

# The Future We Must Plan For

## Forum Summary

*by Roger Taylor, Chair Transport for Melbourne*

### Summary

Transport for Melbourne's annual forum round table 4<sup>th</sup> December was designed to provide a better understanding of the dimensions, scale and complexity of global change and the looming climate emergency, what is causing it and the science that underpins it. It presented actions to address it, and in the process provided an indication of the future we must plan for.

Whilst evidence of global environmental change is overwhelming and widely accepted throughout most societies, governments, particularly national governments have been slow to act despite cries for immediate action over many years. The science tells us time for action is quickly running out and that humanity has only a few years or even less to get its act together. If this is true, traditional approaches based on incremental change will have to be replaced with action that "kick starts" the process of meaningful and effective global change within a very short time – months rather than years. This means many of the strategies and programs policy makers and planners have been talking about cannot wait another decade or two to be implemented – they need to start now, together with many other programs that are now considered vital to restore the damage and degradation of the biosphere and its capacity to support life. But success will not be achieved by simply bolting these programs onto business as usual. It will require a profound change in human activity: its collective values, aspirations, institutions and the way societies live.

### Introduction

Scientists, philosophers and other critical thinkers have been concerned about the direction human society has taken for many decades – even centuries. Quoting from Rachel Carson's famous book *Silent Spring* written nearly sixty years ago "What we have to face is not an occasional dose of poison which has accidentally got into some article of food but a persistent and continuous poisoning of the whole human environment – on the land, the oceans and waterways, and the atmosphere – and we must include greenhouse gases in this category. Quoting EB White, "*I am pessimistic about the human race because it is too ingenious for its own good. Our approach to nature is to beat it into submission. We would stand a better chance of survival if we accommodated ourselves to this planet and viewed it appreciatively instead of sceptically and dictatorially*". Albert Schweitzer also wrote "*Man has lost the capacity to foresee and forestall. He will end up destroying the earth*".

There were earlier warnings of course and many more since and they have grown louder. These have been consistently ignored by most politicians and decision makers, despite compelling evidence that business as usual may put the planet on a hothouse trajectory that will result in mass extinction.

### Background – Understanding the Science

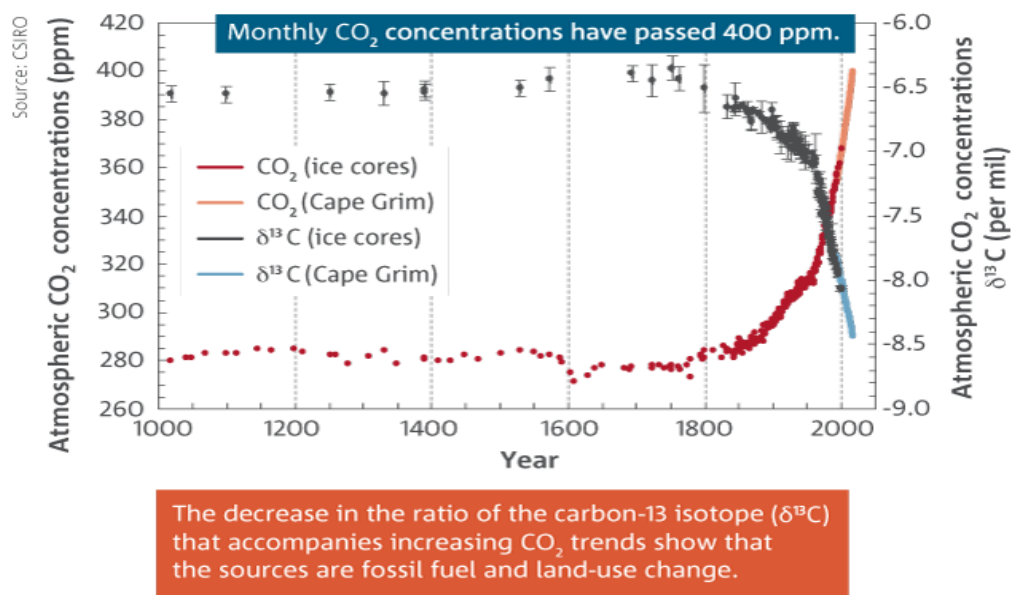
Understanding the dimensions, scale, complexity and magnitude of the environmental challenge and what is driving it must be the first step in developing appropriate responses and strategies for action. Whilst this may seem obvious, it is not reflected in government policy at any level of

government within Australia or even governments elsewhere. Almost without exception government policy is focused on global warming with a narrow strategic response in terms of greenhouse emissions and reduction targets, without reference to changes in the biosphere and its increasingly critical role in determining climate and liveability outcomes, and more immediate needs, particularly food and fresh water.

