

**A PSYCHOLOGY OF ENVIRONMENTALLY SUSTAINABLE
BEHAVIOUR**

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B.A. (Hons)

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for the Degree of Doctor of Philosophy
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Appendix A. Information packs and label installation instructions used in the pilot study (original in colour).

(Chapter 4)



HELP PRESERVE OUR PRECIOUS



ENVIRONMENT



Many of us regard the preservation of our environment as being a very important concern for our society. However, it can often be difficult to feel like we can personally contribute in a positive way towards reducing the environmental impact that the human race has on our planet. Often the issue seems so large and daunting that we are left feeling as if our own behaviour is irrelevant.

One way in which we *can* start to help reduce our own environmental impact and help develop more sustainable development in urban areas is by remembering that environmentalism can ‘start at home’. Three ways in which we can help the environment are by trying to reduce the amount of water and energy that we waste in our homes, and by reducing the amount of waste that we produce that goes to landfill.



Why Conserve Energy?



The burning of fossil fuels such as coal, oil or natural gas to generate energy involves the production of greenhouse gases such as Carbon Dioxide and Nitrogen Dioxide both of which contribute towards global warming. Both natural gas and the coal used to generate electricity are also both limited natural resources with a finite supply. **It is therefore important that we use energy efficiently in our homes and avoid needless wasting of energy.**



Why Conserve Water?



Here in Western Australia, one of the most arid regions on earth, water is one of our most precious resources. Yet, as most of us can have quality water flowing at the turn of a tap, we easily take it for granted.

As Perth's population continues to grow, we are facing an increasing demand for water. At the same time that our population has been growing, our yearly rainfall has been in decline over the past half a century. With the majority of supplies of surface water located close to the metropolitan area already being utilized, alternative sources of water supply will need to be implemented if we are not able to reduce the amount of water per capita that we consume.

Alternative sources of water such as pumping water from dams further away from Perth and tapping underground water supplies all involve increased environmental impact. Building dams can disrupt the local ecology, as well as having a severe social impact on those who may wish to utilize the area for other purposes. Pumping water involves large amounts of energy, as does the installation of the pipes through which the water is to be pumped. Underground water supplies are a limited resource that is very slow to replenish. Over-harvesting of underground water supplies for an extended period of time has the potential to cause dramatic disruption to the natural water table.

One simple way in which we can help avoid the negative environmental impacts associated with alternative water sources is to simply reduce the amount of water that we *waste* in our homes everyday.



Why Recycle?



Your household has two garbage bins, a general waste bin and a recyclables bin. **By increasing the proportion of our waste that we place in our yellow-lidded recycling bin each fortnight we can reduce the amount of waste that ends up in land-fill, and increase the amount that ends up being used for composts and recycled products.** This can have numerous environmental benefits such as:

- reducing natural resource damage and pollution that arises when we have to extract virgin raw materials and manufacture new products
- conserving energy
- reducing the air and water pollution caused by landfill sites
- reducing the need to cut down trees to make paper



HELP PRESERVE OUR PRECIOUS



ENVIRONMENT



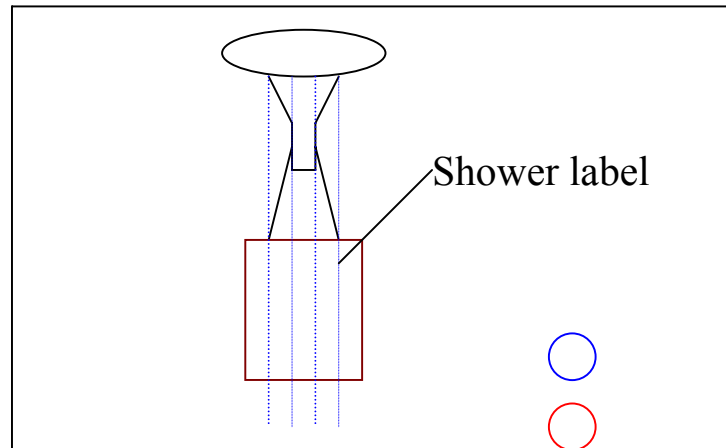
So, how can we go about reducing our energy and water use and increasing our levels of recycling?

Enclosed are a series of labels to be installed around your home that offer you practical, easy tips on how you can reduce the environmental impact associated with everyday urban living. These labels will also make it easier for you to remember to engage in these behaviours. It is requested that you put up these labels around your home for the coming 3 months. You are most welcome to keep them and continue using them after this time. (If you wish to return them at the end of the 3 months, I will collect them off you at the completion of the study, so as not to waste resources!)

Included is a label for:

1) Your shower/s

Simply loop the label (complete with digital timer) over your shower nozzle (such as below), shower tap or shower rail using the adjustable string and fasten with a firm knot. Remember to try to attach the label in a position in which you are most likely to see it each time you turn on the water.



2) Your washing machine

The magnetic tab on the back of the label means all you have to do is stick it on the metal lid of your washing machine. If you have a plastic lid you can either attach it to the front of the machine or use a small wad of blue tac instead.

3) Your dishwasher (if applicable)

Once again, this label has a magnetic tab to make it easy to stick to the door of your dishwasher.

4) Your rubbish bin inside the house

The best way to remember to separate recyclables from non-recyclables is to have a reminder right there when you are about to throw potentially recyclable materials into the normal trash!

This label should be placed (using a small amount of blue tac) somewhere that you are most likely to notice when you go to

throw something in the bin. So either your rubbish bin inside the house, or perhaps the cupboard door if the bin is kept in a kitchen cupboard.

*The best way to make it easy for your household to separate recyclables is to have TWO different bins INSIDE the house, one for normal rubbish and one for recyclables. This way, when it comes time to put out the trash, you can just empty one into your green lid wheelie bin and one into your yellow topped recycling bin.

5) Your front/back door knob (depending on which door you use to leave the house)

Simply loop the string over your door knob and fasten with a firm knot. This will give you a reminder to turn off lights and appliances each time you leave the house for an extended period of time.

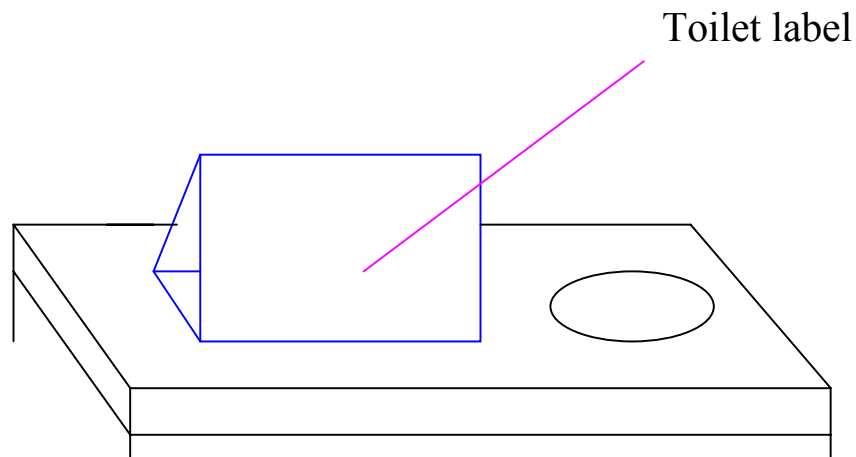
6) Your electric clothes drier (if applicable)

This label can be placed to the door of your drier using its magnetic strip.

note : Some clothes driers may require that you run the cool down cycle when your load has finished drying.

8) Your toilet/s

This label can be folded so that it is able to stand up and sit on top of your toilet cistern (see below). For extra stability you can also attach a small wad of blue tac to the bottom.



Note: A leaking toilet cistern can be extremely wasteful - up to 16,000 litres of water in a year. And you might not even be aware of it ! To check your cistern, place a few drops of food colouring in the tank. Without flushing it, look for colouring in the toilet bowl. If it's getting through, you've got a leak, and it's time to call a plumber.

9) Your garden tap or reticulation system

Your watering schedule reminder label can be hung over your outdoor tap, or portable sprinkler using the adjustable rope. This way, each time you go to water you can remember to monitor how much water you need to use. If you water your garden using a reticulation system, you can attach the label somewhere that is most likely to remind you to readjust your settings.

Appendix B. Environmental attitudes questionnaire used in the pilot study

(Chapter 4)

Please answer the following questions by circling the response that best describes your own personal opinion. There are no right or wrong answers, so just answer based on how you actually feel.

1. We are approaching the limit of the number of people the Earth can support.

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

2. The balance of nature is very delicate and easily upset.

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

3. Humans have the right to modify the natural environment to suit their needs.

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

4. Mankind was created to rule over the rest of nature.

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

5. When humans interfere with nature it often produces disastrous consequences.

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

6. Plants and animals exists primarily to be used by humans.

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

7. To maintain a healthy economy we will have to develop a “steady state” economy where industrial growth is controlled.

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

8. Humans must live in harmony with nature in order to survive.

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

9. The Earth is like a spaceship with only limited room and resources.

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

10. Humans need not adapt to the natural environment because they can remake it to suit their needs.

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

11. There are limits to growth beyond which our industrialised society cannot expand.

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

12. Mankind is severely abusing the environment.

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

13. Conserving water is an important step towards ecological sustainability

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

14. My household generally tries to limit its water consumption

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

15. The amount of electricity that societies consume needs to be reduced.

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

16. Efforts are made in my household to reduce the amount of electricity that is used.

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

17. It is important that people try to use natural gas more efficiently.

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

18. My household generally tries not to use more natural gas than we need to.

(Please ignore this question if you don't use gas in your home)

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

19. It is important that we recycle as much of our waste as we can.

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

20. In my household, an effort is made to minimize the amount of waste that is not recycled.

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

Thankyou.

Appendix. C. Labels used in the pilot study (original in colour)

(Chapter 4)



HELP PRESERVE OUR PRECIOUS



ENVIRONMENT



CONVENTIONAL SHOWERS USE **25 LITRES OF WATER PER
MINUTE**

*HEATING A FAMILY'S HOT WATER CAN CONTRIBUTE 5 TONNES
OF GREENHOUSE GAS IN A YEAR*

- HOW LONG HAVE YOU BEEN UNDER THE WATER?
- HAVE YOU CONSIDERED FITTING A WATER EFFICIENT
SHOWERHEAD THAT CAN REDUCE THE FLOW TO ONLY 9
LITRES PER MINUTE?



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ENVIRONMENT



WASHING MACHINES ARE A MAJOR USER OF WATER IN THE HOME

THE ENERGY USED FOR WASHING AND DRYING A FAMILY'S CLOTHES CAN GENERATE UP TO 1.5 TONNES OF GREENHOUSE GAS IN A YEAR

- TRY TO WAIT UNTIL YOU HAVE A FULL LOAD BEFORE RUNNING THE WASHING MACHINE
- MAKE SURE THAT YOU ARE NOT WASTING WATER BY SETTING THE WATER LEVEL TOO HIGH FOR YOUR LOAD
- SAVE ENERGY BY WASHING YOUR CLOTHES IN COLD WATER USING A COLD WATER LAUNDRY DETERGENT



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ENVIRONMENT



DISHWASHERS ARE HEAVY USERS OF BOTH WATER AND ENERGY

WE CAN REDUCE THIS BY:

- RUNNING THE DISHWASHER ONLY WHEN IT IS FULL
- USING THE 'ECONOMY' CYCLE
- STOPPING THE DISHWASHER BEFORE THE DRING CYCLE AND OPENING THE DOOR TO LET THE DISHERS AIR-DRY





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ENVIRONMENT



**WASTE THAT IS NOT RECYCLED GOES TO
LANDFILL!**

TO REDUCE LANDFILL, WE NEED TO PLACE THE FOLLOWING
ITEMS IN OUR RECYCLING BIN:

- GLASS BOTTLES AND JARS
- NEWSPAPER, OFFICE PAPER, MAGAZINES AND JUNK MAIL
- PLASTIC BOTTLES WITH ONLY THE 1,2 OR 3 SYMBOL ON THE BOTTOM
- RINSED MILK AND JUICE CARTONS
- CARDBOARD
- STEEL AND ALUMINIUM CANS (incl. aerosols with cap removed)





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ENVIRONMENT



FORGETTING TO TURN OFF

- HEATERS,
- AIR CONDITIONERS
- APPLIANCES and
- LIGHTS

WHEN
YOU LEAVE THE HOUSE CAN WASTE
A GREAT DEAL OF ENERGY

• **HAVE YOU LEFT
ANYTHING ON?**





HELP PRESERVE OUR PRECIOUS



ENVIRONMENT



THE ENERGY USED FOR WASHING AND DRYING A FAMILY'S CLOTHES CAN GENERATE UP TO 1.5 TONNES OF GREENHOUSE GAS EACH YEAR

WE CAN REDUCE THIS BY:

- DRYING OUR CLOTHES IN THE SUN, OR ON A CLOTHES HORSE INSIDE, RATHER THAN IN AN ELECTRIC DRIER
- CLEANING THE LINT FILTER IN THE DRIER EACH TIME WE USE IT
- TURNING OFF THE DRIER AS SOON AS THE CLOTHES ARE DRY, (RATHER THAN OVER DRYING THE CLOTHES)
- DRYING HEAVY ARTICLES SEPARATELY FROM LIGHT ARTICLES





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ENVIRONMENT



TOILETS CAN USE UP TO 11 LITRES OF WATER PER FLUSH!

WE CAN REDUCE TOILET WATER USE BY:

- USING THE HALF FLUSH OPTION AS OFTEN AS POSSIBLE*
- NOT USING THE TOILET TO FLUSH AWAY RUBBISH
- CHECKING FOR CISTERN LEAKS

• If you don't have a dual flush system, you can place a one or two sealed soft drink bottles full of water in your cistern to reduce the volume of water used for each flush.





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LAWN WATERING SCHEDULE

<u>Month</u>	<u>Frequency</u>
JAN	Every 2 nd day
FEB	Every 2 nd day
MAR	Every 3 rd day
APR	Every 5 th day
MAY	No watering
JUN	No watering
JUL	No watering
AUG	once a fortnight*
SEP	once a week*
OCT	Every 4 th day
NOV	Every 3 rd day
DEC	Every 2 nd day

(*if needed)

- Each watering should deliver 10mm of water to the lawn (usually watering for 5-10 minutes per area)
- Watering must be done before 9am or after 6pm



Appendix. D. Information packs provided to residents in the labels condition of the main field study (original in colour).

(Chapter 5)



HELP PRESERVE OUR PRECIOUS



ENVIRONMENT



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One way in which we *can* start to help reduce our own environmental impact and help develop more sustainable development in urban areas is by remembering that environmentalism can ‘start at home’. Two ways in which we can help the environment are by trying to reduce the amount of *water* that we waste in our homes and also by reducing the amount of *energy* that is wasted in our homes.



Why Conserve Energy?



The burning of fossil fuels such as coal, oil or natural gas to generate energy involves the production of greenhouse gases such as Carbon Dioxide and Nitrogen Dioxide both of which contribute towards global warming. Both natural gas and the coal used to generate electricity are also both limited natural resources with a finite supply. **It is therefore important that we use energy efficiently in our homes and avoid needless wasting of energy.**



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Here in Western Australia, one of the most arid regions on earth, water is one of our most precious resources. Yet, as most of us can have quality water flowing at the turn of a tap, we easily take it for granted.

