

# Welcome to the Arbustocene

THE beginning and end of each geological epoch is marked by a major, often cataclysmic, event affecting Earth's biophysical environment. Most often major periods in Earth's history requiring a new epoch to be named are remarkable by the mass extinction of dominant life forms and their eventual replacement by new groups of organisms which then dominate Earth's ecosystems. Only once in pre-history were these spectacular evolutionary events precipitated by a physical or chemical change to Earth's atmosphere as a result of biological activity. This occurred early in Earth's history with the release of "polluting" oxygen after the evolution of photosynthesis. More frequently, punctuations in the evolution of life have been brought on by some virtually instantaneous disruption to climate by extreme volcanic activity or an asteroid strike, such as that which heralded the end of dinosaurs and the dawn of the age of mammals. In these instances, changes to the capacity of Earth's atmosphere to absorb and reflect light and heat from the Sun initiated a period of rapid global climate change leaving insufficient time for organisms to migrate or adapt.

The preceding paragraph is a simplistic description of Earth's biological history, and most readers no doubt can think of numerous exceptions. However, our simplistic description of mass disruptions to life on Earth is close enough to the truth to be plausible. It is also a reasonable description of how Earth is changing in our lifetimes. The only significant difference between our description of past events and our current environment is that the changes we are witnessing today are the consequence of the activities of a single species, *Homo sapiens*.

Humanity is now the dominant animal on our planet. People have modified every square centimetre of Earth's surface, are changing the climate rapidly — perhaps catastrophically — and now mobilize many minerals at rates faster than wind and water erosion. Human beings are causing an extinction episode on a scale unprecedented since the demise of the dinosaurs 65 million years ago, and in the process wiping out critical elements of our life-support systems. They have reduced oceanic fisheries to a level far below their pre-industrial levels, overfishing many stocks, and adversely affecting the productivity of the oceans.

The scientific community has warned repeatedly of the disastrous course taken by our species, a course which threatens to transform

life on Earth and, for all intents and purposes, irretrievably change Earth's physical environment and climate. The most recent of those warnings came in the form of the Millennium Ecosystem Assessment, released early in 2005. Despite strong warnings and the advent of changes that even the most gullible of lay persons can read about daily and sometimes experience, the leaders of both the United States of America and Australia are determined to continue as if all is well with Earth's environment. The Bush and Howard administrations both seem determined to persist with environmentally destructive policies until global civilization collapses and the great majority of the world's bird, mammal and frog species, at least, are driven to extinction. In this sense, we are clearly entering a new geological era, the Arbustocene, named in honour of America's President, George W. Bush (arbusto is "bush" in Spanish).

Although we honour President Bush in this way, this does not mean we attribute the present massive loss of Earth's biodiversity or global climate change to him alone. These events were underway long before George W. Bush was appointed President in 2000. The reason for honouring him by naming a new geological epoch in his name is that he and his policies typify the attitudes of all humanity that have brought about these pervasive and rapid changes to Earth's biophysical environment. Bush apparently believes that humanity is independent of Earth's environment. Thus it appears that he does not see the "costs" incurred by exploiting the world's resources for the profit of his supporters and the short-term benefit of the United States with no thought of conservation and sustainable resource management.

That makes this unquestionably the most dangerous era of human history. The most powerful nation on the planet is in the hands of people who place their own short-term interests above those of all other people and above the needs of future generations. Unfortunately, while many of the world's politicians and leaders are horrified at the new American empire, many also appear too willing to follow America's lead and none seem aware of the danger of global environmental collapse.

Most, if not all, conservation biologists would prefer a different kind of world than the one we live in. Speaking for ourselves, we would prefer a world with a slowly declining, instead of a rapidly increasing, population; a world with greater equity among peoples, ages, genders,

and sexual preferences. We would also like to see a world with less consumption of resources by the rich, in which equity among people was achieved without the huge increases in global energy demands and resource consumption occurring today. Especially, we would like to see a rapid reduction in the emissions of greenhouse gases achieved through energy efficiencies and greater use of solar, wave and wind technologies. We, like most people, would prefer a just world where people cared about and for one another regardless of race, religion, colour or nation of origin. In our desired world there would be no detention centres or refugee camps.

None of our preferences is unique. Almost all of our vision for a just world and sustainable environment is at the core of all the world's religions and has been spoken about by world leaders, philosophers and biologists for centuries. Why then do we have a world dominated by the policies and actions of people like George W. Bush and John Howard, Australia's current Prime Minister.

The governments of the United States and Australia, virtually alone among industrialized nations, have refused to sign the Kyoto Treaty — a treaty which, if nothing else, admits to the reality of global climate change and recognizes the consequences of global warming for all life on Earth. It is a treaty that accepts humanity as the driver of increasing levels of greenhouse gases in the atmosphere leading in turn to accelerated global warming. Neither George W. Bush or John Howard and their governments are prepared to acknowledge what the great majority of the world's climate scientists accept — that the Earth is getting warmer, climate is changing and human beings are the cause. Neither government espouses sound environmental policies and the Bush administration seems determined to unravel the nearly 40 years of environmental legislation and progress towards clean air and water, and biodiversity conservation initiated by visionaries of Rachel Carson's "Silent Spring" generation.

The Australian government, irrespective of political persuasion, has never acted strongly to protect Australia's environment. Nor has any Australian politician or government, not even Gough Whitlam, recognized the fragility of the Australian continent and the limits this imposes on population size and resource use. Nevertheless, the severity of environmental problems — dryland salinity, drought, loss of populations and species, overexploitation of fisheries and

forests, among others — facing Australia as a legacy of more than 200 years of poor land and water management means that the inaction on environmental matters by the current Australian government will have serious adverse impacts on future generations. The Bush administration's weakening of America's environmental legislation and pioneering conservation policies of the 1960s and 70s will have similar dangerous results.

It is easy to be critical of national leaders, especially those of rich and powerful nations. But most of us are equally guilty of consuming too much and placing our own self-interest above that of others and of other organisms. When those of us who have had the benefit of university education fail to initiate public debate about environmental policies or the lack thereof, we are as guilty of environmental neglect as George W. Bush and John Howard. Worse, we returned them to office even after we could see their lack of interest in conservation and the wise use of resources.

We have said it before and will no doubt say it again many times, but effective conservation requires good communication with the public. It means scientists engaging the community in learning and debate over the kind of environment we want future generations to be able to enjoy. It is futile to simply sit back and snipe unless we also provide direction.

Where should America and Australia lead the world with new standards of excellence in environmental and resource management? What should we be advising John Howard, George W. Bush and other national leaders to do for the conservation of global biodiversity? What words can we offer the world's leaders besides "use less, use it better, and accept that there will not be enough to go around for everyone to have an American or Australian lifestyle". Can we find ways to convince people of the need to both reduce populations and consume less? Is there a way to educate people to expect less? How do we get governments and people to act before we find ourselves in the depths of the Arbustocene?

The policies of George W. Bush and John Howard will fail the environment and they will fail the future. As conservation biologists, we all need to be there with better policies, new goals and new leaders.

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