Whilst findings presented in the forum may surprise many, much of the science in relation to the physics of climate change had been understood for a long time<sup>1</sup> and should have provided sufficient evidence for policy makers to act decades ago. A more complete understanding of the biosphere and its role as a vital element of the functioning of the earth system took longer and is now accepted as critical in understanding the nature of environmental challenges confronting humanity, how to respond and the implications of inaction.

Most recent findings about the physical science presented at this forum are summarised briefly as follows:

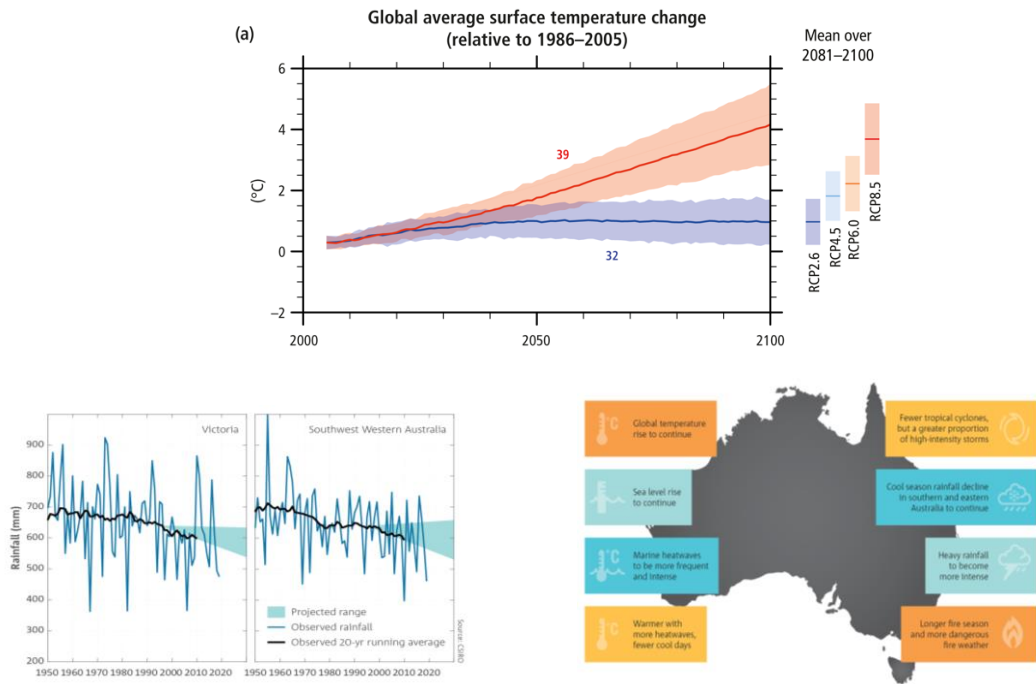
Global temperatures have been rising since the start of the industrial revolution at a time when they were expected to be falling, due in large measure to the large amounts of carbon gas created by burning fossil fuel. The rate of warming has increased dramatically since the end of WW2 however. As noted in the graph and other figures below presented by Prof Karoly, the explanation is clearly identified by examining the trend in the ratio of carbon 13 isotope vs carbon 12.



Global temperature projections based on the physical science are provide below

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<sup>1</sup> **1824** - French scientist **Jean Baptiste Joseph Fourier (1768–1830)** predicts the greenhouse effect – in which the Earth’s atmosphere traps heat and makes the planet warmer than it otherwise would be.



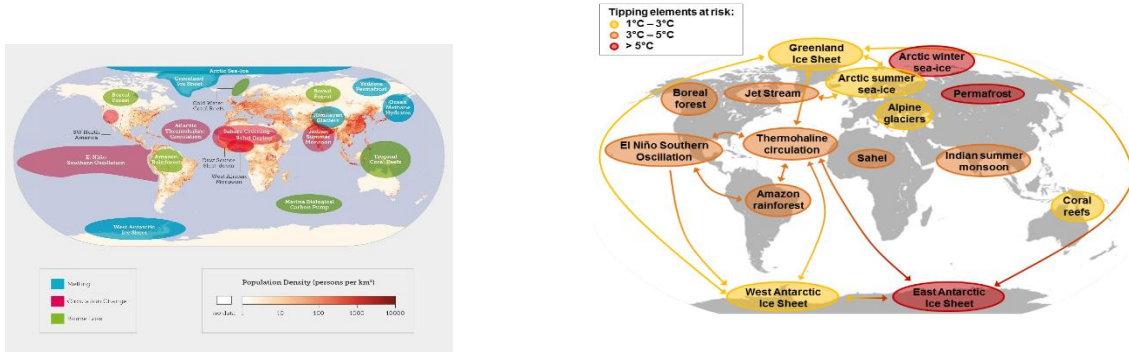
Recommendations from the **United in Science** report informing UN Climate Action Summit Sept 2019, from WMO, UNEP, IPCC, GCP, Future Earth, GFCS are provided below. Of particular note is the need to lower emissions **fivefold** in order to align with a 1.5 degree limit in global warming.



