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1991

Terry Tempest Williams

1955–

An unnatural history

Terry Tempest Williams has been called a ‘citizen writer’, a writer who speaks and speaks out eloquently on behalf of an ethical stance toward life. A naturalist and fierce advocate for freedom of speech, she has consistently shown us how environmental issues are social issues that ultimately become matters of justice.

Williams, like her writing, cannot be categorised. She has served time in jail for acts of civil disobedience, testified before Congress on women’s health issues, been a guest at the White House, has camped in the remote regions of Utah and Alaska wildernesses and worked as a ‘barefoot artist’ in Rwanda.

Known for her impassioned and lyrical prose, Terry Tempest Williams is the author of the 1991 environmental literature classic *Refuge: An Unnatural History of Family and Place*, where she passionately chronicles the epic rise of the Great Salt

Lake and the flooding of the Bear River migratory bird refuge in 1983. Parallel to this she writes about her mother’s diagnosis with ovarian cancer, believed to have been caused by radioactive fallout from nuclear tests in the Nevada desert in the 1950s and 1960s. *Refuge* has since become a classic of American nature writing, a testament to loss and the Earth’s healing grace, with Williams compared to Rachel Carson, Aldo Leopold and Edward Abbey.

118 75

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and *Patience in the Desert*; and *The Open Space of Democracy*. Her new book, *Mosaic: Finding Beauty in a Broken World*, will be published in 2008 by Pantheon Books.

In 2006, Williams received the Robert Marshall Award from the Wilderness Society, their highest honour given to an American citizen. She also received the Distinguished Achievement Award from the Western American Literature Association and the Wallace Stegner Award given by the Center for the American West. She is the recipient of a Lannan Literary Fellowship and a John Simon Guggenheim Fellowship in creative nonfiction.

Terry Tempest Williams is currently the Annie Clark Tanner Scholar in Environmental Humanities at the University of Utah. Her writing has appeared in the *New*

Yorker, the *New York Times*, *Orion Magazine* and numerous anthologies worldwide as a crucial voice for ecological consciousness and social change.

“ . . . what might a different kind of power look like, feel like, and can power be redistributed equitably even beyond our own species? ”



www.coyoteclan.com



Terry Tempest Williams, *Refuge: An Unnatural History of Family and Place* (New York: Pantheon, 1991)

1992

Maurice Strong

1929–

Earth Summit

During the 1960s Maurice Strong, a self-made wealthy Canadian businessman, was President of the Power Corporation of Canada. He left to devote his energies to the Canadian International Development Agency until, in the early 1970s, UN Secretary-General U Thant asked Strong to organise and direct the 1972 Stockholm Conference on the Human Environment. Strong next went on to become the first executive director of the UN Environment Programme.

Perhaps Strong's greatest achievement was as Secretary-General of the Earth Summit, held in Rio de Janeiro in June 1992. One hundred and seventy-two governments took part, including 108 heads of state. Some 2,400 representatives of non-governmental organisations (NGOs) attended, with 17,000 people at the parallel NGO Forum. Agreements were signed on climate change and biological diversity, and the 400-page Agenda 21 was drafted. Subsequent summits have been held every five years to drive forward the sustainable development agenda.

Speaking at the end of the 1992 summit, Strong called it an 'historic moment for humanity . . . It is simply not feasible for sovereignty to be exercised unilaterally by individual nation states, however powerful. The global community must be assured of environmental security.'

In 1992 Strong became Chairman of Ontario Hydro, North America's largest utility company. One of his first recommendations was that the company should buy a 12,500 hectare Costa Rican rainforest as compensation for the harm Hydro was doing to the local environment.

Strong has since served as senior adviser to two UN Secretary-Generals, Boutros Boutros-Ghali and Kofi Annan, and to the president of the World Bank. He is also director of the World Economic Forum, chairman of the Stockholm Environment Institute and of the Earth Council. Since 1999 he has been president and rector of the UN University for Peace in Costa Rica.

“ If we don’t change, our species will not survive . . . Frankly, we may get to the point where the only way of saving the world will be for industrialised civilisations to collapse. ”

📖 Maurice Strong, *Where on Earth Are We Going?* (London: Texere Publishing, 2001)

1992

Edward O. Wilson

1929–

Scientific humanism



Ever since his childhood in Alabama, Edward O. Wilson was fascinated by the natural world, especially insects. Having obtained his PhD in myrmecology (the scientific study of ants), Wilson has remained a research professor at Harvard University for four decades.

But Wilson’s greatest contribution as one of the most influential thinkers of the 20th century was to proclaim the need for traditional religion to adopt more science and for environmentalists to appeal more to humankind’s spiritual impulses. He called this ‘scientific humanism’.

With his books *On Human Nature* (1978), *The Diversity of Life* (1992) and *The Future of Life*, Wilson beats the drum for conserving global biodiversity. He argues that humanity is living through the greatest mass extinction of plant and animal species in 65 million years.

“ Now when you cut a forest, an ancient forest in particular, you are not just removing a lot of big trees and a few birds fluttering around in the canopy. You are drastically imperiling a vast array of species within a few square miles of you. The number of these species may go to tens of thousands . . . Many of them are still unknown to science, and science has not yet discovered the key role undoubtedly played in the maintenance of that ecosystem, as in the case of fungi, micro-organisms, and many of the insects. ”

📖 Edward O. Wilson, *The Future of Life* (Cambridge, MA: Abacus, new edn 2003)

1992

Gunter Pauli

1956–

Zero emissions

Gunter Pauli was 23 when, in 1979, he created the company Ecover to produce ecological soap on a small farm near Malle in the north of his native Belgium. Ecover's products used only natural soaps and renewable raw materials – vegetable extracts, sugar derivatives and natural oils. In October 1992, to worldwide interest, Pauli opened Europe's first eco-factory. A huge grass roof kept the building cool in summer and warm in winter. The water treatment system ran on wind and solar energy. The bricks were made of recycled clay, a waste by-product from coal mining. Pauli wanted to expand, but his lead investor was cautious. He left in 1993.

