



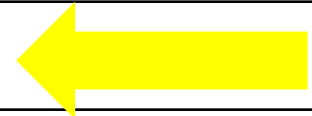
Welcome to Living Smart Week 8

Water Smart



Course Outline

Wk 1: April 30	<i>Intro to Living Smart</i>
Wk 2: May 7	<i>Power Smart</i>
Wk 3: May 14	<i>Waste Smart</i>
Wk 4: May 21	<i>Gardening for Food</i>
Wk 5: May 28	<i>Travel Smart & Peak Oil</i>
Wk 6: Jun 4	<i>Healthy You</i>
Wk 7: Jun 11	<i>Gardening for Biodiversity</i>
Wk 8: Jun 18	Water Smart
Wk 9: Jun 25	Healthy Home/Office
Wk 10: Jul 2	Beyond Living Smart
Follow up	Community Smart - Painted Fish <small>slide 2</small>



Water



Where does it all go?

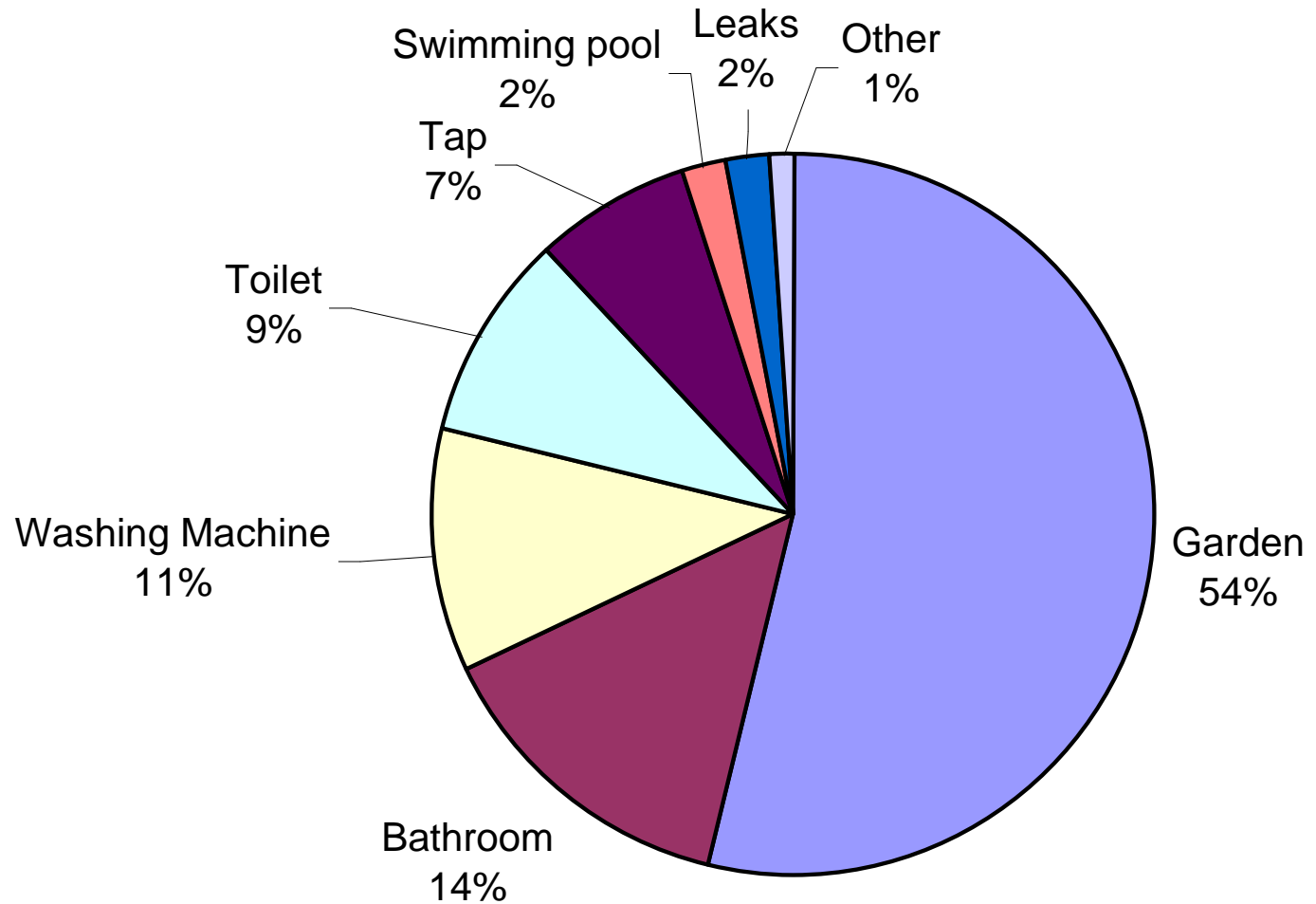
- Which categories use most and least water in average Perth home?

