

Submission for extreme weather inquiry – Peter and Beverley Rubenach

Our experiences of extreme weather events and the changing climate:

Background

We are Peter and Beverley Rubenach, aged 66 and 64 respectively. We own a 69 hectare property at Gray (7kilometers from St Marys) on the East Coast of Tasmania. Peter has lived here for the past 46 years and Beverley has lived here for the past 39 years (and has spent all of her 64 years in the St Marys area).

We both come from 3 generations of farming families, and so we are very connected to the land. Along with our daughter, Hannah (35) we are in the process of setting up our property, *Haven of Hope*, as an educational and display centre for organic, horticulture, diversity, sustainability and alternative health.

We are full-time carers (24 hours a day/7 days a week) for our 26 year old son, Tim, who has acquired brain injury and epilepsy.

For the past 18 years, 4 of our family members (Peter and our 3 daughters) have been actively involved in volunteer emergency services.

Peter - was actively involved in St Marys Fire Brigade for about 8 years and in the State Emergency Service (SES) for over 10 years. He has a Certificate IV in Horticulture (as does Beverley).

Hannah (our daughter) – is actively involved in volunteer emergency services and various community activities: several years as a volunteer ambulance officer, 17 years with St Marys Fire Brigade, and 17 years with Break O'Day SES. She was recently appointed to the State Fire Commission as a Local Government Association of Tasmania representative. She is involved in the recently formed local Transition movement, works for TABIS (Tasmanian Acquired Brain Injury Services Inc), and is Deputy Mayor of Break O'Day Council. Hannah has a Bachelor of Arts with Honours (in sociology) and a Graduate Diploma of Science (in psychology).

Our experiences of extreme weather events and changing climate

The most extreme and unexpected weather event we have experienced was a hailstorm on 31st January, 2009. See *Report on the Hailstorm at Gray, Mt Elephant and Little Beach Areas 31st January 2009*, prepared by Hannah Rubenach.

Note: our vegetable crops for that summer season were completely destroyed. Many of our perennial herbs (we had over 200 different ones) did not regrow or are still recovering 4 years later and several of our stone fruit trees were so de-barked they died the next season. Two years later, when we fell eucalyptus trees for fencing, we were surprised to find the trees deeply bruised through the thick bark. The force and size of the hailstones was so great that eucalyptus trees suffered, so no wonder other plants were destroyed.

Changes we are seeing

The community of Gray is situated in the foothills of Mt Elephant. This area has been renowned as one of the highest rainfall areas in Tasmania. This small region has its own unique micro-climate because of the influence of Mt Elephant (and it is of interest to academics, etc) because some species of insects and ferns grow larger here than elsewhere in Tasmania).

The area's main rainfall has been predominately est/northeast but after the 2006 East Coast Tasmania Bushfire, things changed:

Shortly after the fire, Peter realised our rainfall was less than normal and then he noticed rain clouds that usually (prior to the fire) came in from the sea clockwise around Mt Elephant were now going anti-clockwise around Mt Elephant. The rain we would normally have received from these clouds was now being deposited in the St Marys/Mt Nicholas area (7-10kms away). Also, St Helens and Scamander areas (where the fire had also been, began experiencing unusual flash flooding/heavy rains.

When Peter phoned the Bureau of Meteorology, and told them of this weather direction change, they were very interested as similar observations were being made in Victoria after the 2009 bushfires (for example, clouds/rain were going in the opposite direction after the fires). Now on 4th January 2013, bushfires have occurred south of Mt Elephant in the Bicheno/Coles Bay area. On Sunday 13th January, here at Gray, we received 17.5 mm of rain from clouds that came clockwise around Mt Elephant. As we write, we have seen 4 days of rain clouds again forming and coming in clockwise over Gray (but these clouds are not giving us rain). So it appears things might be returning to pre-2006 fire conditions. A question we are now asking: has the recent fires caused the change in direction back to pre 2006 fires? We are watching and waiting to see.

2006 East Coast Tasmania Bushfire

Some observations of this fire: the humidity on one occasion was recorded at being at 8% and at one time, it is believed it was so low, no reading could be obtained. Local firefighters have said they have never experienced fire conditions like this (even those with 40+ years experience), with one firefighter stating that this fire 'broke all the rules of bushfire behaviour in this area'.

