

The Canterbury air quality challenge: Better burning and better burners

5 February 2018

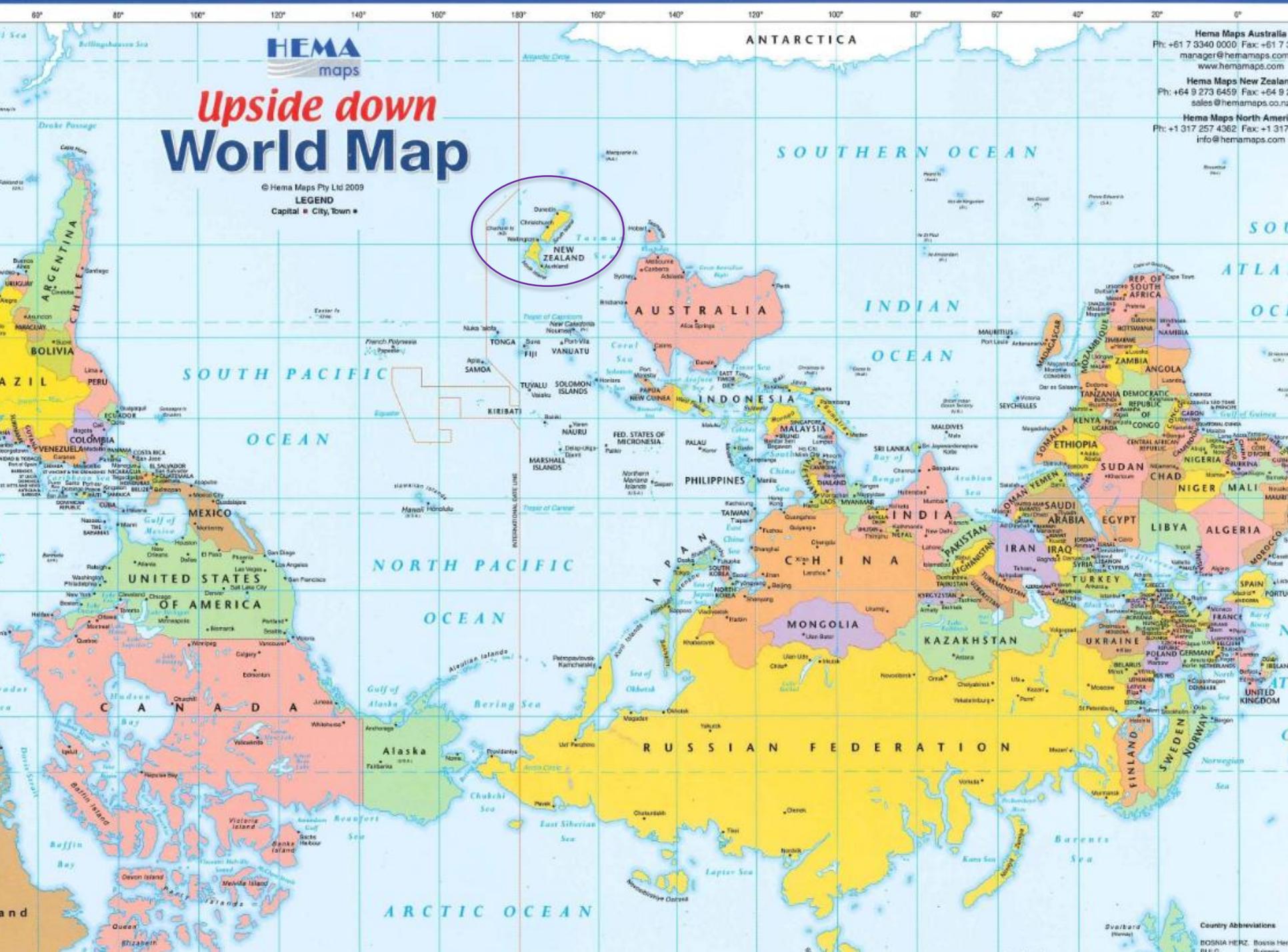
Katherine Trought, Environment Canterbury

Christchurch, New Zealand

Upside down World Map

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LEGEND
Capital ■ City, Town ●



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Country Abbreviations
BOSNIA HERZ. Bosnia Herzegovina
BLG Bulgaria





The hurdles...

