

# Ecology of the Movies

The 1996 fiction film *Independence Day* starts on the surface of the moon, the dead surface of which, in the final shot of the scene, stands in stark contrast to the blue ball of Planet Earth on the horizon, a veritable oasis of life. An alien fleet is heading that way, its mission: planetary rape and, in passing, the destruction of humanity and any other creatures that get in the way.

In real life, the Earth's life-support systems are already being ravaged and biodiversity destroyed. But the agent is not alien. It is humankind itself that is embarked on a global war against the rest of nature, a conflict in which it too can only be a loser. Indeed, in August 2008, the chief science advisor to the Department of Environment, Food and Rural Affairs warned of the likelihood of runaway global warming and the possible extinction of the human race<sup>i</sup>.

That threat from climate change is just one of many such 'timebombs' ticking away, all planted by people: soil erosion and denitrification, salinisation, desertification, depletion of water aquifers, deforestation, wetland destruction, acidified rain, dying coral reefs, expanding 'dead zones' in the seas, holes on the ozone layer, a cocktail of chemicals contaminating air, water and soil, the burial of more and more land under brick, concrete and tarmac, the depletion of cheap and easily available supplies of oil and gas as well as of an increasing number of key minerals...

Humanity's 'ecological footprint' is over 23% larger than what the planet can regenerate. In other words, it now takes more than one year and two months for the Earth to regenerate what is used in a single year. Instead of living off income, humankind is liquidating its 'capital stock'. Any business pursuing such practices would soon be bankrupt. In two words: peak everything; in one: unsustainability. We cannot go on like this.

This 'sustainability crunch' is the biggest, most urgent and all pervading issue of our times, dwarfing financial crises and other economic duress in its likely impact<sup>ii</sup>. It will change everything. Yet, in terms of the total output of the film industry, this long smouldering but now fast burning crisis has been largely ignored— in terms of explicit and direct representation — by movie makers and, even when featured, it is frequently in quite misleading ways. At the same time, film makers have paid little attention to the direct environmental damage done by their activities.

## In the picture

The following discussion will focus largely on mainstream fiction films. There is, of course, a tradition of documentaries on green issues, building on the long-established sub-genre of wildlife films.<sup>iii</sup> Fringe film festivals are an important outlet for such documentary makers<sup>iv</sup>. Then there are bodies the Concord Film Council and Bullfrog Films which mainly distribute to schools and colleges.<sup>v</sup>

The varying symptoms of this looming ecological crisis have been addressed in several documentaries, though few capture the whole picture. A notable 'broad brush' one is *The 11th Hour* (Leonardo DiCaprio's project) while the widely viewed *An Inconvenient Truth*, featuring Al Gore, focused mainly on global warming. So-called 'peak oil' is the subject of *A Crude Awakening* and *The End of Suburbia: Oil Depletion and the Collapse of the American Dream*. Some older documentaries were actually instances of 'greenwash' in that they were commissioned by some of the worst perpetrators of ecological despoliation,

examples being BP's otherwise excellent pair of films directed by Derek Williams, *Shadow of Progress* and *Tide of Traffic*, both from the early 1970s.<sup>vi</sup>

Mention must be made of hybrid films like *The Age of Stupid*. It has a fictional section in which an old man looks back from 2055 to the world of today and wonders why people did not take due action over climate change. This sits alongside more normal documentary footage, parts of which also use animation and CGI. Unlike most other documentaries, the film has direct and explicit campaigning goals, trying to encourage its audience to get involved. Its funding was also quite unusual, based on donations and on a crew willing to take very basic pay.<sup>vii</sup>

However, the audience reached by fiction films from Hollywood and its cousins is much, much greater. *Bambi*, for example, remains one of the most watched movies of all time. Its representation of wildlife and ecology probably has had more impact on youthful audiences than their classroom tuition on the same themes. *Bambi's* lessons may well influence their later adult attitudes. Similarly it is reasonable to assume that more people watched *The Day After Tomorrow* than have taken time to read serious scientific literature on the subject of climate change.

Perceptions of individual species are also likely to be more shaped by feature film representations than either direct personal encounters or scientifically rigorous nature documentaries, the depiction of sharks in *Jaws* being an obvious example (in fact, many more people are killed by falling coconuts than by sharks and the number of sharks killed by people, roughly 11,400 every hour, utterly dwarfs people killed by sharks)<sup>viii</sup>.

Yet, using even the loosest definition, green-tinged movies are dramatically outnumbered by films about other public issues. This, in turn, helps to set other agenda and other priorities for governmental policy and personal lifestyle change. The movie business thereby helps to make threats from, say, terrorism seem much greater than ecological meltdown simply because more blockbusters feature it. At best, it appears to be only one issue amongst many and indeed one less important than, say, economics, crime or, for that matter, sport. Thus there are plenty of films that, in one way or another, delve into the world of trade and commerce, be it financial melodramas like *Wall Street* or role-reversal comedies such as *Trading Places*.

Yet, in another way, both the causes and consequences of environmental abuse are there to be seen in many a movie, albeit not intended by their creators nor perceived by their viewers. Take, for example, that popular evergreen *It's A Wonderful Life* by Frank Capra, released in 1945. The major driving force in environmental destruction is simply human overpopulation. George Bailey and his wife generously contribute to the population boom by parenting four children, instead of just 'replacing' themselves with two (indeed, in real life, actress Donna Reed was a mother of four).

Second in the equation of environmental ruination comes per capita consumption or 'affluence'. Thus the film also depicts the rise in living standards of the 'ordinary' American, though the real explosion was to take place in the 50s and 60s. Last but not least the film shows the that dramatic shift in which Americans swapped in huge numbers to travel by the private motor car<sup>ix</sup>. That is the third factor: the technological option used to satisfy a given level of demand from a given number of people.

The film also depicts the most widespread and unsustainable form of ecological destruction, the burial of more and more land under brick, concrete and tarmac,

most of all via suburban sprawl.<sup>x</sup> Thus George Bailey is shown taking his building society's clients to the new suburb of Bailey Park. Suburbanisation is both a cause and a consequence of increased motor car use and is thus linked to many other forms of unsustainability, from oil depletion to air pollution, including the loss of wildlife habitat and prime farmland.<sup>xi</sup> Indeed the general replacement of the 'ecosphere' by the human-made 'technosphere' is captured by George when he says: "Oh well, you know what I've always talked about. Build things. Design new buildings. Plan modern cities".



Indeed, the "burbs" feature in films too numerous to count, from soft sci-fi like *E.T.* to horror movies such as *Poltergeist* as well as many a melodrama (*Far from Heaven* etc). For example, at the end of *Saturday Night and Sunday Morning*, for example, the (anti-)hero of the film is seen being led down to a new housing estate by his girlfriend who intends to domesticate him in one of what the great Malvina Reynold's song called "Little Boxes". Of course, such a picture does capture the 'habitat' of many, many millions of people. The point is that such lifestyles are, despite their ecological unsustainability, thus shown to be 'normal' and 'natural', though many films like *American Beauty* and *Revolutionary Road* do show their social downside.<sup>xii</sup>

### **Earthy roles**

By far the most common role of the Earth's ecosystems and their diverse life forms for film makers is as a source of scenic backgrounds. It might be Monument Valley, the slopes of the Eiger or some tropical beach but their collective function is to be an appropriate platform for purely human narratives. Thus Scottish rebel leader William Wallace is 'transported' many miles northwards from where he actually lived in *Braveheart* simply because the lands around Ben Nevis look good on the screen. Apparently, the striking rocky landscape around the small Californian town of Lone Pine has been used to

shoot more movies than any other location or so the local tourist bureau claims.<sup>xiii</sup>

Other favourite backdrops include the American south-west (in innumerable movies from *Stagecoach* to *Thelma and Louise*), the sand dunes of North-west Africa (*Gladiator*, *Sheltering Sky*, etc) and the grasslands of East Africa (*Out of Africa* etc.) Tourism in New Zealand received a hefty hand from the use of the country's mountains in *Lord of the Rings*. Sometimes it is the combination of a human feature like a castle and its scenic location. Scotland's Eileen Donan Castle and the Glenfinnan Viaduct feature in respectively *Highlander* and *Harry Potter*. Sometimes nature is 'rearranged' by combining such picturesque settings as happens in *Local Hero*, which blends Morar and the Banff coast while *Rob Roy* roams between a promiscuous mix of castles, lochs and glens.

Often it is the sheer remoteness of the chosen environment that serves the narrative. What better place to put a band of scientists menaced by some alien menace (*The Thing* etc) than the Arctic wilderness where no help can be at hand. The couple menaced by a German agent on the run in *Eye of the Needle* face a similar jeopardy in that they live in a cottage on a remote and storm-swept corner of Mull. The coldness and terrifying isolation of the climbers in the drama-documentary *Touching the Void* is almost palpable, even in a warm cinema.