In 1994, the Tokyo-based United Nations University proposed a commitment 'to ensure that the productive forces in the world can have access to the best minds securing the manufacturing of goods affecting the critical balance of the ecosystem'. The university's rector, Dr Heitor Gurgulino de Souza, called in Pauli as a special adviser to set up ZERI (Zero Emissions Research Institute). Pauli obtained finance from the Japanese government to use the internet to assemble a global network of 300 researchers to evaluate non-polluting future fuels and to redesign manufacturing processes into non-polluting clusters of industries. A World Congress on Zero Emissions was held in Tokyo in April 1995 to help develop these initiatives.

ZERI's focus on integrated biosystems soon led to the initiation of several small industrial-scale pilot projects in Fiji, Namibia and Tanzania. ZERI also developed a 20-hour graduate-level course on zero emissions geared toward senior-level participants from diverse backgrounds, including business, government, education and research. Courses were held in Brazil and Colombia, leading to the founding of a Latin American Zero Emissions Institute.

In his 1998 book *UpSizing* Pauli highlights many examples of businesses where the waste of one company becomes the raw material for others. Materials others view as worthless cascade into a stream of new processes, new products and new wealth, with companies that were previously considered unrelated clustering together. In Gaviotas, Colombia, Pauli is working to expand pioneering rainforest reforestation efforts with a major corporate investment firm. In Japan, he established a major investment fund for growing biomimicry companies into mainstream businesses. Today, ZERI supports around 50 projects worldwide.

“ The full use of raw materials, accompanied by a shift towards renewable sources, means that utilisation of the Earth's resources can be brought back to sustainable levels. ”



www.zeri.org



Gunter Pauli, *UpSizing. The Road to Zero Emissions: More Jobs, More Income and No Pollution* (Sheffield, UK: Greenleaf Publishing, 1998)

1993

Mikhail Gorbachev

1931–

The International Green Cross

During his years as general secretary of the USSR Central Committee, President Mikhail Gorbachev carried out profound changes, liberalising the country through *perestroika*, and being instrumental in putting an end to the Cold War and the arms race.

In January 1989, when addressing the Global Forum for the Survival of Humanity in Moscow, Gorbachev proposed the formation of an organisation that would apply the medical emergency response model of the Red Cross to global ecological issues and expedite solutions to environmental problems that transcend national boundaries.

In 1991, the year after he received the Nobel Peace Prize, Gorbachev stepped down as head of state in the chaos following the abolition of the Communist Party and the dissolution of the Soviet Union.

Two years later, following the Earth Summit in Rio, Gorbachev set about putting together the organisation he had spoken about. A charter was adopted at the first board meeting in Kyoto, Japan, in 1993, and modifications adopted in The Hague in May 1995, as Gorbachev became the first president of Green Cross International. The organisation has since grown to have representatives in 30 countries. Its aims include predicting and resolving conflicts linked to natural resources and tackling the environmental consequences of war.

“ We desperately need to recognise that we are the guests not the masters of nature and adopt a new paradigm for development, based on the costs and benefits to all people, and bound by the limits of nature herself rather than the limits of technology and consumerism. ”



www.greencrossinternational.net

1993

Alexey V. Yablokov

1933–

Striving towards a sustainable Russia

In the late 1980s, Alexey V. Yablokov, a marine biologist, gained prominence when he courageously called attention to the hazards of Soviet nuclear dumping.

From 1992 to 1994, Yablokov was President Boris Yeltsin's top scientific adviser on the environment and health, with an office in the Kremlin. On the office wall was a map showing the location of all the nuclear test explosions and nuclear facilities in Russia, which he considered a major health threat. Under his supervision, the Centre for Environmental Policy published books, white papers and, in 1993, a journal – *Towards a Sustainable Russia*. One report, the result of a working group authorised to accumulate classified information about nuclear dumping in Russian seas, became known as the Yablokov Report.

In his public appearances, Yablokov has never hesitated to recite a litany of East European environmental horrors. Outdated technologies such as open-hearth steel-making and Chernobyl-style reactors have poisoned the air, soil and water, as have misguided attempts to use nuclear explosions to mine diamonds and redirect the course of rivers. Water diversion projects have drained the Aral Sea, making the seabed a vast saline wasteland that poisons the surrounding farmland. Radioactive material has been carelessly disposed of all over the country, from submarines sunk in the Kara Sea to waste disposal in Ismailovsky Park in Moscow. Yablokov describes the human effects of this legacy, from falling life expectancies to rising rates of congenital deformities and reproductive disorders.

In 1997 Yablokov published previously secret data on Soviet whaling, despite protests by the Russian Foreign Ministry and the State Fisheries Committee. In an attempt to bring him to heel, his salary was stopped. Despite this, two years later, he was citing Russian rockets and satellites as causing 50 per cent of the shrinking of the ozone layer: 'If this goes on, in twenty or thirty years, there will be a catastrophe.'

In 2000, when President Vladimir Putin abolished the Centre for Environmental Policy, Yablokov and other members of the Russian Academy of Sciences immediately presented Putin with a protest letter.

From the cramped living room of his apartment in a dilapidated Moscow high rise, Yablokov then set about collecting the signatures of more than 2.5 million Russian citizens to convince Putin of the dangers of pursuing industrial policy at the expense of the planet.