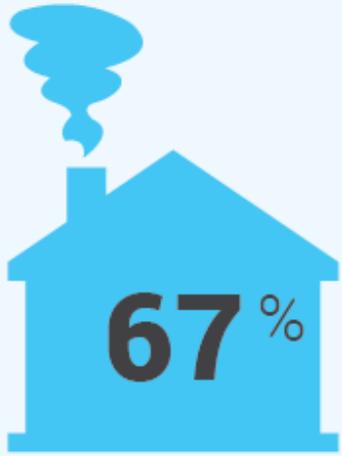
- ‘We love to burn wood – it’s my right’
- ‘We don’t believe home heating is the problem’
- ‘Our climate and topography means pollution collects over the city – we can’t change that’
- ‘Wood burning is our security blanket if there’s a power cut’
- PLUS the economic costs to the community

The challenge...

- In 2009, the New Zealand Government air quality standards set a limit for the number of over-limit (PM10) days
 - 3 per annum 2016-2020
 - 1 per annum from 2020
- In 2009
 - Christchurch had 16 exceedances
 - Timaru had 37 exceedances

The problem...

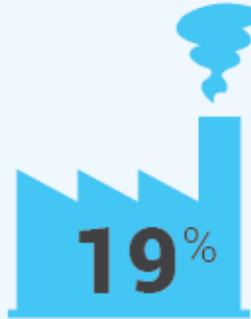
Main sources of PM₁₀ in Christchurch in winter



Home Heating



Vehicles



Industry

Main sources of PM₁₀ in Timaru in winter



Home Heating



Industry



Vehicles

The strategy...

- Work with stakeholders and the community
- Review our regional air plan – the ‘rules’
- Behaviour change for better burning
- Incentivise introduction of new technology (‘better burners’)

Better burning: using insights to drive behaviour change

2014

“If you look around at all the smoky chimneys, it’s clear that we can all learn a thing or two. Now I get more out of my fire and less out of my chimney, which means less pollution too.”

Smoky fires waste heat and pollute the air. In Canterbury, home fires are responsible for 80% of our winter air pollution, in the form of a pollutant called PM10. High PM10 levels are linked to a range of respiratory and cardiovascular conditions, causing more hospital visits and reduced life expectancy. In winter PM10 is regularly recorded at levels higher than the national standard for healthy air.

THE ART OF GOOD WOOD

- Always burn dry, seasoned wood, never rubbish, treated, painted, wet or green wood.
- Using the right size at the right time is important. As soon as you get your wood home, sort and stack it into three sizes: kindling, small logs and large logs.
- Most people underestimate how much kindling they’ll need to get a good, hot fire going. Spend an afternoon preparing kindling or buy a bulk lot from a local wood merchant. Keep a stack ready to re-light the fire in the morning.
- Split logs burn much better, so buy your wood split or get it ready yourself.

Visit letscleartheair.co.nz for a list of Trusted Good Wood Merchants.



Separate wood into kindling, small logs and large logs.