Non-human nature does get to play a more 'active' part in several movies, however. Overwhelming, she gets typecast not as Mother Earth but as a savage and treacherous bitch. The narrative might involve a lone castaway on an island or dump a disparate group of people via a plane crash or shipwreck in a hostile environment, typically the middle of a desert or jungle, from which they have to find some means of escape. In due course, they learn to work together (or not, as the case may be) in the face of shared adversity (*Flight of the Phoenix*, *Back from Eternity*, etc, but with a rather dramatic true story in *Alive*). In *Perils of the Jungle*, it is the forest native dwellers that menace the (white) safari folk.

'Bad-Bitch-Earth' certainly has many nasty tricks up her sleeve: ants (*The Naked Jungle*), piranhas (including an eponymous film), snakes (even *On a Plane*), sharks (*Jaws* and sundry rip-offs), snow storms (*Avalanche*), forest fires (*Firestorm*), raging waters (*Flood*), tornadoes (*Twister*), volcanoes (*Dante's Peak*), earthquakes, and assorted stormy weather (not least *A Perfect Storm*).

Sometimes people go looking for such trouble (*Anaconda*, *King Kong*, etc), though normally with an eye to killing or subjugating this dangerous 'other'. On occasion, such events serve to give extra complications to what might otherwise be mundane plots (the floods in the heist movie *Hard Rain* or the forest fires *Firestorm* in which prisoners break out to find hidden loot). There are also those films in which humans are a proverbial 'fish-out-of-water', struggling to cope with a novel, strange and threatening environment as in *Walkabout* in the Australian outback.

Then there is the movie in which Nature and her elements bite back because of human interference. Such come-uppance is most explicitly on view in *The Long Weekend*, though this theme is hovering around movies like *The Birds*, *Wolfen*, and *The Happening*. According to one of its characters, the rampaging dinosaurs of *Jurassic Park* are what happens with you mess around with Mother Nature. The back story to *The Night of the Living Dead* suggests that human-created radiation (from a space probe) has brought the zombies back to life while in other films, like *Godzilla* and *Them*, it is atomic bomb testing.

Some movies, especially ones mining the 'dystopian' tradition of science fiction, go further, especially the sub-genre of post-apocalypse breakdown. This could be brought about by several forces such as nuclear war and virulent disease, not to forget alien invasion. Sometimes it is just a 'given' but, whatever the cause, here is a fertile field for settings and storylines.

Then there are movies which just start from the assumption that the Earth has been totally trashed. Examples include *Wal-E* and *Silent Running*. At other times, the devastation has transformed the planet, though it still remains habitable. Thus in *Waterworld*, catastrophic climate change has left the world inundated but the hero Kevin Costner tries to rebuild a modicum of civilisation. *Mad Max* and *Blade Runner* are other notable dystopian explorations. The struggles of survivors to cope with unspecified ecological breakdown is the theme of horror films like Michael Haneke's *Time of the Wolf*.

## Sick notes

Any diagnosis of the Earth's ills must be comprehensive to be of any value. But movie representations are overwhelmingly skewed to mainly one set of symptoms, pollution, i.e. substances added by humankind to ecosystems which are unable to absorb them because of their quantity and/or quality. In real life, though not in most movies, most of those pollutants do not stem from mismanagement or irresponsible profiteering. They are simply the entropic wastes inherent in energy and raw material throughput in the human economy, be it waste tailings at mines, gases coming out exhaust pipes and chimneys or the detritus of past consumption (there are now mountains of discarded computers, TVs, refrigerators and so forth).<sup>xiv</sup>

Insofar as movies depict such matters, it is usually a discrete pollutant from or at a specific source: say an oil leak or a vat of toxic waste (into which movie characters are routinely plopped). To be fair it is difficult to imagine how a fiction film could capture the real menace from pollution: namely non-point pollutants such as fertiliser run-off and, worse, the synergistic interaction of the cocktail of chemicals continuously being added to soil, water and air. It might be noted that such pollution defies technological fixes like end-of-pipe containment which in any case, often aggravate, not reduce, the overall ecological problem (catalytic converters etc).<sup>xv</sup>

One effect on ecological awareness is reinforcement of the widespread illusion that any environmental problem is due to specific pollutants. Thus, global warming is widely seen as the product of just one gas, carbon dioxide built-up. Conversely there is one-sided focus on issues like "carbon footprint" and pseudo-solutions like "carbon trading" and "carbon sequestration". In reality global warming is driven by a variety of gases (including methane which is largely impervious to any sort of 'capture') and not just by such sources but also by the loss of 'carbon sinks' such as wetlands and forests. The changing albedo (reflectivity) of areas like the ice caps is also a discrete contributory factor.

At the same time, an even more dangerous misconception is encouraged, namely that 'non-polluting' technologies are, ipso facto, more ecologically sustainable than their 'dirty' relatives. Thus many people seem to think that salvation can be found by substituting so-called 'green cars' (electric/hybrid) for the current fleet of vehicles. Leaving aside the daunting 'rate and magnitude' problem for any such technological rearmament, 'clean' is often far from 'green'. Some of the most serious assaults on the Earth's life-support systems are largely non-polluting (deforestation, mangrove and other wetland destruction, soil erosion, salinisation, overfishing, introduction of invasive species, etc.).

'Clean' hydroelectricity has, to date, caused far more ecological damage than nuclear power, even increasing the likelihood and severity of earthquakes.<sup>xvi</sup> In the case of cars, more damage is done at the stages of raw material extraction and manufacture than in their use and final disposal. Electrically powered ones would still need sources of fuel, production lines, storage compounds, roads, traffic lights, car parks and garages, the ecological costs of which are downplayed in documentaries like *Who Killed the Electric Car*.

So pollution is only one aspect of ecological destruction. More significant is environmental degradation, what humans remove from ecosystems as their land uses variously simplify and otherwise disrupt the structures and processes of the Earth's life-support systems. This distinction is critical to any serious understanding of the breadth and depth of ecological crisis. Arguments about when this or that resource will "run out" often miss the point. It is certainly true that ecosystems provide the 'means of production' (i.e. specific resources like fossil fuels and a huge variety of minerals). It is also true that all of them are inherently limited in supply due to the Earth's finite size and other geological limitations.

Much more importantly, however, ecosystems create the conditions for production and indeed all human activity: fertile soil, potable water, breathable air, nutrient recycling, photosynthesis, pollination, 'sponges' for excess water run-off, climate amelioration, checks and balances that contain infestation and disease.<sup>xvii</sup> The major source of unsustainability is, then, human created monoculture, the tree plantation that has replaced the forest, the tarmac and concrete that has covered the wetland, the field not just the factory. Appreciation of this point explains how large-scale biofuel cultivation would merely swap the frying pan (loss of cheap oil) for the fire (further wildlife extinction, speeded-up deforestation, increased soil erosion, more fertiliser run-off, more pesticide use ... even a net loss of energy).

Generally, discrete one-off events like a sinking tanker, chemical plant explosion, dam burst or a forest fire are easier to picture than slow, dispersed processes like soil erosion, wetland drainage or the acidification of the oceans. *Lord of the Rings* does show deforestation in Part 2 of the trilogy but actually the printed word in the original does it more eloquently and forcefully. The destruction of Amazonian forests was central to Boorman's *The Emerald Forest* and is at the heart of a new Italian film *Birdwatchers*.<sup>xviii</sup> Beyond that and leaving aside documentaries, deforestation has been largely ignored. Indeed in many movies deforested slopes are there to be seen but presumably film makers did not notice. Indeed from the fetching landscapes of *Lord of the Rings*, it would be hard to realise that New Zealand's primal forests have been devastated.<sup>xix</sup>

To some extent, it is possible for fiction films to convey the absence of ecosystem services, perhaps most strikingly in *Soylent Green*. Whether the forthcoming remake of *Dune* brings out such themes (absence of water etc.) remains to be seen. Even when there are explicit representations of eco-disaster as in the fictional *The Day After Tomorrow* or documentary *An Inconvenient Truth*, there is the danger that the ecological crisis is treated as one and the same thing as global warming. In reality, if that threat were to turn out to be nothing but intellectual hot air, the overall prospect would not alter due to the size and severity of many other forms of ecological ruination.

These are all complex matters and, even with the best will in the world, it is a daunting task to picture them with due breadth and depth. For instance, contrary to the widespread but lazy accusations of sentimentality, some aspects of human destructiveness are well captured in Disney's *Bambi* with the killing of

his mother, vicious hunting dogs and the burning of the forest due to human carelessness with a campfire.<sup>xx</sup> It is clearly not all sugar and spice and all things nice. Yet it nonetheless diminishes understanding of fire ecology (i.e. that some woodland ecosystems do regularly burn as part of their regeneration).

