



**HOPE IN THE FACE OF
ECOLOGICAL DISASTER**

JONATHAN BOSTON

INTRODUCTION

A combination of technological innovation, remarkable enterprise and robust institutions has enabled humanity to generate extraordinary economic growth since the Second World War.¹ This growth has yielded a dramatic improvement in living standards and a substantial reduction in poverty and material deprivation. But these benefits have been secured at a substantial cost to the global environment. Such costs include habitat destruction and degradation, air, land and water pollution, ozone depletion, soil erosion and desertification, the over-exploitation of critical natural resources, climate change, ocean acidification and massive deforestation – to name some of the most important. Currently, the ecological costs arising from various human activities are rising rapidly and becoming increasingly evident. As a result, humanity now faces formidable environmental policy challenges. Failure to address these challenges expeditiously and effectively will lead to a large-scale loss of biodiversity, massive ecological degradation and a major threat to economic and social progress. Indeed, there is a risk, as the OECD has recently argued, of “irreversible changes that could endanger two centuries of rising living standards.”²

There is already much to lament. Many species have been lost, many unique ecosystems have been destroyed and many extraordinarily beautiful landscapes have been irrevocably scarred. Worse, even more damaging environmental impacts are now inevitable. This is because of path dependence. In other words, there is much inertia in many natural and human systems – the climate system, energy systems, transport systems and political systems. Accordingly, there are often very long lags between taking action to address a problem and securing the desired response. In the case of the climate system, the lags can be hundreds or even thousands of years.

1 This article is based on a sermon, “Lament, Hope, Action,” preached on 7 October 2012 at St John’s in the City, Wellington. A very much shorter version of the sermon was published as: Jonathan Boston, “Christianity and the ecological crisis: ‘lament, hope and action,’” *The Nathaniel Report* 38 (Nov 2012): 6–7. I owe a large intellectual debt to Christopher Southgate, especially two recent books: Christopher Southgate, *The Groaning of Creation: God, Evolution, and the Problem of Evil* (London: Westminster John Knox, 2008) and David G. Horrell, Cheryl Hunt and Christopher Southgate, *Greening Paul: Rereading the Apostle in a Time of Ecological Crisis* (Waco: Baylor University Press, 2010). I would also like to thank Les Brighton, Victor Lipski, Graeme McLean and Andrew Shepherd for their helpful comments on an earlier version of this paper.

2 OECD, *OECD Environmental Outlook to 2050: The Consequences of Inaction* (Paris: OECD, 2012), Highlights, 1. Online: <http://www.oecd.org/environment/indicators-modelling-outlooks/oecdenvironmentaloutlookto2050theconsequencesofinaction.htm>. Accessed 5 March 2013.

On what basis, therefore, can we be hopeful for the future and what, if anything, can we be hopeful of? This article briefly addresses this question.

THE GOODNESS OF CREATION

Humanity is blessed to inhabit a planet of exquisite beauty, diversity, richness and wonder; a planet set within a cosmos of extraordinary scale, grandeur, splendour and mystery. To gaze heavenward on a clear night is to observe a wondrous, awe-inspiring spectacle. Undoubtedly, as Psalm 19 proclaims, “The heavens declare the glory of God.” Similarly, to witness the miracle of new life is to be filled with joy, delight and excitement. What an amazing world we have been blessed to inhabit! God’s glorious handiwork is truly mind boggling. To quote from Psalm 8,

When I consider your heavens,
the work of your fingers,
the moon and the stars,
which you have set in place,
what is mankind that you are
mindful of them,
human beings that you care for them...
O Lord, our Lord,
how majestic is your name in all the
earth (NIV).

Unsurprisingly, the first chapter of Genesis culminates with the firm proclamation that “God saw everything that he had made, and indeed, it was very good” (Gen. 1:31).

Yet the nature of this goodness needs clarification. After all, the development of the created order is ongoing; it is in the process of becoming. New stars continue to be born; species continue to evolve. Further, cosmologists believe that the universe of which we are part will eventually end, possibly collapsing in upon itself to become a black hole singularity – in a so-called “big crunch.”