OTHER STUFF

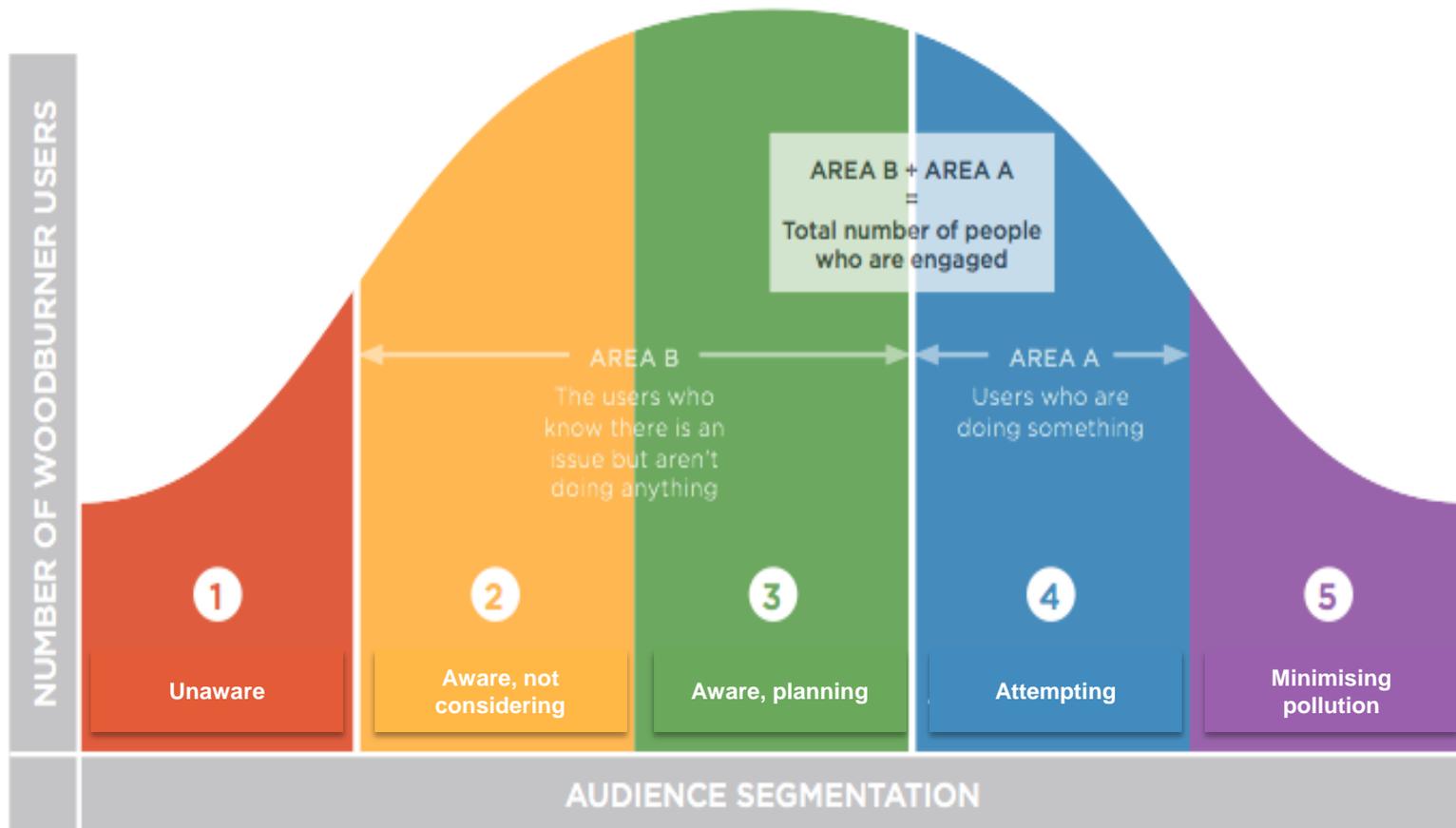
- It’s very hard to keep an old burner smoke free. Consider updating your fire to a newer, more efficient model. But we want to make sure everyone stays warm and healthy, so call Environment Canterbury on 0800 329 276 to see what help is available.
- Air flow is really important to a good, hot fire and a clean chimney makes a huge difference. Be sure to have yours cleaned each year by a professional.
- Check that your burner is in good working order, visit nzhha.co.nz

“If I can learn the art of a smoke free chimney and stop wasting my firewood, then you can too.”

Smoke is actually firewood that hasn’t burned completely. Don’t let your winter heat go up in smoke. A good, hot fire burns smoke free and can be mastered with a bit of effort and know-how.

Everyone who uses a wood burner should know this stuff. Help spread the word and join the growing group of experts at our facebook page.





Four approaches



2015

Smoky chimneys waste your wood, heat, money and pollute the air

There is a new rule which requires no visible smoke from urban chimneys.

This rule in the proposed Canterbury Air Regional Plan applies to all properties in clean air zones* (generally the urban areas in the towns of Kaiapoi, Rangiora, Christchurch, Ashburton, Timaru, Geraldine, Waimate) and properties less than 2 hectares outside clean air zones. The new rule allows for only 15 minutes of visible smoke following start up and 5 minutes on reloading.