## Planetary Menaces

Earlier, the driving forces of ecological ruination were identified by the so-called PAT formula: population, affluence and technology.<sup>xxi</sup> All three can actually be seen by those with eyes to see in many movies, not least the *Home Alone* films. Look at all the gadgetry, at their level of consumption and at the number of children the adults have parented. That last variable, population, is the most significant but even green-tinged movies overwhelmingly ignore it. It is as if numbers do not count. Yet, as a Paul Simon song, *Born at the Right Time*, says, “the planet groans, every time it registers another birth”.<sup>xxii</sup>

Every second, there is a net gain of an extra 2.7 people added to the human population. Such statistics sound silly - what is .7 of a person? Yet they mean that every 10 seconds, there are an extra 27 people to feed, water, clothe, house, educate, employ, entertain, transport...The figures soon add up. Every 24 hours, there is a net addition of some 235,000 new faces added to the human race. Every 48 hours, the net increase in human numbers will be nearly enough to fill a city the size of San Francisco. Each year there is the equivalent of another Mexico of mouths to feed... and, in nine year's time, the population equivalent of another India.

Only *Soylent Green* and *Logans' Run* specifically point to this reality (the latter is more about the way the problem is 'solved' than its causes and broader consequences). Both *An Inconvenient Truth* and *11<sup>th</sup> Hour* skirt round it. The 1992 *People Bomb* does better but even it fails to grips with the scale of the problem and play down the significance of immigration, the driving factor in the USA and Canada.<sup>xxiii</sup> Perhaps best is a 1997 TV documentary by a well-informed writer on the subject, Michael Tobias: *Jam Packed: The Challenge of Human Overpopulation*.

But the vast majority of documentaries and fictional movies simply ignore the population 'elephant in the room'. *The Age of Stupid* has a section on Nigeria but does not spotlight the fact that the country has one of the highest population growth rates in the world. Apparently women there typically say 7 is the ideal family size (men 10).<sup>xxiv</sup> The country is expected to have more than doubled its numbers to more than 300 million people by 2050. This trend is a recipe for disaster but the film focuses instead on corruption, repression, poverty, and pollution by profiteering oil companies (all very real issues, of course).<sup>xxv</sup>

Generally, the wishful thinking that increased affluence, better education and a redistribution of food and other resources are the answer rules the roost.<sup>xxvi</sup> Recent newspaper reports spotlighted Hollywood star Mickey O'Rourke campaigning about pet overpopulation but few celebrities speak out about excessive human numbers. There are indeed films like the recent adaptation of the novel *Children of Men* that posit a failure to breed as the problem.

Of course, human numbers are not the only pressure on planet Earth, even if it is the one that invariably multiplies the effects of others. There is now a strong literature on the environmental and social costs of excessive levels of per capita consumption, in a word affluence. Indeed a number of recent books indict what they diagnose as “affluenza”, an obsessive devotion to the trappings of material wealth.<sup>xxvii</sup> It obviously intensifies the 'A' variable of the PAT formula. It is a condition widespread in what one Australian architect and journalist, Elizabeth

Farrelly, calls *Blubberland*, the world of suburban 'McMansions', SUVs, home entertainment systems and all sorts of other gadgets, 'retail therapy' ... and, often, rather large people, who are not only degrading the planet through consumerist excess but also damaging their own physical and mental well-being.<sup>xxviii</sup>



#### **American Graffiti**

And it is a reality that movies overwhelmingly just take for granted without a moment's reflection. Just look at the material world inhabited by the human inhabitants of *ET*. George Lucas may have been innovative in his use of music in his *American Graffiti* but he was utterly conventional in his acceptance of high level affluence of his characters or his seeming unawareness that the lifestyles he depicted also depend on unsustainably cheap oil. In *Pretty Women*, the heroine's treat is to be able to shop until she is ready to drop, thanks to the Prince Charming who comes into her life but *Sex in the City* outdoes it in hardcore consumerism and limitless desire. The hero of *The Family Man* duly learns to love the suburban and consumerist lifestyle. Revealingly, as Blake Morrison has pointed out, the 1994 re-make of the 1947 *Miracle on 34<sup>th</sup> Street* drops the first version's attacks on commercialism.

There are films that might seem different like the recent *Confessions of a Shopaholic* but they focus more on the narcissistic psycho-babble of getting in touch with one's inner self, rather than the outer costs of consumerism. The merchandising that accompanies a greenish film like *Wall-E* further reinforces the consumerist spectacle as do more blatant 'toy commercials' masquerading as movies. And seemingly only 'Grinches' and 'Scrooges' would question this dream of ever more stuff.<sup>xxix</sup>

Of course, there are films that cast a more sceptical eye. In *Dawn of the Dead*, the zombies do what they did in life: head for the shopping mall. The 2006 *Idiocracy* links, as its name suggests, 'dumbing down' and consumerism. In a way, *Fight Club* also shows that all is not well inside the global citadels of affluence. Brand culture and the general emptiness of suburban living are satirised in *Repo Man*. Some British films of the 60s such as *Darling* also suggested that a certain emptiness underlay consumerist hedonism, though no ecological connections were made.

There are films like *Witness* which depict non-materialistic lifestyles (the Amish of Pennsylvania) yet such settings seem to be used more for their 'otherness' than any serious critique of the dominant mode of living. Thus the hero of

*Witness* duly returns to the big city. Only the odd documentary really gets to grips with overconsumption.<sup>xxx</sup>

## Technofixations

Movies find the third factor, technology, much, much easier to address, not least since it lends itself so well to the very nature of the medium. It is eminently tangible, distinct, sharp in definition, often fast-moving, and thus easily visualised. Early movie makers also found a ready-made narrative, the theme of humans suffering as a result of their unbridled curiosity and technological ingenuity. This can be traced back to old legends such as those of Prometheus, Icarus and Pandora's Box (with a more modern contribution from Mary Shelley and *Frankenstein*).

Sci-fi and horrors both built on this foundation, from *Metropolis* onwards. So recreated dinosaurs run amok in *Jurassic Park* as do robots in *Westworld* and androids in *Blade Runner*. Cars take on a malevolent life on their own in *Christine*. Parallel threats come from human-engineered pandemics such as the virus of *Twelve Monkeys*, super-computers (*Demon Seed* and *Terminator*) and cloning in *Gattaca*. In *Modern Times*, it is the whole factory assembly line system.

Humans are reduced to numbered drones in *THX 138* while, in *Matrix*, they are enslaved inside a fake reality created by machines which feed off human energy. In *The Day the Earth Caught Fire*, humans even manage to knock the Earth off its axis by foolish testing of nuclear devices. Actual nuclear war is shown to be the ultimate human folly in various films such as *On the Beach* while *Dr Strangelove* showed how easy it was to trigger such a holocaust.

Human technological prowess can also feed the hubris that people are above the rest of nature. *Titanic* was believed to be unsinkable... but it still sank. The trawlermen of *The Perfect Storm* might have had many gadgets on their boat but they were still doomed. Indeed the disaster movie genre has been mining this theme for decades. So, back in 1933, audiences could watch the spectacle of what was one of the world's most advanced cities, New York, being washed away, since nothing could stop the tidal wave of *The Deluge*.

Human creations certainly have had a habit of biting back in real world. Examples range from such seeming wonders as internal combustion engine to specific chemicals like the use of CFCs in refrigeration, lead in petrol and PCBs in many industrial processes and products. Poisoning from pesticides kills people and non-human species alike. Whole communities have been washed away when dams have burst or upriver deforestation has triggered devastating floods downstream. Many 'natural' disasters turn out not to be acts of god but the blowback from human action.<sup>xxxi</sup>

Often the intentions are benign. Thomas Midgeley, the inventor of both leaded petrol and CFCs, did not deliberately try to pollute the planet yet, as an individual, he may have done more environmental damage than any other single person. Indeed human overpopulation largely stems from medical successes in curbing child mortality and stretching longevity. This pattern of good intentions gone wrong is more common than deliberate harm and thoughtless irresponsibility, though sometimes they combine. The frequency and severity of forest conflagrations seem to be increasing, partly due to malicious fire-starters (sometimes seeking to open up protected areas for future economic development on top of the ashes) and to fires ignited by careless campers. But a much bigger factor is habitat change due to suburban colonisation and agricultural development.

If specific technological risks are only partly pictured in film, movies are even poorer vehicles for the depiction of indistinct, subtle feelings and relationships. This is especially true of the web of life in which there are innumerable but often difficult to spot interactions. That the whole is more than the sum of the parts is something particularly hard to capture in technological media. So too are the touches, smells and possibly tastes that someone walking through a forest would perceive but which are difficult to translate to the screen (come back 'smellovision'?).

Indeed, ruined environments can look better on film. Scenes of trees being cut down are more visually arresting than shots of an intact primal forest. Technology tends to trump ecology. Watch the dune buggy scene in the 1968 *The Thomas Crown Affair* then imagine a film just showing sand dune and nothing else.<sup>xxxii</sup> Alternatively see which is more visual engaging: the battle scenes or those of the undisturbed forest in Malick's *Thin Red Line*.