As Perth's population continues to grow, we are facing an increasing demand for water. At the same time that our population has been growing, our yearly rainfall has been in decline over the past half a century. With the majority of supplies of surface water located close to the metropolitan area already being utilized, alternative sources of water supply will need to be implemented if we are not able to reduce the amount of water per capita that we consume.

Alternative sources of water such as pumping water from dams further away from Perth and tapping underground water supplies all involve increased environmental impact. Building dams can disrupt the local ecology, as well as having a severe social impact on those who may wish to utilize the area for other purposes. Pumping water involves large amounts of energy, as does the installation of the pipes through which the water is to be pumped. Underground water supplies are a limited resource that is very slow to replenish. Over-harvesting of underground water supplies for an extended period of time has the potential to cause dramatic disruption to the natural water table.

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HELP PRESERVE OUR PRECIOUS



ENVIRONMENT



So, how can we go about reducing our energy and water use?

Typical *Energy* use in the home: Typical *Water* use in the home:

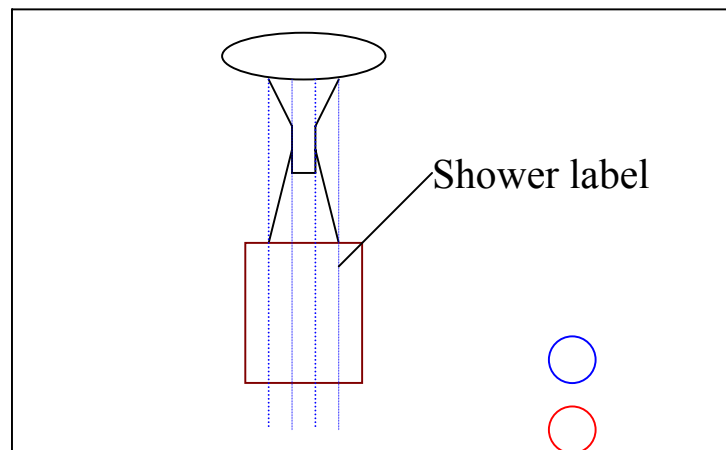
Water Heating	32%	Garden	40%
Heating and Cooling	25%	Bathroom	23%
Refrigeration	16%	Toilet	20%
Cooking	12%	Laundry	13%
Sundry Appliances	11%	Kitchen	4%
Lighting	4%		

Enclosed are a series of labels to be installed around your home that offer you practical, easy tips on how you can reduce the environmental impact associated with everyday urban living. These labels will also make it easier for you to remember to do these things. It is requested that you put up these labels around your home for the coming 3 months. You are most welcome to keep them and continue using them after this time. (If you wish to return them at the end of the 3 months, I will collect them off you at the completion of the study, so as not to waste resources!)

Included is a label for:

6) Your shower/s

Simply loop the label over your shower nozzle (such as below), shower tap or shower rail using the adjustable string and fasten with a firm knot. Remember to try to attach the label in a position in which you are most likely to see it each time you turn on the water.



7) Your washing machine

The magnetic tab on the back of the label means all you have to do is stick it on the metal lid of your washing machine. If you have a plastic lid you can either attach it to the front of the machine or use a small wad of blue tac instead.

8) Your dishwasher (if applicable)

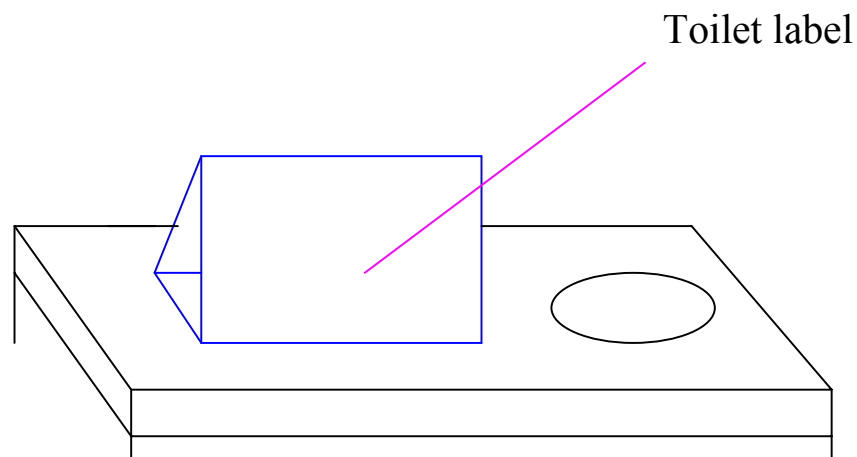
Once again, this label has a magnetic tab to make it easy to stick to the door of your dishwasher.

4) Your electric clothes drier (if applicable)

This label can be placed to the door of your drier using its magnetic strip.

5) Your toilet/s

This label can be folded so that it is able to stand up and sit on top of your toilet cistern (see below). For extra stability you can also attach a small wad of blue tac to the bottom.



Note: A leaking toilet cistern can be extremely wasteful - up to 16,000 litres of water in a year. And you might not even be aware of it ! To check your cistern, place a few drops of food colouring in the tank. Without flushing it, look for colouring in the toilet bowl. If it's getting through, you've got a leak, and it's time to call a plumber.

6) Your garden tap/s

Your watering schedule reminder label can be hung over your outdoor tap, or portable sprinkler using the adjustable rope. This way, each time you go to use water outside the home you can remember to monitor how much water you need to use.

7) Your air-conditioner (if applicable)

Place this label somewhere that people will see it each time they use the air-conditioner.

9) The Fridge

This label can be attached to the fridge near the door handle using its magnetic strips.

Appendix E. Labels used in the main field study (original in colour).

(Chapter 5)



HELP PRESERVE OUR PRECIOUS



ENVIRONMENT



**THE ENERGY USED TO RUN A HOUSHOLD'S REFRIGERATOR
CAN GENERATE UP TO 2.5 TONNES OF GREENHOUSE GAS
EACH YEAR**

**WE CAN REDUCE THE AMOUNT OF ENERGY USED FOR
REFRIDGERATION BY:**

- **MAKING SURE THAT DOOR SEALS ARE REPLACED WHEN
THEY ARE
NO LONGER SEALING PROPERLY**
- **KEEPING THE COILS AT THE BACK OF THE FRIDGE FREE
OF DUST**
- **ONLY KEEPING THE FRIDGE DOOR OPEN AS LONG AS IS
ABSOLUTELY NECESSARY**





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ENVIRONMENT



THE ENERGY USED TO AIR-CONDITION A HOME DURING
SUMMER

CAN GENERATE UP TO 2 TONNES OF GREENHOUSE GAS
EACH YEAR

WE CAN REDUCE THE AMOUNT OF ENERGY USED FOR
AIR- CONDITIONING BY:

- LIMITING THE USE OF AIR CONDITIONERS
- USING FANS RATHER THAN AIR CONDITIONERS TO
CIRCULATE
AIR IN THE HOME
- KEEPING CURTAINS CLOSED DURING HOT , SUNNY DAYS
- KEEPING WINDOWS AND DOORS CLOSED DURING HOT
DAYS
AND THEN OPENING THEM IN THE EVENINGS
- INSTALLING INSULATION IN THE HOME



HELP PRESERVE OUR PRECIOUS



ENVIRONMENT



**CONVENTIONAL SHOWERS CAN USE UP TO 25 LITRES
OF WATER PER MINUTE!**

***HEATING A FAMILY'S HOT WATER CAN CONTRIBUTE 5
TONNES
OF GREENHOUSE GAS IN A YEAR***

- HOW LONG HAVE YOU BEEN UNDER THE WATER?
- HAVE YOU CONSIDERED FITTING A WATER EFFICIENT SHOWERHEAD THAT CAN USE AS LITTLE AS 9 LITRES PER MINUTE?

- HAVE YOU MADE SURE THAT YOUR HOT WATER SYSTEM THERMOSTAT IS SET AT NO HIGHER THAN 65 DEGREES CELCIUS?

Digital Timer Attached Here



**HELP PRESERVE OUR
PRECIOUS**



ENVIRONMENT



WASHING MACHINES ARE A MAJOR USER OF WATER IN THE HOME

THE ENERGY USED FOR WASHING AND DRYING A FAMILY'S CLOTHES CAN GENERATE UP TO 1.5 TONNES OF GREENHOUSE GAS IN A YEAR

- TRY TO WAIT UNTIL YOU HAVE A FULL LOAD BEFORE RUNNING THE WASHING MACHINE

- MAKE SURE YOU SET THE CORRECT WATER LEVEL FOR THE CURRENT LOAD

- SAVE ENERGY BY WASHING YOUR CLOTHES IN COLD WATER USING A COLD WATER LAUNDRY DETERGENT





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ENVIRONMENT



DISHWASHERS ARE HEAVY USERS OF BOTH WATER AND ENERGY

WE CAN REDUCE THIS BY:

- RUNNING THE DISHWASHER ONLY WHEN IT IS FULL
- USING THE 'ECONOMY' CYCLE
- STOPPING THE DISHWASHER BEFORE THE DRYING CYCLE AND OPENING THE DOOR TO LET THE DISHES AIR-DRY





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ENVIRONMENT



THE ENERGY USED FOR WASHING AND DRYING A
FAMILY'S CLOTHES
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ENVIRONMENT



**DONT FORGET TO BE WATER WISE
IN THE GARDEN!**





HELP PRESERVE OUR PRECIOUS



ENVIRONMENT



**TOILETS CAN USE UP TO 11 LITRES OF WATER
PER FLUSH!**

WE CAN REDUCE TOILET WATER USE BY:

- USING THE HALF FLUSH OPTION AS OFTEN AS POSSIBLE*
- NOT USING THE TOILET TO FLUSH AWAY RUBBISH
- CHECKING FOR CISTERN LEAKS

• If you don't have a dual flush system, you can place a one or two sealed soft drink

bottles full of water in your cistern to reduce the volume of water used for each flush.



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THE ENERGY USED TO AIR-CONDITION A HOME DURING SUMMER CAN GENERATE UP TO 2 TONNES OF GREENHOUSE GAS EACH YEAR

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 - USING FANS, RATHER THAN AIR CONDITIONERS TO CIRCULATE AIR IN THE HOME
 - KEEPING CURTAINS CLOSED DURING HOT , SUNNY DAYS
 - KEEPING WINDOWS AND DOORS CLOSED DURING HOT DAYS AND THEN OPENING THEM IN THE EVENINGS
 - INSTALLING INSULATION IN THE HOME
-

**CONVENTIONAL SHOWERS CAN USE UP TO 25 LITRES OF
WATER
PER MINUTE!**

**HEATING A FAMILY'S HOT WATER CAN CONTRIBUTE 5 TONNES
OF GREENHOUSE GAS IN A YEAR**

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- WATER EFFICIENT SHOWERHEADS CAN REDUCE THE FLOW TO ONLY **9 LITRES PER MINUTE**
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 - USING THE 'ECONOMY' CYCLE
 - STOPPING THE DISHWASHER BEFORE THE DRYING CYCLE AND OPENING THE DOOR TO LET THE DISHES AIR-DRY
-

THE ENERGY USED FOR WASHING AND DRYING A FAMILY'S CLOTHES CAN GENERATE UP TO 1.5 TONNES OF GREENHOUSE GAS EACH YEAR

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- TRYING TO WAIT UNTIL YOU HAVE A FULL LOAD BEFORE RUNNING THE WASHING MACHINE
- SETTING THE WATER LEVEL AT THE CORRECT LEVEL FOR YOUR LOAD
- SAVING ENERGY BY WASHING YOUR CLOTHES IN COLD WATER USING A COLD WATER LAUNDRY DETERGENT
- DRYING YOUR CLOTHES IN THE SUN, OR ON A CLOTHES HORSE INSIDE, RATHER THAN IN AN ELECTRIC DRIER
- CLEANING THE LINT FILTER IN THE DRIER EACH TIME YOU USE IT
- TURNING OFF THE DRIER AS SOON AS THE CLOTHES ARE DRY, (RATHER THAN OVER DRYING THE CLOTHES)
- DRYING HEAVY ARTICLES SEPARATELY FROM LIGHT ARTICLES

TOILETS CAN USE UP TO 11 LITRES OF WATER PER FLUSH!

WE CAN REDUCE TOILET WATER USE BY:

- USING THE HALF FLUSH OPTION AS OFTEN AS POSSIBLE*
- NOT USING THE TOILET TO FLUSH AWAY RUBBISH
- CHECKING FOR CISTERN LEAKS

- If you don't have a dual flush system, you can place one or two sealed soft drink bottles full of water in your cistern to reduce the volume of water used for each flush.

Note: A leaking toilet cistern can be extremely wasteful - up to 16,000 litres of water in a year. And you might not even be aware of it ! To check your cistern, place a few drops of food colouring in the tank. Without flushing it, look for colouring in the toilet bowl. If it's getting through, you've got a leak, and it's time to call a plumber.

Appendix G. Example of feedback used in the main field study.

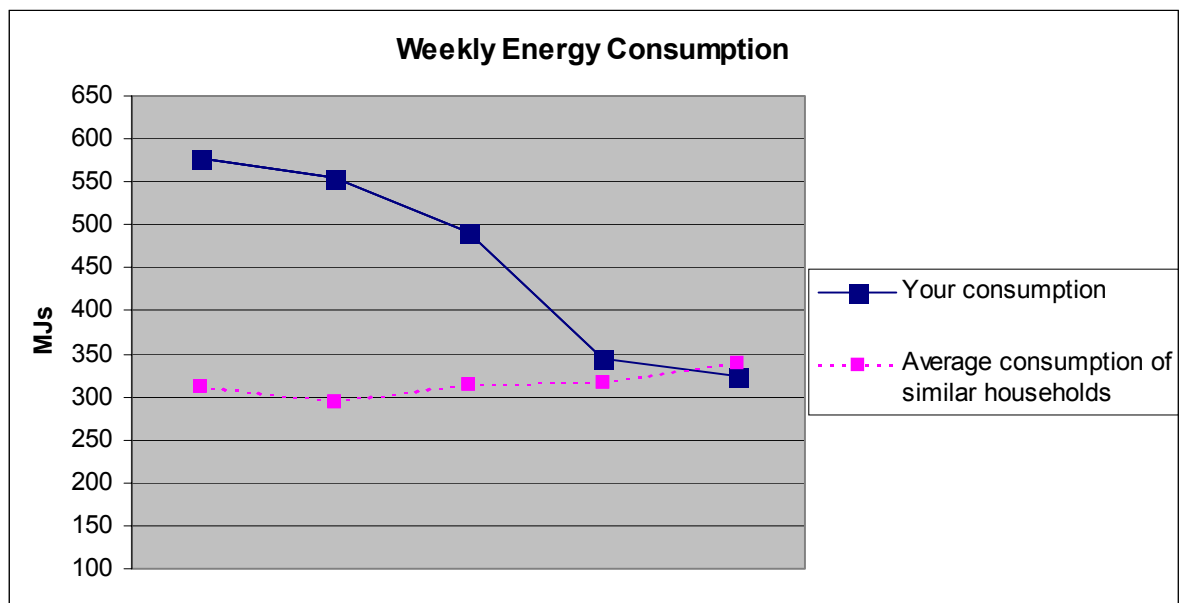
(Chapter 5)



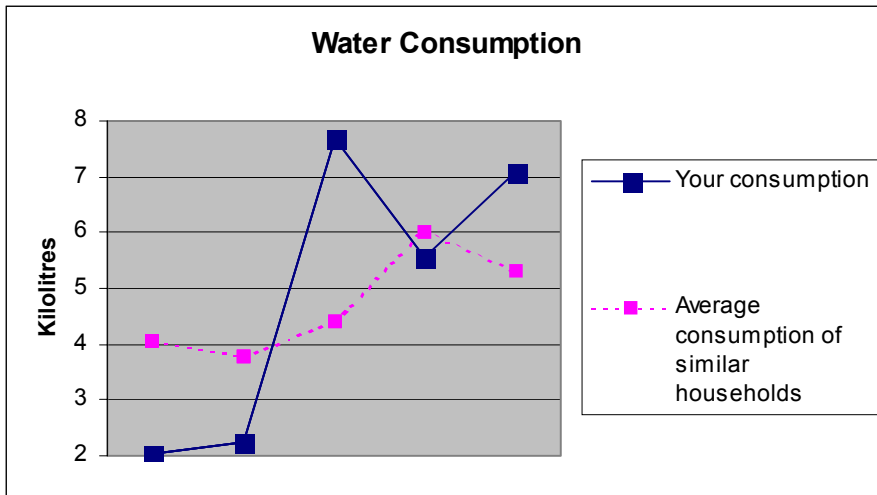
Dear Heidi,

I have included, for your information, some further feedback on your energy and water consumption.