*See letscleartheair.co.nz for clean air zones.

The key to a smoke free fire is a hot firebox and flue. Get them both hot as quickly as possible. You will need a good supply of dry, seasoned wood. Your flue must be clean (cleaned annually) and your burner must be properly maintained.

You should be able to get your fire smoke free in under 15 minutes. Follow the simple instructions inside.

Signs you're burning smoke free

- No visible smoke from your chimney.
- Clear burner door glass (maybe a little ash but no residue).

Check out the Trusted Good Wood Merchants in your area at letscleartheair.co.nz

Trusted
GOOD WOOD
Merchant



It will help to sort your wood into three sizes: kindling, small logs and larger logs. Remember to bring plenty of all three sizes inside each night.

If you would rather watch a real life demonstration, check out the NZ Home Heating Association video at letscleartheair.co.nz or if you need more help we can arrange free in-home training. Financial help and assistance is also available in some cases.
Call 0800 329 276 for more information.



15 minutes to a smoke free chimney

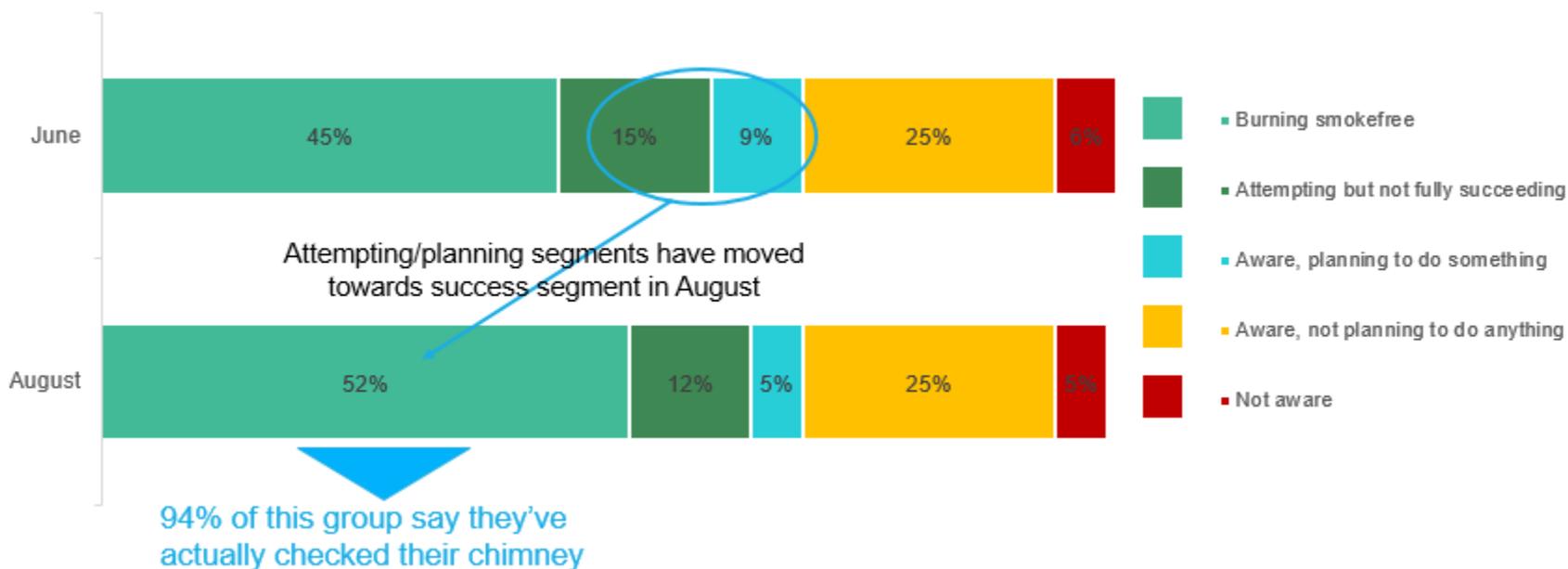
Most woodburner users believe they are already burning smoke free. The smoke coming from urban chimneys tells a different story.