*Thomas Crown Affair*

It is no wonder, then, that even documentary makers distort nature by focussing on the chase, the kill, the charging herd, the gyrating flock of birds, the avalanche, the tornado, the fire and the like. Thus competition and death are grossly over-represented, making nature seem nothing more than red in tooth and claw. This is certainly part of life but in reality nature is driven more by adaptation, mutualism and symbiosis, co-evolution rather than simply competitive survival of the fittest.

All that said, most movies do not show technology as a menace. Usually it is just some neutral force, simply 'there', be it the omnipresent car, aeroplane or skyscraper. Indeed technological innovation is often represented as a progressive force, an Aladdin's Lamp shining the way to new riches. So *Chain Reaction* treats nuclear fusion as the cure-all (though, of course, certain vested interests try to sabotage the breakthrough). Most documentaries tend to put

their faith in one technofix or another. Accordingly *An Inconvenient Truth* looks to an array of 'alternative' technologies even though they yield less in the short-term and, overall, are as much constrained by the limits of geology, entropy and ecology as the present technological mix.<sup>xxxiii</sup>

### **Baddies ...**

However, babies do not conceive themselves, products do not throw themselves off supermarkets into shoppers' trolleys, and technologies do not spontaneously emerge. In all three cases, the question is begged why wrong choices are made that, in turn, lead to overpopulation, excess consumption and the development of environmentally and socially inappropriate technologies.

The first root cause lies in the role of certain vested interests whose self-interest and self-serving behaviour plus, on occasion, 'tunnel vision' and equally distorting 'groupthink', variously lead society down the wrong road. Usually sheer greed for wealth and power, at the expense of environment and/or ordinary folk, is the core driver. At the same time, the way society is organised frequently leaves individuals, especially its poorer members, with little choice but to do things that harm the long-term interests of themselves and society as a whole. Films overwhelmingly opt for this line of explanation.

Thus, in *It's A Wonderful Life*, Henry F. Potter, the grasping banker, is clearly the villain of the piece. Most greenish movies also opt for this explanation of why nasty things happen. Sometimes the 'bad guys', menacing their honest, hard-working neighbours as in *Pale Rider*, are also depicted as agents of environmental destruction, in this case blasting away mountain sides via hydraulic mining.<sup>xxxiv</sup> [It must be noted that small-scale miners can trash an environment just as destructively if there are enough of them, as can be seen today in Amazonia and elsewhere whilst mining roads open up primal forests and other wildernesses for further exploitation by ranchers and other 'developers'.]

In more explicitly 'green' films, various villains are indicted for environmental despoliation. *On Deadly Ground* blames big, bad corporations for the pillage of Alaska (i.e. not the consumers whose demands fuel the drive to drain the last remaining reserves of oil). In *The China Syndrome*, it is the nuclear industry. In *Chinatown*, it is corrupt politicians and government officials (though the historical background, the ecological rape of the Owens Valley by overabstraction of local waters is left right at the back of the picture). The chemical industry is fingered in *Erin Brockovich*, again a story based on real events. Corporate ranchers are the villains of *Fire on the Amazon* while further bites are being taken out the Amazonian jungle by dam builders in *The Emerald Forest*. A malevolent body called the Energy Corporation presides over the world of *Rollerball*.

In *Wind Across the Everglades* the threat to wildlife comes from a different set of bad guys, this time poachers, a theme taken up in *Running Wild*. Government corruption and poaching combine in *To Walk with Lions*. In *Sequoia*, hunters and poachers combine to threaten local wildlife. The search for someone to blame even leads Danny Boyles' *28 Days Later* to point the finger at animal rights activists.

But the bad guys have many tricks up their corporate sleeves. Mining conglomerates form the New Economic Block to fight The Alliance which seeks to stop the pollution that is devastating the space colony in *Screamers*. In *Quantum of Solace*, the threat to Bolivia's water supplies comes from a pretend

'eco-entrepreneur'. According to *Silkwood*, the nuclear complex is even prepared to resort to murder to silence whistleblowers.

Even non-human species can get singled out as 'bad guys'. Wolves, for example, are often portrayed as nasty creatures (*Beauty and the Beast*, *Wolves of Willoughby Chase* etc). The name of Michael Haneke's film *Time of the Wolf* refers to the association of wolves with bad times. In *The Lion King*, there are various villainous species that menace little Simba while in *The Jungle Book* adaptation a panther is the main villain.

Usually, environmental — and social and economic — problems are someone else's fault. Thus *Zeitgeist, The Movie*, a 2007 documentary with a 2008 sequel indicts a network of conspiracies by the Few against the people and the planet, including the Federal Reserve Bank, the CIA and assorted corporations.

Sometimes the net is cast wider. In *Dances with Wolves*, it is the culture of the incoming whites who kill both bison and the wolf of the title, sometimes for the sheer hell of it. Generally, however, the masses are more victims rather than perpetrators. Perish the thought that the 'people' are often willing and indeed wilful contributors to the ecological crisis. In fact, as discussed later, there is widespread and entrenched apathy and hostility regarding the 'green' message.

Perhaps it is the influence of populist ideas that leads documentary makers to blame the system: capitalism, the banks, the media, even schooling ("Teacher, leave those kids alone!"). Indeed it leads to a viewpoint (as in *Supersize Me*) that treats consumers as little more than some tabula rasa, brainwashed by cynical advertisers, contrary to all the media research that has questioned the existence of such "magic bullets".

The other tendency goes to the opposite extreme, namely the hand-wringing that says we are all to blame (the "David Attenborough" school of analysis) when, in reality, some are more to blame than others. Thus *Wall-E* dismisses humankind as an undifferentiated mass of "pea-brained idiots". Specific values, structures and policies thereby escape indictment.

Then there is, however, a second and far more potent set of root causes. They might be summed up under the heading "the tyranny of commonplace decisions". In this case this is no exploitative, oppressive or otherwise wilful dynamic necessarily at work. The problem is the cumulative of countless micro-decisions, many of which might be harmless in themselves or intend no harm but which added together, bring about collective ruin. The road to perdition is thus marked by a myriad small steps rather than giant strides. These tiny bites out of the Earth's life-support systems often go unnoticed precisely because of their tiny size. They often seem quite justified in and of themselves. Because they seem so unimportant and because they are so diffuse, it is very hard to stop them.<sup>xxxv</sup>

## **and Goodies?**

Fortunately, some hero (or heroine) is usually there to take up the good fight. Thus in *On Deadly Ground*, Steven Seagal saves Alaska from being coated in oil by a ruthless corporation. In *A Civil Action*, the battler against pollution and other corporate misdeeds is an even stranger friend of the Earth, John Travolta, playing a crusading lawyer, based on a true story. In *Hoot* it is local youth (shades of *The Blob!*) who come to the rescue of local birdlife from the hands of rapacious developers, in whose pockets dwell the local politicians. Somewhat more seriously, a reporter and disillusioned scientist combine to fight the nuclear industry in *The China Syndrome*.

The eponymous heroine of *Erin Brockovich* successfully takes on a company polluting local waters. Other environmental campaigners have featured in biopics. Examples include Diane Fossey (*Gorillas in the Mist*) and the eponymous hero of the rather soft-centred *Grey Owl*. There are a number of documentaries on that other American crusader David Brower such as the rightly named *Monumental*.

The Earth itself can be seen playing a positive part in several films. This is most common in the Western where the 'wild' west is often positively compared to technological world of urban 'civilisation'. Of course, such 'wildernesses' were inhabited by people too. *Dances With Wolves* paints a very positive picture of the Lakota Indians while *Geronimo* makes its hero much more attractive than his protagonists. Even as individuals, Native Americans are portrayed as physically stronger and more capable than their white counter-parts. So the hero of *Jeremiah Johnson* finds solace, after various trials and tribulations, in the mountains, eventually making peace with his Indian enemies. Westerns have most commonly dealt with such themes but it was the great Akira Kurosawa who gave the most poetic treatment in his *Dersu Uzula*, contrasting a native Siberian with Russian incomers.