“ Ecological troubles have no limits. In spite of ideological and spiritual differences, we are all citizens of the World Polluted States . . . Environmental interdependence inevitably leads us to a new concept of global security, which includes not only military but environmental security. ”

1993

Paul Hawken

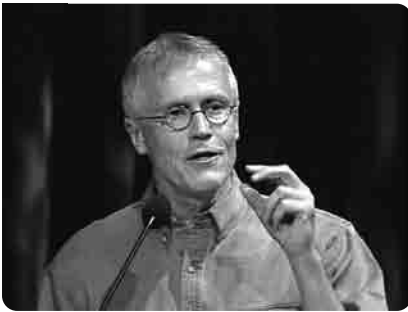
1946–

Author, businessman

During the 1960s, Paul Hawken of Sausalito, California, founded Erewhon, a natural foods wholesaling business that relied solely on sustainable agricultural sources. He went on to co-found Smith & Hawken, a garden supply company based on similar lines. From these experiences, Hawken wrote his third book, *Growing a Business*. Its success led him to produce and host a 17-part public broadcasting service television series of the same name profiling socially responsible business. In time, it would come to be shown in over 115 countries.

Hawken's writing and speech-making were always aimed at directing companies' corporate philosophy towards ecological practices and social justice. His book

The Ecology of Commerce: A Declaration of Sustainability (1993) has been voted the number one college textbook on business and the environment by professors in 67 business schools. It introduced full cost accounting where the entire outcome of an event or process to all parties is taken into account, not just the immediate participants. A decision to build a factory, for example, would include the associated natural resource use, pollution and any side-effects of the production, distribution and



consumption processes. The book also introduced the concepts of restoration as a more suitable goal than sustainability; green taxes; and a resource flow model where waste from industrial manufacturing became 'food' for other manufacturing systems.

Following further research, Hawken went on to co-author *Natural Capitalism: Creating the Next Industrial Revolution* with **Amory Lovins** in 1999. The book popularised the idea of 'natural capital' – a metaphor for the mineral, plant and animal formations of the Earth's biosphere when viewed as a means of production of oxygen, water filter, erosion preventer, or provider of other ecosystem services. In other words, a method of direct accounting for nature's services. 203

Hawken's new book, *Blessed Unrest, How the Largest Movement in the World Came into Being and Why No One Saw It Coming*, was published in May 2007. In it, Hawken describes a convergence of the environmental and social justice movements as the largest and fastest-growing social movement in history, comprising over 1 million organisations in every country in the world.

“ Picture the collective presence of all human beings as an organism. Per-
vading that organism are intelligent activities, humanity’s immune response
to resist and heal the effects of political corruption, economic disease, and
ecological degradation caused by ideologies, whether they are free-mar-
ket, religious, or political. ”



www.paulhawken.com



Paul Hawken, *Blessed Unrest: How The Largest Movement in the
World Came into Being, and Why No One Saw It Coming*
(New York: Viking, 2007)

1993

Birsel Lemke

1950–

Mobilising against gold mining

In the early 1990s, two Turkish companies – Tuprag and Eurogold – proposed hundreds of new gold-mining projects along the Turkish Aegean coast. The proposed extraction technology would use cyanide, which has caused numerous environmental disasters worldwide. The most recent of these was in Romania in January 2000 when 99,000 m³ of mine waste contaminated with cyanide and heavy metals was accidentally discharged into a tributary of the Danube, killing practically all aquatic life along a 400 km stretch of the river.

Birsel Lemke, a board member of Turkey’s Green Party, decided to found the citizens’ initiative Hayir! (No!) to oppose these projects. Her house became Hayir!’s informal headquarters and her financial resources its main source of funds. From here she organised a campaign that gained the support of local farmers and 13 mayors, and led 300,000 people to apply for asylum in Germany on the grounds that mining would make their homeland uninhabitable.

In May 1993 Lemke organised a symbolic meeting in the Aegean of a Greek and a Turkish ship with children, citizens and mayors on board to demonstrate that gold mining using cyanide was not only a Turkish problem. She then took the mayors to Germany, where she had lived from 1975 to 1985 (and whose Dresdner Bank was due to provide funding for the mines), and showed them the Rhein biosphere reserve as an alternative. Dresdner Bank withdrew its finance and Hayir! won support for its stance in both the Turkish and the European parliaments. In 1994 it sued the Turkish Environment Ministry and Eurogold in the courts. In 1997 the Turkish Supreme Court found in Hayir!’s favour and prohibited the extraction of gold using cyanide in Turkey. In 2000, Lemke was the recipient of a Right Livelihood Award.



“ I regard our resistance as a triumph of friendship and of love of one’s native country and culture over the plans of a billionaire industry, which we would have liked to persuade to grow olives instead of mining gold. ”

1993

Randall Borman

1955–

Defender of the Ecuadorean rainforest

In November 1993, Randall Borman, the 38-year-old son of American missionaries and chief of Zabálo, an Ecuadorean village of Cofán Indians, led a band of 35 Cofán followers on an armed visit to an oil well illegally constructed on their land deep in the San Miguel region of Ecuador’s Amazonian rainforest. With spears and shotguns, the Cofáns encircled the well and its crew of startled workers. Thirty-six hours later, following a tense stand-off and extensive negotiations, Borman had what he wanted – the promise of an environmental impact study for the area and compensation in the form of 60 solar panels for the roofs of the Cofán villagers’ huts.

Ecuador’s multi-billion-dollar Amazon-based petroleum industry had been dominated for more than 20 years by the national Petroecuador and multinationals such as Texaco and Occidental. Living among the Cofáns, Borman soon realised that his numerous protest letters sent to petroleum companies pointing out the need to preserve Ecuador’s 13-million-hectare forest biodiversity from ongoing exploitation were having no impact. Taking matters into his own hands, Borman led the Cofáns into direct action, destroying a Petroecuador drilling platform built without permission on Cofán land. To date, none of the Cofán attacks have resulted in physical injuries.

Anger toward oil exploration is growing across Ecuador. A new \$1.1 billion pipeline, now under construction and funded by companies from Canada, Spain, Argentina, Italy and the US, is behind much of it. Borman has continued to campaign for the legal rights of the Cofán nation and for financial aid to protect the rainforest.