This first graph represents your household's ENERGY consumption (in Megajoules) over the past 16 weeks in comparison to other households of similar size that are participating in my research. The first point on the graph indicates weekly levels of consumption during the period from the 20th of October to the 19th of November. The second point represents weekly consumption between the 19th of November and the 3rd of December. The third point is for 3rd of Dec – 17th of Dec, the fourth for the 17th of Dec - 4th of Feb and the fifth for 4th of Feb- 18th of Feb.



The second graph represents the same information, but this time for your household's WATER consumption (in Kilolitres).



I hope that you find this information useful.

Yours Sincerely,

Tim Kurz.

(ph: 9360 2390)

Appendix H. Environmental attitudes questionnaire used in the main field study.

(Chapter 5)

Please answer the following questions by circling the response that best describes your own personal opinion. There are no right or wrong answers, so just answer based on how you actually feel.

1. We are approaching the limit of the number of people the Earth can support.

Strongly Agree Agree Unsure Disagree Strongly Disagree

2. Humans have the right to modify the natural environment to suit their needs.

Strongly Agree Agree Unsure Disagree Strongly Disagree

3. When humans interfere with nature it often produces disastrous consequences.

Strongly Agree Agree Unsure Disagree Strongly Disagree

4. Human ingenuity will ensure that we do NOT make the earth unlivable.

Strongly Agree Agree Unsure Disagree Strongly Disagree

5. Humans are severely abusing the environment.

Strongly Agree Agree Unsure Disagree Strongly Disagree

6. The earth has plenty of natural resources if we just learn how to develop them.

Strongly Agree Agree Unsure Disagree Strongly Disagree

7. Plants and animals have just as much right as humans to exist.

Strongly Agree Agree Unsure Disagree Strongly Disagree

8. The balance of nature is strong enough to cope with the impacts of modern industrial nations.

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

9. Despite our special abilities humans are still subject to the laws of nature.

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

10. The so-called 'ecological crisis' facing humankind has been greatly exaggerated.

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

11. The Earth is like a spaceship with only limited room and resources.

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

12. Humans were meant to rule over the rest of nature.

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

13. The balance of nature is delicate and easily upset.

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

14. Humans will eventually learn enough about how nature works to be able to control it.

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

15. If things continue on their present course, we will soon experience a major ecological catastrophe.

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

16. Conserving water is an important step towards ecological sustainability

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

17. My household generally tries to limit its water consumption

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

18. The amount of energy that societies consume needs to be reduced.

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

19. Efforts are made in my household to reduce the amount of energy that is used.

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

20. The use of renewable sources of energy such as wind and tidal power is an important step towards a more sustainable society.

Strongly Agree *Agree* *Unsure* *Disagree* *Strongly Disagree*

21. Have you heard of Western Power's NaturalPower scheme? *YES* *NO*

22. Is your household signed up to Western Power's NaturalPower scheme? *YES* *NO*

23. If you answered yes to Q22, what percentage of your household's electricity originates from *NaturalPower* (NP) sources?

25% *50%* *75%* *100%* *Not sure*

Thank you.

Appendix I. Transcripts of follow-up interviews.

(Chapter 6)

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Interview with "A", Friday 7th July, 2002

T: My research has been looking at water and energy use...one thing that I would be interested to know is how important you and the household would regard water and energy conservation?

A: Probably a little bit lax I'd say

T: Yeah?

A: We put a lot of water on our garden which is not good news, but, ah, we are concentrating more on shrubs and annuals now so I guess we are conserving in some ways. Of course the price is a deterrent too. Energy...umm...power...um...we are not good users of power, we've got gas heating...for rooms and hot water. We use electric fry pan and microwave a lot...rather than the oven. There is only my wife and myself in the house...so we are not big users of energy as such...we are probably disproportionately big users of water though. But, you know, if things got really bad...I've got no problems with water restrictions for instance. And if...well...I can't understand why they don't make them permanent...winter and summer...until such time, if it does occur that our dams have got sufficient water in them to do it.

T: My next question was to ask you how you felt about the water crisis this summer...how you reacted...how you felt others reacted...

A: I think people...people, you know, if they've got any brains and they see the pictures on the television and the pictures in the paper they know that we are really in dire straits with water...I think people accept it...they get a bit browned off at times...I went to town this morning on the bus...and we got to the transfer station around Marmion street and the sprinklers were running. Ah...that's...I think local governments seem to be bigger wasters of water than a lot of other people...because they program their things and they are slow to react to rain and things. I mean there is no reason in the world why people should be watering at the moment. My lawn...I think I've watered it once in the last couple of months. Its a bit ironic I think that the government at the beginning of summer was encouraging people to put bores down and then they start talking about putting a levy on bores...you know that's just crazy in my book...I wouldn't put down a bore around here to be honest. With the size of our block I don't think it would warrant it. I just go along with the water restrictions and if it gets to the stage where your not allowed to water your lawns well so be it...I'll just let the lawns die and I'll put a few more shrubs in out the front. You know, its not just going to happen to me...its going to happen to everybody...so you know, your place isn't going to stand out like a beacon...everybody's will be the same if that happened. So...I accept it...like years ago when we had power restrictions...people didn't like them...but if they had any brains they would accept them.

T: Did you see any evidence of people failing to comply with the water restrictions at all?

A: Not really...no. No...I ...well, of course I don't know...I know that my days are Sundays and Thursdays...so...if the guy up the road is watering on a Wednesday, I don't really know what his watering days are. But I think people, to my knowledge, were kind of like "Eww...I have to remember to water my lawn today, cause its my day". Its terrible that we have this fetish with lawns though...in a way...they probably use about 50 percent of the water consumed in the metro area...but you know...that's what we like.

T: Do you think that there is any way that we could change this 'fetish' for lawns?

A: I think that if there was a total sprinkler ban for watering lawns then the fetish for lawns would disappear wouldn't it? Nobody would have a lawn...so people wouldn't say have a nice green lawn to keep up with the Jones' sort of thing.

T: Yeah.

A: I remember the last time we had water restrictions back in the 70's, I reckon my lawns looked better then, because I was hand watering and I used more fertilizer. And I came to the conclusion that the lawns didn't need half the water that was put onto it.

T: In regards to energy then. What kinds of things do you think would motivate people to be concerned about conserving energy?

A: Well if we had restrictions that would motivate them, wouldn't it...there is nothing like depriving people of things to motivate them is there.

T: Obviously at the moment its being made fairly obvious what the reasons are for conserving water...empty dams...

A: yeah...they are more visually apparent aren't they than...you know...the average person doesn't have the ability to see how much coal is left in the ground...or how much gas left...its not a visual situation like water is. So I don't think people are anywhere near as concerned about energy as they are about water, except for the greens...who want to conserve it.

T: Well, I suppose one aspect of energy conservation that has been in the media has been the issue of the Kyoto Protocol....an attempt to reach international agreements...

A: Yep. We haven't signed it yet.

T: Yeah.

A: Right

T: Yes, Japan has now signed...but Australia has said that there is no point if the US don't sign.

A: Probably uses half the world's energy.

T: Do you think these sorts of global energy issues influence how people think about energy at all?

A: I don't think so. I think most people say...oh...its not going to happen in my time.

T: Yes, whereas water, I suppose...

A: Its always going to rain...energy, we are going to run out of it one day. But...it wont be in my time sort of thing.

T: Whereas...if the dam runs out...

A: You can take a photo of the dam with no water in it...or turn on the tap and nothing comes out...

T: In my study there appeared to be an effective reduction in water consumption amongst those households who were given the labels vs. those who didn't...however I didn't get the same results for energy conservation.

A: It's hard to cut down on energy...I think.

T: Well that's what I was going to ask...

A: Ah...well its easy to cut down on water...its a *visual* thing, as I say...you see these...hardly a week goes past when you don't see a picture of the empty dam. Ah...I think your getting an unconscious reminder, if its not even a conscious reminder. Energy...I don't think people waste it...we don't overuse energy in this place...we don't sort of...we use the florescent tubes...we sit in the lounge and just leave the light on in the kitchen. We've got a couple of electric radiators, but we never use them...we've got a gas heater...that's only gone on for the first time last night...first time we've used the gas, because its been a lot milder...so there should have been some reduction in energy because of the weather I would think. Showers...we have a short sharp warm shower.

T: Do you use an air conditioner at all in summer

A: Yeah...we've got an air conditioner...and evaporative air conditioner...we use that in the summer...ah...yeah, if we had to...we would cut it down. The house is insulated...we've got all these screens around so that you don't get sun on the glass...we've got the pergola across the back which keeps the house cooler in summer. I don't think there is many ways...as I say we cook predominantly in the fry pan and the microwave which are pretty low uses of energy in comparison to an oven...ah...we probably don't have much more we can cut down on in power really...you know...we could sit in the dark, if there was total restrictions, and you only get power two hours out of 4...then you would cut it down.

T: So you feel like most of the energy that is being used is being used efficiently...it isn't being wasted then?

A: Its not being wasted....air conditioning is probably the luxury item...there is nothing else in the house...we haven't got any 'machines'...well, we've got a washing machine of course...and a refrigerator...but ah...we haven't got any other machines around the place that are power users.

T: It seems that many people see energy as being used for necessities whereas watering the garden is more discretionary.

A: Yeah, well when you get restrictions many people cant be bothered hand watering. So the restrictions have more impact than they are intended because people who would normally put the sprinkler on the roses or whatever just say, oh bugger it.

T: Can you think of any other reasons why it might be easier to conserve water than energy?

A: I think one of the things that is having a bit effect is the fact that people are on smaller blocks these days. A lot of people haven't got lawns the way they had. More people have paving.

T: I was wondering how much impact my feedback that I sent you had on your consumption?

A: I didn't use it very much to be honest. I read it...I didn't throw it in the bin...I read it and all...I didn't find it that applicable to me

T: Why was that?

A: Well it didn't seem to do anything for me that I wasn't already doing.

T: I cant remember whether your house was above or below average...

A: We were above average in water in below average in power.

T: Would you have thought that...before you got the feedback...would that have been your prediction?

A: Hadn't thought about it to be quite honest...I would have expected that we would be big users of water...we usually pay about \$300 a year for water...

T: So it didn't really motivate you to reduce your water...

A: I think the thing that motivated me was restrictions. No...I don't think I was motivated by it much...power...we have always tried to conserve power as much as we can. We have never wasted it...put it that way...we don't leave all the lights in the house on...that gets up my snout a bit.

T: My last question is just whether you had any ideas about what the best ways might be to get people to use less water and energy?

A: Make the restrictions a bit harder...for water. Make the restrictions harder. And ah...if it upsets people and...if they make the restrictions harder and they bite the bullet on it, and then they see things like the councils leaving water running and they see the amount of water they use in some of these industries...I think people are realistic enough to...if they say...the water restrictions will be such and such...for instance, see the evening ones...you can put it on at six o'clock at night and let it run till midnight...ok...well say you could make it so you could only run it from 9pm till midnight, and then many people would say, "ah well...too bloody late I'm not going to worry about it". I think you would have savings by default in those kind of circumstances.

Ah...power...not much you can do about power. I s'pose solar power...pity its so expensive, puts it beyond most peoples means. Even if it is within their means...if someone says to me...put in solar power and it will cost you 20,000 and I work out that I am using x number of dollars a year on power and it will take me 160 years to pay it back...well I'm not going to be around in 160 years time...the economics of it aren't there.

T: You mentioned people being fairly amenable to water restrictions...If Australia was to sign the Kyoto agreement for Greenhouse gases that would require us to reduce our emissions to a certain amount how do you think people would feel about having to, say, cut back their use of cars?

A: They'd whinge like hell I'd say. It's going to come one day. Its a finite power source...eventually it will get too dear and *economically* people wont be able to use their cars and they will use public transport.

Interview with "D", Wednesday 12th June 2002

T: Obviously in my research I was interested in looking at the areas of water and energy use within the home. My first question was how important you would regard the issues of water and energy conservation?

D: Well obviously, you know, water is of extreme importance to us, in western Australia...and energy...also important.

T: And why...why would you regard those two things as important?

D: Well...water...there has been that much said about water over the last 20-30 years...its a very precious commodity. We haven't got unlimited quantities of it, well we have, but most of it is up north...and well we have just got to conserve it...as our population grows, more people, more users of water...so its inevitable that one day we are going to reach the stage that we are going to have too many people for too little water...in the metro area.

T: And what about conserving energy?

D: Well I guess its probably not as much of a problem as water...at this point in time...but...ah...its also important, particularly the sort of energy you use. We don't want to go back to coal fired power stations...although I think there is talk of building another one, which I think would be stupid. We've gotta worry about the greenhouse gas, so its more important *how* we manufacture energy rather than worrying about how much we use. Perhaps one day...I know a lot of people don't like the idea...but one day we may have to depend on nuclear energy...whether we like it or not. Nice to live in a perfect world Tim...but we cant always do it can we.

T: So what would be your preference then...you said your against coal filled power stations...you said that in the long term nuclear may be the only answer...what would you see as the best direction to take in the short term, for western Australia...

D: In the short term I think gas power...we seem to have a lot of gas, why don't we use that for our power stations. In the long term, I don't know how long our gas is going to last...in the long term, maybe it will have to be nuclear...but certainly we have got to get away from coal powered...crazy.

T: Do you think that these kind of things that you have talk about as reasons to conserve...do you think these are things that most people would think about?