Of course, it is quite easy to go over the top and Disney leads the charge. *Pocahontas* paints an extreme contrast between noble eco-savages and the 'civilised' eco-rapists invading their land (whilst managing to make what, in real life, was a quite remarkable story quite dull). Yet there was severe soil erosion in some areas of pre-Columbian America while, as *Black Robe* spotlights, some native ways were quite brutal. Desertification, wildlife extinction and the like have followed in the footsteps of humankind since records began. Thus the inhabitants of Easter Island managed to commit ecological suicide all by themselves, without the aid of modern technology or capitalist economics.<sup>xxxvi</sup>

## The Others

Even species that normally get a bad billing can get more positive treatment. *Never Cry Wolf*, telling the story of naturalist Farley Mowat, brings to that much maligned creature an ecologically informed re-evaluation. *When the North Wind Blows* does the same thing for Snow Tigers. *Grizzly Man* might seem to be poor public relations for bears (the 'hero' is mauled to death by them!) yet it could be read as endorsing that their 'right' to be left unmolested on their patch of planet Earth. That said, such films cannot be compared to those documentaries that do manage to put species in a more rounded ecological perspective.<sup>xxxvii</sup>

There have, of course, been a number of films 'starring' animals. *Free Willy*, for example, tells the tale of an orca trapped by whalers and dumped in an amusement park, later to be liberated by an erstwhile tearaway who has been transformed by his encounter with the creature. The movie spawned both sequels and a TV spin-off. Such films might be dismissed as sugary sentiment or praised for getting kids to care more for wildlife (the original film has also been much lampooned, not least for its somewhat unfortunate title). However, there are more serious questions raised by such films, of which Disney, with *Bambi*, *Dumbo* and much more in its cupboards of course, a leading source

Films like *Bambi* do seem to have alerted their viewers to the human capacity to destroy for no good reason. But such films might also contribute to a distorted sense of conservation values which cherish 'nice' creatures like deer and pandas but not ones perceived to be ugly and otherwise 'nasty'. Thus hyenas and vultures are crucial components of various ecosystems but often symbolise badness in movies (*Lion King*, *Jungle Book* etc). And, as for sharks!

There has, of course, been much criticism of ‘anthromorphism’ in the human arts, not just film.<sup>xxxviii</sup> It is certainly easy to demean other creatures by reducing them to cute little people (some readers may remember the Johnny Morris and *Animal Magic* on BBC TV). Their entitlement to respect on their own terms may be thus diminished. To be fair, it is rather difficult not to see other creatures through human eyes. Presumably the author’s cat, which is sat watching him type this line, is doing so through ‘cat eyes’. Perhaps the real danger is when human values and in particular those of a just one economic order are projected onto nature (“competition”, “dominance”, “hierarchy”) thereby further making seem natural exploitation and domination within society as well as between people and the rest of the planet.

More generally, non-urban and non-industrial environments have frequently been shown in real life to have restorative and healthy effects on visitors (witness the location of sanatoria). So it can be in movies too. The shallow materialistic Dallas oil man who comes looking to build an oil terminal, thereby destroying a beautiful bay in highland Scotland, is duly seduced by its charms to change his view in *Local Hero*. The money grabbing heroine of *I Know Where I’m Going* has a similar change of heart, transformed by the landscape. *Into the Wind*, however, showed the perils of thinking that the Earth owes anyone a favour and that ignorance of the Wilds can be quite deadly.

In terms of ‘national cinemas’, Japan might be said to have produced some of the ‘greenest’ movies. Mention has been made of Akio Kurosawa and *Dersu Uzala*. Hayao Miyazaki of Studio Ghibli has also been delivering films with strong ecological themes, not least *Nausicaa* and *Princess Mononoke* (destruction of forests by ‘Iron Town’, etc.).<sup>xxxix</sup> The films often feature Earth spirits that are generally benign, in sharp contrast to the Earth-as-Bad-Bitch discussed above.

Such films avoid the sentimentality of most Disney’s animations and also feature strong female characters. They connect to an older, more gentle and harmonious side to Japanese culture. Certainly animistic worldviews like Shinto could be said to encourage greater appreciation of and respect for non-human nature.

### **Ever onward and upward**

Cinema is not alone in its feeble engagement with the ecological perspective. Overall, the environment has been largely discounted in human thought, increasingly so since the Enlightenment and Industrial Revolution. The dismal ‘science’ of economics has epitomised this trend more than other branch of human thought. Even the word ‘environment’ invites its own marginalisation. It has come to mainly mean everything about an individual ... and therefore nothing much in particular.

But language is just part of the problem. The dominant worldview of the past two hundred or so years has been that of a certain definition of ‘Progress’: bringing more of the planet under human ‘control’ via ever more powerful tools of technology to cater for indiscriminate and open-ended human desires. Logically enough, non-industrialised lands and peoples are widely deemed to be backward, in need of ‘development’, waiting to ‘take off’.<sup>xl</sup>

Thus the ‘unmodernised’ community of *Chocolat* is duly portrayed as one riddled with inhibition and ignorance (would they be happier or wiser in urban tower blocks?) while villagers of *Local Hero* are only too happy to sell off their environment for oil development, with only the local eccentric standing in the way of ‘progress’. The inhabitants of the backwoods of *Deliverance* need no

comment (the need for the dam construction which will flood their land is accepted as inevitable and beneficial)

The vast majority of films take for granted the anthropocentric and materialistic values and goals at the heart of the Progress paradigm. Indeed they tend to assume that humans are quite exceptional, apart from and above the rest of Nature. The odd upset like 'natural disasters' might shake society but the march of humankind is onwards and upwards. Thus the blows rained on society in disaster movies like *Deep Impact* are merely temporary hurdles which humankind duly stride over. Even after the climate disaster dramatically depicted in *The Day After Tomorrow*, better times return with rather remarkable speed (and during the crisis, governments do eventually co-operate in ways not evident in the real world)

This paradigm is most strikingly present in the vision of space colonisation, something that many movies simply take for granted (*Flash Gordon*, *Forbidden Planet*, *Star Trek* etc). Yet there are good grounds for thinking that the damage liable to be done to the protective ozone layer by the passage through it of large numbers of rockets may well curtail this endeavour. Indeed debris from past space flights may be itself curb future ones, due to the unacceptable risk of collision. The diversion of scarce resources to any large-scale space programme at a time of growing scarcity might also become politically unacceptable.

Most movies wish away such barriers. Indeed films like the 1936 adaptation of the H.G. Wells' novel *Things to Come* make it clear that only ignorant Luddites could object to the conquest of the final frontier, outer space. But some do see such progress as a two-edged sword. *Wild River* captures the clash between those who want to build a new dam and attached to the land that will be flooded.<sup>xii</sup>

### **Sustainable Impact?**

If, indeed, we do face a looming crisis that will be more intractable and potentially more deadly than any wartime emergency, short of all-out nuclear war, it is only reasonable that all human activities should be assessed in the light of that crisis. The movie business cannot be an exception, even if its impacts are obviously much more minor than, say, agriculture, energy generation and industrial production. Yet it too has some serious direct environmental impacts.

Any assessment of the ecology of the movies must be done in terms of complete 'lifecycles' and total cumulative impacts. It might start with film-making itself but would also take into account film marketing and merchandising as well as the consumption of movies, be it in the cinema or at home. The environmental costs car journeys of film audiences to the cinema would figure as well as the electricity consumed watching a film on TV, not to forget the carbon bill clocked up by jet-setting stars and directors.

Much damage can be done while shooting on location. Thus a chunk of forest was cleared to create space for the construction of the fort used in *Last of the Mohicans*. A beach was flattened, native vegetation cleared and exotic trees planted to get the desired look for *The Beach*. It would take many pages to list all the films that show car smashes, cars being tipped over cliffs, and other such squandering of resources. Let us not forget the costs of all those generators powering the lights on set and on outdoor shoots and all the other activities that are part and parcel of making a movie.<sup>xiii</sup> The author has only ever seen one film director, Alex Cox, openly rue the waste and pollution that his movies might

have caused. It must be noted that films can be made and screened in greener ways as *The Age of Stupid* demonstrates not least with its “eco-friendly premiere”.<sup>xliii</sup>

The ‘ideological’ impact of films and indeed the media as a whole is an even more complex matter, as the long-running disputations over the possible effects of film violence evidence. Conclusions here will be more tentative than, say, judgment of damage done to a habitat during location shooting. For a start, the lifestyles and opinions of film stars may have an impact. From the early days of film, fan magazines and newsreels featuring the off-screen lives of the likes of Douglas Fairbanks and Mary Pickford encouraged millions to desire to emulate at least some of their lifestyles.

This is not to say that the ‘news’ that 12 was the ‘dream family’ of Brad Pitt and Angelina Jolie (“still broody” apparently after their latest additions to the human race) will mean that fans are going to get down to more breeding themselves. But it does contribute to a climate in which it is hard to raise the most fundamental of ecological issues, human numbers and the on-going growth in population (America’s being one of the fastest growing, thus multiplying the impact of typically large and wasteful consumption levels there).

Then there is the rather larger matter of the content of films per se. A number of films with the greenish messages like *Wall-E* have been big-budget movies that have attracted large audiences. Yet they might enjoy Hollywood animations such as *Finding Nemo* without necessarily noticing what it depicts in passing about the critical importance of coral reefs for fish stocks as well as the ecological connection between city drains and the open seas. Perversely that film actually encouraged more people to keep fish as pets, something the film condemns.<sup>xliiv</sup>

*Bee Movie* also touches upon some significant issues. It builds a story around ‘ordinary bees’ being worked by the bad guys, this time Honex Industries. It shows what would happen without bees to provide that fundamental ‘life-support service’ of pollination. At the end comes the reformist message that humans and bees can learn to work together (a bit like the masses and masters of *Metropolis*). But it is hard to know whether many film viewers made a connection to the very real crisis concerning bees (and, indeed many other vital insects).<sup>xliv</sup>

Who knows what messages audiences took away from a film like *The Emerald Forest*. It is one of the few films to make a strong contrast between local ecosystems and their inhabitants on the one hand and, on the other, the destructive forces of ‘development’. The latter’s denizens are called “termites”, in the film and their habitat the “dead world”. It may be suspected few in the audience made any connection between their own lifestyles and the ecological despoliation they watched in the film.