letscleartheair.co.nz

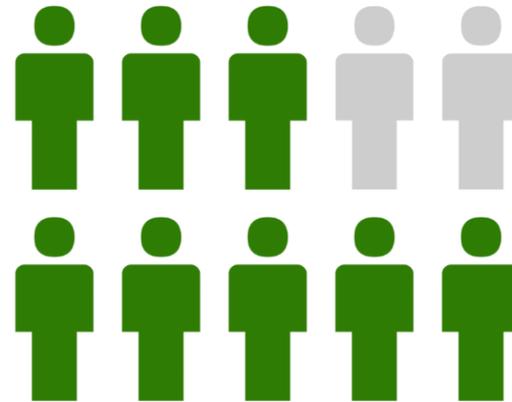


We started to get a shift in behaviour over winter 2015



There was high levels of awareness

Nearly **8** in **10** saw at least one campaign element but...



Base: Total sample: Survey 1 (June) n=350; Survey 2 (August) n=464

**Awareness ≠
behaviour change**

2016 & 2017



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Cheaper**

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Cheaper**

MENU
≡

A cosy home is the cat's pyjamas...

and good burning technique
is key – you'll be warmer, save
on firewood, and have a
smoke-free fire!



Fine-tune
your technique
right meow and
WIN!
↓

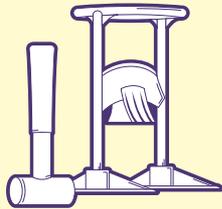
WIN these great prizes this winter!

Enter now at WarmerCheaper.co.nz



An iPad Pro

25 Kindling Crackers



50 Cosy Home Packs



What - no dog treats?

Need help making your technique purrrrrfect?



If you've checked your chimney and you're still getting a bit of smoke, don't worry, there's plenty of help available.

1. Visit WarmerCheaper.co.nz for a handy video and more top tips.
2. Come and watch a fire master build a smoke-free fire. Find out when a demo is happening near you at WarmerCheaper.co.nz
3. In-home training can also be arranged. Email training@warmercheaper.co.nz or call Environment Canterbury on 0800 329 276.

Who has the good wood?

For a list of our Trusted Good Wood Merchants in the Canterbury region, visit WarmerCheaper.co.nz

Trusted
**GOOD
WOOD**
Merchant



For information about the rules for no visible smoke or woodburners, visit ecan.govt.nz/air
Financial assistance is also available.

A cosy home is the cat's pyjamas...

and good burning technique is key – you'll be warmer, save on firewood, and have a smoke-free fire!

Fine-tune your technique right meow and be in to WIN!



**Warmer
Cheaper**

WarmerCheaper.co.nz

Free kindling for you



We noticed your chimney was smoking for more than 15 minutes last night.

Date: _____ Time: _____

Address: _____

*Maybe you need to fine-tune your technique. Check inside your bag of kindling for instructions and your chance to **WIN!***



Crazy, but true – you can have a smoke-free fire.

When a fire gets hot enough, the chemicals in wood that produce smoke turn to gas and steam. If you see any smoke AT ALL after 15 minutes, your technique might need fine-tuning.

One of the keys to a cosy home, spending less on firewood and a smoke-free fire is using enough kindling. We've noticed that some people aren't using enough, so we've left you some. We hope the kindling and the enclosed burning instructions help you fine-tune your technique.

If you are still getting a bit of smoke, don't worry, there is plenty of help available.

1. Visit WarmerCheaper.co.nz for a handy video and a few more top tips.
2. Come and watch a fire master build a smoke-free fire. Find out when a demo is happening near you at WarmerCheaper.co.nz
3. In-home training can also be arranged. Email training@warmercheaper.co.nz or call Environment Canterbury on 0800 329 276.

What next?