Aside from being “transient,” the universe is also marked by tensions and ambiguity: there is much to marvel at and delight in, but also much to disturb, not least the pain and suffering evident across the natural world.

In what sense, then, is God’s creation “very good?” There are various possible responses to such a question. One option is to argue that the cosmos (whether from its very origins or from some specific point in its development) has all the required qualities or properties of being “very good.” Such qualities might include beauty, majesty, diversity, excellence, and so forth. To be “very good,” of course, does not require “perfection” or “completeness,” but

it certainly implies that the creation is of high quality and has many virtues.

Another option, which was originally advanced by Saint Irenaeus of Lyons in the second century, is to think of goodness in terms of “that which is destined for perfection,” as Colin Gunton has put it.³ From this perspective, the assessment of creation as being “very good” refers to the point when temporal history as we know it ends and the cosmos is renewed and redeemed by God – not replaced or done away with, incidentally, but revitalised and transformed. To quote the theologian Wolfhart Pannenberg: “Only in the light of the eschatological consummation” when God will be “all in all” (1 Cor. 15:28) and the creation is fully perfected will the verdict of “very good” be utterly appropriate.⁴ Only then, from this perspective, will God’s creation be truly fulfilled, completed and at peace, liberated from evil, pain, death and transience. Only then will God’s purposes for this amazing creation be fully achieved.

Whether the creation is judged as being “very good” from the early beginnings of the cosmos or, alternatively, from an eschatological perspective, we certainly want to say, on the basis of the Biblical witness, that God has endowed the created order with great value and that the world in which we live ought to be treasured and respected. Equally, the account in the early chapters of Genesis makes it abundantly clear that humanity has a divine mandate to care for God’s creation and exercise wise stewardship. This is not a matter of choice; it is an unequivocal imperative.

OUR ULTIMATE HOPE AND THE GROANING OF CREATION

The claim that the created order will eventually be renewed constitutes what theologian Richard Bauckham refers to as our “ultimate hope.”⁵ This hope, in short, is founded on Christ’s incarnation and resurrection. In Christ, God entered human history – “the Word became flesh and dwelt among us” (John 1:14). In so doing, God embraced, experienced and endorsed the material world; but he also transformed it. To quote Bauckham, our

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“unconditional hope... rests on God’s faithfulness to his creation and the promise made in the resurrection of Jesus Christ from the dead.”⁶ In other words, the self-giving of Christ and his bodily resurrection not only confirm God’s deep concern for the material world, but also signal his commitment to its eventual renewal and transformation. Related to this, as Christopher Southgate puts it, “the Christ-event takes all creaturely experience into the life of God in a new way,”⁷ thereby making possible the transformation of life and matter in the age to come. In this new heaven and new earth, according to the biblical witness, the whole created order (which potentially may include numerous non-human species) will be redeemed. In this new era, in other words, there may well be a multiplicity of creatures living some form of resurrected life. If so, humanity will certainly not be alone!

Today, we live in anticipation of this “ultimate hope.” But we do so while abiding in what Dietrich

Bonhoeffer called the “penultimate” age⁸ – or the period of overlap between the end of one age and the age to come. Today, in this penultimate age, there is no perfection. Rather, there are both splendour and suffering, triumph and

travail, astounding beauty and agonising affliction, self-giving love and selfish endeavour. The Apostle Paul highlighted all this in Rom 8:18–24, when he spoke poignantly of the whole created order “groaning, as in the pains of childbirth” and being in travail, subjected to the “bondage of decay” or futility – that is (at least on one interpretation) a futile cycle of birth and death.

Whereas Paul talked of the “groaning” of creation, today, viewing this through the lens of evolutionary biology, we would say that the natural world is characterised by competition, predation, violence and pain. They are an intrinsic part of the very fabric of life. So too are loss, decay, deleterious mutations, and death. Indeed, biological life as we know it would be impossible without the phenomenon of death; it is essential for regeneration. Likewise, while the process of natural selection generates excellence, this excellence is double-edged: there is an excellence in both the art of killing and the art of survival, excellence in both predator and prey. To quote the environmental philosopher Holmes

³ Colin Gunton, *The Triune Creator: A Historical and Systematic Study* (Edinburgh: Edinburgh University Press, 1998), 56.