“ Unless we take direct action like this, we know our forest and way of life will be destroyed. It has happened elsewhere and it will happen here. ”



www.cofan.org

1994

Ray Anderson

1935–

An environmental epiphany

By the early 1990s, Ray Anderson, of Atlanta, Georgia, had built up his petro-intensive company Interface Inc. into the world leader in the design, production and sales of modular, soft-surfaced floor coverings. Interface traded in 100 countries and manufactured on four continents.

Then, in August 1994, motivated by the need to address a task force convened by the company's research division on Interface's environmental

250 position, he read **Paul Hawken's** book *The Ecology of Commerce*. It changed his life: 'It was an epiphany. I wasn't halfway through it before the vision I sought became clear, along with a powerful sense of urgency to do something. Hawken's message was a spear in my chest that remains to this day.' Anderson offered the task force a vision – to make Interface the world leader in 'industrial ecology'. His mission was to convert Interface to a restorative enterprise, first by achieving sustainable business practices and then helping others achieve sustainability. The strategy was to reduce, reuse, reclaim, recycle and redesign. Interface would adopt best business practices and then advance and share them, developing sustainable technologies and investing in them when it made economic sense to do so, and challenging its suppliers to do the same. Interface named this strategy EcoSense™.

After two years of planning, and in consultation with Hawken and the English designer David Oakey, Interface began a project called Climbing Mount Sustainability. Its goals included eliminating waste, radically reducing emissions and producing more environmentally sustainable products. Today, waste has been reduced by a third. The ultimate aim is to eliminate any negative impacts the company may have on the environment by 2020.

The technical challenges they chose to address included: 'How would nature 273 design a floor covering?' To answer this question, they worked with **Janine Benyus** at the Biomimicry Institute. The outcome, in 2001, was Entropy™, a carpet inspired by random pattern formation in nature. It rapidly became Interface's top-selling line of carpet. Three years later, this biomimetic product is still the company's bestseller. Interface followed up by using fibres made from poly lactic acid/ 242 non-food-grade corn as developed by **Pat Gruber**.

“ If we're successful, we'll spend the rest of our days harvesting yesteryear's carpets and other petrochemically-derived products, and recycling them into new materials; and converting sunlight into energy; with zero scrap



going to the landfill and zero emissions into the ecosystem; And we'll be doing well . . . very well . . . by doing good. That's the vision. ”



www.interfaceflooring.com



Ray Anderson, *Mid-course Correction: Toward a Sustainable Enterprise – The Interface Model* (White River Junction, VT: Chelsea Green, 1998)

1994

José Maria Figuères

1954–

Fostering sustainable development in Costa Rica



José Maria Figuères addresses a crowd of Costa Rican farmers

During the 1970s and 1980s, José Maria Figuères, son of José Ferrer Figuères, the former three-time President of Costa Rica, worked in the Costa Rican agro-industrial sector. Then, in 1994, he too was elected President. His governmental programme was based on moving the country towards sustainable development, with the aim of transforming Costa Rican society from one divided by poverty and privilege to an integrated society that provided opportunities for all.

Figuères worked to change Costa Rica from a country that had little knowledge of how to preserve its natural resources towards one that understood their value and took responsibility for their preservation. One of his first actions was to ratify the UN Conventions on Biological Diversity and Climate Change. In 1995 he approved a tax on carbon emissions.

During his four-year mandate, Figuères set up the Costa Rica Foundation for Sustainable Development, initiating several programmes – LINCOS (Little Intelligent Communities); APVE (an initiative to introduce electric vehicles); and CENTAIRE (Central American Centre for Air Quality Monitoring, Assessment and Management Technologies). He brought together the academic sector, non-governmental organisations and private-sector partners to develop these programmes. He was also one of the main sponsors of the Central American Alliance for Sustainable Development, co-signed by regional leaders in the first year of his presidency. Figuères established an integrated political platform based on the principles of sustainability, capable of generating improved competitive advantages for Costa Rica in the process of economic globalisation.

After leaving the presidency, Figuères was appointed managing director of the World Economic Forum, three years later becoming its first CEO. His responsibilities included coordinating the prestigious annual meeting of the forum at Davos, Switzerland, which brings together prominent corporate leaders, heads of state and government, as well as respected personalities from the academic, cultural and religious worlds. Among his greatest achievements while at the Forum was to strengthen the links between the corporate world and the public sector in order to identify their common long-term interests and visions.

More recently, together with Nicolas Negroponte and Jeffrey Sachs, Figuères founded the Digital Nations Consortium, a programme overseen by the Media Lab at the Massachusetts Institute of Technology. In 2000, he was appointed special representative of the UN's Information and Communication Technologies Group and Task Force.

“ **The enlightened self-interest of business should allow them to take up the most important challenge, that is to advance towards a world civilisation that is more jointly responsible, more inclusive and safer.** ”

 www.josemariafigueres.org

1994

Pooran Desai

1965–

Sue Riddlestone

1960–

The bioregional approach

Following studies at Oxford, Pooran Desai conceived the idea of enabling people to live in a sustainable way within an ecological footprint of two hectares, the per capita environmental space available globally. Desai called this the BioRegional approach. To put this to the test, Desai, together with Sue Riddlestone, formed the charity BioRegional Development Group in 1994 and began to examine how more goods could be made from local resources – particularly waste or renewable resources. Their first project focused on a former sewage works at Beddington, in the south London suburb of Sutton. First they transformed the brownfield site back into the lavender fields for which the area had once been world-famous a century before. The labour was carried out by low-risk offenders from nearby Downview Prison, who cleared the site and planted not only lavender but also other herbs.

Riddlestone also directed the development of a clean technology paper-recycling mill called MiniMill.

In 2000, Desai and Riddlestone worked with architect Bill Dunstan to build the ecological village of BedZed (Beddington Zero Energy Development). It provides 82 homes and gardens, including living/working units as well as standard apartment-style accommodation. Energy saving is achieved by extra insulation in the walls and triple-glazed windows. The small amounts of energy required are generated through a small combined heat and power plant using waste wood from a local tree surgery and solar energy from photovoltaic cells built into the glass of the light and airy buildings. BedZed is close to public transport and a car pool reduces emissions

from private car use. Rainwater is collected, used water is recycled and organic waste is made into compost on site.