Burning instructions left. Help offered



Formal warning. Help offered



Abatement notice issued



\$750 fine may apply



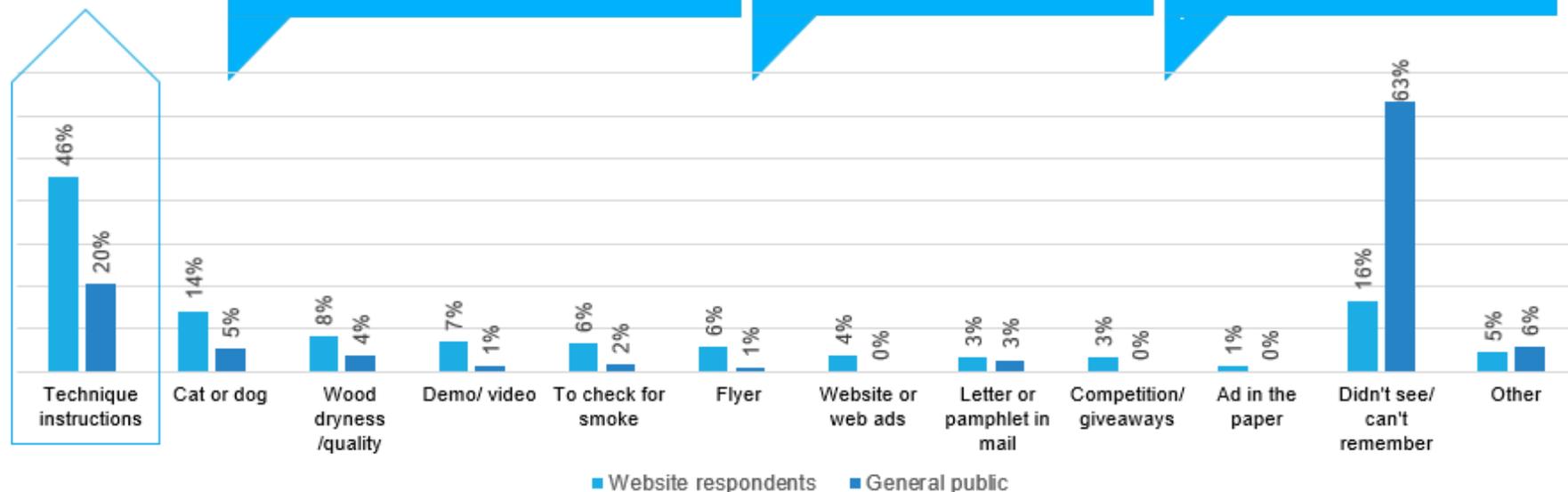
The pets catch people's eye, and the technique instructions stick with them

Those recalling technique/ instructions remembered a lot of the specifics:

Rolling up newspaper for kindling logs Use more kindling Use wood supply to control the fire rather than thinking the air control is the main thing. Learnt the meaning of 'bricking' when the wood is burnt black and looks like bricks

How to light a fire in steps. We always remember the bit that says 'Put on your coat and go outside to see if the chimney is smoking' It has become a catch cry with us!

Instructions on how to start a fire with less smoke lots of newspaper then small bits of kindling then slightly bigger until burning strong make sure you check your chimney



Base: All respondents. Website respondents n=395, General public respondents n=103 (question added part way through fieldwork for general public)

Question: From the Warmer Cheaper Campaign, what do you remember seeing? Describe what you recall

Make the problem visible and tangible

- Media campaign to raise awareness of the issue & solutions
 - Radio
 - Digital

Develop an integrated communications and marketing strategy

- Ensure partners & stakeholders know campaign messages & call to action
- Test campaign collateral for behaviour change effectiveness

Target individuals

- Show emotion
- Reflect people like me

Clear messages

- Call out the problem
- Behaviour to change
- What are people to do?
- Bust myths
- Simple How To instructions
- Understanding that I can do something
- My action counts

Inform tools

- Email newsletter
- Facebook
- Website
- Text messages

Make the enforcement fair and visible

- Be clear on problem and offer tools & solutions initially.
- Be clear on what enforcement action will be taken and when.

Target smokey chimneys

Target old burners

Review enforce tools

- Letters
- Website

Take action

- Fine



Integrate behaviour change focus across Environment Canterbury

- Communications & marketing
- Planning
- Enforcement

Stakeholders & partners working together to support change

- Wood merchants
- Neighbours
- District health board
- District Councils

Coordinated approach across relevant commercial partnerships

- Wood merchants
- Manufacturers

Build a community of change

- Knowledge - action gap
- Peer to peer learning
- Facebook and website
- Neighbours learning from each other

Target individuals

- Provide meaningful feedback
- Reward behaviour
- 10% voucher off wood (from TGWM) if register commitment via a unique promo code.
- Personal recognition - thank you letter for those working more actively in the community.
- Reward for sharing on social media.