Worst of all in terms of possible negative audience effects is the film that gets embroiled in what a regular column in *The Guardian* calls “bad science”. The tenuous assumptions that underpin *The Day After Tomorrow* allowed global warming denialists to score some easy points and thereby cast doubt on more scientifically based projections about the threat from climate change. Perhaps it should come as no surprise that opinion polls record that a majority of public think that scientists are crying wolf. It might be argued that people take what they want from movies, using them to reinforce what they already think or justify choices they make in everyday living. It is difficult to avoid a depressing but not surprising conclusion: namely that the best informed, best made, and best

intentioned green movies are unlikely to make much of a contribution to saving the world.

## Green screen?

If movies partly function as a window on the wider world, then the picture thus given on the ecological crisis is not just a small one (the vast majority of films simply ignore it) but, even worse, a distorting one. To be fair, there are films, some noted below, that illuminate some of the causes and consequences of what, potentially, could be a catastrophic turning point in human history. But, even then, as above examples try to show, such movies are also frequently misleading.

However this closing critique must distinguish documentary film-makers from their cousins in fictional film. Documentaries have a better record, not least since many more actually do address directly and sometimes forcefully the ecological crunch. But, to be fair, the genre provides an easier vehicle from which to do so, since there is far less, if any, need to develop the plotlines, characters and personal relationships of fictional narrative.

Yet many eco-documentaries still leave much to be desired. 'Nature films' in particular often isolate the environment in general or specific species/habitats from what is going on in the real world. Thus many early David Attenborough TV series delivered quite stunning portrayals of the Earth's flora and fauna yet failed to make explicit the fact that the web of life was being torn apart. Most Disney nature films did the same.

Then there is the worldview, typified by the *National Geographic*, which might recognise (certain) threats but either resignedly shrugs its shoulders, saying "that's the price of progress" or misleadingly suggests that all will be well when common sense prevails. Linked to this is the notion that bits of Mother Earth might have to be sacrificed in the name of various socio-economic goals. In a specific and immediate sense, there can of course be conflicts between, say, jobs and the environment (e.g. the battle over Heathrow's expansion) but, in the bigger picture, conservation must come first since the human economy is totally dependent on the ecological matrix.

There is also that wishful thinking, evident in some documentaries from sources like Bullfrog Films about alternatives to 'business-as-usual', that some combination of smarter planning, stronger incentives and more scientific understanding will make possible something called "sustainable development". This thinking is, however, just a variant of the dream that one can have one's cake and eat it. The various geological, thermodynamic and ecological limits-to-growth constitute absolute constraints on all kinds of expansion, the only sustainable society thus being a steady-state one, as John Stuart Mill recognised back in the mid-19<sup>th</sup> century.<sup>xlvi</sup> In other words, the challenge, one almost impossible to voice in today's growth-oriented culture, is really 'sustainable contraction.'<sup>xlvii</sup>

Most documentary-makers also seem reluctant to address the threat from overpopulation. One suspects that many lean to the Left, thereby seeing shortages exclusively in terms of maldistribution. This leads them to deny the realities of 'too many'. Thus films on this issue typically will dig up poor old Thomas Malthus for ritual retrial and execution, ignoring the contemporary literature on the perils of current population growth. Buy any serious study that omits the pressure from human numbers is like a polo mint: there is a big hole in the middle.

Last but not least, most film-makers in this field seem to think that the problem is a technical or managerial one. This is true in some specific cases. But the fundamental issue is a cultural one, needing both a full critique of the status quo and the articulation of an alternative vision. Only a few films, including Schumacher's *Edge of the Forest*, aim so high.

### **Not Coming to a Cinema Near You**

The accompanying filmography attests to the fact that there are several films with a greenish tinge. But, as noted before, they constitute a tiny proportion of the films in circulation (see, for example, the subject index at the back of the *Time Out Guides* on film). Worse, some of the biggest environmental stories have been largely ignored. At other times, the subject matter is treated lopsidedly. A final question is begged: why?

At first sight, there would appear to be many environmental stories begging to be told. Some are based on dramatic real events such as murder or attempted murder: Chico Mendes and Dema Federicci (Brazil), Heraldo Zuñiga and Roger Ivan Cartagena (Honduras), Aldo Zamora (Mexico), Charoen Wat-aksorn (Thailand), Chella Krishnamurthy (India), Ilya Borodaenko (Russia) Guy Bradley (USA) or the sinking of the Greenpeace vessel *Rainbow Warrior* by French secret agents. Then there were battles between the FBI and Earth First! in the USA, including the mysterious car bombing of radical environmentalist Judith Bari. Hollywood has mined the rich seam of the McCarthyite witch-hunts (*Good Night and Good Luck* etc) but not the brutal hounding of Rachel Carson.

Anyone looking for a crime thriller need seek no further than the environmental front, be it the 'mahogany kings' of Amazonia or the dumpers of toxic waste. Disasters like Bhopal and Chernobyl would also seem suitable cases for treatment (the latter and its aftermath have already featured in a number of novels, such as Martin Cruz Smith's *Wolves Eat Dogs*). Many such events included attempted cover-ups and other shenanigans which might be thought to boost their potential box office appeal.

Then there is a wealth of fictional material that could be adapted. Some, like the 'eco-noir' of Florida journalist Carl Hiaasen, afford plenty of comedic possibilities. Similar scope is offered by the novels of Edward Abbey. Writers like Judith van Giesen and John McDonald have provided much material for environmentally oriented "who-done-it" mystery thrillers. Then, of course, there is literary science fiction, with several works spinning tales about pollution and general eco-catastrophe, not least that eco-classic *The Space Merchants* (Pohl and Kornbluth). Unlike film-makers, several authors have dealt directly with overpopulation (Robert Silverberg, Harry Harrison and John Brunner, for example). There are several eco-dystopian novels crying out for filmic adaptation, not least T. C. Boyle's *A Friend of the Earth* as well as visions of a more sustainable society (the best one, *Ecotopia*, written by Ernest Callenbach, himself actually a one-time editor of a film theory journal)<sup>xlviii</sup>

So the comparative dearth of 'green films' cannot be put down to any shortage of possible material. Several other reasons spring to mind. The most obvious explanation is that film makers are being a bit cowardly, that they feel that an industry dominated by private conglomerates might not be receptive to pitches for films that attack their capitalist fellows. There are, of course, a fair number anti-corporate movies, including *The Insider* (Big Tobacco being its target) and *Lord of War* (arms trade). Internet rumours even suggest that the next Muppet movie will include an attack on Big Oil. John Sayles managed a swipe at property developers in *Sunshine State*. There are some Hollywood

heavyweights of radical inclination (George Clooney, Sean Penn, Danny Glover, etc), a factor that has helped to add some political spice to its output.

Yet, more generally, Hollywood and other mainstream centres of movie making have tended to squash radical sentiments. So, back in 1940, John Steinbeck's socialist novel *Grapes of Wrath* was politically neutered by 20<sup>th</sup> Century Fox,<sup>xlix</sup> Anti-capitalist films like *Idiocracy* suffered from the lack of serious marketing by the big film corporations.<sup>l</sup> The 'corporate stranglehold' explanation does hold a bit of water though, like all capitalists, film financiers normally will back anything that promises to make a good return. Or, as Lenin put it, "the Capitalists will sell us the rope with which we will hang them".

So other explanations must be included in any accounting. For a start, many environmental stories lack those clear cut characters beloved of mainstream narrative. Thomas Midgeley might have done a lot of damage but he was no Dr. Frankenstein. In any case, hazards like bromide, dioxin, 'hormone imposters', and anthropogenic radiation have many sources and equally diffuse effects, sometimes the result of slow bio-accumulation in food chains or synergistic interaction (e.g. acid rain), all of which are hard to capture in conventional film narratives.