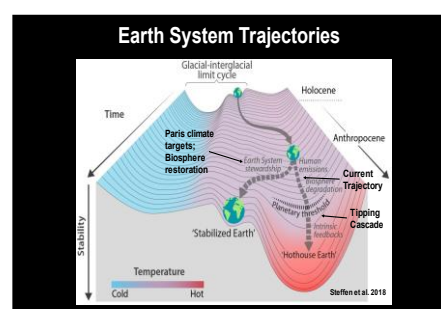
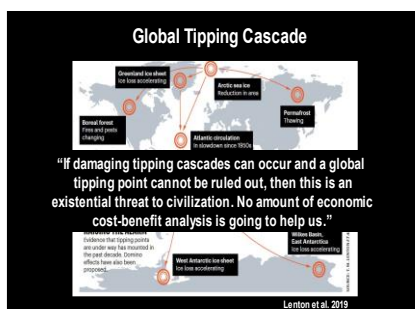
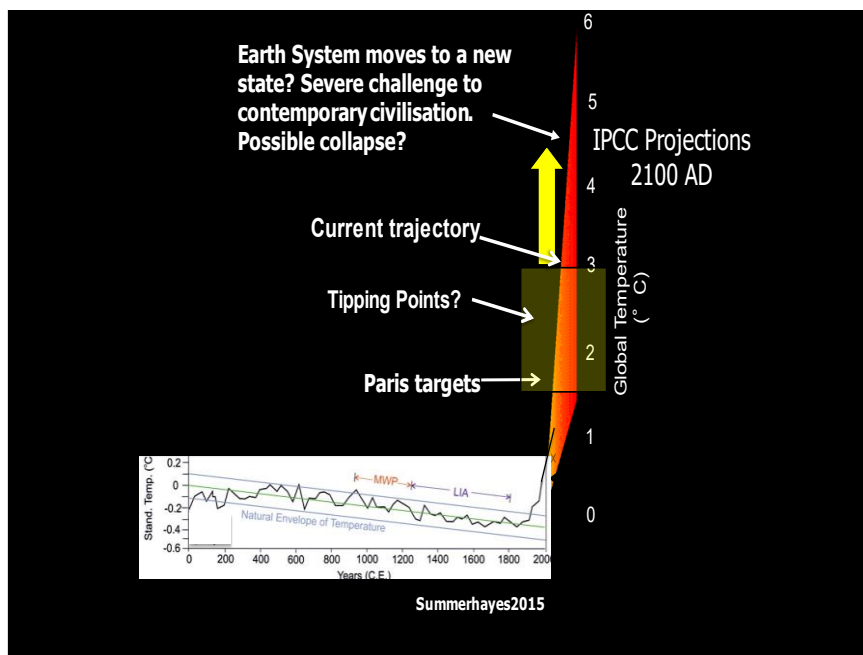
Unfortunately this is not the full story. It is necessary to factor in the human impacts of the transformation of the biosphere, and Nature’s dangerous decline. As noted by Prof Will Steffen

- Global change is occurring at rates unprecedented in Human history
- Around 1 million animal and plant species are now threatened with extinction, many within decades
- The web of life is becoming smaller and increasingly frayed. The impact on the planet’s capacity to support life and provide fresh water, food and other resources/services is profound.

This in turn is affecting the planet's ability to moderate variations in climate. This reduces its capacity to maintain an environment suitable for human life and the population that can be supported. It has also created a number of tipping points where small changes can trigger rapid changes in the earth system. Some of these are illustrated below, but there is the potential for one or more of these to trigger others and create a cascade in which tipping elements become mutually reinforcing. This is highlighted in the figures presented below by Prof Steffen.



This will accelerate global warming and once started will be impossible to reverse. As noted below "If damaging tipping cascades can occur and a global, tipping point cannot be ruled out, then this is an existential threat to civilization. No amount of economic cost-benefit analysis is going to help us."