Goal setting

- Show people where they are at & where they could be
 - Facebook, website and app

Community events

- Information
- Tools to drive knowledge into action

Knowledge - action tools

- Written
- Visual
- Aural
- Live action
- Website, facebook and app
- Via digital advertising

PM10 alert tool

Smartphone app

- Measurement
- Goal setting
- Rewards

Ultra low emission burner

Crafted to Amaze

sirocco

Catalytic wood fire



Better burners...

But the really hard bit...

- Phasing out older burners, required by regional air plan rules
- 2017 winter (April-Sept) the rules hit in Timaru
 - Older, less well off population
 - Don't believe they are the problem
 - Old housing stock
 - National election
 - Local government by-election

Timaru 2017



Timaru 2017



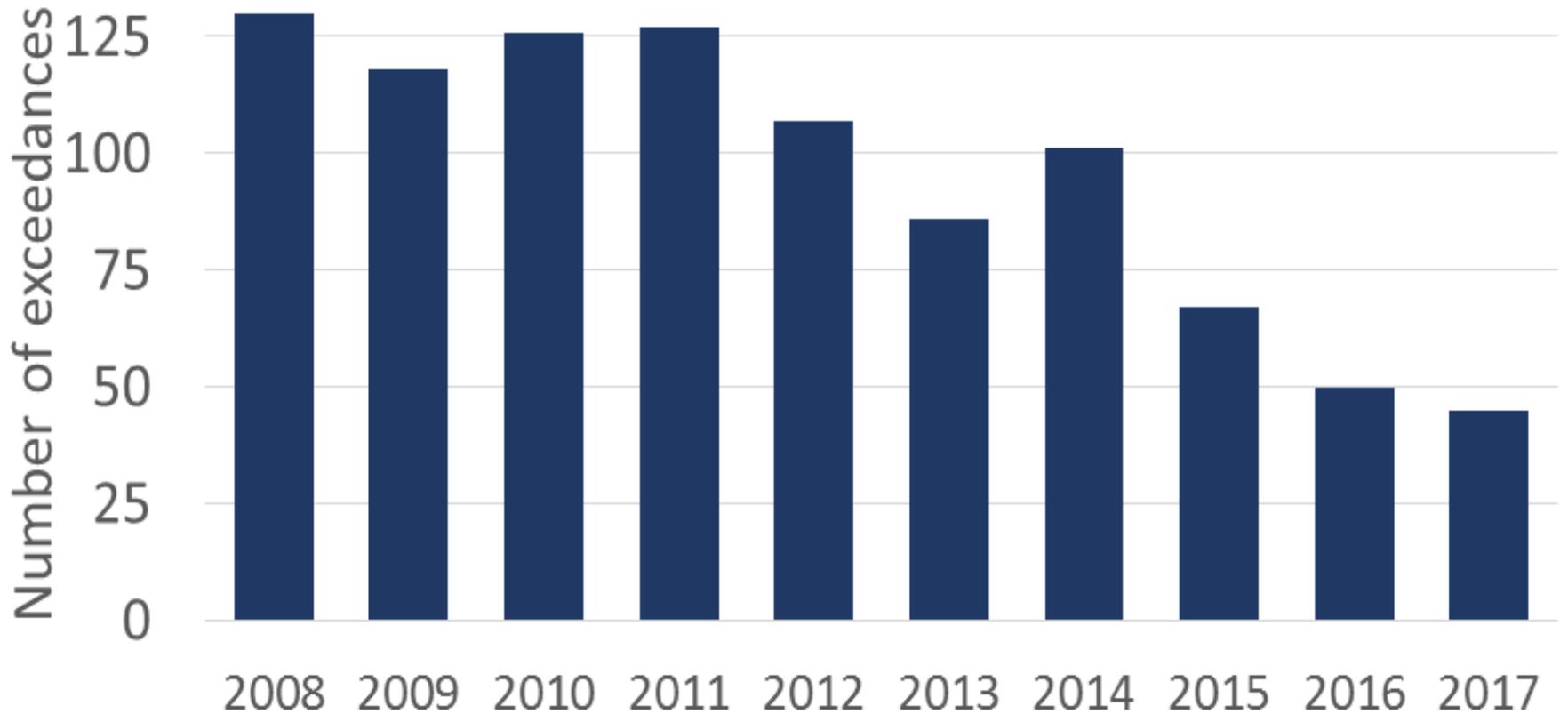
Timaru 2017



Timaru 2017



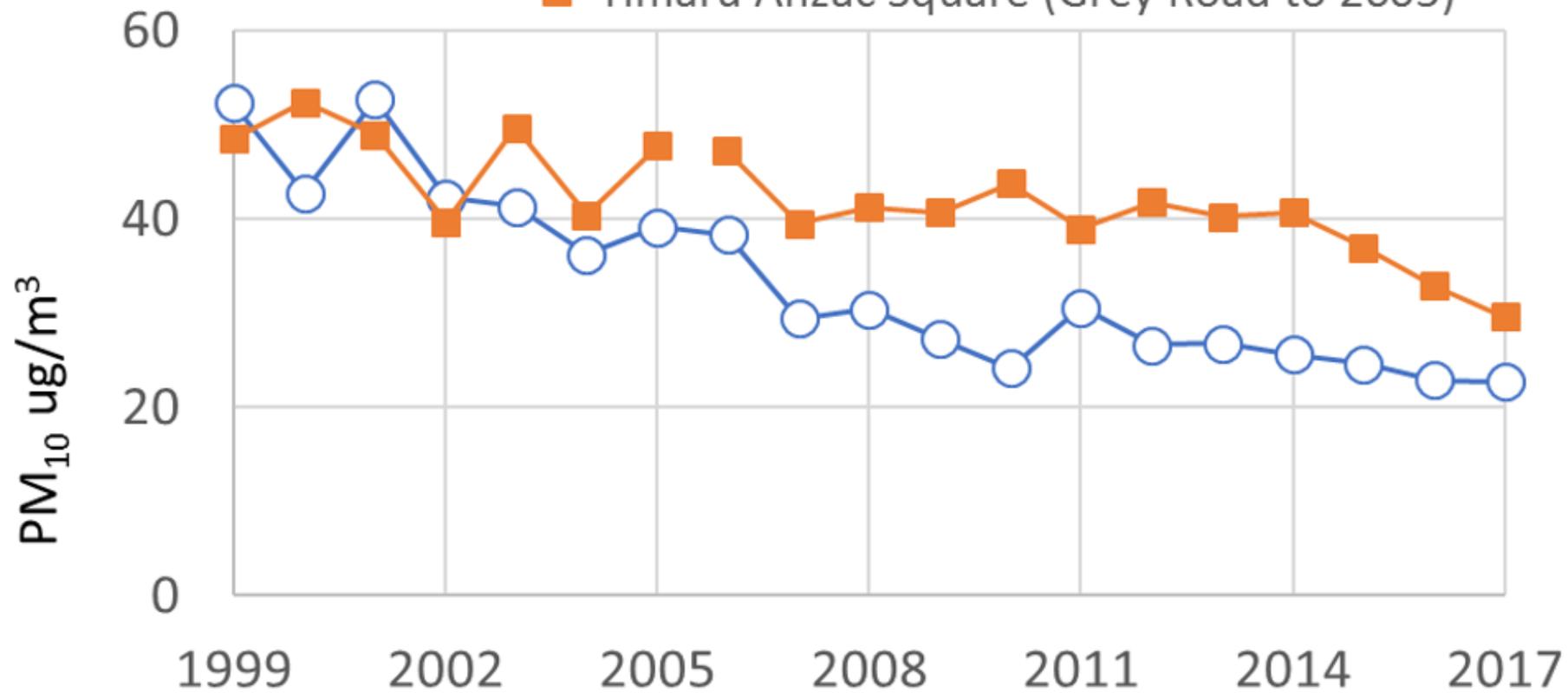
Total number of exceedances per year: Canterbury's seven airsheds



Winter average PM₁₀ concentration

○ Christchurch St Albans

■ Timaru Anzac Square (Grey Road to 2005)



Thank you!