Mention has already been made of the inherent biases in film-making technology. For example, the constant impoverishment and erosion of the world's soils will, if unchecked, eventually bring down modern society as it brought low several ancient civilisations (Mediterranean littoral, Mesopotamian 'Garden of Eden' etc.). But it hardly makes for sexy viewing. Indeed, destruction, not conservation, works well on the screen: trees being sliced by chainsaws, scrubland set on fire, whales being harpooned. Even then, the real damage to the Earth is not a matter of (filmable) 'big events' (the extreme weather of *The Day After Tomorrow* etc), but rather one of death by countless tiny cuts to the ecological fabric, something far less suitable for visual representation. No wonder makers of films of *Koyaanisqatsi* and *Baraka* resorted to all sorts of visual trickery to dramatise their subjects.<sup>li</sup>



*Koyaanisqatsi*

Perhaps, however, the fundamental reason why film-makers have largely declined not to tackle 'green issues' is because, as individuals, they do not rate them as inherently significant. For instance 'radical' film-maker Michael Moore

has not touched the issue in his films. Indeed, in his books, he makes snide remarks about conservation. Or perhaps they doubt likely audience interest. Opinion polls, voting habits and spending patterns all suggest that large sections of the public are apathetic about the whole issue of ecological sustainability and indeed hostile to any serious action to address global warming and the like. Even in the 'green' state of Oregon, the good citizens voted in 2004 to repeal planning controls on urban sprawl. Readers may remember the recent University of Exeter report that showed that those who boast about their recycling efforts and the like are actually some of the worst 'binge flyers'.

So film makers might reasonably conclude that their paying public does not want to be reminded that the reason why the Earth is sickening is largely not due to big, bad corporations but to the lifestyle options, (let's not leave out child-producing) of those who buy cinema seats and DVDs. After all, what industry sustainably thrives by upsetting its customer base? And there is plenty of evidence that most people quickly tire of 'bad news'. The British New Wave rather quickly gave way to film-making of a sunnier disposition because cinema-goers tired of those rather grim movies. There is obviously a market for disaster movies, even ecological ones, but it is only so big and, in any case, tends to wax and then wane. Green issues too have followed in real life a similar boom then bust cycle in terms of public interest.

### **Film Theory: Grey Matter**

There is one group omitted from the above discussion: not movies makers, not film audiences but theorists about film. It must be noted that they too have maintained, by and large, a studied indifference to green matters. One can leaf through any major textbook in Film Studies and find chapters on Semiotics, Psychoanalysis, Feminism, Marxism and indeed just about every 'ism' except environmentalism and its deeper cousin ecocentrism.<sup>lii</sup>

Proof of the pudding is a sampling of table of contents and index entries. Several keywords can be used — ecology, environment, overpopulation, pollution and so forth — but all usually yield barren results when used with film books in general, be it arcane theoretical tomes or ones aimed at the student market. Of course there are exceptions. The *BFI Companion to Horror* has an entry on 'Eco-Horror', for example. Indeed specific studies of genres like the western have generated a richer harvest. But overall the pickings are slim.

The same is true of exam boards. In Britain, the WJEC, for example, has shown real creativity in the syllabus it has devised for Film Studies. Its documents do encourage the promotion of the 'wider curriculum' within the delivery of the subject. Yet, in terms of actual unit specifications, no further encouragement is provided to actually address environmental themes.<sup>liii</sup>

It is tempting to suggest that Film Studies writers share the same interests — and antipathies — as their fellow citizens. But perhaps there is an extra element. It is the influence of postmodernism and its emphasis of individual subjectivity. It leads many commentators to argue that the 'environment' is merely a social construction and indeed that one is as good as another since it is relative. Not surprisingly then, 'objective' yardsticks like geology, entropy and ecology are lost in the ideological vortex. 'Natural' means whatever the user of the word wants it to mean. In this Humpty Dumpty world, the ecological crisis becomes just another matter of discourse and there are always other things to talk about.<sup>liv</sup>

Perhaps this picture is beginning to change. If so, it is long overdue.

## Filmography

*28 Days Later* (Boyle, 2002).  
*Age of Stupid, The* (Armstrong, 2009)  
*At Play in the Fields of the Lord* (Babenco, 1991).  
*Baraka* (Fricke, 1992)  
*Bee Movie* (Smith & Hickner, 2007)  
*Birds, The* (Hitchcock, 1963).  
*Black Robe* (Beresford, 1991).  
*Born Free* (Hill, 1966) & *Living Free* (Couffer, 1972)  
*Chain Reaction* (Davis, 1996)  
*China Syndrome* (Bridges, 1978).  
*Chinatown* (Polanski, 1974).  
*Christine* (Carpenter, 1983)  
*Civil Action, A* (Zaillian, 1998)  
*Dances With Wolves* (Cosner, 1991).  
*Dawn of the Dead* (Romero, 1978).  
*Day After Tomorrow* (Emmerich, 2004)  
*Day the Earth Caught Fire* (Guest 1961)  
*Deluge, The* (Heist, 1933)  
*Dersu Uzala* (Kurosawa, 1975).  
*Emerald Forest* (Boorman, 1985)  
*Erin Brocovich* (Soderbergh, 2000)  
*Family Man, The* (Ratner, 2000)  
*Fern Gully: The Last Rainforest* (Kroyer, 1992)  
*Finding Nero* (Stanton & Unkrich, 2003)  
*Fire on the Amazon* (Llosa, 1993)  
*Free Willy* (Wincer, 1993)  
*Gorillas in the Mist* (Apted, 1988).  
*Grey Owl* (Attenborough, 1998).  
*Happy Feet* (Miller, 2006).  
*Hoot* (Shriner, 2006)  
*Idiocracy* (Judge, 2006)  
*Into the Wild* (Penn, 2007)  
*Jaws* (Spielberg, 1975).  
*Koyaanisqatsi* (Reggio, 1983).  
*La Gloire de Mon Pere* (Robert, 1999).  
*Lake Placid* (Miner, 1999).  
*Local Hero* (Forsyth, 1983).  
*Logan's Run* (Anderson, 1976),  
*Lord of the Rings* (Jackson, 2001, 2002 & 2003)  
*Manufactured Landscapes* (Baichwal, 2006)  
*Medicine Man* (McTiernan, 1992)  
*Metropolis* (Lang, 1926).  
*Modern Times* (Chaplin, 1936).  
*Nausicaa of the Valley of the Wind* (Miyazaki, 1984)  
*On Deadly Ground* (Seagal, 1994).  
*Over the Hedge* (Johnson & Kirkpatrick, 2006).  
*Pale Rider* (Eastwood, 1985)  
*Perfect Storm* (Petersen, 2000)  
*Perils of the Jungle* (Blair, 1953)  
*Pocahontas* (Gabriel & Goldberg, 1995)  
*Princess Mononoke* (Miyazake, 1997)  
*Radiant City* (Burns, 2006)  
*River Runs Through It, A* (Redford, 1992).  
*Repo Man* (Cox, 1984)  
*Running Wild* (Bond, 1998)  
*Sequoia* (Franklin, 1934)  
*Silent Running* (Trumbull, 1971).  
*Silkwood* (Nichols, 1983)  
*Soylent Green* (Fleischer, 1973).  
*Spirit: Stallion of Cimarron* (Asbury & Cook, 2002)  
*Split Second* (Maylam, 1991).

*Star Trek IV: The Voyage Home* (Nimoy, 1986).  
*Sunshine State* (John Sayles, 2002)  
*The Cars That Ate Paris* (Weir, 1974).  
*Them* (1954).  
*Thin Red Line* (Malick, 1998).  
*Thunderheart* (Apted, 1992).  
*Time of the Wolf* (Haneke, 1988)  
*Titanic* (Cameron, 1996)  
*To Walk with Lions* (Schultz, 1999)  
*Toxic Avenger* (Herz, 1984).  
*Valley of the Giants* (Brabin, 1927)  
*Wall-E* (Stanton, 2008)  
*Whale Rider* (Caro, 2002)  
*Wild River* (Kazan, 1960)  
*Wind Across the Everglades* (Ray, 1958).  
*Witness* (Weir, 1985).  
*X-Men* (Singer, 2004)

### Some documentaries

*11<sup>th</sup> Hour*. (DiCaprio).  
*Addicted to Plastic* (Connacher, 2008)  
*Affluenza* (de Graaf and Boe, 1997)  
*Amazonia* (Switkes et al, 1991).  
*Animals Film* (Schonfield, 1981).  
*Blue Vinyl* (Helfand and Gold, 2004)  
*China Blue and Store Wars* (Peled, 2001).  
*Crude Awakening; The Oil Crash* (Gelpke & McCormack, 2006)  
*End of Suburbia: Oil Depletion & the Collapse of The American Dream, The* (Greene, 2004)  
*Frankensteer* (Canell & Remerowski, 2006)  
*Inconvenient Truth, An* (Guggenheim, 2006)  
*King Corn* (Woolf, 2007).  
*Killing of Chico Mendes, The* (Cowell, 1990)  
*Never Cry Wolf* (Ballard, 1983)  
*On the Edge of the Forest* (Oldfield, 1972).  
*Overspent American: Why We Want What We Don't Need* (Schor, 2004)  
*Radiant City* (Burns & Brown, 2006). See <http://www.radiantcitymovie.com/>  
*Reverend Billy & The Church of Stop Shopping* (Post & Palacios, 2002)  
*Snowmobile for George, A* (Darling, 2008 (See <http://www.asnowmobileforgeorge.com/> )  
*Story of Stuff, the* (Leonard, 2007) See <http://www.storyofstuff.com/> )  
*Subdivide & Conquer: Suburban sprawl: causes & remedies* (Gersh & Congdon, 1999)  
*Surplus: Terrorized into Being Consumers* (Gandini, 2003)  
*Wal-Mart: The High Cost of Low Price* (Greenwald, 2005)  
*What a Way to Go: Life at the End of Empire* (Bennett, 2007) See <http://www.whatawaytogomovie.com/>  
*What Would Jesus Buy?* (Van Alkemade, 2007).