- What percentage of water use?

- Total average water use for a Perth home?



Where does it all go...?

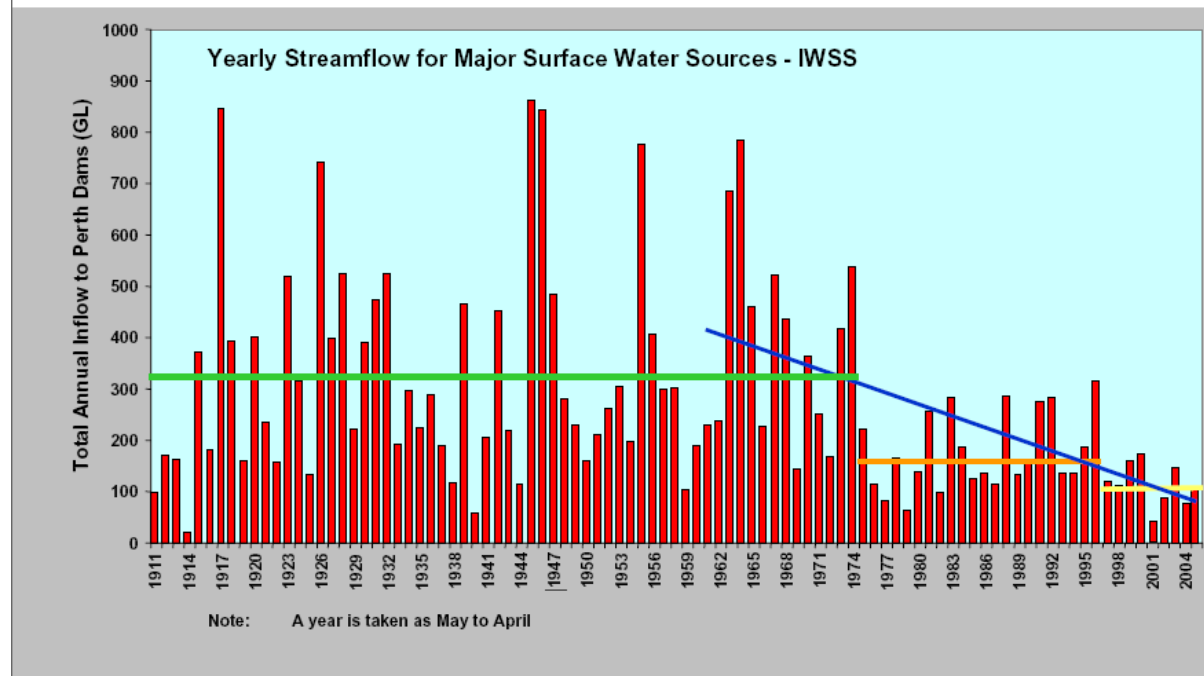


Water supply

- Approximately 75% of the Earth's surface is water. Of that, only 3% is fresh and only 0.3% is available for humans

Perth:

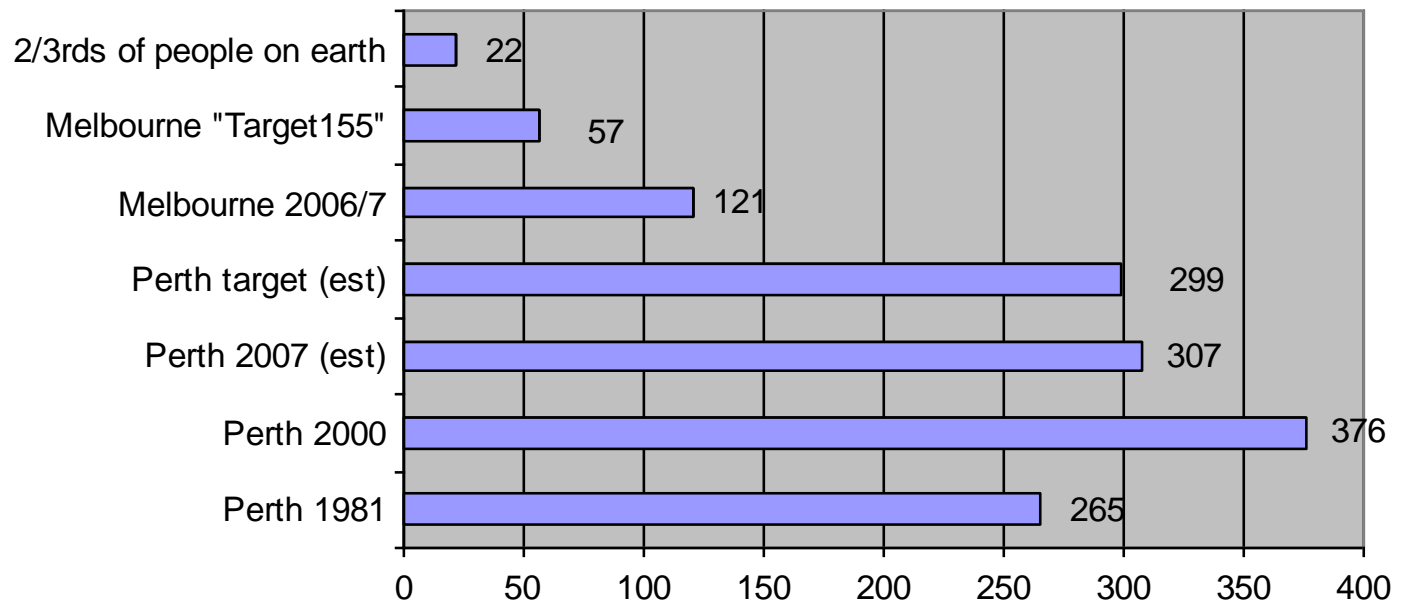
Reduced Inflows to Dams



How much do we use?



Water Use in kL/person/year





Government of Western Australia
Department of Water



Purchase your Waterwise products before 30th June.

Save water. Save money. Rebates are available on a range of Waterwise products designed to help you save water in your home and garden.

These rebates apply to purchases made on or before 30 June 2009 and must be redeemed before 30 September 2009. For more information, and more Waterwise rebates, visit www.water.wa.gov.au or call 1300 133 646.



Living
Smart

How to reduce water use?

• behaviour

Put the plug in

Cover pool

Mulch

Dirty car

Fix leaks and drips

Shorter showers

If it's yellow...

