



“The Environmental Apocalypse”: Doomsday Reports, Predictions and Critiques

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INTRODUCTION

It can only be described as remarkable the extent to which radical environmentalism resembles classical religious fatalism about the end of time. Several religious fundamentalists, such as Harold Camping, repeatedly and wrongfully predicted and continue to predict the end of the world using biblical references (McFadden, 2013). Similarly, green extremists predict the end of civilization by means of dystopian scenarios, and the irrevocable destruction of the natural world, a consequence of previously unheeded apocalyptic predictions (Garforth, 2005).



The release of the atomic bomb sowed the seeds for popularizing the idea of an environmental apocalypse. During this time, the public was assaulted with predictions of large-scale eco-disasters. In the years following Hiroshima and Chernobyl, environmentalism anticipated similarly occurring, horrific and cataclysmic events throughout the industrial world. To date, while none of these dire predictions have come true, the twenty-first century remains rife with apocalyptic predictions. It appears that from an environmentalist perspective, things can only get worse.

Whether framed in terms of the risks associated with nuclear energy or the destabilization of the earth’s temperature implied by current global warming scenarios, the spectre of the apocalypse and the collapse of all ecological and social systems has yet to come to pass and may probably never come true. History it seems has exposed environmental scientists and extremists to be poor predictors of the future (Bailey, 1993; Garforth, 2005). Despite this undeclared win for humanity, the threat of ecological disaster is still deeply embedded in our social consciousness as the human species’ struggle remains extremely sensitive to claims of apocalyptic disaster especially when faced with the fragility of our own existence (Garforth, 2005).

What is the driving force behind these environmental apocalyptic prophecies? Is it a response to the rift between humanity and nature? Or, is the sole purpose to coerce the public into action to reverse



the patterns of how society has evolved? Whatever the premise, expectations and fears of doom are always being promoted to stimulate public response and propose specific actions.

THE ENVIRONMENTAL APOCALYPSE

The most influential pronouncements of impending environmental and social crisis include the writings of Thomas Malthus, reports by the Club of Rome (especially *Limits to Growth*), Rachel Carson, and today, the media, which preys on human weaknesses and our unhealthy obsession with the apocalypse to drive up their ratings and pander to political agendas. These early writers believed that there were limits within which the earth functioned; thus sustaining life. If and when those limits were surpassed, then the world, as we know it, would cease to exist. (See Table 1)



Doomsday predictions are not relegated solely to environmental extremists as one may have been led to believe. Renowned environmental conservation organizations have also been seduced by the fatalism inherent in all doomsday prophecies. The World Wildlife Fund (WWF), in its *Living Planet Report* (2012), made some bold statements regarding the inevitable destruction of the earth if the current rate of consumption continues unabated (WWF, 2012). The dire predictions were premised on the projected results of a combination of mathematical modelling and worst case scenarios. The report emphatically stated that humankind needs an additional 1.2 planets to

maintain its present standard of living. As an additional 1.2 planets have yet to be found and inhabited, the report suggests that the earth is operating in “overdraft” – living beyond what is biologically productive; a definite recipe for impending ecological disaster (Marano, 2002).



Recently, the Club of Rome issued yet another report which questions the ability of humankind to survive on the planet if it continues on its path of over-consumption and short-termism (Randers, 2012). The report, *2052: A Global Forecast for the Next Forty Years*, states that the main cause of future problems is the excessively short-term and predominantly political and economic model which fosters



and thrives on our unsustainable consumption patterns (Randers, 2012). The issues raised in this report are a re-emergence of similar issues discussed at length in the *Limits to Growth*, the book commissioned for the Club of Rome some 40 years ago. (See Table 1)

The predictions of the Club of Rome were based on the results of computing model/systems analysis that took into account the linkages between various global developments and produced computer simulations depicting possible alternative scenarios (The Club of Rome). Most of the scenarios assumed uninterrupted growth of population and the economy until the turning point is reached around 2030. Based on the data collected by the team, only drastic measures for environmental protection can be taken to prevent or avert the unmitigated disaster.

Of note is that these alarmist predictions have yet to materialize. The rhetoric thus remains utterly speculative, emotional and sensational productions, devoid of scientific rigor, objectivity, and clarity (Killingsworth & Palmer, 2000, p. 175).