D: I don't think everybody thinks about them. I think there are a lot of people out there that don't think about anything...they just turn a switch on and that's it. I think more and more people are becoming concerned about clean fuels and stuff like that. Not only with power stations but with petrol....I think most people are starting to think: we may have a problem with greenhouse gas. And individually, none of us can do anything about it...collectively I guess over a period we *may* be able to do something about it. But,

basically, all of this gets back to one thing and that's money. Governments have a certain amount of money and they have got lots of things they've gotta spend it on and I suppose if you could wave the magic wand and say to government 'you've got all the money you want' and then they could do things like bring the water down from the north...or...if money wasn't an issue then ideas are there...but you've got to fund them, and that's where it all breaks down.

T: What were your thoughts on the Perth water shortage this summer and the use of restrictions?

D: Well we managed...nobody had to miss showering...or washing or washing clothes or um...most of our water goes on gardens and I s'pose we are all a bit wasteful. But that's the way we live, that's our lifestyle and your not going to change that in five minutes. People are saying we all should plant native gardens and have less water...you know...I don't like a native garden...its just not my style of gardening...I...I don't think we have reached the stage yet where we have got to worry about what sort of garden we plant...I think we've got to be conscious of the fact that we have got to use the least amount of water as we can.

T: So use the least amount of water we can on the kinds of gardens we have now rather than going to the extreme of changing the whole way that we garden?

D: Well, you've got an anomalous situation now where...I don't have a bore...I just to have one, before we shifted to this house...you've got people today where if you've got a bore you can put water on your garden 7 days a week. If you haven't got a bore...you can put it on 2 days a week. I guess people who haven't got a bore look at people who have and say, "why are you using all that water, why can you use all that water and I cant?". And...I think a lot of water is wasted...we seem to be sitting on a mountain of water...it depends on who you believe. Perth is supposedly sitting on a huge lake of water, which is almost inexhaustible...well if that's so...have we got a water shortage?

T: I think a lot of people have a concern that if a lot of water was taken out of those underground aquifers then it would cause environmental problems with the water table. For example if you take a lot of water out of the deepest aquifer, the Jarigardee, then what effect will that have on the two more shallow ones above it and those kind of things.

D: Well sure...and we've seen that haven't we...it causes some water ways to dry up if you take too much. I guess its just a question of balancing it all out and trying to do the best we can.

T: Do you think that bores should be metered, or restricted in terms of days per week.

D: I think so...I think so...I used to have a bore and when I had the bore I might not have said that, I might not have agreed with that but I was going to put a bore down here, I got a man out to do it and he said it wasn't worth my while to do it. But if you forget about your own little personal choices...you know...common sense dictates that you should

ration your water. You shouldn't just let people use it willy-nilly. You know, I think it's a problem too with trying to educate people in water conservation. If you haven't got a bore, and everybody else in the street has and they are all splashing water around...why should you worry yourself...you know you'd have to have an exceptionally strong conscience or ah desire to do the right thing...because your one of...lets assume that around here most people have got bores...now, why should I really worry...I do worry...but why *should* I worry if...when all the neighbours are splashing water around, what difference is my little bit going to make. I think that's the attitude of people. If people see water being wasted, if they see it being wasted...like the place around here is not occupied and the sprinkler comes on regularly and you think "god, what a waste of water that is". Until we reach the stage when everyone is treated equally...I don't think people will really take it too seriously.

T: do you think that people...actually...that's an interesting point...whether people in suburbs where not many people have bores....like around my suburb in Mt Hawthorn where there aren't many bores...just driving around in summer, the verges tend to be left to dry off a lot more than, say around here where there are heaps of bores. I wonder how much of that is not being able to water as often...or whether those who ARE on scheme water feel under pressure to maintain the image...

D: Yeah...I'm sure they are. That's right. Applecross is a very nice place to live, and I'm lucky that I live there. But, if I didn't water my street lawn, and let it die, it would stick out like a sore toe. And that would be...I guess my neighbours would look at me and say "well what a crummy old neighbour *he* is!" So I am under pressure...to maintain a good lawn. So, you know, if you drive down the street and everybody has got reasonable lawns and ones got a dead patch...its like pointing the finger of scorn isn't it?

T: I was wondering whether you thought that the Kyoto Protocol....

D: Yeah

T: We talked about greenhouse gases before, and obviously tied up in that is the international energy negotiations which have been attempted for quite a few years now. I was wondering whether that is something that you personally would think about at all in regards to energy use and energy conservation...for example if Australia was to sign up for that then that would require us as a nation to reduce our greenhouse gas...do you think that these sorts of issues are things that people think about and might motivate changes in behaviour?

D: Well...you know...you've opened up a tin of worms haven't you...if everybody agreed to sign that agreement and abided by it, of course you'd have a massive reduction in greenhouse gas, but everybody's *not* going to do it. So you're whistling in the dark if you think...well America wont sign it...and I guess people think that if the majority are not going to sign it...or if they sign it and not agreed to the levels required...why should somebody else sign it. Out of 10 if there are nine nations that don't sign it and one does and the one that signs it sticks by it rigidly and because they have done that, they have

put a burden on their citizens, not only in cash terms but in all sorts of terms...is that fair to their citizens...what's the point? Now you could probably argue that at least it is a small step in the right direction...but, gee that one country out of ten that has signed it is paying an awful big price...and why should they? And if your the government of that country, you know, do you think your voters are going to say...gee...your a good government, you know...we're doing the right thing but the other 90 percent of the world isn't. Unless you can get people to agree, particularly the bigger nations....the third world nations...we were up in Sarawak recently and ah...from what I can gather there, the amount of timber that's chopped down illegally...its a *huge* amount of timber! But, its going on , but the country wont police it...they either cant police it...or they don't want to police it for any one of a number of reasons. So what do you do...do you not chop the trees down here...and they chop theirs down...the worlds a big place and its full of intrigue with governments and...its just very difficult. It would be lovely to live in a perfect world...it will *never* happen...it will never happen.

T: One thing I found in my study was that what I was able to get people to conserve water by getting them to put labels up around the house...but this didn't work the same for energy. I was wondering whether you had any ideas as to why it might be easier to conserve water than to conserve energy.

D: I think because water's...water's, you know, I think we're told or educated to think that water is more important. Umm...energy you can generate...if we wanted more energy...we've only got to build another power plant. If we want more water, it doesn't matter how many more dams we build...unless it falls out of sky or we get it from underground we cant get it. So I really don't think...I'm more concerned about water than I am about energy...I don't see energy really as a problem. And if we reach the stage of having nuclear power stations which are safe and viable...we can use all the energy in the world...what difference is it going to make. But water is a different kettle of fish. We've only got limited water...we've got unlimited sources of energy. So I don't really worry too much about energy. I think water is our problem. And with your survey, I found with those things...I hung one up in my shower and my wife had one in her shower and ah...I put it up and probably the first shower...I went ah yeah, I'll do the right thing...and I restricted my showering...and I did that probably for a couple of weeks. But then I found it tapering off...and eventually the clock gave up...and I s'pose I gave up.

T: Yes...those watches were not the best quality

D: Yes...they weren't made in Switzerland!

T: No...definitely not. My budget was so small...and I had so many houses.

D: You can give people a message...and it will have an impact for a while...but then after a while you've got to reinforce the message...otherwise people drift off.

T: That was why I was surprised that I didn't get a better effect for people who also got sent the feedback...I would have expected an interaction

T: My last question leads on from that...and that is to ask what ways you think would be best in terms of getting people to conserve resources like water and energy in their homes or maybe to use their cars a bit less?

D: I think you will only have success if you can convince people that there is a real need to conserve. If people don't see that then they will perhaps do it for a while but they won't do it in the long term. And getting back to people who waste water...like people who have got bores...they put them on and they forget about them...now why somebody who has got scheme water for reticulation feel about using a bit too much when they see the neighbour using a *hell* of a lot too much. And it gets back to fairness...you've got to have a system where everybody believes they are being treated equally...and if there not, then most people are not going to abide by it.

T: So then you think that provided that there is this fairness...then the imposition of actual restrictions is probably a good way to go...

D: Oh... I think...if you can have a system that's fair, and you can demonstrate to people that there is a need for it...an absolute need for it...you will get a good result. But if people don't see a need, and don't think the system's fair...you won't get a good result.

T: What about...with the water restrictions this summer...it was only in the garden...over a 12 month period the average Perth household would use about 45 percent of their water in the garden. So...those outdoor water restrictions can only target, well, less than half the water that's used. Do you think...what about the other half...is there any way do you think that you could impose a system that would restrict people's water use inside the house? What about the pricing structure of water?

D: Well...I don't think it's a good way. I don't think you can say to people...the more water you use the more water we will charge you for it. If you say that...some people with unlimited funds won't care less...they'll say, well, if that's the only barrier to me using water...then bugger it, I'll use as much as I like...money is nothing to them. I think that we...most people, most law abiding people will obey what the government dictates. The government said I can put water on for two days a week and suggested that I do it for no longer than 15 minutes...well that's what we did. And if they changed that and said...you can only put it on once a week, for quarter of an hour...I'd do that. My lawns and gardens would suffer...but if everybody else was suffering...if that was the norm...well, alright...I'd cop it, that's it. And if I perceived a real need to do it...I mean, if the government said "the dams are full...but you can only use water one day a week for 15 minutes"...I'd say, "Drop on your head". There is no need to do it. But if there is a perceived need to do it, and everybody was doing it...*I'd* do it. No argument. I guess it gets back to having a need to do it, and fairness. What's the point in saying to somebody...you can use all the water you like provided you pay for it...that's silly. Because everybody's not equal.

Interview with "H", Tuesday 4th June, 2002

H: Well I enjoyed getting all the letters comparing our water level to others...and its like what are they doing with the water! What are they doing! And I thought that our water consumption would be really high because I actually have a two year old who was in cloth nappies and I was washing everyday. So it was like what are these other people doing...why are they wasting so much. I just couldn't understand...ours was really low...and there's was like 10 kilolitres *more*. Yeah. But having all the information to start with...when you suggested that if you cant change your dual flush on the toilet, to put the bottles in, so we put two plastic water bottles in each of the toilets, yeah...so yeah, I'd say that's made a difference as well...but, depends on how often you use it I s'pose.

T: I'm interested in having an informal chat about some of the issues involved in my research. First of all...I just wanted to talk about the issue of water and energy conservation in general. I'll start by asking how important you....

H: *Very*, very important to save water...very important...oh yes. I mean, look at our water restrictions now. And if we don't conserve our water then next year we wont be able to have our sprinklers on at all. I mean we've been lucky that we've had this little bit of rain, but we still need a lot more rain, and I cant understand why people waste so much water...you know like people brush their teeth with the tap running...cant stand that, don't do it at all. As you can see, I've got dishes on the sink...I don't do dishes until I need to do dishes, like there is more to do...or, at the end of the day they go in the dishwasher. Or if the dishwasher is full and I cant fit anything in...then I will do them. But, yeah...I just cant understand how people do waste it, I think it is really important because water is precious. And having been living in the country as well...and knowing how precious water is to them...umm...like where we were in the central wheat belt, people rely on rain...whereas people down the south-west, they have got their own irrigation so to them its ok because they can pump their own water, whereas other people actually rely on rain. I mean, were relying on rain now for our garden. Yeah...I think that's really important. And, like you were saying, um, like electricity...it was drummed into me when I was little...don't leave the lights on! Its a waste of electricity, its a waste of electricity...and I've always had the same thing. If a light doesn't need to be on, don't leave it on. If you've finished in the room...turn it off. Yeah.

T: So, what sorts of reasons do you think that people might have for conserving water and energy in their homes. Obviously with water in Perth at the moment there is the drought...but with energy...do you think it's the same kind of things there...

H: I don't think people are aware of how energy does effect our lifestyle, um, I think this has made me more aware...doing this study...has made me more aware. I mean, I was aware before of wasting electricity and wasting water, but actually being more aware now...having given me the facts of what's going on...your showing me in the graphs, this is what your using, this is what other people are using, and its like WHAT A WASTE! What's it doing to our environment? You know...och...I think people are just not aware of really how much they are wasting.

T: You have referred to “what’s this doing to our environment?”...what do you think people perceive as being the environmental damage that is caused by wasting these resources?

H: Um...

T: So when people are thinking about conserving...what sorts of environmental issues do you think they might consider?

H: Um....

T: Or is it more just a generalized idea of not wanting to waste?

H: Yeah...possibly of not wanting to waste...umm...I don’t think people are really aware of their environment and what they are destroying...if they are wasting. Yeah...its hard to say.

T: Ok...well just to make it a bit more specific then...um...firstly in regards to water...you spoke already a bit about the Perth water shortage...what has been your impression of how people have reacted to the water shortage?

H: Well...at the start I think people were still not listening. People were still putting their sprinklers on on the wrong day at the wrong time...but, when it was drummed into them...this is what’s happening, I think people become more aware that way. But, they have got to be told over and over again...this is what’s going to happen, if you don’t do it correctly, this is what’s going to happen....we are not going to have any water. Umm...I think all the media coverage that they have had...this is what they needed to make people aware “hey buckle up, you’ve got to stop wasting...”

T: Or else?

H: Yeah!

T: So there is a notion of a potential consequence?

H: That’s right.

T: Something that interests me at the moment is the difference between that focus on a consequence in regards to water and whereas with energy I wonder whether there is such an immediate...

H: Consequence....yeah. See, we don’t find it until later. Like it would have been these years now...if we aren’t careful of what energy we use...it will be later...like when our children are older, that’s when they will be suffering.

T: Do you think that that delaying in consequence is a hurdle in terms of getting people...

H: Yeah...in a way. Cause they think "aww yeah, it will be alright". It's cause they cant see it, they cant hear it straight away that this is what's going to happen...whereas water...your being told! This is what's going to happen...now!

T: In regards to energy, something else I was interested in was the Kyoto Protocol which was receiving quite a lot of media coverage prior to the events of Sep 11. There had been quite a lot of focus on that. I was wondering what your current feeling and opinion (if any) would be on the system of negotiations in regards to Kyoto...or whether you think it is really something that is discussed much within the community.

H: Well...I wouldn't know that it is discussed a lot...um...I wouldn't know that it would come up in general conversation. Someone in your field...yes...it may do...because that is what your so passionate about...but just the general community I would say not. But...um...yeah.

T: Is it something that people really know that much about?

H: I wouldn't think so. No. No. I don't think people are educated in that area to say this is what's going on and if we don't do this then it will result in it.

T: As I said before we started...one of the things that I found in my study was that the labels that I was using seemed to be fairly effective in bringing about changes in water consumption...but so not so much for energy. I can show you here on this graph. (shows graph).

H: Ah.

T: So one thing I was interested to ask participants is whether you have any thoughts on why you thought this may be the case based on either your experiences of being involved in the program or just generally.

H: Umm...I s'pose because water you can actually see it. Its there and you think...aww what a waste, cause you can see it...if you've got a bucket of water and you threw it away...its like, its a waste...its gone. Whereas electricity, you cant see it, you cant necessarily feel it. I mean, you can feel heat, but, you cant feel light...you can see it, but you know...I don't know...maybe...you know what I mean?