Changing climate and impacts of climate trends in our local area

Having been raised 'on the land', we have always been interested in predicting the weather. Time honoured observation methods, passed on from generation to generation were always fairly reliable. For example, heavy wattle/blackwood blossoming in Spring were indicators of a dry summer, "a red sky at morning, a farmers warning, a red sky at night, a farmers delight", things like: 3 days of heavy clouds over the eastern sea horizon meant good rains were quickly approaching. All the signs of nature we used to use as guides (which served our forefathers well) are no longer reliable. In other words – the predictable has now become the unpredictable – the reliable, now the unreliable.

For almost 10 years, Peter has been keeping a record of rainfall (daily) here at Gray. For 8 years, he has been recording daily temperatures here and more recently barometric pressure and humidity levels.

The alarming thing as been seeing such variations and unexpected sudden daily changes, such as being hot one day then cold the next, barometric pressure plummeting within minutes, extremely low humidity even before a sunrise (on days that a normal humidity could be expected). Peter is now an official volunteer weather observer for the Bureau of Meteorology.

Daily variations of weather conditions are having an impact on our *Haven of Hope* gardens. Most noticeable is plants going to seed long before normal maturity time, especially carrots, turnips and brassicas of all kinds. This means these vegetables are useless as food and the seeds they produce appear to be of inferior quality. (We want to experiment on the germination viability of seeds from these plants to confirm this observed 'inferior quality').

Gray has always been renowned for its high rainfall – one of the highest rainfall areas in Tasmania, but things are changing. Note: at the date of writing, we have not had any significant rainfall since June 2013. This is having a dramatic effect on the environment.

About 30% of Gray is rainforest on its southern and eastern aspects. For the 46 years Peter has lived in the area, these rainforests have been typical rainforests – lush, green, moist/wet. Now they are dry – mosses, lichens and all undergrowth is dead or dying. Even the eucalyptus trees are shedding their leaves at an alarming rate.

On nearby Mt Elephant, and in fact all around us, native trees as well as introduced trees are shedding leaves en masse due to unusually prolonged dry conditions. We have never seen eucalyptus trees so sparsely leafed. The enormous amount of fine fuel this is creating is ready for catastrophic bushfires. (at the time of writing this, Gray is 10/10 on the fine fuel dryness index and soil dryness is among the highest in Tasmania).

Frequently, clouds form, but disperse without any rain. (The certain indicators of the past no longer apply, such as rain clouds once meant RAIN, now they don't). They just evaporate or move east to New Zealand.

Another thing we have noticed is that our lemon trees have not set fruit this summer, but produced an abundance of leaves. They could not hold them in the present drought conditions, and have currently shed about 60%. We have seen a similar thing happen with raspberries (we have about 280 bushes) and with gooseberries – 3-4 bushes in a group will be laden with extremely healthy fruit, then next to them will be 4-5 bushes with no fruit at all, only an abundance of leaves. We have never seen this pattern occur until this season. We are wondering if it could be that we had two (2010/11) very wet years, then since June 2012, very dry.

Note: After the bushfire of 2006, it took 2 years for bees to return. Then in 2009, they disappeared because of the hailstorm. However, Spring of 2012, saw number beginning to return to normal again. So this unusual fruit-bearing does not seem to be pollination-related, but weather related.

Preparedness for extreme weather events and climate trends

After the hailstorm of January 2009, we realised how vulnerable we are to unexpected extreme weather events (and changing climate trends), so in horticulture, we are:

- Trying to grow some of our vegetables under shade cloth, so we have some survive if there are extreme conditions.
- Grow more root vegetables than usual in the hope that they survive any surface leaf damage (the hailstorm of 2009 wiped out potatoes and other root crops, but we hope we don't ever see a storm of such severity).
- Grow a diversity of food in both fruit and vegetables. Note: we want to be able to purchase both cold climate and warm climate blueberries, but current restrictions are such that some varieties of blueberries (and cranberries) cannot be sent to Tasmania from mainland suppliers. We feel such restrictions need reviewing and also that more exotic fruits/vegetables from other countries should be allowed in the country (under strict quarantine of course), and made available to small/individual growers so as to increase and diversify our current food supply. We need to be able to purchase and grow both cold and warm climate varieties of plants to suit changing conditions. *On a national level*, we feel one of the best ways to protect our food supply from extreme weather events and climate trends is to encourage diversity instead of monoculture.