⁴ Quoted in Christopher Southgate, *The Groaning of Creation*, 16

⁵ Richard Bauckham, “Ecological Hope in Crisis?” John Ray Initiative, JRI Briefing Paper 23 (2012): 2. See also Richard Bauckham, *The Bible and Ecology: Rediscovering the Community of Creation* (Waco, Baylor University Press, 2010).

⁶ Richard Bauckham, “Ecological Hope in Crisis?” 2.

⁷ Christopher Southgate, *The Groaning of Creation*, 77.

⁸ Dietrich Bonhoeffer, *Ethics* (New York, Simon and Schuster, 1995), 103–10.

Rolston: “The cougar’s fang has carved the limbs of the fleet-footed deer, and vice versa.”⁹

Put bluntly, then, God’s evolving creation is deeply ambiguous. It exhibits both positive and negative values. There is good and evil. There is great majesty, orderliness, cooperation, interdependence, productivity and thriving. Yet there is also randomness, selfishness, brutality and suffering, and even apparent wastefulness. William Blake captured this brilliantly in his arresting poem *The Tiger*. He spoke of the tiger’s “fearful symmetry” and nature being marked by “deadly terrors” and “dread.”¹⁰ The one who crafted the gentle, shy, bleating lamb also shaped the tiger’s prowling, pervasive and potent symmetry.

Moreover, the God of whom the biblical writers speak so eloquently – the one who made this universe, who sustains all things by his powerful word, who became the Lamb of God who takes away the sin of the world – this very God also made a world where great tragedy is possible, where there is the potential for colossal destruction and enormous harm. Indeed, not only are dreadful, catastrophic things possible, they actually happen.

Over the past 540 million years, for instance, we know of at least five mass extinction events, that is, events where more than 50% of this planet’s species were destroyed. The most recent such event was about 65 million years ago. It witnessed the demise of the dinosaurs and countless other creatures.

THE CURRENT ECOLOGICAL CRISIS

Tragically, we are now in the midst of a sixth great extinction event.¹¹ It is underway and gathering pace. Whole ecosystems are being destroyed; whole kinds of life are being lost forever. But what makes this latest mass extinction different from those of previous epochs is the cause. The reason lies not in massive volcanic activity or asteroid impacts, but the wilful actions of human beings. Put bluntly, human

9 Holmes Rolston III, *Science and Religion: A Critical Survey* (Conshohocken: The Templeton Foundation, 2006), 134.

10 William Blake, “The Tiger,” in Sir Arthur Thomas Quiller-Couch, *The Oxford Book of English Verse* (Oxford: Clarendon, 1919, [1901]), no. 489. Online: <http://www.bartleby.com/101/489.html>. Accessed 5 March 2013.

11 There is a vast literature on this issue. For a brief introduction see Elizabeth Kolbert, “The Sixth Extinction,” *The New Yorker*, 25 May 2009. Online (by subscription): http://www.newyorker.com/reporting/2009/05/25/090525fa_fact_kolbert. Accessed 5 March 2013.

beings are the cause of this unfolding tragedy. And, moreover, we know exactly what we are doing, how we are doing it, and what the consequences will be.

We are destroying the life-blood of the planet. We are devastating the great tropical rain forests – known as the “lungs” of the Earth. We are polluting the streams, waterways, lakes and oceans. We are destocking the oceans of fish. We are changing the chemistry of the atmosphere and warming the planet. We are eroding the fertility of our soils. We are draining the earth of its precious supplies of fossil water and fossil fuels, built up over hundreds of millions of years. And we are disrupting unique and fragile ecosystems all across the planet. As Pope Benedict observed at his Inaugural Mass in 2005, “The external deserts in the world are growing, because our internal deserts have become so vast.”¹²

The magnitude of what is being lost, of course, is largely invisible to most people – as are the risks that lie ahead. Most people now live in urban areas.