T: That's something I was wondering as well...that aspect.

H: Yeah...I s'pose because if you don't have water...you cant drink anything and your body needs water. I mean, what else are we going to drink? Soft drink all day...ich! I'd be devastated without water...I drink so much water...that's all I drink...so if we didn't have water it like...och! I'd be devastated...yeah.

T: Is there any other ways in which there are differences...maybe in terms of the ways that people *use* these resources?

H: Umm...well see...I've got a drier...but I don't use my drier very often...I was only using my drier...winter time mainly...with towels with towels and sheets that needed to be dried...but mainly nappies. So...I *needed* them dry to be able to use them. But when I could hang them out, I hung them out. So...yeah...when I had that label I thought...well, really I can hang these out...so I'll go and hang them out, but if I didn't have that time to go and hang them out, being working and all that, then I'd go and put them in the drier. But, you know, it made you sort of think twice...because of what you *are* using up. But I don't know whether other people sort of have the same opinion.

H: Were the people in your study home owners...or renters?

T: It was a mixture...most were home owners.

H: I just wondered whether maybe with the water...if they were just renting then they didn't care...if I don't know what the water situation is with water bills and rentals, but I thought that if you had an excess water bill then the person who was renting actually had to pay for that.

T: Well the way that bills work at the moment is that rather than an excess water bill, you pay for use. For example, I am renting at the moment and the water bill is sent to my estate agent, but I have to pay.

H: Oh...ok.

T: One thing that has been apparent over the summer in regards to water has been the focus on water as a shared resource...'this is *our* resource'...'its up to all of us' etc. Do you think that people think about energy in the same way?

H: No...I wouldn't have thought so.

T: How do you think people would perceive energy then?

H: Aww. I don't know.

T: Its the kind of thing we don't necessarily think about...

H: No...no. I s'pose they think...aww...its just there.

T: Just a bill that comes in the mail?

H: Yeah...you know...they've used up that much electricity or gas or whatever...and, they will just pay for it.

T: So...if electricity or gas bills go up....

H: They'll probably just grizzle about it and go "Aww...look how high that is...oh well...it was a cold winter or a hot summer"...you know.

T: Do you think that people will change the way that they read and react to their water bills as a result of...

H: Yes...well I would have thought so. But then I don't pay a water bill. I don't pay the water bill, but yet I'm careful of what I use.

T: Ok...so do you pay the power bill?

H: Yep.

T: Do you think that focusing on monetary savings is a good approach to getting people to not waste?

H: I would think that it would make a difference for some people...you know...we saved \$50...the garden's still alive...that sort of thing. Whereas there are still those other people who are a bit blasé and are like "yeah...whatever"

T: Just pay it...

H: Yeah...yeah.

T: I s'pose water is not that expensive either

H: Yeah... yeah

T: So what do you think would be the best ways to get people to conserve water and energy then?

H: Show them...like what you've done!

T: Like, the graphs.

H: Yeah...cause I showed my in-laws, every time I got the graphs...when I first got the letter I showed my mother in-law and she said "Ah, don't worry about it, just throw it away"...and I said "know, I really want to do this". So when I get the information, I make sure I show them...and she was really impressed...it made me want to stay low...because I kept looking at the high people and thinking "what a waste! what are you doing? Wake up!" Yeah.

T: So you said that you discussed it with a few other people...

H: Yeah...and I gave my friends the labels...and she's got them at her home...and hopefully she is going to pass them on as well.

T: So, how did that process actually come about...

H: Well everybody that came, I told them that I am doing this survey for you...cause I had the label on the dishwasher, the label on the fridge and I think I had one of the ones for the tap on the bench...and I said to her, "I'm doing this survey" it must have just come up in conversation...I'm doing this survey...and I showed her and she goes "Oh wow, what a good idea...I'll have to tell my husband". And I said "Oh well, when I finish I will give you the labels"...cause you had said, pass them on to someone...so I thought...ok then, I'll do that. So, all my friends that I had told them, you know, this is what I'm doing and they were like, wow. Yeah.

Interview with "K", Wed 5th June, 2002

T: The first thing I was interested to ask you about is how important you would consider water and energy conservation to be?

K: Umm...very important, because, I don't know, without the resources its pretty hard to live I guess. And, my mother is always on everyone's back in this house to conserve those resources. I guess, its important to preserve for the future too.

T: So, if you regard conserving these resources as important, what specific environmental issues do you think about when you consider the reasons to conserve water and energy?

K: When I think of energy I think of using like CFC projects...the hole in the Ozone Layer and global warming...so if you wanted to reduce...I don't know...I just think of the environment getting hotter and hotter...so to slow down that process maybe we can do more environmentally friendly practices. It's better environmentally practical than to destroy everything. I guess we've got a wood fire going now...which we shouldn't I guess (laughs) because if you want to preserve our forests and things. I mean, we are going to get rid of that fire soon so we can take up a more environmentally friendly way of heating our house. I don't know what that would be yet...but we can do that. I don't know...just...try to do everything we can...because if every person did it then it will help.

T: Do you think that most people are doing these things?

K: No, I don't think so. I think that if there was more ads on TV...or the council could do a bit more. For example, the council gives us things for recycling and we use those...but if they didn't give us those then we probably wouldn't do it.

T: Do you think that's the same with conserving water and energy?

K: I think those ads on TV about conserving water and having water restrictions was a good idea...and fining people. That kind of thing enforced people to conserve water on their gardens and use water wisely campaign. Without it, I don't think people would care, they would think "we've got it, we may as well use it". As for energy...saving energy...I don't know, we try to turn our lights off when we go out of a room, and just small things like that...but I know a lot of people that wouldn't bother.

T: What do you think it was this summer that caused people to actually change their behaviour to actually reduce their water consumption?

K: I guess they were educated on it more, usually they just go out and do the same thing year after year...it just becomes a habit...you kind of forget about the environmental issues...but when its in your face all the time on the TV...every commercial break its there...as soon as advertising stops, things go away and people slip back into their normal

patterns of behaviour. One reason the water corp. reached their target this summer was the advertising reinforcing the issue.

T: What about restrictions?

K: Restrictions?

T: Do you think that they worked...and what was people's reaction to them?

K: Umm...well I know our reaction was "Good, it's about time"...when we did see people putting their sprinklers on after it has just rained or when their not supposed to it was kind of...you'd kind of get annoyed with them...like what are you thinking...you know. Umm...so we had no problems with the restrictions, we thought it was necessary.

T: Would you have got annoyed with other people for wasting water in previous summers?

K: Umm...I think it could be annoying in previous summers as well...like if water was running down the street from people leaving their sprinklers on, but I this summer I guess it would have just made us aware more.

T: Do you find that your conservation of resources is influenced at all by a concern for the resources running out?

K: Yes. The water issue. Cause my mum grew up in Jarradale which is near the Serpentine Dam...umm...she has always grown up with the knowledge that the dam water does run out and stuff so she is always saying..."The dams are low so we have to conserve for the future"

T: What about with energy...is that the same?

K: Umm...I think we usually think of water...more than energy. Umm...when you say energy, are you talking about electricity?

T: Well, both, electricity and gas I suppose...and for that matter wood heating is a form of energy or even driving the car...

K: Oh...ok.

K: Well we try to turn off lights when we leave the room and umm...the cars, there is 4 people in this house and we have 3 cars and we all drive...like I drive to Joondalup 3 times a week and my mum drives to work and dad has a motorbike...so we do rely on automobile transportation a lot. I mean, we could walk more...up to the shops, but sometimes we get lazy. As for gas, when we get rid of the wood fire we will probably get gas, unless there is another environmentally friendly way. Umm...in summer, we have the air conditioning, but its the evaporative air conditioning, I don't know if that's better for

the environment than the fully ducted...it might be...I'm not sure. Try turning all our appliances off.

T: So you mentioned before the issue of greenhouse gases...I was wondering if you had any thoughts on the Kyoto protocol...the attempted agreement on targets for greenhouse gases. I don't know if you are familiar with that at all?

K: No, I'm not.

T: No? Ok.

T: One thing I found with my study was that the thing that seemed to make the most difference in terms of people reducing their consumption was having the labels up around their house.

K: Ok...mmm.

T: But only for water consumption (shows graphs)

T: I was wondering whether you had any thoughts as to why it might have been easier to get people to conserve water rather than energy?

K: Maybe it had more effect on water because people can do smaller washes in washing machines and take shorter showers and things, but when it comes to electricity, people aren't prepared to cut back on things they like, like the TV, the radio, the hairdryer...appliances in the kitchen which make things easier. These are things that people rely on for everyday life.

T: So you think that water use is a bit more discretionary?

K: Yeah, yeah. Yes, like maybe a lot of leisure activities like the pool, the spa. Like people might have had those spas in their bathrooms...previously they might have had one once a week, but now cut down to once a fortnight or whatever. It's easier to take shorter showers or...

T: There seemed to be some evidence from my questionnaires that the behaviours that were most effected were things like using the half flush more often in the toilet...

K: Well we already did that before your study...I mean, for people not to do that, you think...what direction are you coming from? Why wouldn't you use that?

K: But I read your things that you sent us every month about what our household saved...and this household actually went down in electricity but we didn't do very well in water...so I don't know how we did that. But umm...I've been trying to take shorter showers...but I have a process in the shower, you know...you have to do things with your hair and...but...instead of keeping the shower bore now I keep it on really light...so I can

still take the same amount of time but it wont use as much water...cause its only a light shower.

T: What some people will do is wet their hair, turn off the water, and then turn it back on to wash it off...

K: Yeah...I do that in summer...but not in winter. (laughs)

T: Yeah...its a bit hard in winter!

T: So what do you think might be the best ways to motivate people to conserve resources in their homes?

K: Umm...

T: Did you find getting the feedback and having the labels helpful?

K: Yeah...The actual statistics and facts on the labels...like, to have a shower you can use 25 litres of water a minute or something...I didn't realise you'd use that much...and you start to think there is 4 people in this house...and then you times it by four and then all the people in the street...and this is just for one day...for one shower so you think Oh...wow...we do chew up a lot of resources so you try to think of ways to improve around the house. But, yeah...in order for *everybody* to do it...for every household to do it...umm...I don't know. Its kind of...its huge.

T: You mentioned the advertising.

K: But advertising can only last so long before it gets way too expensive and as soon as advertising stops...the emphasis will start to wear off and then people will go back to their normal habits.

T: So I s'pose its about changing habits... I suppose that was what I was trying to do by getting people to put things in their homes and stuff

K: Yeah

T: Trying to get people to go through a process of every time they do something being reminded of it to a point that it would just become habit to conserve

K: I think that your interventions had an initial effect...but maybe wore off. When we first got them we went around the house and put them on and stuff and you'd always see them...umm...but then I guess it becomes one of those things that you'd see all the time so you'd kind of block it out.

T: Do you get any sense that as a result of the initial process of noticing it your habits changed at all? Do you feel that the way that resources are used in this home now is any different to what it was before?

K: Umm...well water in the shower definitely is for me...um....before the study we always filled up our dishwasher before putting it on...umm...we set the reticulation and if it didn't need to go on we'd turn it off...umm...the clothes drier, we'd never use the drier really, and washing machine we always put it on the right load...so, we didn't really need to change any of those. We didn't change our thermostat on the hot water heater.

(Dad enters room)

T: Did you find that there was much discussion about these kind of issues in the household as a result of being in the study?

K: Not a lot, when we first got the signs...we did. And when the actual feedback sheets came back each month we talk about it...yeah...then. But, other than that...I don't think so.

T: So there wasn't any regulation of each others behaviours or anything like that?

K: No...

Dad: Well, there was a bit

K: Actually...yeah...we already had that before...me and my sister already had my mother on our cases telling us to get out of the shower.

Dad: Didn't make any difference though

K: Well...yeah

Dad: You could bang on the door...and call out...but...

K: We're still in the process of doing something, but we have gotten our behaviour better
Yep.

Interview with "RR", Friday 7th July, 2002.

R: We don't have too many of these modern convenience, but water heaters, yes...mind you I use scheme water, they were two of the things you were interested in I think. A few thoughts...solar hot water systems were the go here some years ago, I don't know if they are still selling as many...but...I don't have one...but my son has one over in Attadale, he had it for a few years and it gave him that much trouble that he gave it away. So you spend several thousand dollars putting one up...and then...he gave it away because he didn't think that much of it. And he got the cheapest sort of heater he could find...that's one of these instantaneous things...I had one here once, and it was good.

There has been talk by the water board on the TV saying 'get a shower rose in the shower' so not so much water will come out. But we find that doesn't work, we do have a small rose, but that doesn't work much....if your having a shower, it takes a certain amount of water to have a shower and if you have it on harder you will get through the shower quicker than if you have a slow trickle...right...so I don't think there is much in that...that's for me anyway. I find you need a certain volume of water for a shower...basically, give or take a bit. And a big shower rose will give you more water, a small rose will give you less water...but then it takes you longer. They're just some thoughts.

T: So how important would you regard the issues of water and energy conservation?

R: Its a very important issue...well...its a world wide issues isn't it. Well we were told years ago that there was an energy crisis...they don't seem to flog that quite as much now but...to generate the power we are going to pollute the world in the process...oh yes, I think its very important. Anyone who is at all conscious of conservation issues would realise, would know that. I think people *are* becoming more conscious of it, its a slow process. When people get spoilt and have everything at their finger tips...press button this and press button that and automatic this and automatic that...

T: So I was also wondering whether you had any thoughts or reactions to the Perth water shortage this summer?

R: Yes, I...we do conserve water, actually we don't use a lot...although, the bill we get every year suggests we do use a lot. But...we...the big trees we've got, they allow us to save water to an extent because all the bushes that are under the trees don't require any water...very little, they are in the shade most of the time. And we have the trees partly for that...partly for ourselves because we don't like the sun...I get skin cancer.

Wife: Just push that Curtin open...I just want to show you how close the neighbours are...

R: What's that got to do with it?

Wife: Well, they don't have any garden at all...it used to be one big block there...now there are no trees...so we don't want to lose any of ours...and the birds come in.

R: We have trees for shade...and the birds. But the trees don't use much water...although strangely enough the gum tree in the middle out there...that one is ten years old now...that one, and other native trees will die back if they don't get a bit of water...only in this area...I don't think it would apply to a slow flat place like queens park or Cannington or somewhere else...but we are 100 feet above the river here, and we've got coarse loose sand and water wont stay anytime at all...and if we don't give that tree a bit of water it will die back...they don't die...but they die back...and a lot of dead wood comes on the top. So what we do with that...we use our water from the washing machine...we have a pipe and we take it out to water that. So that's getting regular water...but we are saving water too...because we are not throwing away the washing machine water. This was *illegal* a while back but the water authority has recently said that people should do that to save water. We have been doing that for a fair while...washing machines use a fair bit of water. And that's something you cant really do much about can you? I mean you can save it the way we do...but...a washing machine takes so much water doesn't it?

T: I suppose one thing that people sometimes do is make sure that they only do it when they have got a full load of washing.

R: We cant do a lot more on that....but...water...ah...the infill housing does reduce water use I suppose...because the garden's aren't there. But ah...then again, if you grow native trees, generally speaking they can do with not a lot of water.