Choose waterwise plants

Full loads

Fewer showers

Use a broom

Turn the tap off

Reuse it

• technology

Rainwater tanks

Drip
irrigation

Dual flush
toilets

Flow restrictors

Grey water
systems

Buckets and
watering cans

Low flow shower
heads

Slide 9



Low Flow Shower Heads

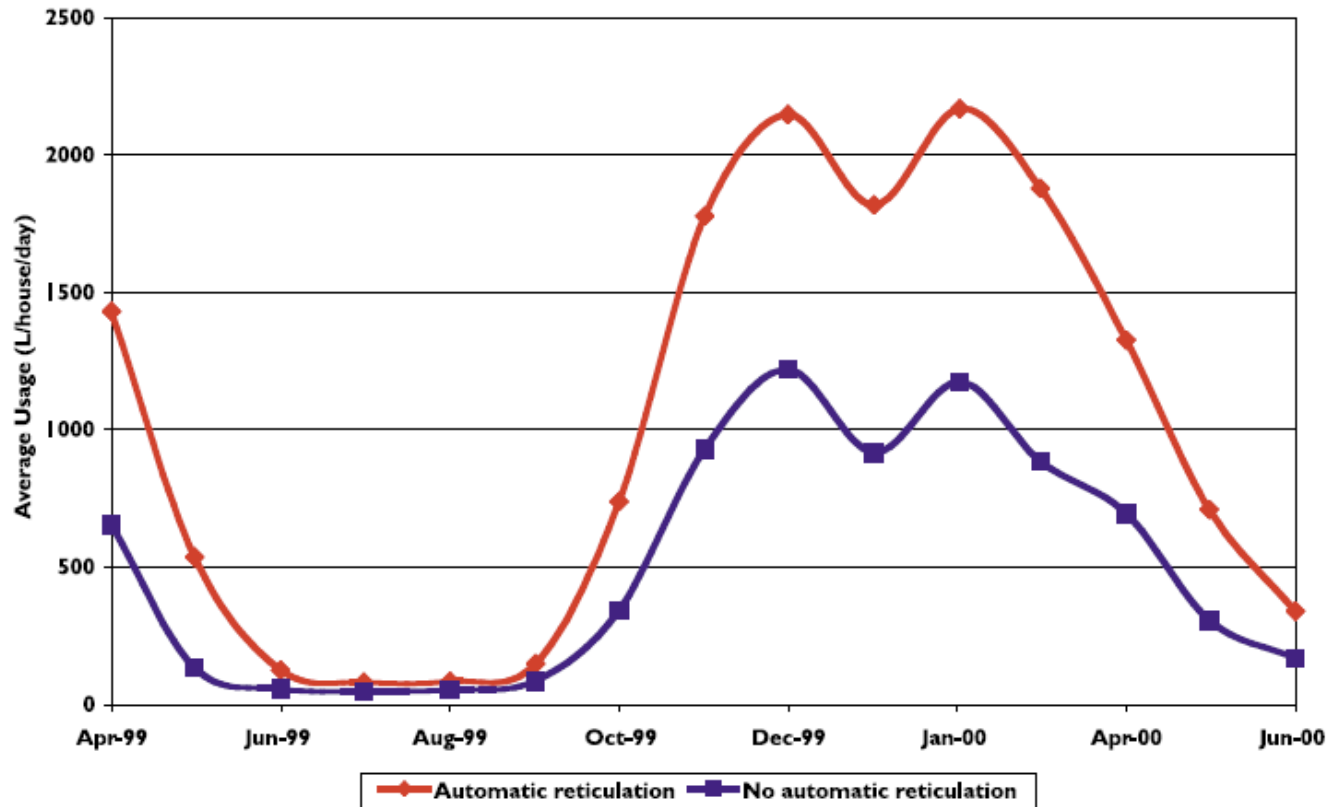
- Perfectflow Ultimate showerhead
- 5.5l per minute
- \$24.99
- www.perfectflow.com.au



Shower Saver



Effect of Automatic Reticulation



Contemporary Spray and Sprinkler irrigation systems

- extremely wasteful (water, energy, labour, chemicals)
- not very environmentally-friendly, and increase risk of plant fungal diseases
- inflexible and not very suited to complex gardens layouts
- subject to drift in windy weather



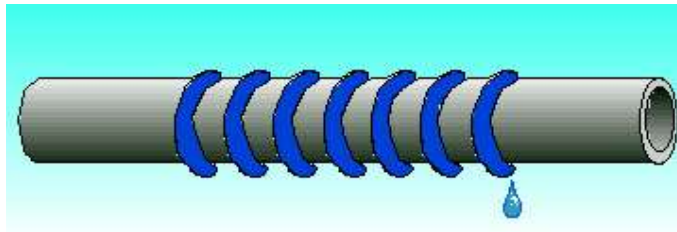
Waterwise Irrigation



Why use Drip Irrigation?