They have little detailed knowledge of ecology. They do not witness the unfolding drama of death and destruction in the natural world. But there are ways of tapping into this world. For instance, Bernie Krause, a musician and naturalist, has spent some four decades making

sound recordings of many of the world’s most pristine habitats, including some 15,000 species. But the loss of species over recent decades has been so great that around half these recordings are now archives – they cannot be repeated either because the relevant habitats have ceased to exist or because they have been so compromised by human noise. As Krause has put it,

A great silence is spreading over the natural world even as the sound of man is becoming deafening... Little by little the vast orchestra of life, the chorus of the natural world, is in the process of being quietened. There has been a massive decrease in the density and diversity of key vocal creatures, both large and small. The sense of desolation extends beyond mere silence. If you listen to a damaged soundscape... the community [of life] has been altered, and organisms have been destroyed, lost their habitat or been left to re-establish

12 Benedict XVI, “Mass for the Inauguration of the Pontificate of Pope Benedict XVI,” 24 April 2005. Online: http://www.vatican.va/holy_father/benedict_xvi/homilies/documents/hf_ben-xvi_hom_20050424_inizio-pontificato_en.html. Accessed 5 March 2013.

their places in the spectrum. As a result, some voices are gone entirely, while others aggressively compete to establish a new place in the increasingly disjointed chorus.¹³

In short, the human impact on the Earth's fragile ecosystems is taking a large toll. We are living beyond our means. Our ecological footprint is too big. We are exceeding our safe planetary boundaries.¹⁴ We are borrowing from the future and leaving our grandchildren a dreadful legacy in the form of a huge ecological debt.

If we continue on our current path, the implications are abundantly clear. We will radically reduce the planet's biodiversity. We will destroy millions of species, many yet unidentified. And we will make this planet much less hospitable for human life.

These claims are not the wild fantasies of extremists; nor are they some cruel scientific hoax. They are the studied conclusions of thousands of the world's best scientists.¹⁵

Thus far, their concerted pleas for humanity to change its ways have largely gone unheeded. As a result, the ecological crisis is deepening. Even with radical policy changes now, the legacy of the environmental damage we have wrought will be long and bitter. Much harm is now unstoppable.

To give but one example: recent scientific evidence suggests that global warming will cause the sea level to rise by as much as a metre by the end of this century, and many more metres in subsequent centuries. There is little we can now do to prevent this. Yet even a rise of one metre will displace millions of people globally and expose around 500

million additional people to flooding.¹⁶ A rise of two metres could displace nearly 200 million people, eliminate whole nations and do immense damage to coastal property, infrastructure and ecosystems all over the world, while a rise of ten metres is likely to displace as many as one billion people.¹⁷ The President of Kiribati, Anote Tong, spoke at my Institute at Victoria University of Wellington in early June 2008. He lamented that within fifty years his small nation of around 104,000 people living across some thirty atolls will need to be relocated. But where are all these people to go? Will we welcome them here in New Zealand?

Moreover, New Zealand, as an island nation, will have major problems of its own to contend with. Most of our major cities are located on the coast, and vital parts of our transport infrastructure are only a few metres above the current sea level (e.g. Auckland International Airport). Over the coming century we will be forced to invest heavily in coastal defences

and/or the relocation of roads, rail-links and other transport facilities.

There is thus much to lament. And perhaps we should grieve all the more that the species who is wreaking such havoc is the one who bears the image of God, who is charged with the wise stewardship of this

planet, and who ranks as the crowning pinnacle of the Earth's 4.5 billion year journey. There are some sobering ironies in all of this.

A CHRISTIAN RESPONSE

What might constitute a proper Christian response to this state of affairs? Our ultimate hope for creation may be clear and secure, but what hope, if any, can we have for the here and now – and especially for the next few centuries? In other words, what proximate hope, if any, might we point to? To be more specific, will God allow humanity to destroy

13 Quoted by John Vidal, A Great Silence is Spreading over the Natural World, *The Guardian*, 3 Sept 2012. Online: <http://www.guardian.co.uk/environment/2012/sep/03/bernie-krause-natural-world-recordings>. Accessed 5 March 2013.

14 See, for instance, Johan Rockström, et al., "A Safe Operating Space for Humanity," *Nature* 461 (24 Sept 2009): 472–75; John Rockström, et al., "Planetary Boundaries: Exploring the Safe Operating Space for Humanity," *Ecology and Society*, 14, 2 (2009): Art. 32. Online: <http://www.Ecologyandsociety.org/vol14/iss2/art32/>. Accessed 5 March 2012.

