigalong	Western Desert	196	16.9	13.4
Balgo Hills	Wunan	500	18.9	13.2
Oombulgurri	Wunan	250	10.7	11.3
Looma	Malarabah	475	31.1	10.2
Mowanjum	Malarabah	290	13.4	7.1
Kalumburu	Wunan	450	18.2	6.3
Kurnangki	Malarabah	80	4.8	4.8
Yandeyarra	Ngarda Ngarli Yarndu	320	6.3	4.6
Koongie Park	Wunan	120	4.3	4.1
Frog Hollow	Wunan	80	4.4	3.7
Ninga Mia Village	Mulga Mallee	160	6.0	3.2
Total: 14 communities	Mean	330.8	15.2	11.7

Note: there were two communities in the top 20% in 1997 that were not surveyed in 2004.

6

TRENDS BETWEEN THE 1997 AND 2004 ENVIRONMENTAL HEALTH NEEDS SURVEYS CONTINUED

Dust

Table 6-42 Top 20% Communities for Weighted and Unweighted Dust Scores – Old Dust Formula

Dust (Old Formula)	1997		2004	
	Weighted	Unweighted	Weighted	Unweighted
Number of communities with a priority score > 0 for the respective indicator	164	164	217	217
Number of communities in the Top 20 per cent range	33	20	42	39
Population Total	8520	3198	8176	1985
Population Mean	258.2	159.9	194.7	50.9
Range	(23.0 - 20.4)	3.0	(1.8 - 17.0)	3
Mean Score	5.7	3.0	4.0	3.0
Number of communities in both weighted and unweighted categories	11		16	

* Top 20%: refers to approximately the top 20 percent of communities with a priority score. It may be more or less depending on the number of communities having the same cut-off score.

Table 6-43 Top 20% Communities for Weighted and Unweighted Dust Scores – New Dust Formula

Dust (New Formula)	1997		2004	
	Weighted	Unweighted	Weighted	Unweighted
Number of communities with a priority score > 0 for the respective indicator	212	212	267	267
Number of communities in the Top 20 per cent range	43	72	56	118
Population Total	9648	7298	9801	5572
Population Mean	224.4	101.4	175.0	47.2
Range	(4.0 - 40.8)	(5.0 - 6.0)	(3.0 - 25.5)	(5.0 - 6.0)
Mean Score	10.2	5.2	6.4	5.3
Number of communities in both weighted and unweighted categories	26		32	

* Top 20%: refers to approximately the top 20 percent of communities with a priority score. It may be more or less depending on the number of communities having the same cut-off score.

There were six communities from the Top 20% Unweighted Priority Scores in 1997 that weren't identified as a weighted priority in either 1997 or 2004 using the old dust formula. There were 29 communities from the Top 20% Unweighted Priority Scores in 1997 that weren't identified as a priority in either 1997 or 2004 using the new dust formula.

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TRENDS BETWEEN THE 1997 AND 2004 ENVIRONMENTAL HEALTH NEEDS SURVEYS CONTINUED**Dust continued***Table 6-44 Communities that were a Weighted Priority in 1997 and 2004 – Old Dust Formula*

Community	ATSI Region	2004 Usual Pop	1997 Score	2004 Score
Bidyadanga	Kullari	850	20.4	17.0
Balgo Hills	Wunan	500	3.8	10.0
Kalumburu	Wunan	450	12.0	9.0
Yandeyarra	Ngarda Ngarli Yarndu	320	7.5	6.4
Mowanjum	Malarabah	290	4.5	5.8
Oombulgurri	Wunan	250	12.8	5.0
Junjuwa	Malarabah	500	5.0	5.0
Yungngoro	Malarabah	235	3.2	4.7
Wunan	Mindibungu	220	3.6	4.4
One Arm Point	Kullari	400	11.7	4.0
Jigalong	Western Desert	196	7.2	3.9
Yakanarra	Malarabah	160	3.3	3.2
Wingellina	Western Desert	160	4.7	3.2
Burringurrah	Yamatji	150	3.0	3.0
Mungullah	Yamatji	150	3.2	3.0
Wangkatjungka	Malarabah	132	3.3	2.6
Punmu	Western Desert	83	3.0	2.5
Ngallagunda	Malarabah	80	2.4	2.4
Blackstone	Western Desert	232	2.8	2.3
Tjukurla	Western Desert	100	3.1	2.0
Total: 20 communities	Mean	272.9	6.0	5.0

Note: there was one community in the top 20% in 1997 (old formula) that was not surveyed in 2004.