Why do we need to change?

- Increasing cost of water and power
- Depletion of our water resources
- Pollution of our water bodies
- Pressing demand for more efficient systems
- Need safer ways of re-using our greywater
- Vandalism, Public Liability



Drip irrigation can be pressure-compensated, self-flushing, anti-siphoning and have a shut-off mechanism.



Benefits and Limitations of Dripper Irrigation

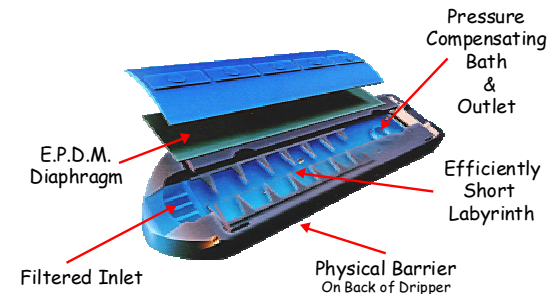
💧 BENEFITS

- 💧 Efficient water use (uniform, good recovery)
- 💧 Low application rate (reduced risk of runoff)
- 💧 Ideal for odd shapes & narrow strips
- 💧 Improved disease control
- 💧 Effluent (eg greywater) reuse
- 💧 Reduces weed growth
- 💧 Allow for 24 hour operation possible
- 💧 Reduces exposure to vandalism
- 💧 Reduced injury risk
- 💧 More energy-efficient

💧 LIMITATIONS

- 💧 Requires capillary action of water to work
- 💧 More technical maintenance required
- 💧 May need replacing after 3-5 years if drippers blocked
- 💧 Does not tolerate short cuts
- 💧 Establishment of lawn may require temporary overhead watering

Techline Dripper



Domestic lawns

Roll on turf in sandy soils





KISSS

For...

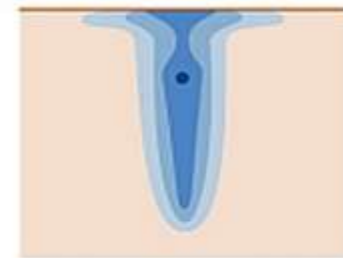
- Ovals
- Parks



KISSS Sub-surface Irrigation Wetting Pattern



Sub-surface KISSS irrigation



Sub-surface drip irrigation

■ Wetted area after 30min
■ Wetted area after 60min
■ Maximum wetted area

Unlike Sub-surface Drip, KISSS has:

- > No run off
- > Less evaporation
- > No deep drainage
- > Reduced water tunneling



Where do councils use water?