At the same time, the Bio-Regional Development Group is working with Imperial College at Wye, Kent, on research into growing flax and hemp locally as an alternative to cotton.

Riddlestone is also a co-founding director of One Planet Living, a joint initiative between BioRegional and WWF. As a member of the London Sustainable Development Commission,

she has worked on setting targets for reducing London's CO₂ emissions and the London 2012 Olympic bid. BioRegional, with WWF, subsequently worked with London 2012 to write the sustainability strategy 'One Planet Olympics'.

Pooran and Sue were married in September 2007.



“ The BioRegional approach is a practical expression of thinking globally and acting locally. Localising the supply of products and services enables us to increase local recycling and reduce unnecessary transport and to create more stable regional economies, protected from the destructive swings of globalisation. ” (Pooran Desai)



www.bioregional.com



Pooran Desai and Sue Riddlestone, *Bioregional Solutions: For Living on One Planet (Schumacher Briefing)* (Dartington, UK: Green Books, 2002)

1994

Steven R. Galster

1961–

Undercover agent

In 1994 Steve Galster, a 33-year-old master's graduate in security police studies at George Washington University, published *Crime against Nature: Organised Crime and the Illegal Wildlife Trade – An Investigative Report*. The same year, Galster created the environmental and human rights group Global Survival Network.

Galster's background has covered investigative research and media campaigning relating to human, arms and wildlife trafficking. He has led numerous undercover investigations into criminal operations relating to these three topics in the former Soviet Union, US, China, Afghanistan and South-East Asia.

In 1993 Galster led an investigative team that uncovered the world's largest rhino horn smuggling syndicate in China, leading to the arrest of the smugglers and a public commitment by the Chinese government to clamp down on the illegal trade.

The following year, he organised Operation Amba, a Russian anti-poaching brigade that helped the Siberian tiger population stabilise after years of heavy poaching. In 1995 he published the report *Tracking the Pirates: New DNA Results and Undercover Research Expose the Illegal Whalemeat Trade*.

In 1997, Galster designed Burma's first Buddhist anti-poaching project in the country's first national park (Alaungdaw Kathapa). Two years later he was designing the Khao Yai Conservation Project, a model park protection project for Thailand. Also in 1999, together with Suwanna Gauntlett, Peter Knights and Steven Trent, he co-founded WildAid. Initially funded by the Barbara Delano Foundation, WildAid's mission is to train local law enforcement and wildlife officials to fight poachers, with the aim of ending the illegal wildlife trade within 50 years. WildAid's aggressive approach, using activists, undercover investigators and law enforcement officers, has helped to confiscate over 17,000 animals directly from the hands of poachers in Cambodia and to reduce the number of Phnom Penh restaurants serving illegal wildlife dishes by over 75 per cent.

In 2001 Galster and WildAid collaborated with J. Walter Thompson advertising agency to design a national media campaign in Thailand to reduce consumption of shark fin soup. The campaign focused on the fact that shark fin contains dangerously high levels of the poison mercury. The campaign led to a rapid drop in shark fin sales (30–70 per cent) in key markets.

China remains a major problem. During 2000, 20 tons of turtles were shipped from Indonesia to China every week. And in just seven months in 2002 Thai officials intercepted 1,800 mammals and 21,000 reptiles bound for their voracious neighbour to the north. Galster's ambitious goal is to stop the illegal wildlife trade in Asia by the time of the Beijing Olympics in 2008.

“ The aim is . . . to unplug the Chinese vacuum cleaner, sucking up South-East Asia’s wildlife left and right. ”

 www.wildaid.org

1995

Dimítrios Archontónis

1940–

The green patriarch

Dimítrios Archontónis was born in 1940 on Imvros, among a Greek community on a Turkish island in the Aegean Sea. His childhood memories of this remote and beautiful place were to have a strong influence on his life. After studying theology, at the age of 21 he became ordained a deacon, taking the name Bartholemew.

In 1991, as Bartholemew I, Archontónis became the 270th successor to the Apostle St Andrew as Patriarch of the Eastern Orthodox Church, based in Istanbul.

Three years later, Patriarch Bartholemew I organised a series of annual international environmental seminars on the Greek island of Heybeliada (Halki). The first, on the topic of environment and religious education, was followed by environment and ethics (1995), environment and communication (1996), environment and justice (1997) and environment and poverty (1998).

In 1995, Patriarch Bartholemew declared that pollution and other attacks on the environment could be considered sins. He then popularised 1 September as a day of prayer for the protection of the natural environment throughout the Christian orthodox world.

Following the Halki seminars, the green patriarch organised Symposium II, seeking to reach agreement on appropriate action for preserving the Black Sea region. Symposium III, in 1999, was a floating seminar where the Halki Ecological

Institute, an interdisciplinary group of scientists, clergy, journalists and educators, voyaged down the Danube from the river’s headwaters to its delta and the Black Sea. Symposium IV, in 2002, concerned the Adriatic Sea, bringing together Muslim, Jewish, Protestant and Catholic leaders to consider the calamitous state of the planet’s oceans, seas and coasts. It concluded with an unprecedented joint declaration signed in Venice by Patriarch Bartholemew for the Orthodox Church and Pope



John-Paul II for the Catholic Church. In 2003 Symposium V concerned the Baltic Sea and, in this same year, a book, *Cosmic Grace, Humble Prayer: The Ecological Vision of the Green Patriarch Bartholemew I*, was published in the US.

In July 2006 Symposium VI on the Amazon discussed deforestation and the loss of regional biodiversity. Delegates agreed that the destruction of the Amazon rainforest to grow soya to feed chickens in Europe must be halted as soon as possible.