## Implications and Actions

Implications of global biophysical change are profound and will impact all societies at every level. Action must be taken to reduce greenhouse emissions (by 125% by 2030) but this is only part of the problem. Further actions will be critical, particularly with respect to the protection, preservation and restoration of the biosphere. Some of the actions required include the need to

- Reduce our consumption and the demands we make on the planet's natural resources
- A giant Landcare/Earthcare project to restore much of the environment we have trashed – not just in Australia but throughout the world
- Huge waste reduction, reuse and effective recycling programs to reduce the poisoning impact on our planet and the demand we make on it harvesting the resources we need
- These activities will create many new jobs but we need to value these jobs properly and financially
- Change the way we produce and harvest food – it is this activity which is the cause of many of our environmental problems today
- Recognition that sooner or later we will be forced to depopulate remembering that if we don't the planet will do it for us
- And there is much more, but don't pretend that technology and greenhouse gas reduction on their own will solve our problems.

This has implications for the way people live and work, particularly in our cities, what jobs have value, the population that can be supported, how it can be fed, serviced, maintained and managed, land use and how the economy is structured. Almost certainly travel demand will diminish through sheer necessity as communities come under increasing social and economic stress.

People will be forced to travel/transport goods and services less in terms of distance, less often and more efficiently. The only mode that meets this target for personal travel at this time is active transport – walking and cycling. The challenge for all other travel and transport modes is immense, and could be terminal for air travel/transport. This raises serious question marks about the future of Melbourne's airports and proposals to service/access them. But public transport will also need to become more efficient. This in turn has implications for infrastructure and the need to reduce its cost and promote most efficient modes of travel. This is of particular significance for freeways and tollways which promote more travel rather than less, and encourage people to travel longer distances rather than shorter, more often using least efficient modes (cars and trucks). The inevitable increase in social and economic stress will also challenge government's ability to finance high cost infrastructure, particularly mega infrastructure projects in the State government's big build program.

## The Politics of Climate Action and Ways Forward

Environmental/climate change has been dogged by vested interests intent on maintaining business as usual by downgrading the need for action, often attempting to discredit or call into question the science and making it a political issue. This has been supported by very skilful public relations campaigns which have been maintained for many decades. As Prof Robyn Eckersley noted in her presentation "the rise of nationalist populism (which rejects science, cosmopolitan elites along with internationalism and globalisation) has made it harder to build support at the national level for the protection of planetary boundaries. Nonetheless, we are stuck with the states, and the success of the Paris Agreement now depends on national action".

Eckersley argues “that the state (including at national and sub-national level) must play a necessary and crucial role in facilitating the energy transition and ecological transformation. Further that while our national government lacks the motivation for this kind of change, sub-national, city and municipal governments have been much more responsive to public concern, thanks to political mobilisation in civil society, industry and the financial sector and in many other places, we see the tide slowly turning”.

There is also the possibility of a tipping point in community action, particularly amongst younger people which may promote much faster political change. It is possible increased frequency and severity of natural disasters, such as bushfire/firestorms and other weather events may help sharpen the focus and increase pressure for action by political and business leaders to act. Whilst any change of this kind is promising the rate of change under this scenario may not be fast enough, nor sufficiently transformative to avert a climate calamity. There is therefore a compelling case to look for other strategies/mechanisms that can trigger a more immediate and more transformative response that involves all tiers of government and be applied at an international level.

Prof Johan Rockstrom has described our situation as so serious it will require an effort equivalent to the Apollo program to achieve success. Apollo was a large-scale concerted effort involving science, politics, the public sector and industry employing resilience and creativity. There was a common goal. With climate, he argues there is little time left. We have ten years to transition the whole world to a new logic. Success or failure lies in our hands.

## **Summary and Conclusion**

Scientists are telling us we have almost run out of time if we are to avoid a climate calamity and humanity may have only a few years left – or even less to get its act together. Traditional approaches are not working – they take too long and have a poor track record so a new approach is needed. Time has run out for incremental change; the switch needs to be turned on now, but success will require action on many fronts driven by fundamental system change. This means major behavioural change (reliance on technology will not be sufficient, and on its own may make matters worse) underpinned by new values and a relationship with the natural environment based on mutual cooperation and respect, with acceptance that

- our species is an integral part of the biosphere, that we are dependent, one way or another on all other species on this planet for our survival,
- that if we continue to destroy other species as we are doing now on a massive scale we are destroying our own future. To put this in context we are in the middle of the 6<sup>th</sup> greatest mass extinction event this planet has witnessed – all the result of human activity.
- And a new respect for life in general.

All of this has huge social, economic and political implications and will put our institutions under enormous stress. It will challenge our democratic processes. It is clear business as usual or inaction is a plan for extinction. We need a plan that is redefined as a plan for survival, with a formal declaration of a climate emergency, based on the understanding that the emergency is real and must be addressed now at any price and do whatever is necessary to avert it.