- We are staggering planting more so that things do not all produce at the same time so that if “disaster strikes”, there is a better chance of some surviving.
- encourage the growing of various varieties (such as cold and warm climate lettuces, growing the many varieties of carrots now readily available – from red, orange, purple, white, etc). In other words, encourage people to grow great variety.
- Encouraging backyard gardens/community gardens, etc. Please note: many pensioners and low-income earners in our area have small backyard gardens from which they source some of their food (helping their pension stretch a bit further) – any extreme weather events have the potential of affecting the nutritional standards and finances of backyard gardening pensioners and those on low incomes.
- Saving seeds – especially non-hybrids, etc.

Health

Health is certainly affected by extreme weather events and changing climate, especially in the emotional/psychological area – stress and anxiety increases.

Our son, Tim (who has ABI and epilepsy) suffered depression and severe anxiety after the 2006 East Coast Bushfire, and has not communicated well since then, especially in areas of expressing his worries/fears, etc. Seven years later, he is still disturbed if he sees smoke (or even fog) as memories of the 2006 fire returns.

As carers, we feel added stress/anxiety as the threat of catastrophic bushfires becomes more real. We worry about how to protect our son, etc. Currently we are preparing a “safe place” (we hope) if bushfires come suddenly and we cannot evacuate. It is in the form of a large garden with 1.5 meter high roofing iron fence, green plants and fruit trees and several water tubs and reticulated water in the centre. Note: bushfires are our biggest concern in climate change.

Please note: we want to put sprinklers on our home as a fire protection measure. Then our home could be a safe place to stay with Tim if bushfires come unexpectedly, but as we are only on carer’s pensions, this would cause us economical stress.

To prepare for changing climate trends, the government MUST have sufficient and appropriate crisis/emergency places available in every municipality in our nation. Some people, such as Tim could NOT cope with being in a community refuge place in the case of emergencies, and he is not alone – there are many others like him especially those with ABI, mental health conditions, etc. Also, a scheme to enable low-income earners to protect their properties (sprinklers, assistance with vegetation management, etc) should be considered.

There also needs to be some systems in place to ensure that individuals requiring disability/aged support services are able to access their supports adequately during emergency extreme weather events. There needs to be respite facilities available in rural areas where people can relocate to if their own home is threatened (normal community refuges cannot meet the needs of all people with a disability).

Emergency Services

Four of our family members have been/are actively involved in volunteer emergency services (currently their combined efforts equate to over 50 years of service). As extreme weather events and climate trends become more prevalent and pronounced, Australia is going to depend more and more on volunteer emergency workers. The more they are called to do, the more stress/pressure and anxiety they and their families face. Governments must look at this carefully.

To prevent burn-out, the following is necessary:

- Supplement/reimburse some % of lost income of volunteers while serving (for large campaign fires)
- Supplement employers who let volunteers go to serve (for large campaign fires)
- Ensure that volunteers do not overwork. Remember, they give up leisure/holiday time to serve and frequently, this time is never recuperated. This can cause stress not only to the volunteers themselves, but to their families. (Family members often have to take on tasks/responsibilities of the volunteers to enable the volunteers to be free to respond to a situation).
- Family members need support as they worry about loved ones working in dangerous conditions, especially firefighting as bushfires are becoming increasingly more dangerous.
- Recruit and train more volunteer emergency service workers
- Recognise volunteers worth – without volunteers, our Nation would not function as it does.
- Train/educate existing and future volunteers to cope with changing climates.
- Help citizens to become more self-sufficient and resilient to lessen their dependence on emergency service volunteers (eg encourage them to have their own sand bags and sand to protect their houses against flood).

We all need educating – our Nation is changing as climate changes. We must be prepared in order to survive; and be informed in order to prosper.

Peter and Beverley and Hannah Rubenach