“ Crime against the natural world is a sin. ”

1995

Ken Saro-Wiwa

1941–1995

Fighting injustice in Nigeria

Since 1958, when Royal Dutch Shell struck oil on Ogoni lands in Nigeria's oil-rich delta region, an estimated \$30 billion of oil has been extracted in a joint venture in which the government is a majority partner, with Shell the largest private partner (30 per cent). In return, the Ogoni, an ethnic minority of 550,000 farmers and fishermen, have received little except a ravaged environment. Once fertile farmland has been laid waste by oil spills and acid rain. Virtually all fish and wildlife have vanished.

One of those who felt strongly that action must be taken was Ken Saro-Wiwa, a well-known Nigerian author and television producer. In 1991 Saro-Wiwa helped to found the Movement for the Survival of the Ogoni People (MOSOP), later becoming its spokesperson and then leader. The Ogoni Bill of Rights, written by MOSOP, set out the movement's demands, including increased autonomy for the Ogoni people, a fair share of the proceeds of oil extraction and remediation of environmental damage to Ogoni lands. In 1992, Saro-Wiwa was imprisoned for several months without trial by the Nigerian military government.

In January 1993 Saro-Wiwa gathered 300,000 Ogoni people on a peaceful march to demand a share in oil revenues and compensation for the damage done to their land. Bypassing the government, Saro-Wiwa asked Shell to engage immediately in environmental impact assessments of its past activities and to raise its standards to best practice. Shell's response was to cease operations in the region. The Nigerian military moved in. In an occupation that lasted more than four years,



over 1,000 people were killed and many more were driven from their homes or imprisoned without trial. Saro-Wiwa and eight other MOSOP leaders were arrested and detained by the Nigerian authorities in June 1993, but were released after a month. In May 1994, he was arrested again and falsely accused of incitement to murder following the deaths of four Ogoni elders. Saro-Wiwa denied the charges, but was imprisoned for over a year before being found guilty and sentenced to death by a specially convened tribunal. Nearly all the defendants' lawyers resigned in protest at the tribunal's cynical rigging by the government regime. Many of the witnesses brought to testify against Saro-Wiwa and his co-defendants later admitted they had been bribed to do so by the government.

On 10 November 1995, despite worldwide condemnation and incredulity, Saro-Wiwa and his eight co-defendants were hanged at Port Harcourt, Nigeria. Subsequently, Nigeria was suspended from the Commonwealth and condemned by the UN General Assembly. Shell became an international pariah.

Although Saro-Wiwa's exiled family continue to campaign on behalf of the Ogoni, the region remains heavily militarised and the government has yet to agree to allow an independent environmental assessment of the historic long-term and ongoing pollution in the Niger Delta.

“ I harbour the hope that in founding the Movement for the Survival of the Ogoni People, in empowering the Ogoni people to fearlessly confront their history and their tormentors non-violently, that in encouraging the Ogoni people to a belief in their ability to revitalise their dying society, I have started a trend which will peacefully liberate many peoples in Africa and lead eventually to political and economic reform and social justice. ”



www.remembersarowiwa.com



Sanya Osha, *Ken Saro-Wiwa's Shadow: Politics, Nationalism and the Ogoni Protest Movement* (London: Adonis & Abbey Publishers, 2007)

1995

Charles A. Munn III

1956–

A pioneer of South American ecotourism

During the 1980s, Charlie Munn of the Bronx Zoo-based Wildlife Conservation Society was working as a conservation zoologist researching macaws, giant otters and other wildlife in the Amazon rainforests and savannahs of the Peru–Bolivia border region. Munn's particular passion was for the region's eight threatened species of colourful macaws, including Lear's macaw (*Anodorhynchus leari*), the hyacinth macaw (*A. hyacinthinus*) and the blue-throated macaw (*Ara glaucogularis*), which were being trapped and traded as pets.

In his efforts to protect the habitat on which the macaws depend, in 1995 Munn helped to create Bolivia's Madidi National Park, home to more than 1,200 species of birds. He also helped establish a 1 million hectare buffer zone around Peru's Manu National Park, one of the largest wildlife parks in the world. This included setting up model ecotourism projects. The adjoining parks are now the most biologically diverse protected areas on Earth.

Alongside this, in 1994 Munn and a group of Brazilian environmentalists set up the non-profit organisation BioBrasil which now owns 4,000 hectares of dry forest in the Brazilian state of Piaui where there are important nesting sites for hyacinth macaws.

As well as founding the World Parrot Trust USA, in 2000 Munn set up Tropical Nature, a non-profit ecotourism concern now operating in Ecuador, Peru, Bolivia, Brazil, the Dominican Republic and Gabon, providing high-quality sustainable jobs to people who had previously been poachers to survive. Tropical Nature is now the world's largest operator of tropical rainforest eco-lodges.

“ We use ecotourism as an effective conservation tool to add value to tropical rainforests and thus make them worth more standing than cut. ”

 tropicalnature.org

1996

Theodora Colborn

1928–

Our stolen future

During the 1970s Theodora Colborn, wife of a sheep farmer in Colorado and mother of four children, lost a fight to protect the Gunnison River from pollution from coal mining.

In 1978 Colborn, a 50-year-old zoology graduate, decided to study ecology at Colorado's Western State College. Four years later, she began work on a PhD in zoology at the University of Wisconsin–Madison. In the mid-1980s Colborn carried out research into pollution of the Great Lakes and its links to cancer in humans.

Becoming a senior scientist with the WWF in 1996, Colborn, along with journalist Dianne Dumanowski and John Peterson Myers, founder of Environmental Health Sciences, developed the endocrine disruptor hypothesis. This stated that synthetic chemicals found in common plastics, cleaning compounds and cosmetics mimic hormones in the human body and cause long-term physiological damage, including reproductive damage. Their book, *Our Stolen Future: Are We Threatening Our Fertility, Intelligence and Survival? A Scientific Detective Story*, argued that even low-dose exposures to these endocrine disruptors can affect developing foe-



tuses and new-born babies, causing a range of problems including low IQs, genital malformations, low sperm counts and infertility.