Table 1: Environmental Predictions, Explanations and Reality

Authors/Reports	Predictions	Explanations	Reality
Thomas Malthus (1798- 1826)	Unchecked population growth would lead to poverty which eventually will destabilize society	<ul style="list-style-type: none"> • Population explosion would lead to poverty • Human population growth surpasses the ability of the earth to produce subsistence • Disequilibrium in the system would impede progress towards a utopian society 	<ul style="list-style-type: none"> • The ability of the earth to produce subsistence for society continues to increase as technology in food and agriculture continues to expand • Population growth is an inappropriate indicator of poverty. Poverty, in many instances, is caused by inequality in the distribution of income and resources • The idea of a utopian society is a widely discredited concept
Rachel Carson - <i>Silent Spring</i> (1962)	Ecological disaster as a consequence of widespread chemical use (including DDT)	<ul style="list-style-type: none"> • Use of pesticides like DDT was linked to cancer and threatened wildlife 	<ul style="list-style-type: none"> • Scientists remain undecided as to whether the use of DDT is less harmful or more harmful than emphasized • There is further debate as to whether the harmful effects outweigh the potential benefits from the usage of DDT for specific purposes; particularly malaria control
Paul Ehrlich (1968)	Mass starvation – population explosion	<ul style="list-style-type: none"> • Uncontrolled population growth would surpass the ability of the world to produce food 	<ul style="list-style-type: none"> • History proved Ehrlich wrong; while there are incidences of famine in Asia and Africa, political, social and economic factors are more to blame than population growth • There is considerable evidence that there is no shortage of food in the world – it is primarily a problem of distribution and corruption
D. Meadows, D L. Meadows & J. Randers Club of Rome - <i>Limits to Growth</i> (1972)	Ecological instability, uncontrollable decline in population and industrial capacity	<ul style="list-style-type: none"> • Exponential material growth on a finite planet would lead to inevitable overshoot and collapse of the system • The planet would reach its limits within the next 100 years if nothing is done to reverse the trend 	<ul style="list-style-type: none"> • The ability of the earth to provide food and shelter for its inhabitants has yet to be surpassed as technology continues to increase the efficiency with which resources are utilized



<p>Norman Myers - <i>The Sinking Ark: A New Look at the Problems of Disappearing Species</i> (1979)</p>	<p>Projected that 1 million species would be lost by the end of the 20th century at a rate of 40, 000 per year</p>	<ul style="list-style-type: none"> • The rate of species disappearance was estimated as being at least one species per day at the time of Myers writings 	<ul style="list-style-type: none"> • Criticized for exaggeration and over hyping the species extinction scare • No one knows how many species exist on the planet nor how many new species are emerging • Basis for his calculation also criticized as flawed • Numerous criticism – particularly, a dearth of empirical evidence, lack of scientific rigor, inconsistency, poor methodology and failing to take into account the opportunities for adaptation
<p>Jimmy Carter – President of the United States (1977-1981)</p>	<p>Oil and natural gas that we rely on is running out. At the rate of world consumption of oil, we could end up using all of the world’s oil by the end of the next decade. (end of the 1980s)</p>	<ul style="list-style-type: none"> • World consumption growing at rate of 5% each year • Not able to increase domestic production • Unreliability of imports • Mid-east turmoil (Iranian revolution) 	<ul style="list-style-type: none"> • Currently a world glut of oil and natural gas • US production expanding • Williston Basin in North Dakota has a deposit of 500 million barrels of oil—enough to fuel the US economy for about 100 years • Largest untapped reserve in the world is more than 2 trillion barrels in the Rocky Mountains (Stansberry Report – US Geological Survey)
<p>Al Gore – former US Vice President. Nobel Peace Prize 2007</p>	<p>At a UN Climate Conference in 2007 predicted the demise of Arctic sea ice. North Pole would be ice free by 2014</p>	<ul style="list-style-type: none"> • Based on erroneous assumptions; and extrapolation of short term climate data 	<ul style="list-style-type: none"> • Polar ice caps have grown by about 60% • 2014 was the second consecutive year of sea ice expansion (Danish Meteorological Institute, Danish Centre for Oceans and Ice) <p>Gore is roundly criticised for his predictions based on not understanding natural processes</p>
<p>Greenpeace (2008)</p>	<p>Fisheries collapse within the next 40 years</p>	<ul style="list-style-type: none"> • Collapse of commercial fisheries • 90% loss of stocks of large predatory fish • Genetic crop engineering would cause new and horrible food allergies 	<ul style="list-style-type: none"> • The oceans are not picked clean • There are lots of fish in the ocean, but not as many as there would be if we did not rely on the oceans for food • No proof that genetic crop engineering would cause new and horrible food allergies
<p>World Wildlife Fund - <i>The Living Planet Report</i> (2012)</p>	<p>Inevitable destruction of the earth if the current rate of consumption continues unabated</p>	<ul style="list-style-type: none"> • Humankind needs an additional 1.2 planets to maintain its present standard of living • Earth is operating in “overdraft” – living beyond what is biologically productive 	<ul style="list-style-type: none"> • The computing model used to derive the figures is itself subjective • The assumptions are unsubstantiated



MODELS AND SCENARIOS

The global community continues to grapple with the effects of climate change and a myriad of other events associated with the changes in the environment. Examples are the earthquake that destroyed Haiti; the Tsunami that threatened Japan's nuclear safety; the monsoon floods that almost annually wash away homes and livelihoods in India and other lower lying countries in the East; and the hurricanes which batter the Caribbean, the Florida Keys and other parts of the USA. These kinds of events validate the fears and fuel visions of the apocalyptic collapse and impending doom.