R: We don't use sprinklers...I mean, we don't use set sprinklers, as a lot of people do these days. Most of our watering is hand watering...its only a few of the small things...like, for instance I'm growing that passion fruit that you can see there...ok...well...we will hand-water that. The gravellier gets a bit...that's all part of living because the gravellier brings the birds...and we like the birds. I don't know that we could cut down a lot on our water usage...umm...so bearing in mind that: you've got washing machines...and is this climate you have showers pretty often...umm...and washing up of course, they are pretty fixed...I don't think we could reduce ours very much...but we are conscious *of* it. And...as I say...we put the water out from the washing machine. And that seems to be legally approved now...approved by the health department, the council, and promoted by the water authority. I think we've got to.

T: So what did you think of the use of water restrictions this summer?

R: Umm...ah...I...I didn't um...it didn't greatly effect us...the only thing...didn't effect us...we were supposed to use our sprinklers on Monday and Friday...umm...well sometimes I'd forget on Monday, so I'd be tempted to use it on Tuesday or Monday afternoon...or during the 6-9 or whatever it was in the morning.

So I wasn't greatly upset by the water restrictions...because we hardly use sprinklers anyway. But then we've probably got more trees and more shade than most people, so what applies to use may not apply to these people [points to next door]. They've just moved in...and they have no trees as yet...they are developing a little garden at the

back...so, they wont have enough area for sprinklers...so I they would be hand watering, I would think...we don't know that much about them yet.

T: Did you find that other people seemed to be fairly good with complying with the restrictions?

R: Yeah...I did...I didn't notice anybody not complying...lets put it that way...I think they did...yeah. Well, certainly in *our* street anyway. Now...Ron Green two doors down...

T: Yeah, I know Ron, he was a participant in my study too.

R: Oh was he...yeah, he does quite a lot. He's got sprinklers in his street lawn...that's why his street tree is such a beauty...its the highest one in the street...and his lawn is well grassed. Now he used to use the sprinklers a lot to water the lawn...but I didn't notice him having any sprinklers on *at all* at the wrong time...in fact I don't think I ever saw them on *at all* last summer. He was...he was...a responsible type...he was a public servant with the health department many years ago. No...I don't think...oh...occasionally you'd see perhaps the councils flinging water around but then, they have their own bores...so whether that is against the policy I'm not sure.

T: How do you feel about people watering whenever they like...if they have a bore?

R: If they have a bore?

T: Yeah.

R: No I don't...well...I suppose I'm one eyed because I don't have a bore...but my son has one...umm...no...I've always felt that bores should be metered...there would be a bit of an outcry...but...umm...if its water, its water...and if its going to affect the overall water supply by the water commission...if its going to upset them...and make them bore deeper or whatever...well then, there must be some kind of restriction on people who use bores, even though they sunk the bores themselves. But see the water commission I think made a mistake here...they *encouraged* people to put down bores a few years ago. And umm...I felt at the time that it was going to be a backwash...it was going to hit back at them. And umm...I think it is beginning to now...because I just feel, and I don't have much to go on but I have a feeling that they are getting around to restricting the use of bores. Sooner or later they are going to have to get around to putting meters on them...on bores. Whether it be at the same cost as the scheme water, that's another question...that's totally different...but bore water is not used for drinking, its used for the gardens, so in that sense its not quite as important as the scheme water.

T: One thing I found in my research was that it was easier to get people to reduce water consumption than to get people to reduce energy consumption. Do you have any thoughts on why that might be?

R: Lets talk about energy first. It was a cool summer in that we didn't have one day that reached the old 100 degrees F...we normally get about 12. That meant we had a cooler summer...this should have reduced water usage...and also power usage, with air-conditioning. That is a possibility.

T: What sorts of things do you think would motivate people to change their behaviour if they are using too much water or energy?

R: Well money is usually number one isn't it. How to do it, I'm not sure.

T: So...by making the resources more expensive?

R: Well...yes, I s'pose that's...or the other way...um...a graduated cost....I suppose money is behind most motivations. Educating people more on conservation issues...but that's more long term thing. A lot of people are that busy that they don't have time to pay attention to what government authorities are trying to do.

Interview with "R"- Thursday 6th June

T: How important would you regard the conservation on the resources of water and energy...

R: Absolutely vital...in this country...I think world wide anyway, but in view of the fact that we are digging up our reserves of coal and may have many years to go...ah...you've got all the other considerations...I'm not sure if I understand them fully, but greenhouse and so on are obviously issues...I've taken an interest in efficient houses from thermal efficiency and northern orientation and so on and am applauded to find that most of the housing stock in Perth is built entirely the wrong way and for no other reason than that was the way it was built. In earlier days I think houses were built with heat in mind...but not post WW2. Surprised when you go into areas such as Nedlands and the only room that faces north is the second bedroom or something.

T: What about water conservation then?

R: Well water is very important too...as a laddy who grew up in Kalgoorlie with the goldfields pipe-line, there is a history of that and a realisation of earlier days up there...my grandfather went to the golden mile when he was a 20 year old. In those earlier days they say that water was a pound a hundred gallons or something like that and a pound was a lot of money in those days. I've always seen water as very important. In Perth...it's surprising that people...well not surprising I suppose water was cheap...and they used water to establish lawn and control the sand on the Perth sand plain...that was the principle reason for it and we keep on doing it. Not long ago in Kalgoorlie when I visited there the locals were saying they had a scheme whereby the water authority were giving them plants and landscaping to encourage them to get rid of their lawns they were actually giving away large sums of money because it was actually cheaper than building another pipeline...that says something about water, doesn't it? And yet we...ah...I've read stuff that says that there is only one place in the world that uses more water per capital than Perth and that's in America, in Texas somewhere.

R: Water has always been used in a rather extravagant manner. It's only recently that you have had things like half flushes on your toilet...so yeah...I think more things need to be done about it.

T: What was your reaction to the Perth water shortage this summer

R: I wasn't worried about it because of my attitude which I have already told you about...I put in a polly-pipe reticulation system and bought a pop timer from Bunnings. One of the things that I chose in coming to this house was a house that didn't have any lawn...its got some in the front unit, but that's not my worry, I don't look after that. I am putting in essential plants that will grow here...low water usage as far as native plants are concerned. Basically, the garden when I arrived didn't have much in it. I was able to do that....but, you noted to me at one time that my consumption was up high. One thing that trapped me, and that I needed education on to learn about was the fact that in this area the

pressure is higher than I have ever experienced anywhere...its extremely high pressure. So that if you put a tap on for a period of time it delivers a lot more water. So you get used to the notion that you water a thing for half an hour, but in fact once I started measuring my meter I realised that more water was going through in that half an hour than I would have anticipated. When my drippers were supposed to deliver 4 litres an hour...because of the high pressure they were in fact delivering 3 or 4 times that. The pressure! I can say that even with the restrictions we didn't lose one plant to an undersupply of water...but we did lose a few to an over supply of water...we actually drowned them! So, I think that your study was helpful to me in that respect.

T: So what aspect of my intervention did you find helpful

R: I got your graphs, and I looked at them and I was puzzled by them. That's one of the reasons why eventually, and it took me some time to work it out, what was the difference. I got to the stage of reading the meter on a daily basis to see what...how much water was being delivered while I was watering. And I was surprised at the amount of water being delivered. I paid 130 odd dollars for water this year...which is way ahead of anything I've ever paid before, mind you we had a bore in our previous house, here I was relying entirely on the mains to water. As a matter of philosophy I would probably only water twice a week next summer anyway, I may have gone to three days a week instead of two, but when the law said you had to do it two days...I said "ok, fair enough, we will give it a go at that". But then initially I was letting the drippers to go for well in excess of an hour...and then eventually I got it down to half an hour and I think the water was reduced accordingly.

T: So you found then that being provided with that feedback that I gave you did actually then...bring about...

R: Yeah it was useful because I might not have addressed the subject as soon...I was interested in it, so I would have addressed it I think regardless, but then I got this graph and had a look...and aww other people using about 400 and your using 600...so I thought, oh, that's funny (laughs)...why is that, you know, there's only two of use here and were not, what you would call...well, we don't *think* we're wasteful you know...we're very careful about what we turn off, what we don't.

T: Did you find that you were able to reduce your consumption by the end of the study?

R: Yeah...I think it has come down a bit. I felt by the end of the summer it was more controlled than it had been earlier. Interestingly...when I got the bill...it was...about 100 Kilolitres or something like that...but LAST summer in this place it was 500! So I immediately thought golly there might be a leak in the pipes or something...but I turned everything off and checked the meter and it seemed alright.

T: One thing that I found in my research was that providing people with reminders to put up around their home was able to get people to reduce water consumption relative to those who didn't. Interestingly though, I didn't obtain the same encouraging results for

energy. I was just interested as to whether participants, such as yourself, had any thoughts as to why programs such as mine might have more impact on water consumption as opposed to energy.

R: Quite possibly, the way I'd answer it would be this...one of the things that alarmed me in focusing on it...and I might have had a natural focus on it anyway...but I, but because of your study I looked at it a bit closer. Ok...so...I've asked the plumber twice if we can adjust our electric hot water system and he says we cant...its set...its one of those things that produces the storage of 50 litres or something and that's that and he says if you go away, turn it off...cause there is actually an independent switch. So when we go away in the caravan for a few days we turn it off. I've wondered whether it might not be worth turning it off every night...and then turning it on in the afternoon or something when you are showing at night. Now we've had electricity and gas in most of our houses before, but in this unit we haven't got gas, and I thought about putting it on...but I thought...aww we will let it go. I've noticed that our electricity bill is consistently over \$200 or \$100 a month and that is dearer than what I was paying combined in the other houses. We went away the other day and I read the meter before I went away and I read it when I came back again and I was surprised to find that the daily consumption was well up to average over that time. And then I found that we've got two fridges out there and one of them was actually jammed a little open...working constantly while we were away...when I moved the obstructing box then it closed down...and I guess that was a hard thing, but, electricity say...if you've got things like refrigerators, hot water systems and so on...and then your using appliances like toasters, kettles and cooking...you've still got your three meals a day...and if you customarily have tea and toast in the morning...I mean, what are the units you'd use? Its a pretty non-elastic demand there...in terms of...you'd keep that going regardless. So as far as the water's concerned...a lot of people may have watered every other day, but with the restrictions they have cut down to two. And things like the shower...ok...good idea...we've taken that on board here...we've got two low consumption showers...but the shower at the front actually delivers a lot more water than the one at the back. It had its label that says its a triple A or whatever, but I'm a bit skeptical about that now. And with the additional *pressure* that's available here...and if you turn it on and adjust so that there is more cold and less hot well then you've got a shower that's really delivering a lot of water and ah...depending on how long you stay under it...so the lady stays under it to wash her hair or something like that, then a lot of water goes away...and also as far as flushing is concerned in the toilet...well...we're not as religious now at flushing it every time we have a widdle in it...ah...we tend to say, "don't worry about it overnight, we will flush it in the morning sort of thing. I guess that is probably going to save 5 or six litres a night.

But so I think yeah...everybody has been really conscious of water, because of the great amount of publicity about watching it and taking care of it and its up to all of us...you know...that ad that was constantly on television...but ah...there wasn't the same level of awareness for power was there....wasn't advertising for power? Power is collie down there or something...it comes out of the wires and so I'd think that the motivation to keep it down is not there to the same extent. And the other part about it is...well...you wouldn't turn your fridge off...would you...and you wouldn't go without your tea and toast at

breakfast time...or your cooked tea at night and then you've got these things [points to air-conditioner on wall]. Now, I think we've used our air conditioners a great deal less over this summer than we would have otherwise used them and yet we've still got a big power bill. We've got two reverse cycle units...we probably only need the one...but um...we sort of have it in mind to put this one in here and phase out the one in the back but we're not sure about that...and um...so yeah...I've gotta be watching it seasonally now because we will start using these soon as it gets colder...we've had about...well...you know...certainly may and April we didn't use it much for cooling and it wasn't needed for heating. So...ah...yeah it will probably start going on again soon for a while.

T: So do you think then that for power, the things that people use it for are less discretionary...there more things that people regard as parts of there life?

R: But I do know that Janet will tell you, as she has told me, that she definitely turned this off (she does a bit of teaching in here on the piano) she definitely turned this [air con] off more days than she would have had it on...but for your study. She examined it...we're as before she might have just come in...turned the lights on...turned on everything else...now she is more inclined to examine whether it is really needed.

T: Well...that's good! That's what I want to hear! (laughs)

R: Yeah...well it did...it focused attention on an issue...whereas before it was just me nagging (laughs).

T: So, then there was more talk of it in the house then?

R: That's right, yeah. Yeah. Definitely, it's obvious that if your participating in something, and every month your getting a piece of paper saying "have a look at this" then it does raise awareness...definitely.

T: So...the other thing you were saying was about the publicity...

R: Oh the publicity on the water...well it was drip, drip, drip wasn't it...all the time...every time your turned on the television on or picked up the paper, the ad was there...and I think that was an effective campaign...aww, how do *I* know it was effective...well, it was effective with me, put it that way...I took notice of it, I knew it was there, I said it was valid, I worried about next summer... because if we don't get decent rain next winter...we are in *big* trouble I'd say...big trouble.

T: Well...according to the report released by the water corporation last week, it did seem to be effective. They had their goal of reducing consumption by 25% for Perth compared to last year

R: And did they make that?

T: Pretty much dead on.

R: I don't take the daily paper now.

T: Yes...there was an article in the west. Geoff Gallop made a statement saying that they had reached their goal...but that people cant relax now...

R: NO...oh no...the challenge is yet to come...it depends on the water this year...because it wont start running into the dam until July or August.

T: Yeah...I mean I certainly wasn't planning to conduct my study during a drought...and it did make it a bit harder due to the water corps campaign running at the same time

R: I think that your little study can take a bit of credit for this household...even though the general awareness of water...I mean...I've been aware of the need for water conservation for a long, long time...and having lived around many country districts...the city hasn't understood the difficulty that the country has had with water...yeah...water is very important.

R: When you finish your report on this...you should make sure that there is a copy in the local library...some of us might like to take it out and have a read of it. I think that more work should be done of the type your doing. I think its an important thing for people to think about...and people *don't!*

Interview with "S", Tuesday 4th June, 2002.

T: Perhaps we could start by addressing a few of the points that you raised in the follow up questionnaire?

S: I was rather interested to get the feedback...but I noticed that we were always running at about 13 or 14 Kilolitres...but when you are comparing to a supposed 'similar household' and they were down around the 8 or 9 and I thought..."how the hell are they doing it?" Umm...we have pool, but I haven't even topped it up cause I've got a pool blanket on it. And I was wondering what they were doing and were they...was it valid...were they really identical or...did they have a smaller garden or...you know, we've got a native garden which would...supposedly. I thought it was interesting that our latest water bill has shown a reduction of 36% over last year, which was significant I thought...and which was 27% less than the year before. I don't know whether it's your survey doing that or the water corp. campaign...