15 See, for instance, "United Nations, Millennium Ecosystem Assessment, 2005." Online: <http://www.millenniumassessment.org/en/Index-2.html>. Accessed 5 March 2013; OECD *Environmental Outlook to 2050: The Consequences of Inaction*; Susan Solomon, et al., (eds.) *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge: Cambridge University Press, 2007).

16 P. Vellinga, "Sea Level Rise Scenarios," Presentation at the 4 Degrees Conference at the University of Oxford, 28–30 September, 2009; R. Nicholls, "Impacts of Sea-Level rise at 4°C and Above," Presentation at the 4 Degrees Conference at the University of Oxford, 28–30 September 2009.

17 See M. New et al., "Four Degrees and Beyond: The Potential for a Global Temperature Increase of Four Degrees and its Implications," *Philosophical Transactions of the Royal Society A*, 369, 1934, 2011. Online: <http://rsta.royalsocietypublishing.org/content/369/1934.toc>. Accessed 5 March 2013.

much (or all)¹⁸ of the life on this planet or will he act decisively to prevent such an outcome?

In my view, we are not in a position to answer this latter question; we simply do not know. On the one hand, it is clear that God has given human beings a remarkable degree of freedom, including the freedom either to destroy or affirm his creation. On the other hand, God may not be prepared to tolerate damage, destruction and suffering beyond a certain threshold. Perhaps there is such a threshold; perhaps there is not. I, for one, certainly do not know. Yet this lack of knowledge does not alter or diminish our responsibility to be wise stewards of the amazing gift God has bestowed upon us. Our mandate to care for the creation, as noted earlier, is clear and unequivocal.

But what else might we say as Christians in response to the growing ecological crisis? Let me offer six quick reflections.

First, we ought to be utterly realistic about what the future holds. We need to recognise and acknowledge fully the disturbing challenges confronting humanity. Undoubtedly, there is the potential for the actions of human beings to eliminate much of the life on this planet. We have the means and we are currently deploying these means with few constraints. As Christians, moreover, we know the force of sin; we know the power of evil; we know the sway of greed. There is thus no place for complacency. Nor is there any room for denial, avoidance, evasion or escapism. Indeed, it is instructive in this regard to ponder the sobering imagery of the book of Revelation, especially the seven plagues referred to in chapter sixteen. The specific nature and grave impacts of these plagues have some remarkable parallels to the kind of environmental catastrophe that humanity has the potential to bring about. Of course, great care is needed in interpreting prophetic literature, such as that encountered within Revelation. There are considerable risks, for instance, in suggesting that the vision of plagues represents a reliable prediction of what lies in store for this planet. Nevertheless, it is enlightening, and in some ways comforting,

¹⁸ There is debate over whether the Earth could experience a runaway warming and become like Venus – too hot for any form of life – but some distinguished scientists do believe that this is possible. See, for instance, James Hansen, *Storms of My Grandchildren* (London, Bloomsbury, 2009), 223–26.

that even the worst ecological outcomes that can be imagined as a result of long-term environmental degradation and human-induced climate change are not beyond the scope of the biblical witness or completely foreign to its message. This suggests, amongst other things, that there is nothing humanity can undertake or give rise to, whether for good or ill, that lies outside the knowledge, overarching purposes and redemptive power of God.

Secondly, we must avoid being overwhelmed by the magnitude of the task ahead or paralyzed by fear, foreboding or depression. For Christians, there are no grounds for defeatism or fatalism. Rather, we must take the moral high ground. The path we follow should be informed by the best available evidence and guided by wisdom, prudence and precaution. And it must recognise humanity's unique ethical responsibilities for the whole created order, of which of course *homo sapiens* is an integral part. We need, in this context, to be constantly reminded of Jesus'

comforting words when his disciples were fearful or anxious, as during the storm on the Sea of Galilee: "Take courage, it is I; do not be afraid" (Matt 14:27); prior to his crucifixion: "Peace I leave with you; my peace I give you. I do not give to you as the world gives. Do not let your hearts be troubled and do not be afraid" (John 14:27); and

after his resurrection: "Peace be with you!" (John 20:21). God has not abandoned us. "Behold," Jesus said, "I am with you always, even to the end of the age" (Matt 28:20).

