Subject: EPA network to help solve air mysteries - ABC Northern Tasmania - Australian Broadcasting Corporation
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Data now being collected from the EPA's new network of air monitoring stations may soon help explain a mysterious daily peak in Launceston's large particle pollution, and the extent of lingering "clear air" wood smoke across the state.

The 15 Blanket (baseline air network) monitoring stations have been progressively coming online over the past year, with stations at Carrick and Sheffield joining the network in the past month. The primary aim of the network is to monitor smoke from controlled burns, bushfires and wood heaters.

The EPA is currently analysing data from the March 17th "smoke event" that affected much of north-east Tasmania, correlating that with data from other agencies and the Bureau of Meterology and is expected to release their analysis in the next two weeks.

A separate finding from the Blanket network is that an unexplained morning peak in large particles in Launceston is not being seen in surrounding areas.

"We're still finalising some of the configurations of some of the Blanket stations, but so far it hasn't been popping up," said EPA air specialist John Innis.

"For a long time it was thought to be a break up of the inversion layer bringing the smoke back down again, but it's only occuring in the PM10,we don't see it in the PM2.5, so it's probably not smoke."

PM10 is particulate matter up to ten-millionths of a meter in size. In 2004 the EPA added monitoring of PM2.5 - particulate matter - two-and-a-half millionths of a meter in size.

"The reason why PM2.5 was chosen was that most smoke particles are below a millonth of meter," Mr Innis said.

"So PM10 includes smoke but it also includes things like dust, pollens, sea salt aerosols and a lot of other things so you don't really know what's Smoke and what's not when you're measuring PM10."

Mr Innis said the PM10 phenomena in Launceston had been noted several years ago but couldn't be explained.

"Hopefully we'll soon have more information from our stations at Exeter and Carrick. We will then have a better idea about whether it's local to Launceston or more widespread.

"If it is local to Launceston we can try to correlate that with maybe something coming up the river.

"What is interesting is that there were some studies in New Zealand where they found the same thing in certain towns and cities, and they weren't able to explain it either. So there's a really interesting little question there I'm hoping we may be able to resolve.

"I had a quick look at the local meteorology to see if we could correlate that with wind direction or a relative humidity increase and I've been at the station at that time of day, but there's nothing obvious going on.

"There's a huge amount of information in the data that's really interesting and we'd really like to get into and look at but there are other priorities we have to meet so we don't always have the time to look at some of these interesting scientific questions."

Mr Innis said he doubted the peak was a harmful.

"If it's a natural aerosol like a sea salt it's probably not a worry. I couldn't imagine it being molecular so I don't think it'd be NO2 or any = sort of pollutant like that because they're tiny compared to a dust particle. It's an interesting one."

He said the EPA would be happy to provide the data to academics for further analysis.

The 15 Blanket stations are located at Emu River (Burnie), West Ulverstone, Sheffield, Exeter, Carrick, Lilydale, Scottsdale, Derby, St Helens, Fingal, Bryn Estyn, Gretna, Huonville, Judbury and Geeveston. They join four existing monitoring stations at Launceston (Ti Tree Bend), Hobart (Newtown), Rowella and Georgetown.

"In the past we've been fairly limited because we've ony had the Hobart, Launceston, Georgetown and Rowella stations and we've tended not to be able to see the data in real time," he said.

The network now updates the EPA's public information webpages every 10=20 minutes, while the EPA receives data every two minutes.

"One of the issues we're going to use the Blanket data to address is what the background level of smoke is as a result of planned burns," Mr Innis said.

"We know that there can be big smoke events when a planned burn impacts on a populated area - you get a short-term high-level exposure. What we don't know is whether there's a general increase in the background level over large parts of the state during the burning season.

"There's two sorts of effects from smoke. There is a short-term high-level exposure such as you might get on March 17th when we had very high values for 8 to 12 hours depending on where you were.

"Then there's a general low-level increase in the background which you may not be even able to smell, but the instruments will pick up. You might be living in that for several weeks and you don't even know you're breathing it. That's one of the issues we hope Blanket will address.

"The other issue is that in the winter-time we do know there are towns and cities that do get very smokey and stay that way for days at a time depending on the weather.

"So it's the amount of smoke you're actually breathing as much as the amount of smoke that's being produced.

"By the time we get through this season we'll get the first look at that. In principle the stations should be able to measure any large-scale low-level increases and that's an issue that was factored into the design of Blanket.

"Blanket was in large part a response to the 2008 burning season when we realised we didn't have the spatial coverage we needed to address these sorts of issues.

"The intention is that those results will be a public document and feed into the debate at all levels.

Mr Innis admitted that the publically available data could be hard to interpret. "It is a bit tricky," Mr Innis said. "It's more complex than a weather report, that's just the nature of air quality data.

"The real-time plot will turn red if the instantaneous values go over the 24-hour standards. But a 10-minute, half-hour or even a four-hour instance where the values are above the standards is not a breech because the standard is a 24-hour standard.

"The low volume air samplers give us only one sample per day after we pre-weigh and re-weigh a filter. So to get an up to date value during the day we'd have to use other technology and at the moment that's not accepted as a reference quality measurement under the legistraltion.

"If people want us to say that air quality standards have been breeched, well we can't because the filter has to be pre-weighed, deployed, exposed,retrieved,post-weighed and the data has to be processed.

"There is no short-term standard."

Mr Innis said air quality had been improving in recent years and that the Blanket network and other initiatives such as the Cordinated Smoke Management Strategy (CSMS) should see further improvements.

The CSMS is an initiative of the Forest Practices Authority and is in the second year of a two-year trial. The strategy defines various "air sheds" over Tasmania and a suggested limit on smoke in that shed.

"This was deployed in 2009. All Forestry Tasmania, private forestry companies and Parks and Wildlife all bid for units each day and if the allocations add up to too much they are reduced," Mr Innis said.
"The allocation goes up and down depending on the meteorology.
"At least there's now a system whereby people understand there is a limit, they bid for the limit and abide by the allocation they're given.
"One thing Blanket can do is provide real-time feedback to burners about how smoke has moved in the airshed.
"In Launceston in winter-time the number of smokey days has also dropped dramatically. The number of excedences dropped from about 50 per year to zero last year."
My Innis said that although Launceston's smoke problem was much reduced, many other Tasmanian towns and localities were still affected by high levels of domestic woodheater smoke.
"Normally down here we don't believe any other pollutants are a problem. Generally speaking the other pollutants are at very low levels," he said.

And so does Tasmania really have the cleanest air in the world?
"It depends where you are and what's happening locally. But looking at the CSIRO Cape Grim baseline air station which is monitoring the air straight off the Southern Ocean, that is certainly clean, so there's a sense in which that is true. But then most people don't live at Cape Grim."
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