S: I think that I'm...I mean, we are here committed to sort of...the "Greenie" approach I suppose. Umm...and ah...our son certainly...he started at Murdoch as a environmental science...a course in environmental science. So yeah...we are committed. But how I get the 13 thousand down to 8 or whatever it was I have no idea. And...ah...I guess it was so far, the gap was so wide, I don't think I even tried. Umm...I just couldn't see how I could get it down...ah...obviously as part of the water campaign too...you only use sprinklers twice a week, for whatever time, I think we were back to about 20 minutes at a time. Umm...so...yeah...I don't know where we will go from there. It was interesting to get your feedback...but I didn't know what to do with it.

T: One thing, at a general level that I would be interested to hear your thoughts on is how important do you think people regard water and energy conservation to be? You have indicated that...as a household...

S: (sighs) Well the people we know, um, were quite happy to part of the campaign that the government or the water board was running. I think it was probably essential...they had to anyhow. Umm...I didn't hear any complaints. The people we know have reduced their water consumption without severely effecting their lifestyle...or garden or whatever. And I think they have been pretty happy with that. Umm...yeah, I think it's pretty important, to the extent, for instance, I...um...as an example, I think bores should be limited. I mean, underground water is a resource and its use should be severely curtailed... even though someone paid however many dollars to get it put down. Umm...and I could go further and say I have the same thing as my son who has a bore in the place he rents...and he restricts it's use to 2 days a week in keeping with the reticulation water supply limitations. Umm...he says "its a resource"...and I agree with him. And I've got to conserve it...and if I pump it out of the ground, I'm using just as much as I'm using the water out of the dam or...and I agree with that. So in answer to your question, its extremely important, and I the people we know have gone the same way too.

S: I think we have really got to get away from the grass...the green grass syndrome. In Perth. It goes back...I don't know whether this is relevant...but when I was doing my major in Geography at...in those days it was WAIT, now Curtin University...it was 1968 and we had a lecturer then who said "the size of Perth will be limited by the amount of water available to it...in 1968". And that stuck in my mind ever since...and you know that's 35 years ago. I think that was great foresight...and its coming through now. And yet, I don't think we are doing anything about it. We're putting down more bores...and building another dam or...no such thing like...what's the word...decentralize...or lets go and start up another town up in Geraldton or another city down in Albany or anything. Um...as far as electricity and gas...I think we...I don't know...maybe some people can point out how we can save more power and energy. Umm...I know we have got an air conditioner...we just put it in...but we hardly ever use it. I think there was a hot period a couple of years ago and we decided we'd go for it. But...yeah...its too expensive...in terms of using up energy. I guess that's what Gallop is on about at the moment, Dr Gallop, the Premier... saying I'm going to have three more power stations...because they are going to have these peaks in electricity consumption during the hot weather...because of air conditioning...

T: There seems to have been a sense this summer that the community has become more aware of water being a scarce resource...how do you think energy is thought about? Do you think people view energy as a scarce resource?

S: Umm...I think they have been forced to think about the water and certainly photographs of the dam only containing 17 percent of their total capacity for instance has got home to them. Umm...electricity I believe is too remote for them...you know...it comes down a wire somewhere and there is plenty of it...you know...I don't see the effects of carbon monoxide...or carbon dioxide...they don't see the effects of that. And gas, I think we are lead to believe that there is plenty of it...so, you know...use it.

T: I suppose if you look at some of the advertising...water advertising is about using less...whereas there isn't really much pro-energy conservation advertising.

S: I think within our circle of acquaintances and friends...we certainly talk about the water...because I think it was forced on us...but I cant recall ever sitting down and talking about the supply of electricity and gas. I think maybe that is a fair indication of the community. I think that companies like western power and Atlinta Gas are interested in their bottom line figures...lets sell them more gas, lets sell them more electricity...and they promote, you know, lets have the air conditioner on...the gas shows you the extended hot shower, no thought about how much water you are using as well. So...I don't think the public is conscious of it to any great degree.

T: Do you think people perceive these resources as things which could ever run out?

S: No...I don't think so. I think they are aware that water *is* running out, but, you know, we only need a heavy rainfall and we will be right again. But I have severe reservations about that...I think our climate is changing. I think people *did* see a shortage of

petrol...they grizzle about the price now, but I don't think they see a shortage. I don't think we consider the shortage or gas...or coal. And yesterdays paper would be a good example, "lets have more jobs...lets dig up more coal and have more jobs" rather than, what's the effect on the environment. And I think it was David Suzuki who said, "without an environment, you haven't got an economy"...and I like that. I don't think people realise.

S: I think it is a promotional thing. I don't see the government telling me to go easy on the electricity or go easy on the gas...but they are telling me to go easy on water, even through the regulations...and they can demonstrate a short supply of water, but they cant do that for energy and gas...I suppose there isn't one! They are signing huge contracts with China...to sell *more* gas...so the likes of little old Syd Tippet sitting in Perth thinks, well, there is plenty of gas.

T: I suppose they could use arguments about rising sea levels of rising temperatures...

S: Pretty obtuse though...isn't it? I mean, they tell me there is a hole in the ozone layer but...you know...its pretty hard to actually demonstrate that in a practical sense...in fact there was a heading in the paper the other day saying that the ozone is filling in and in the next 30 years the hole will disappear. So...I s'pose, some would say, its a bit like scientists who say there is nothing wrong with smoking...you get the two points of view...might be very hard to justify it...but that makes the headlines.

T: I was wondering whether you had any other ideas as to why participants were able to reduce their water consumption (even on top of the reductions brought about by the water corps campaign) but not their energy consumption?

S: I thought the water consumption there is quite a few variables...and I would have thought that places like Booragoon for example, so to reduce by 46% (which it did) is relatively easy. Whereas, if you go to...say, Balga, where they don't water their gardens anyhow (and that's a generalised statement, I know)...umm...I mean, they are pretty low...so one might expect that if they reduce their water consumption by 46% they might be putting water back into the system...you know...to be ridiculous! So it was very easy for *us* to cut back on water. Whereas some suburbs, they actually showed an increase.

T: Do you think that the cost of these resources makes any difference to the way that people use them?

S: Umm...No, I don't think so...I don't think the price of any of the resources as exorbitant... within our earning capacity. And I think people are able to say...well we can afford it...we can afford a car, we can afford two cars...we can afford to run the car, we can afford to water our garden and have green lawn...etc etc. Maybe if the price was doubled or...there would be a lot of political outcry about that...then people might reduce. If the price of petrol went up to \$2 a litre instead of one, then I think you would probably find a cut-back. But...yeah...just from me...I know that the feedback I was getting from you...I thought, now how can I cut back on the water...umm...cause I'm conscious of the

length of a shower...or...saying to my wife, I think you've got to use the rinse water to wash the next dirty lot of clothes...like my work clothes for instance...and I've sort of worked along that line. But its interesting that umm...washing machines down have suds savers anymore...and I haven't got the capacity to recycle that waste water by putting it out in the garden. I'm not greatly mad about rainwater tanks...the biggest rainwater tank you can fit in the suburbs is like 1000 gallons....4.5 thousand litres...umm...not going to save that much water...I mean, in my case I am using 12 Kilolitres every six or eight weeks or whatever.

T: No...actually that was *weekly*.

S: Well...that was interesting...if they were weekly...I don't know how I could use that...I *couldn't* use that much. I'm sure my bill didn't say I used that much.

T: What do you think might be the best ways to get people to conserve water and energy?

S: I don't know...I would like to think I am a convert anyhow...and being an ex-geography teacher this was coming through anyhow. What would cause others to change? I don't know. Very practical demonstration that there is a water shortage so you've got to cut back. Which is what we've had...and people have done it. Umm...but I don't see any...sort of... issue to do with power or gas. I umm...probably see the reverse...they are promoting it...use more. Umm...I certainly don't see the environmental issue being taken up. So, I guess the government's got to be convinced...and then I s'pose an education program...that's were I have got my...umm...feelings from. Become environmentalists...I don't think enough of us are environmentalists. You know...sort of in a 'green' sense. When you drive along leach hwy and see the rubbish that is collected along the road there and sort of demonstrates to me that a lot of people aren't that concerned about such issues. So yeah...I really haven't got any strong ideas about that. I think primary schools do a good job...but some time around the time that kids leave year seven and get into years eight and nine and ten...the secondary schools lose the plot. Maybe it's peer pressure or, you know, kids who are 15 don't want to be seen...wearing hats...for example...like they do in primary school...or putting your rubbish in the bin...or going easy on the water or whatever. And maybe the high schools have got to do more. But then...I'm always that everyone says, maybe the schools have got to be doing more, you know, schools ought to be teaching more about, whatever the issue of the day is, whether it be abortion or euthanasia or family relationships, or marriage or parenting or...and schools have only got limited time and capacity...

Interview with "V" (Thursday the 6th June 2002)

V: One thing we were very aware of was the pool, last summer we were for ever topping it up...with the evaporation rate...and that's...um...it just goes! Useless water really. But, we do enjoy the pool, we use it a lot. It isn't as if its a white elephant. We don't use air conditioners...so it balances out a bit in that way.

T: The first question that I have been is just...as a household, or as an individual, how important do you think it is that people worry about how much water and energy they use.

V: I think its *very* important. We live in a throw away society and I think we have got to learn not to be. We've gotta be conscious of everything we use. When you go to one of these third world countries and see how they live, it's so different. We were in china some years back...you take your shopping out in china because they don't supply paper bags or *anything*. It wasn't all that long ago that it was like that in Britain too...you took your shopping bag along and the greengrocer put your apples and your carrots and your spuds all on top of one another...you just had the one bag...this business of putting everything in a separate bag...

T: Well they are trying to get people to go back to that...Woolworths now sells those big canvass shopping bags

T: So...what kinds of issues motivate you to be concerned about conserving water and conserving energy?

V: Just knowing that the dams are so critically low...is enough. Knowing that the rainfall is dropping, on average, every year...um...energy doesn't come into that so much. We haven't done anything about getting onto the...what do they call it... natural energy...simply because we haven't got around to it I s'pose. One of those things you've just gotta make time to...*do*.

T: So, what would be your motivation for switching to natural power?

V: Because I like the idea of wind generated and sun generated energy. But...gas is a better option than electricity...because we are on natural gas...that is probably why I haven't made a big effort to get the electricity switched over. But I suppose the gas is going to run out at some stage too. I think one reason we haven't got solar hot water is because we had to put a new hot water system in, several years ago, when we were about to renovate and we were going to have the roof off. But the hot water system collapsed just before hand...so we couldn't put one on the roof...and then take it all off again, it was financially out of the question. So we went for the gas and as a result we stuck with it. I've been told that because it is so expensive to get a tank on the roof...the capital outlay is huge...and it doesn't last any longer than the gas one...so then you've got that expense again. So you've only JUST got to the point of getting free hot water...when the whole thing starts again, with this expensive capital outlay again. So, I think they have got to

make that a lot cheaper to make it more attractive. I think that they are now looking at putting tanks somewhere in the house...and only the panels on the roof...now *that* sounds much more sensible. And ah...if it came down in price as a result...then it would be much more feasible.

T: Obviously over the summer this year there has been a widely publicized campaign regarding the Perth water shortage...I was just wondering what your reaction has been to that shortage, the way it has been covered in the media and the response that the water corporation has taken.

V: Well...I think I was very disappointed that they decided not to totally ban sprinklers from whenever it was discussed...I think it was end of April...beginning of may. They were thinking of doing it, and it was thrown out of parliament because the...mainly because the people who do the lawn mowing had a strong lobby saying that we are all going to be thrown out of work if you ban sprinklers....which is ridiculous, they wouldn't be out of work for the next 6 months because we are going to get rain and the lawns keep growing anyway. And they might change the laws after that. I see no reason why the sprinklers shouldn't be banned throughout the whole of winter...every year, from April to October. We do a lot of walking and cycle around the suburbs with the dog and sprinklers are going...when it's *raining*...it's just stupid! It's not necessary to water gardens at all in winter. So why they don't ban them totally I don't know. It would stop the wastage of people who insist on not turning their reticulation off.

T: One thing that seems to have happened, from my observation this summer, is that people tend to be a lot more aware of other peoples water use. It seems that the people who are trying to be conscious...there seems to be a bit of a reaction towards those who it seems aren't being conscious.

V: Certainly...I watch what other people use...I make enquires when I see sprinklers going...and usually it's on a bore or something like that...but, even bore water...

T: That's something I was going to ask...how do you feel about people on bores

V: I cant understand why the water corporation is encouraging everybody to put down bores...because surely if *everybody* puts down bores the...um...we are going to use up the underground water quicker anyway...and they rely on it to top up the dams...the water system from underground water don't they.

T: The water corporation has argued that they don't want to do things such as...talk about metering bores, charging for bore use and putting restrictions on bores because...if people stop using bores to water their gardens...or if the new bores don't get put down, then that is just more scheme water that is going to be used

V: Mm...that's true.

T: So that is their take on it. But it seems to me that within the public, people don't seem to like the idea of it being an open slather approach for people using bore water.

T: Your reaction to the restrictions seemed to be one of "well it's about time"...and you said that you would be in favour of a....

V: Well...we were surprised how little water you can get away with on the garden. This summer we have made a deliberate attempt...and for a lot of the summer we were only sprinkling once a week not twice (which we were legally allowed to do). And, the lawns still survived...and the rest of the garden is basically native and we hand water it if it looks like it needs it...essentially it doesn't get much water at all.

T: I was just wondering what your impression has been of other people's reactions to the water shortage...people that you know. Is it something that has been discussed much?

V: Only in a very...um...not in depth in any way. You just talk about it in a conversational sort of way...I don't think I've ever discussed it to the point of saying "well what are *you* doing" with anybody.

T: Would you say that if you were talking about the period of the last six months that there would be more conversations about the issue of water...

V: Oh yeah...I think so...yes...definitely. I mean it was in the public view all the time.

T: Would you say much more so than the issue of energy conservation?

V: Yes. Oh yes...definitely.

T: Are you aware of any publicity campaigns surrounding energy conservation?

V: No. Can't think of any. Although we get information from the ACF (Australian Conservation Foundation), of which we are members, they put out pamphlets on how to conserve energy...but, ah...I can't think of anything that has come out...from the government for instance. I must admit we don't get the papers every day.

T: One issue that was in the public eye for a little while was the Kyoto Protocol...and the greenhouse gas agreements. There was something about that in the paper yesterday...that Japan has aborted it...Australia is still saying that there is no point in supporting it because the US won't support it. These kind of global energy issues...do you think these are things that people think about very much...in regards to their *own* energy use?

V: Umm...probably not so much in regards to their own energy use. I think the general feeling is that most of that applied to industry. But it probably doesn't, I don't know. I think we could probably all do with some educating on that school.

T: With the results I found with this study, putting labels and so on up around people's homes seemed to be fairly effective with getting people to reduce their water consumption, but not so much their energy.

I was wondering whether you had any thoughts about why this may have been the case?

V: Well I suppose if your reminded of it all the time...if your standing under the shower...a lot of people do their thinking in the shower, but if you've got a label in front of you telling you all sorts of things about water consumption...

T: It was also though telling people about energy consumption. Which is why I am curious as to why it is easier for people to conserve water.

V: Umm....