Colborn has come to be regarded by many as the **Rachel Carson** of the 1990s. **118** Her work has triggered worldwide public concern about endocrine disruptors and has prompted both the enactment of new laws and redirection of research by governments, the private sector and academics.

“ We can’t do anything about the chemicals that have been released and are out in the environment. But we could at least not make any more, and we could try to contain those that are now in use. ”



www.ourstolenfuture.org



Theo Colborn, Dianne Dumanowski and John Peterson Meyers, *Our Stolen Future: Are We Threatening Our Fertility, Intelligence and Survival? A Scientific Detective Story* (Cambridge, MA: Abacus, new edn 1997)

1996

Sebastian Chuwa

1952–

Saving the tree of music

The wood of the East African blackwood tree (*Dalbergia melanoxylon*), known as *mpingo* in Swahili, is widely used by African carvers. Because of its tonal qualities, it is also highly prized in the West to make woodwind instruments, principally clarinets and oboes. But, because of over-harvesting and the long-term lack of any efforts directed towards replanting, the *mpingo* has become a threatened species.



In 1992, the US PBS *Nature* series produced a documentary on *The Tree of Music*. In this, a Tanzanian called Sebastian Chuwa expressed his concern for the tree and his desire to save it. Among those who saw the programme was retired civil engineer Jim Harris who was using *mpingo* for his craft of ornamental woodturning in Red Rock, Texas, USA.

In 1996 Harris and Chuwa founded the African Blackwood Conservation Project (ABCP). Harris launched a fundraising effort among woodworkers, musicians and conservationists in the West and sent the money to Chuwa to start tree nurseries in Tanzania. Working through two national youth organisations – Malihai Clubs of Tanzania

116 and Roots and Shoots (founded by **Jane Goodall**) – Chuwa established almost 100 conservation groups of up to 300 students each. Periodically they replanted areas that had suffered from environmental damage. One such project was to plant 15,000 trees along Mweka Route, the most popular backpacking track on Mount Kilimanjaro, while 500,000 mpingo trees have been planted on the fertile slopes of Mount Kilimanjaro itself. During their annual Environment Day celebrations for 2004 on 8 September, attended by around 2,200 people, the millionth tree was planted.

Sebastian Chuwa was a recipient of the Rolex Award for Enterprise in 2002.

“ It pains me to see the environment of my own country being destroyed by forces which could have been, and can be, controlled by man himself. I realised that through education the situation can be alleviated. Environmental efforts will only succeed in my country if environmental education is targeted at a grassroots level – from primary schools onward. ”



www.blackwoodconservation.org

1996

Alexandr Nikitin

1952–

Cleaning up the cold war

Until 1985, Alexandr Nikitin was a naval captain in the Soviet northern fleet where he served as chief engineer on nuclear-powered submarines. From 1987 to 1992 he worked for the Department of Defence as the senior inspector for its Nuclear and Radiation Safety Inspection Department. His work included inspecting the large fleet of nuclear-powered



submarines moored in a remote shipyard on the Kola peninsula adjacent to the Norwegian border along the Barents Sea. With the Cold War over and Russia unable to afford either to run or decommission the payloads, 52 submarines still containing nuclear fuel and weapons were slowly becoming an environmental timebomb – the danger of catastrophic radioactive contamination from leaks, overheating or explosion increased daily.

In 1996 Nikitin felt obliged to publicise this threat through the Bellona Foundation which had been set up some ten years before, shortly after Chernobyl, by Norwegian environmentalists Frederic Hauge and Rune Haaland. The result was a report entitled *The Russian Northern Fleet: Sources of Radioactive Contamination*.

The impact of the report was immediate and, for Nikitin, devastating. The Bellona Foundation's Russian office was ransacked by federal security police, the successors to the KGB, and all the references for the report were removed. Nikitin was trying to reconstruct the report when he was arrested. He was imprisoned on charges of high treason and violating Defence Ministry secret decrees. His report had the dubious honour of being the first publication to be banned in Russia since the fall of Communism.

At first, Nikitin was held in solitary confinement and denied bail. Although he was released in late 1996 the security police now drew up seven charges of high treason against him and asked that he be sentenced to 12 years in a labour colony. For the next three years Nikitin and his family were followed and harassed, and he was again held by the police.

Although in April 1999 Russia's Supreme Court refused an appeal to drop the charges against Nikitin, in December of the same year the St Petersburg City Court acquitted him of espionage and ruled that all the accusations were a violation of the Russian constitution. The police were forced to release him. Nikitin received the Goldman Prize in 1997 and, a year later, the Sierra Club's Chico Mendes Award.

The lethal danger from the Kola fleet remains. In 2004, the commander-in-chief of Russia's Navy, Admiral Vladimir Kuroyedev, announced that the condition of the flagship of Russia's northern fleet, the nuclear cruiser *Peter the Great*, was so bad that 'it could blow sky high'.

“ I am convinced that ecology cannot be secret. Environmental openness is an inalienable human right. Any attempt to conceal any information about harmful impacts on people and environment is a crime against humanity. ”

1996

Erin Brockovich

1960–

A legal clerk takes on a utility company

Hinkley is a town of about 3,500 people in the Mojave Desert in California about 193 km north-east of Los Angeles. Since the 1970s the town's residents had been unknowingly drinking, bathing and swimming in water polluted by a cancer-causing chemical called hexavalent chromium (chromium 6). Millions of gallons of this chemical had been leaking into the groundwater from the nearby Pacific Gas &

Electric Company (PG&E) facility where it was used to prevent rust from corroding the water-cooling system.