Thirdly, we should not be presumptuous. We should not expect God to save us from our folly. We cannot lay waste countless ecosystems or destabilise the planet's climate system without suffering the consequences. God calls us to exercise intelligent, responsible stewardship, to protect the natural order and remedy our ways. If we do not, there will be dreadful ramifications.

Fourthly, and related to this, we should avoid an improper faith in the power of technology to save us from the perils that lie ahead. Necessity may be the mother of invention, but we cannot change the basic laws of nature. There are real biophysical limits within which we must live. Extinction is forever. The process is irreversible – at least given our current state of knowledge. Hence, we should not delay in making the required policy and lifestyle changes

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on the basis that “something will turn up” or that “science will save us.” Such an approach would be reckless and irresponsible. Equally, it ignores our tendency for scientific hubris and arrogance, as well as our capacity for duplicity and self-deceit. We have no right to pass the buck to future generations.

Having said this, we need to harness the resources of the scientific community to the fullest possible extent. Mitigating climate change, for instance, will require a radical shift in global energy systems over the next few decades, with a rapid increase in our reliance on renewable energy sources (including solar, wind, geothermal, marine, etc.) and the abandonment of the use of coal, except where there is an effective and safe regime of carbon capture and storage. But for renewable energy sources to be competitive, significant additional technological progress will be required.

Fifthly, the unfolding ecological crisis should not be welcomed – whether on the basis that it signals the imminent return of Christ or on the grounds that previous mass extinctions have led, albeit only after millions of years, to a new flowering in the long evolutionary journey of our biosphere. There is nothing good about destroying countless species or degrading this planet’s life-support systems. On the contrary, it is utterly wrong. It needs to be stopped. Our task, surely, is to slow the natural evolutionary pace of extinction, not drastically to speed it up.¹⁹ Why? Because the biblical witness highlights that our calling is to be co-creators, co-healers and co-redeemers with Christ; and we are to fulfil our calling on this planet, which the Psalmist acknowledged belongs to God: “the earth is the Lord’s and all that is in it” (Ps 24:1). The narrow road we should follow is one of rescue, remedy, reconciliation and restoration; it is not the broad highway that leads to destruction and devastation.

Finally, we must never conclude that our efforts to conserve, heal and restore God’s creation are worthless. Nor should we value such efforts simply on the basis of the progress, or lack thereof, that we can readily see. Doing what is right, responding to the Spirit of God, is important and valuable, regardless of the apparent outcome. When Paul remarks that “our labour in the Lord will not be in vain” (1 Cor 15:58), he does not imply that our

19 For a more detailed argument for slowing the evolutionary pace of extinction, see Christopher Southgate, *The Groaning of Creation*, esp. 124–32.

strivings will inevitably lead to an improvement in our current circumstances. Rather, he means that they “will have effects that will be preserved in the new creation.”²⁰ The nature of these effects we may never know.

But this is where faith is crucial. We worship a God who has entered our history, embraced the life of humanity, and triumphed over the forces of darkness. This God is faithful and full of grace. Hence, as Rowan Williams has put it, “we have to say, as believers, that the possibility of life is never exhausted within creation: there is always a future. But in this particular context – this specific planet – that future depends in significant ways on our cooperation, imaginative labour, on the actions of each of us.”²¹

Hence, the ecological crisis today confronts each of us with a choice. How genuinely human do we want to be? What kind of legacy will we leave for future generations? Will we live in a way that honours rather than threatens the planet? Will we show a reverence for the whole of life? Will we respond to God’s summons to demonstrate responsibility for the non-human world? Or will we continue to create a scarred and impoverished planetary wasteland? God has given us this choice.

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20 Richard Bauckham, “Ecological Hope in Crisis?” 3.

21 Rowan Williams, “The Climate Crisis: Fashioning a Christian Response,” 13 October 2009. Online: <http://www.hereford.anglican.org/news/49/archbishops-lecture-the-climate-crisis-fashioning-a-christian.aspx>. Accessed 5 March 2013.