T: Wondering what the differences are...

V: I don't know...I s'pose it's easier to turn the tap off, or not flush the toilet, or say "well that garden can wait for another few days before it gets watered" than um...well I suppose our biggest consumption of energy, in the summer, is again, the pool...running the filter. Um...even if we are not here that filter runs.

T: I suppose some of the things that you use energy for are on all the time.

The main users of energy over summer are air conditioning, heating hot water and refrigeration.

V: But refrigeration doesn't use that much energy does it

T: In summer it does

V: Well...I suppose the fridge has to work a lot harder when the temperature is up.

T: One of the reasons that other people have given for water being easier to conserve is that with water...you can see it.

V: Yes, well that's true. You can see it pouring down the sink.

T: I'm just wondering whether you have any ideas about what the best ways are to get people to change their behaviour?

V: Put the price up

T: Price? Do you think that would make a difference? Putting the price up?

V: To a lot of people...yes. Those that are in the multimillionaire bracket, nothing makes a difference...they just keep paying it anyway...but...yeah, the more it hurts the hip pocket, the more conscious people become of using it.

T: So if people were receiving their water, electricity and gas bills every few months and were getting slugged with a much higher price, then that would motivate conservation.

V: Mm.

T: What about with Petrol prices though? A couple of years ago it would be fairly common to buy petrol for around 70c

V: Mm.

T: Now, its more likely that you are likely to be paying something like 90c. That's a fair percentage increase. I haven't really noticed any evidence of people changing how often they drive their cars as a result of that though.

V: Ah...no...I think it's got to go up a lot further before it will have a real effect...but I think people do consider it, when they are buying another car. They will say "well, I'll go for a four cylinder car rather than a six". Or something like that.

T: So you think that increasing price is more likely to change, what people sometimes call...structural behavioural changes...changes things like the car you have...or in the context of the home...maybe price increases wouldn't change everyday behaviours but might make a difference, if they were going to buy a new hot water system, they might think about efficiency more?

V: mm...yes. Well if you were paying more for the electricity then it might make solar power a bit more attractive. And umm...I certainly think people would become more conscious of turning off lights, if the electricity went up markedly, they wouldn't leave the lights on all the time.

T: You mentioned that, in regards to Petrol, it would have to go up more, to make a difference. Is there a required 'threshold' that it needs to reach before it makes a...

V: Well...I'm just thinking of Britain...we have relatives there...I was there about 4 years ago...and I said to my cousin "why do you drive a manual car in this traffic!" stop start, stop start all the way...the traffics horrendous! And she said, well the automatics use up a lot more fuel and, of course, the price of petrol in Britain is horrendous, its much more than it is here. And they drive small cars...and manual cars as a result, but they still *use* their cars, because the public transport is getting worse. At one stage you could get around Britain on public transport very easily and it was very cheap...but its not cheap anymore.

T: So, other than increasing price?

V: I suppose publicity...but then...I've always felt guilty because I've never put in low use showerheads...mainly because the experience that I have had with them, and I think they might have improved in recent years, but in the past...I just don't LIKE them! You sort of get these 'pin-pricks' of water and you don't get a real shower. I'd rather have a much shorter shower, but have lots of water while I've got it. So...um...I'm conscious of the fact that they are trying to persuade us to use these things...but I am resisting that one.

T: So what kinds of publicity campaigns do you think are likely to make the most difference? Mass media, one to one, education in schools?

V: I think education in schools is quite effective. Often kids come home from school and say..."Oh your doing everything wrong Mum!". Yeah, that has some effect. And also, if their taught right from an early age then they take those things through life...often, not always. Umm...I suppose my biggest exposure to the water was listening to programs on the radio. I don't listen to the radio consistently, but often, when I had it on, they would be talking about water, whether it be talkback radio or somebody from the water board giving a speech on something, um...so that brings it to your attention a lot more. We don't watch TV here....so I'm not conscious of any advertising that is done on the TV.

T: Do you actually consider the possibility of resources running out when carrying out consumption behaviours?

V: Ah...yeah, I s'pose so. Energy use is something that we have been aware of for years. My husband has been a member of the ACF for years, and they often put out literature on how to conserve energy and why to conserve energy. I get into trouble because I don't *use* the car...the battery goes flat! I prefer to ride my bike. I'm not driving that dirty great thing down to the local shops if I can avoid it. So it's something we have been conscious of for a long time. I think probably more people are becoming conscious of it now, as a result of campaigns by different conservation groups and the government.

Interview with "W" and "L" (Thursday 6th June 2002)

T: So you were just saying that one effect was when people came to the house...

W: Mm...visually...we had them on the fridge, and on the toilets and on the front meter. So umm...those little graphs you turned out, they were interesting too...you cant help but read those and see how you are comparing against normal usage. And...we thought that with this new house we would try to go for energy savings things like with the hot water system. But I didn't sort of go overboard and try really hard on the energy conservation thing...no windmills up in the room or anything like that. I think people have got to be made aware of it don't they. And I think the more affluent people are the worse they....like my daughter...I mean she goes ok...and she leaves lights on around all over the place...or air conditioners on during the day when she goes out and things. So they are not aware of it...no.

T: How important do you regard conserving water and energy?

W: Well I do, because I was born and bread in a mining town, you know, and we only had tank water and during summer time we were very careful...so I am very aware of it...my L, she is a city girl and they always had mains pressure. So you know, I think your initial upbringing has an influence on it. Um...we are not *terribly* aware of it, but I would *be* aware of it...you know...I sort of switch off lights, and don't leave things on if they are not necessary...you know. I think if people tried to do that. It used to amaze me in the house in Applecross...the lady across the road used to have her water on every morning because it was on a bore, you know, she didn't think she had to worry. Well...obviously she wasn't at all concerned about that, was she?

Smokey cars and all that...they annoy me. Once I bought a Diesel car because I thought I was doing the right thing...but, I think that faded out, you know...after the energy crisis. No...we'd be in the middle...you know, not terribly aware or not at all worried about it...so were in the middle of concern for the environment.

T: So what kinds of things would motivate you to conserve water and energy?

W: Well, energy, because I realise how it is manufactured...I realise that there is a by-product...you know...smoke, and pollution and so on, I'm aware of that. I had a house in Victoria once that was some big power stations and it would be smoking away...just filling up the air with this smoke...and you'd think, where is that going to go? And when I'm on holidays and I come back to the city and I see this great haze...if you go on top of the hills here and see the haze over Perth...and that's a worry isn't it...and that from too many cars or whatever. That would concern me...I think the environment would concern me a lot...and pollution in rivers...that's a real worry. I think people are most disgusting. Before we lived here we lived down on Dunsborough on the beach...and people would have picnics and they would pick a nice spot on the beach because it was clean but when they left there was beer cans and bottles and broken glass. I think generally people are

pretty disgusting really. Not that many people are concerned with the environment I think. And if you go to McDonalds...that's a worry...the amount of packaging...for one burger you get wrappers and god knows what. They must be high on the list of waste-makers, that McDonalds. That concerns me, that sort of thing...I'm *aware* of it...don't do much about it though. Just did a *minimal* effort on this house. And interested in seeing how I compared with other users...with the water I did the right thing.

T: How about in relation to water then?

W: Perth's a dry state, we don't have many good rivers that run through it. And those waters underground, they won't last forever either. So we need to be very careful with the amount of water we use. It's a problem though...did you see my big verge when I came in, now what would I do with that. If I left it looking like nature...it would look like an Aboriginals camp wouldn't it? You know...I am nearly forced to put a lawn in aren't I? Which is probably the worst thing you could ever do with it...so that's a problem you see. There is not much more we could do to save water. We are aware of showers, we don't have long showers, we are aware of wastage of water you know.

T: What thoughts do you have on the Perth water shortage this summer, restrictions etc

W: Well I think the Water corp. has got a big job of getting a message across. Like...ah...I must admit I wasn't too aware, but they say you only have to water a lawn twice a week...and...down south I probably used to water every day! So I think there is an education that can happen to people. Gardens, and then selecting the right type of plants...you know you have to get a message across to people, I think that's where they should be spending a lot of money. Well I think the biggest problem is the increased population...the resources just aren't there are they...water doesn't just disappear, but it needs to be shared around and if there is too many people doing the sharing then there is going to be a problem isn't it. So I think yeah...that's the big thing...education. And yeah...they made it quite easy to understand didn't they...they had numbers...alternate numbers...and it was on the TV...and they did a bit of policing, I think that's a good idea...you've got to do it, don't you. Leave people to their own devices and they don't do much, you've got to take a really active role, the water corp. and let it be known that there is a limited amount of water. So I think you have got to do that.

T: In regards to the energy issue, do you think people ever consider the global energy situation...things like the Kyoto Protocol etc

W: No...capitalist influenced world aren't we, and I think, why is Australia not really trying harder...

L: I don't the ordinary person does, I mean they might go as...and we probably do...as to what energy we use...locally...but I think the ordinary person has that many worries as it is...we think that the state of the world is just disgusting...and when it gets to global things...I think they sort of say "Uh...got enough to worry about"

W: And I think people realise how helpless they are, there is nothing much you can do about anything...

L: We would feel that there is nothing much you can really do.

L: Population....nup...we give up.

T: How far would you go, as far as reducing environmental impact?

L: Well, we definitely wouldn't do without a car...

W: No!

L: But umm...

W: And heating...the older you get the more body comforts you need...got gas fires in there and air conditioner. So I think we would be limited, wouldn't we, on the actual things that we would be doing. I have got a bike, I use that every now and again.

Yeah... Energy wise, that's a terrible problem, I think that if more people made more noise or were more concerned. I think its the environment isn't it that is the big worry isn't it? Cities now have so much pollution its terrible isn't it. And the poor old Asian countries, their not aware, plastic in the streets and all that....they are not aware are they.

L: Materialism...like making things that don't last

W: Getting a bit better... you see recycling starting to happen with cars

T: I found that my program helped people to conserve water but not energy. I was wondering if you had any thoughts on why this may be?

W: Well there was the education program by the water board

T: But, both groups had that, maybe my program just gave people an extra boost for water...I wasn't aware of any focus in the media on energy conservation

W: No...well, there is a limited amount, you've got that star system on electrical products. But ah...

L: But with the water...there was also a Punishment system too, if you were caught, you got a fine. So...nah...I mean it was a pretty hard sort of...with the media thing about it, and fines... that was pretty strong wasn't it?

W: I think the government has got to play a major role...you know, like better transport...if buses are easy then you'd use them but if they are difficult to catch and hard then your not going to wait.

L: People don't seem to be though...*aware* of energy...do they? Maybe cause its such a...um...hidden...thing or something you know...

W: It's not tangible is it

L: You know like people will have all their lights on...will have lights on all night!

W: like our daughter

L: Maybe because the water is something your looking at all the time

T: More visible?

L: yeah

W: I think it gets back to education...I mean look at smoky cars....that's terrible pollution. Its up to shires and the government.

W: I mean the cost of *manufacturing* a car in energy is staggering...its not only the use of cars...its the manufacturing of them.

W: It's interesting the way some suburbs were different than others on water use... that's a good point of study...you know...Wembley was the best or something...you'd think that Dalkeith would be the worst...you know...because they spread it all over the place.

W: The rest of the world...I mean that's a big problem isn't it, I mean some countries aren't aware of it or aren't doing much about it are they. But then, its pretty hard on those Asian countries...when they see what the rest of the developed world is doing...its a hard message to get across isn't it.

T: How do you guys feel about whether developing countries should be allowed to increase their output of CO2...should they be given a break.

W: Developed countries need to subsidize developing countries though don't they... you have to ask them not to use coal or whatever is causing all the trouble...that's a difficult one

L: I think that they should be allowed to...because...really...once again, its such a hard thing...*but*, they are going to do it anyway...unless things change and the whole world comes to a very subsistence level, I would think its not until they come to a certain level

of wealth that they then can think about...and...therefore you would probably have to go through that period.

W: I s'pose Singapore is a good example isn't it, it used to be as bad as other Asian countries for rubbish, they really pulled themselves up by their bootstraps didn't they by putting harsh penalties etc...but then again, they are wealthy, aren't they?

L: Its only when your wealthy that you can afford to think about it...well that's what it is isn't it...really.

T: What do you think might be the best ways to get people to conserve resources...we talked about restrictions...cost...education...what would be the most fruitful approach to take.

W: I think your aware of it when the government makes you aware of it. I don't think you do it off our own bat.

L: And of course...cost! If you...and I hate the thought...but if the government puts the energy cost up then you're going to be restricted even more...but would that work with younger generation though...cost? I don't know....

T: Would putting the price per unit of water and energy up change behaviour?

L: That's what I wonder...it would certainly change ours...but I don't know about the majority of people

T: For example, price of petrol has gone up...I haven't changed... and I haven't seen others change.

L: No...that's right...I don't know...its a really hard one that

W: I think it's starting with school kids now...I think my grandkids are doing it at school aren't they....recycling...see that's a good place to start isn't it...

L: I wonder if it will develop though...when I think...

W: Well I think they are aware

L: Well...mm

W: Well...as I say, I was brought up in a mining town where there is no water... I was very aware of water...and that was because in my young days...it sticks with you

T: Have heard that from other participants as well...growing up in the country...if you have a tank...when that runs out...you have a problem.

When you were growing up, was there actually a real concern that if people didn't conserve, then the water may run out?

W: We've been faced with that lots of times...when we moved to Dunsborough we had a 20,000 gallon tank...and we were always aware of that. When we had visitors...I mean L's mother used to come down...

L: They could be told, don't leave the taps on too long don't waste water because we are on tanks...didn't make any difference whatsoever...they would have two showers a day

L: I don't know, its only the people who actually have it who are aware of it...

T: In Perth, do people ever actually contemplate turning on the tap and having no water coming out? I'm not convinced that anyone ever actually contemplates the possibility that one day they will turn on the tap and find no water coming out. There is this notion of consequence verses no consequence...

W: So if you could teach them the consequences....your not one of those extreme greenies are you whose gunna blow up the water supply just to teach the people the consequences

T: Well it would probably work...a psychologist would tell you it would work

T: What if the water corp. had turned off the water for 30 minutes at the beginning of summer?

L: it would be a good idea

L: What I find a problem though...with the environment... is extreme environmentalists! Now every article I would be reading about it...and they will be saying drastic this...and the ozone...disaster, disaster its terrible...and then I read an article by a scientific thing who says it is exaggerated...now...it puts me off when I feel that they are making statements that maybe are not true...so therefore I don't take as much notice. I have a problem with that...I just want to know what the truth is. Mm.

W: Happens with the trees doesn't it...you hear conflicting stories...old growth, plantations...are they a problem...there is two different arguments...you don't know who is telling the truth do you? There is heaps of problems with the environment isn't there...and the population explosion, that's the biggest one isn't it?

T: Advocate a one child policy?

W: well...people just don't think about it

L: We have known a much pleasanter, I suppose... way of living...and I mean, as you get older, you sort of harp back...but there is *definitely* no doubt about it, it was definitely

better. I mean, you move from one place to another...you live in Melbourne, then that's too big...move to Perth, that's gorgeous, now that's too big...yes...its a bit depressing.