On discovering the pollution in the early 1990s, PG&E undertook a \$12.5 million clean-up effort, approaching the owners of three farms and ten houses in the area and offering to buy their properties. When householder Roberta Walker was asked to name her price and found PG&E swiftly agreeing to \$250,000 for a house previously valued at only \$25,000, her suspicions were aroused. She approached Masry & Vititoe, a local firm of lawyers specialising in personal injury cases.

Working as a filing clerk at Masry & Vititoe was a divorcee and mother of three called Erin Brockovich. While organising the papers for Roberta Walker's case, Brockovich found some medical records that disturbed her. After obtaining permission from one of the firm's principals Ed Masry she began to research the matter more deeply. Before long, other Hinkley residents were calling Masry's office. Following an advertisement in the local newspaper, a town meeting brought clients together.

In 1996, as a result of the largest direct-action lawsuit of its kind, spearheaded by Brockovich and Masry, PG&E paid the largest civil injury settlement in US history – \$333 million in damages to more than 600 Hinkley residents.

Erin Brockovich, the feature film made about this drawn-out case, was released in March 2000 by Universal Studios. It starred Julia Roberts as Erin and Albert Finney as Masry. Its five Academy Award nominations included Julia Roberts as Best Actress.

The real Erin Brockovich is currently research director at Masry & Vititoe where she has taken on other major chromium 6 and groundwater contamination lawsuits in California, New Hampshire, New York, West Virginia and other states.

“ Don't be intimidated by authority. When it comes to your children and it comes to the safety of your family and you have a question and you're not getting an answer, demand it and keep after it until you get an answer. ”



www.brockovich.com

1997

Pan Wenshi

1937–

Panda conservation

By the 1980s giant pandas (*Ailuropoda melanoleuca*), hunted by man and with their habitat shrinking, had retreated to just three provinces in China – Sichuan, Gansu and Shaanxi – and their numbers had declined to just 1,200 individuals.

In the 1960s a protection programme had been set up by the WWF with the Chinese Ministry of Forestry at the Wolong nature reserve in Sichuan province. Among those who joined this programme was a zoology lecturer at Beijing University called Pan Wenshi.

Pandas were known to feed almost exclusively on bamboo, and researchers had found that they favoured the leaves and young stems of the arrow bamboo. However, once every 50 years, the arrow bamboo flowers and dies off in wide areas. When news came in of arrow bamboo flowering in 1983, the Chinese government made plans to rescue starving pandas and place them in specially constructed holding stations. Wenshi did not agree with this policy. He reasoned that over the centuries pandas had survived countless flowering events and would not suffer unduly because they could eat other bamboo species. Although he knew that it could jeopardise his career, Wenshi sent a lengthy report to the State Council. Although the government took note and halted the rescue operation, by then 108 pandas had been captured, of which 33 had died.

In 1984, Wenshi left the Wolong nature reserve to conduct his own panda research in the Changqing area in the northern Qin Ling Mountains. Without financial support, Wenshi and his helpers lived frugally. But, in 1987, he obtained permission to put radio collars on the pandas to better follow their movements. The

Qin Ling population seemed fairly stable. Among the 36 pandas studied by Wenshi, there had been 7 deaths and 13 births, with 11 surviving infants. But, during 1993, logging threatened the survival of the colony. Wenshi wrote directly to President Jiang Zemin and then to Premier Li Peng, urging that the logging be stopped. Not only was a halt ordered, but in 1997 the government designated 305 km² of Qin Ling as the Changqing Nature Reserve to protect the pandas' habitat. About 170 of Qin Ling's 240 pandas now live in the protected area.

In addition, the Chinese government, in cooperation with WWF, has been implementing a plan to boost protection of the 13 existing panda reserves and to create 14 new ones. To stop poachers from killing pandas and selling their pelts stricter laws have been enforced.

In 1999, Chinese scientists announced they were planning to clone a giant panda embryo and grow it in a black bear's womb in an effort to save the species. The initiative was opposed by Wenshi, now Director of the Panda Research Centre at Beijing University, who feared it would divert resources from efforts to save the pandas' habitat.



“ The damage done by mankind to its natural habitat is the main threat to its existence. ”

1997

Ernst Ulrich von Weizsäcker

1939–

Factor four

In 1984 Ernst Ulrich von Weizsäcker, who had benefited from an interdisciplinary study of chemistry, physics and biology at Essen University, became director of the Institute for European Environmental Policy in Bonn. Seven years later, he became president of the interdisciplinary Wuppertal Institute for Climate, Environment and Energy. The aim of the institute is to explore and develop models, strategies and instruments to support sustainable development at local, national and international level. In 1992, Von Weizsäcker published *Earth Politics*, which argued that a non-wasteful, non-destructive model of wealth creation requires environmental policies that not only clean up pollution but put a price on ecological realities through green taxes and pricing. The book had a great impact on the environmental debate in Germany.

203 In 1997 von Weizsäcker joined **Amory and Hunter Lovins** in writing the hugely influential *Factor Four: Doubling Wealth, Halving Resource Use*. It persuasively argued that we should use natural resources at least four times more efficiently, enabling us to live twice as well while halving the stress we place on our environment; it was widely translated.

215 In 1998 von Weizsäcker entered mainstream politics as a candidate for the German Green Party led by **Joschka Fischer**. He was elected and served two terms in the red–green coalition with responsibilities as chair of the Environment Committee of the Bundestag and, from 2000 to 2002, as chair of the Bundestag’s Select Committee on Economic Globalisation.

In 2005 von Weizsäcker was appointed Dean of the Donald Bren School of Environmental Science and Management at the University of California at Santa Barbara.

“ We can quadruple resource productivity using existing technological knowledge. That would allow the world to double well-being while at the same time halving resource consumption. ”



weizsaecker.bawue.spd.de/index_en.html



Ernst Ulrich von Weizsäcker, Amory B. Lovins and L. Hunter Lovins, *Factor Four: Doubling Wealth, Halving Resource Use* (London: Earthscan Publications, 1997)