Today, popular culture is still inundated with tales of environmental apocalypse and disaster (Lilley *et al.*, 2012). What makes most of these scenarios believable to many people are the scientific models on which they are based. Because these models are presumed to be sound, they distort our understanding of the dynamics of natural processes.

Models

Models are typically used when it is either impossible or impractical to create experimental conditions that allow the direct measurement of outcomes. Stated differently, “models are simplified reflections of reality at some particular point in time or space, intended to promote understanding of the real system” (Gupta & Grover, 2013, p. 45). Models are best understood as tools to communicate a simplified version of a particular system or process. Models are a reflection of what **might** occur based on a **set of assumptions**. Models are not a complete or accurate reflection of the complexities that characterize reality.

Scenarios

Scenarios are plausible representations of the future based on a certain set of assumptions about the future that are based on past trends or behaviours. According to the Intergovernmental Panel on Climate Change (IPCC), “scenarios are images of the future, or alternative futures. They are neither predictions nor forecasts. Rather, each scenario is one alternative image of how the future might unfold. A set of scenarios assists in the understanding of possible future developments of complex systems” (Intergovernmental Panel on Climate Change, n.d.).

Models and scenarios are used to forecast and attempt to mitigate the uncertainty and unpredictability of our future, assuming the assumptions used are complete and accurate. They have been accepted as appropriate tools to examine a range of complex problems such as future trends in population growth and distribution, climate change and diseases. However, the ability of scenarios and models to provide an image of reality is questionable; many physical and social systems, particularly those occurring in our natural environment, are still poorly understood. This means that information on the relevant variables in the system is also incomplete. This



information gap is filled using intuition and communicated through images and stories (Intergovernmental Panel on Climate Change, n.d.).

LIMITATIONS OF MODELS/SCENARIOS

According to the National Centre for Policy Analysis—a non-profit, non-partisan public policy research organization—there are many limitations of the current scientific models including General Circulation Models or Global Climate Models (GCMs), which are used to determine and calculate climate change, global warming, and more specifically, the impact of humans on the planet (Legates, 2002). Some of the known limitations cited by the author include:

- An incomplete understanding of the climate system;
- An imperfect ability to transform knowledge into accurate mathematical equations;
- The limited power of computers;
- The models' inability to reproduce important atmospheric phenomena; and
- Inaccurate representations of the complex natural interconnections.

The use of models in trying to better understand situations has some value—if properly understood. However, the uncritical reliance on models and scenarios to make policy decisions has led many jurisdictions to make major expenditures that were simply wrong—because the decision-makers did not understand the speculative nature of the models/scenarios—or they chose to ignore it in the efforts to look like they “were in charge” and dealing with a problem. Some argue that sometimes this leads to costly solutions to problems that don't really exist.

DEBUNKING THE MYTH

Now that we have an understanding of the limits of scientific modelling, the next step is to debunk environmental self-fulfilling prophecies. The tools and techniques used for most, if not all, of the attempts in predicting the future behaviour of the earth and its natural processes include mathematical modelling, simulations and engineered scenarios. The *World₃* computer model, based at the Massachusetts Institute of Technology (MIT), is an example of a popular scientific modelling tool. This model forecast the collapse of the socioeconomic order and the extensive loss of life in the 21st century, because humans have failed to act accordingly to divert this disaster. While these models are thought to somewhat accurately predict the patterns of natural systems (Pilkey & Pilkey-Jarvis, 2007), predictions are biased by the influence of individual subjectivities, preconceptions and expectations and the flaws in the technology itself.

The most recent apocalyptic prediction coincides with the end of the Mayan Long Count Calendar on December 21, 2012. According to Matt Ridley, predictions of global famine and ecological collapse have proved to be just as wrong as the end-of-the-world forecasts from millennialist priests. Without being entirely dismissive, Ridley acknowledges that human populations have encountered obstacles such as public-health emergencies, nuclear disasters, and



mass tragedies from famine, natural disasters and wars. Nevertheless, Ridley and many others note that the promised Armageddon, the eco-disaster where we have reached an environmental threshold beyond which the world will fail to exist, has consistently failed to materialize (Ridley, 2012).

CONCLUSION

Predictions are just that, predictions. They are neither science nor flawless. Despite innovations made in modelling, it still remains highly improbable to accurately predict the future or the ability of future technological innovations to resolve seemingly intractable problems (Warren, 2010). This is the fundamental weakness behind most, if not all, prophecies. Because of their futuristic outlook, it becomes impossible to know without a doubt the impact of science and technology and sheer human resilience and ingenuity. Additionally, far from calling people to arms, continued apocalyptic predictions often result in passivity and inaction and or a reactionary approach to real issues that require a proactive approach.



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