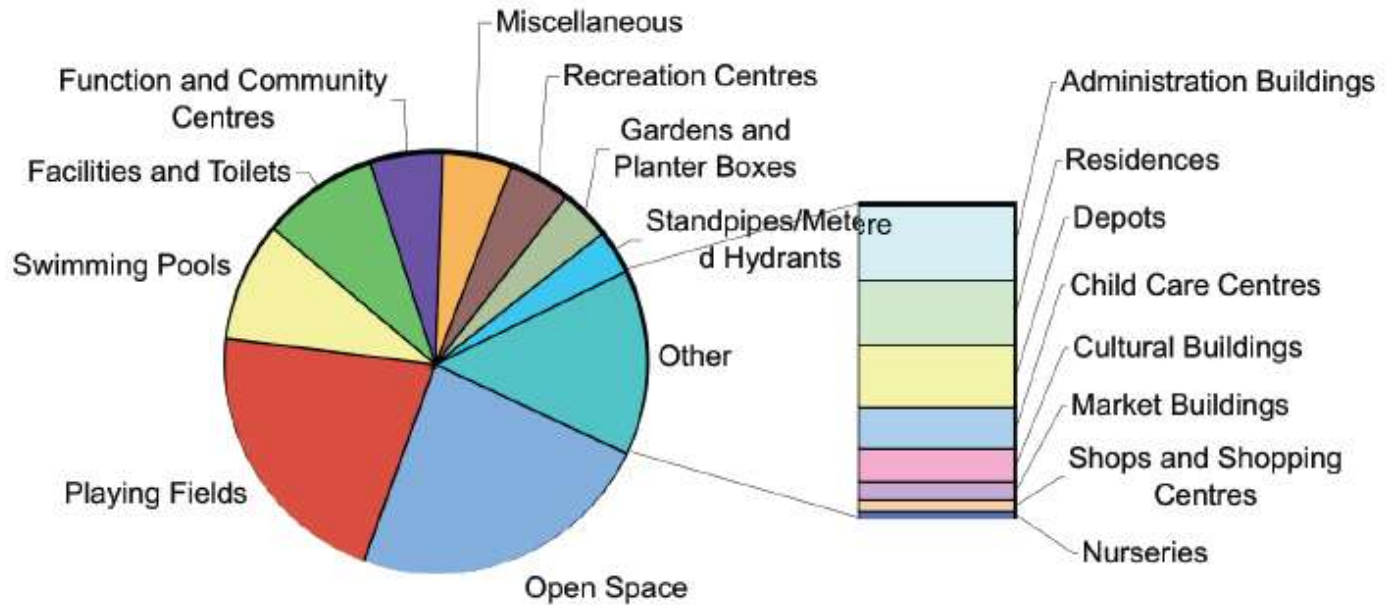


Figure 5: Average breakdown of council water consumption by facility type.

Winterfold water harvesting



Stormwater sump before Project began



Winterfold water harvesting project engineerin



Stormwater sump closure Ceremony

What's this?



2 million plastic bottles.
The number used in US every 5 mins.
And in Australia every 47 mins



Bottled Water – some facts

Price

- 1 litre tap water around 0.07cents
- 1 litre bottled water around 250 cents (and up!)

Australians spent \$385 million on 250 million litres of bottled water in 2006 and consumption growing at 10% per year

Source:ABWI



Bottled Water – some facts

1 litre bottled water

= about 200 ml oil to make, bottle and transport

+ more to refrigerate

+ 2-3 litres water used in bottling process

250 million litres bottled water per year in Australia

= 314 000 barrels of oil

+ 500 million litres of water not even drunk

Or 60000 tonnes GHGs ~ 13000 cars



Plastic bottles

- Only 35% of PET bottles in Australia are recycled
- Some of the rest take around 1000 yrs to degrade in landfill
- 38% of total volume of litter in Australia is PET bottles

There are an estimated 13,000 pieces of plastic on every square kilometre of the ocean surface. More than one million seabirds and 100,000 marine mammals die as a result every year.



Tips

- Drink tap water
- Buy inline filter or filter jug
- Buy reusable bottle
- Remember to take your bottle
- Use sodastream for fizzy water
- Ask for tap/filtered water at restaurants
- Public water fountains



I
Don't
NEED
A Cap and LABEL.
I LOOK BETTER
NAKED.
water



Goals...

**Write it, tell
someone**

Make it specific

**Make it positive &
present**

Make it achievable

**Make it
measurable**

Give it a deadline

Allow flexibility

Reward yourself!



Smart
ustainable communities

My overall goal and steps to achieve this are:

goal: _____

step 1: _____ ☐

step 2: _____ ☐

step 3: _____ ☐

Why I want to achieve my goal: _____

I will achieve my goal by: _____

"Whatever you can do or dream you can, begin it. Boldness has genius, power and magic in it. Begin it now." goethe

Topic: _____

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step 1: _____ ☐

step 2: _____ ☐

step 3: _____ ☐

Why I want to achieve my goal: _____

I will achieve my goal by: _____

"be the change you want to see in the world"

Topic: _____

Next week – Healthy Home/ Office Homework...



- Make a list of all the household chemicals in your laundry/kitchen/shed (then take a look in the kitchen cupboard at work)