



## **Climate change adaptation in the Midlands**

### **Heat - how we can prepare as individuals and a community.**

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Landscape restoration in the Midlands, Photo: Graham Green

A principle of adaptation is making positive changes to our lives in order to minimise or reduce the impact of emerging or expected change. If the future doesn't pan out as envisaged, the changes we have made should continue to influence our lives in positive ways. Adaptation should be viewed as a 'no regrets' exercise.

As mentioned in the previous article, moving somewhere else is an adaptation action that some people may choose. In the long term, the Midlands is likely to see more people arrive than leave, as the risks of bushfire and flood are not as extreme as in other parts of the state or country. People affected by coastal inundation will be looking for somewhere to go that is safe, and the Midlands is a good option.

But what do we do about heat? After a cold winter it feels like the wrong time to be talking about heat, but it's always a good idea to begin preparing early. Who knows what the coming summer will bring. We can almost guarantee that heat and heat-waves will be part of the story. In Tasmania's last summer we had a reprieve due to a relatively cool February, however, temperature for the summer was still above average and both Tunnack (37.4°C on 30<sup>th</sup> Dec) and Hobart Airport (41.4°C on 31<sup>st</sup> Jan) reached their hottest recorded temperature.

2019 was the hottest on record for Australia with the annual average temperature measuring 1.52°C above the long-term average. 2018 and 2017 are in the top 5 hottest years ever recorded in Australia. The drama of the 2019-20 summer season on the mainland (which arguably began in spring), will be talked about for a long time, at least until it is surpassed. I hope I'm wrong, but this could be sooner than we expect.

Heat is something that is becoming increasingly on our radar, and for good reason. I recently read in the Tasmanian State Natural Disaster Risk Assessment 2016 that the physiological impacts of extreme heat have killed more Australians than all other natural disasters combined over the last century. Also in the document, the natural hazards *heat-wave*, *pandemic* and *severe storm* are rated at an extreme risk level for their potential to cause death. This is a higher risk rating than for *bushfire* and *flood*.

Heat-wave is currently rated the most likely natural hazard to cause death in Tasmania. Extreme heat events in Hobart in the past have resulted in a 25-30% spike in ambulance call-outs. Heat is already the real deal in Tasmania, and over time we can expect its impact to increase.

In my last article I presented some data from the Climate Futures Tasmania modelling that showed how much hotter it's going to get if nothing is done to curb greenhouse gas emissions. In the Southern Midlands hot days are already increasing, on average, we currently experience 11 days greater than 30°C annually. This is expected to increase to between 28-39 days annually towards the end of the century, depending upon where you live in the municipality.

While early season hot days can be embraced and enjoyed for many as we emerge from the cooler months, we have to appreciate that people have different tolerances. We need to be mindful of those in our community who have low thresholds or predisposing conditions for whom extreme temperatures and heat-waves can be a real threat. Those most at risk are:

- children and the elderly due to susceptibility to heat stress and dehydration;
- those with pre-existing medical problems, such as heart, lung and kidney disease, or people with a high temperature from an existing condition;
- visitors to our area - given the State's cool-climate reputation, many visitors are not prepared for extreme heat and are potentially vulnerable to heat stroke or dehydration;

- people in lower socioeconomic groups who have less capacity to modify their circumstances in preparation for extreme weather, or an inability to afford efficient cooling systems; and
- outdoor workers such as farmers and construction workers.

Part of the solution is to modify our indoor spaces to improve thermal performance, and modify the times we undertake outdoors work or recreational activity. Importantly we'll need to be more aware of those we know are vulnerable and ensure they have access to somewhere cool. Looking out for and supporting one another is something that rural communities tend to excel at – another reason that the Midlands is a good place to be in increasingly challenging times.

Council has an important role to play. It is a core function of councils to provide for the health, safety and welfare of the community and to play a role in responding to emergencies.

In a practical sense council could assist the community in preparing for climate change by:

- planning and implementing publicly accessible cool spaces, including well thought out locations for shade trees;
- providing easily accessible swimming places for residents;
- collaborating with the Bureau of Meteorology to ensure residents are informed in advance of extreme hot weather and heat-wave events; and
- including allowance for heat-waves in their Emergency Management Plan - in terms of being clear of their role in community response and support.

For our farmers heat challenges are escalating. This is in terms of the physical and mental distress related to working outdoors, and also due to the effect of heat on stock, crops and natural assets. This is complicated because farms are an ecosystem with a lot of concurrent influences. When hot weather comes it may be just one of several stressors at play. Nonetheless, heat has the potential to compromise yield and quality of crops, cut pasture growth, and burn stone and berry fruit. The number of days annually that stock experience heat stress is likely to increase.

Facing challenges is nothing new for farmers. Working alone as rural workforces shrink, doesn't help. Problems can be internalised if there is little other human contact across a typical day. Isolation, a deeper burden of responsibility, or a building sense of hopelessness can be an issue during hard times. The stress caused by extreme weather events is all the more reason for people in rural communities to look out for one another and to assist where necessary. If this is the only adaptation measure we choose, we will be a better community for it.

Farmers are building their experience and ability to cope with climate variability as the former predictability of the seasons no longer occurs. In adapting to climate change most farmers are well informed and know what to expect. So

adaptation means being positive, having a willingness to innovate and to learn from experiences elsewhere.

Adaptation measures some graziers are using include:

- selection of pasture species that are more heat tolerant, for example, revisiting the value of native perennial grasses and managing them back into grazing rotations;
- adjusting stocking rates and managing animal nutrition;
- increasing shaded places for stock;
- improving water use efficiency and increasing watering points; and
- looking after natural assets in recognition of the animal welfare and ecosystem services they provide.

Very hot days can be brutal on the natural environment. Adaptation is really not possible if tolerance levels are exceeded, our environment just has to cop it. For plants there's nowhere to hide and little capacity to disperse to where conditions are more favourable. Many plants are adversely affected by heat and some may not recover.

The Southern Midlands of Tasmania lies within one of only 15 biodiversity hotspots Australia wide. It is deservedly recognised as a treasure trove of plant and animal species, and rare vegetation communities. There's plenty at stake if things go wrong. Working to preserve our biodiversity hotspot in the face of increasing weather extremes deserves our utmost attention and effort. Many landholders in the Midlands have already made visionary commitments to protect natural areas through voluntary private conservation agreements over large tracts of land. This commitment has possibly arrested the process of fragmentation and decline in our natural vegetation communities, at least for now.

So are we going to be able to hold the fort and prevent further loss with the building impacts of climate change? What are potential interventions we can make to assist survival of our unique flora and fauna? What are the tipping points beyond which our landscape and it's species will change for good? This is the topic for discussion in another article.