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TRENDS BETWEEN THE 1997 AND 2004 ENVIRONMENTAL HEALTH NEEDS SURVEYS CONTINUED

*Table 6-45 Communities that were a Weighted Priority in 1997 and 2004
– New Dust Formula*

Community	ATSI Region	2004 Usual Pop	1997 Score	2004 Score
Bidyadanga	Kullari	850	40.8	25.5
Kalumburu	Wunan	450	20.0	22.5
Balgo Hills	Wunan	500	11.5	15.0
Oombulgurri	Wunan	250	21.3	12.5
Djarindjin	Kullari	250	8.4	12.5
Nulleywah	Wunan	200	5.3	12.0
Junjuwa	Malarabah	500	10.0	10.0
Mindibungu	Wunan	220	7.2	8.8
Blackstone	Western Desert	232	5.6	7.0
Wingellina	Western Desert	160	11.7	6.4
Yakanarra	Malarabah	160	8.4	6.4
Yandeyarra	Ngarda Ngarli Yarndu	320	15.0	6.4
Parngurr	Western Desert	104	4.3	6.2
Mulan	Wunan	150	5.1	6.0
Wanarn	Western Desert	150	4.4	6.0
Jigalong	Western Desert	196	17.9	5.9
Mowanjum	Malarabah	290	11.2	5.8
Tjukurla	Western Desert	100	6.2	5.0
Ngallagunda	Malarabah	80	4.8	4.8
Looma	Malarabah	475	25.0	4.8
Mindi Radi	Malarabah	90	4.3	4.5
Mungullah	Yamatji	150	4.8	4.5
Punmu	Western Desert	83	7.5	4.2
Mardiwah Loop	Wunan	80	4.2	4.0
One Arm Point	Kullari	400	23.4	4.0
Ringers Soak	Wunan	130	4.8	3.9
Burringurrah	Yamatji	150	7.4	3.0
Bayulu	Malarabah	150	4.0	3.0
Total: 28 communities	Mean	245.4	10.9	7.9

Note: there was one community in the top 20% in 1997 (new formula) that was not surveyed in 2004.

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TRENDS BETWEEN THE 1997 AND 2004 ENVIRONMENTAL HEALTH NEEDS SURVEYS CONTINUED**Dog Program***Table 6-46 Top 20% Communities for Weighted and Unweighted Scores for Dog Program*

Dog Program	1997		2004	
	Weighted	Unweighted	Weighted	Unweighted
Number of communities with a priority score > 0 for the respective indicator	80	80	102	102
Number of communities in the Top 20 per cent range	16	80	20	102
Population Total	1495	3004	1552	2699
Population Mean	93.4	37.6	77.6	26.5
Range	(0.8 - 1.3)	1.0	(0.4 - 3.2)	1
Mean Score	0.9	1.0	0.8	1
Number of communities in both weighted and unweighted categories	80		102	

* Top 20%: refers to approximately the top 20 percent of communities with a priority score. It may be more or less depending on the number of communities having the same cut-off score.

Table 6-47 Communities that were a Weighted Priority in 1997 and 2004 for Dog Program

Common Name	ATSI Region	2004 Usual Pop	1997 Score	2004 Score
Irrungadji	Western Desert	100	1	1
Total: 1 community	Mean	100	1	1

Note: there were three communities in the top 20% in 1997 that were not surveyed in 2004.