An interesting development is the on-line documentary, A good example can be found @ <http://www.guba.com/watch/3000053112>

### Bibliography

Aitken, S. & L. Zonn, eds. (1994). *Place, Power, Situation and Spectacle: Geography of Film*. Rowman & Littlefield.  
 Anderson, A. (1997) *Media, Culture and the Environment*. Routledge  
 Bouse, D. (2000). *Wildlife Films*. University of Pennsylvania Pr.  
 Brereton, W. (2005). *Hollywood Utopia: Ecology in Contemporary American Cinema*. Intellect Books.  
 Carmichael, D. (2008) *The Landscape of Hollywood Westerns: Ecocriticism in an American Film Genre*. University of Utah Pr.  
 Corbett, J. (206). *Communicating Nature: How We Create and Understand Environmental Messages*. Island Pr.  
 Cubitt, S. (2005), *EcoMedia*. Rodopi.

Ingram, D. (2004). *Green Screen: Environmentalism and Hollywood Cinema*. University of Exeter Pr.

Hochman, J. (1995). *Green Cultural Studies: Nature in Film, Novel, and Theory*. University of Idaho Pr.

Lamay, C. & E. Dennis (1995). *Media and Environment*. Island Pr.

Mitman, S. (2009). *Reel Nature: America's Romance with Wildlife on Film*. University of Washington Pr.

Murray, R. & J. Heumann (2009). *Ecology & Popular Film*. SUNY Pr.

Schoell, W. (2008). *Creature Features: Nature Turned Nasty in the Movies*. McFarland & co.

Whitley, D. (2008). *Idea of Nature in Disney Animation*. Ashgate.

<sup>i</sup> See

<http://www.guardian.co.uk/environment/2008/aug/06/climatechange.scienceofclimatechange>

<sup>ii</sup> An EU study estimated that the costs of deforestation alone were at the least twice those of the 2008 credit & liquidity crisis. (See: <http://news.bbc.co.uk/1/hi/sci/tech/7662565.stm> ).

However it is impossible to put a price on all of the life-support services on which we depend & which are irreplaceable by any technology. Again, compare the conditions for life on Earth with those technological systems needed to sustain a handful of people on the moon.

There are, of course, big moral, not just utilitarian, questions about the now systematic destruction by humankind of non-human life forms (for a recent estimate of imperilled mammals, see <http://news.bbc.co.uk/1/hi/sci/tech/7651981.stm> ).

<sup>iii</sup> See Derek Bouse's *Wildlife Films* (University of Pennsylvania Pr., 2000) & Greg Mitman's *Reel Nature* (Harvard University Pr., 1999), both with a North American focus. Disney contributed several films to the genre. Britain's BBC has, of course, played a pivotal role, with nature documentary makers like David Attenborough to the fore.

<sup>iv</sup> See, for example, <http://www.planetinfocus.org/> , <http://www.cinemambiente.it/> , <http://www.dcenvironmentalfilmfest.org/> , <http://www.wildscreenfestival.org/> , & [http://www.dfgdocs.com/Festivals/Ecocinema\\_International\\_Environmental\\_Film\\_Festival.aspx](http://www.dfgdocs.com/Festivals/Ecocinema_International_Environmental_Film_Festival.aspx) .

<sup>v</sup> See <http://www.bullfrogfilms.com/ecology.html> & <http://www.concordvideo.co.uk/films.php?SHHeading1=102&SHHeading2=102&SHHeading3=102&SHHeading4=102&SHHeading5=102> See also <http://www.rsaartsandecology.org.uk/> .

<sup>vi</sup> On greenwash, see Greer, J. & K. Bruno (1997). *Greenwash: Reality Behind Corporate Environmentalism*. Apex Pr.; Lubbers, E. , ed. (2002). *Battling Big Business* . Green Books; Tokar, B. (1997). *Earth for Sale*. South End Pr. See also

<http://www.sourcewatch.org/index.php?title=Greenwashing>

<sup>vii</sup> <http://www.ageofstupid.net/>

<sup>viii</sup> Of course the perception fed by *Jaws* is amplified by widespread news coverage whenever sharks do attack people. See:

Jha, A, (2008). 'Shark species face extinction amid overfishing & appetite for fins @

<http://www.guardian.co.uk/environment/2008/feb/18/conservation.aaas>

Sample, I (2007). 'Death of a predator: big sharks are disappearing - & world's fisheries are suffering as a result'. @ <http://www.guardian.co.uk/science/2007/mar/30/biodiversity.fishing>

Sample, I (2008). 'Shark numbers crash'. Posted @

<http://www.guardian.co.uk/environment/2008/jun/12/wildlife.endangeredspecies>

<sup>ix</sup> An interesting case study can be found in:

Hall, C.A.S., et al (1994). 'The environmental consequences of having a baby in the United States'. *Population & Environment*, 15 (6), 1994: 505-524. It is worth digging out John Holdren's careful study, 'Population & the Energy Problem'. *Population & Environment*, 12(3), 1991: 231-255.

<sup>x</sup> See <http://www.sprawlwatch.org/> for American data

<sup>xi</sup> The USA loses some 6,000 acres of open space every day, plus around 100,000 acres of wetlands every year. 33% of U.S. plant and animal species are threatened with extinction. Half of U.S. lakes and a third of its rivers fail to meet the standards that by law should have been met by 1983.

<sup>xii</sup> See <http://www.radiantcitymovie.com/about.php>

<sup>xiii</sup> There is a list at <http://www.lonepinefilmfestival.org/movielistyear.asp>

<sup>xiv</sup> Perhaps the best textbook on these matters is G. Tyler Miller's superb *Living in the Environment* (Brooks Cole, 2008, now on its 16<sup>th</sup> edition).

<sup>xv</sup> One of the best expositions of these issues is Eugene Odum's *Ecology & Our Endangered Life-Support Systems* (Sinauer, 1989). As Odum himself notes, even photographers could not convey nonpoint pollution whereas it is easy to picture a factory chimney or sewage outflow pipe. The spreading dead zones created by pollution in the world's seas are similarly hard to

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convey in pictures, unlike, say, the victims of mercury poisoning or the Bhopal explosion. See, for example William Eugene Smith's photographs of the Minamata children.

On the limits of technofixes for climate change, see <http://www.corporatewatch.org.uk/?lid=3126>

<sup>xvi</sup> See, for example [http://www.zonaeuropa.com/20090207\\_1.htm](http://www.zonaeuropa.com/20090207_1.htm) about the 2008 Sichuan earthquake in China.

<sup>xvii</sup> See, for example:

Boskin, Y. (1997). *The Work of Nature*. Island Pr.

Daily, G. C., ed. (1997). *Nature's Services: Societal Dependence on Natural Ecosystems*. Island Pr.

Ehrlich, P. & A. Ehrlich (1982). *Extinction: Causes & Consequences of Disappearing Species*. Gollancz.

Ehrlich, P. & H. Mooney (1983). 'Extinction, Substitutions & Ecosystem Service'. *Bioscience*, 33(4): 248-254.

A good case study is Benjamin, A. & B. McCallum (2008). *World Without Bees*. Guardian Books.

Also see:

<http://www.ecology.org/biod/value/EcosystemServices.html>

<http://www.steadystate.org/Daly-Lauderdale-Paradox.pdf>

<http://www.ecospherics.net/pages/MosqEcoFun5.html>

<sup>xviii</sup> See <http://www.birdwatchersfilm.com/news/?lang=en>

<sup>xix</sup> The author must confess his ignorance of Asian cinema, not least Bollywood. His researches did spotlight movies like the new *Banada Neralu* and *Banani*, which focus on the threat to the forests but it presumably most movies from that part of the world, are not so different from those Hollywood and Europe. The documentaries about reforestation under Maoism grossly distorted the terrible ecological record of Chinese Communism, something that continues unchanged today. The rate of deforestation in the tropics continues at about an acre a second, and has for decades, despite all the noises made at global conferences like Rio 1992.

<sup>xx</sup> For a discussion, see *The Trouble with Bambi* by Ralph Lutts posted @ <http://www.history.vt.edu/Barrow/Hist2104/readings/bambi.html> On forest fires, see *The Wildfire Reader* by George Wuertner (Island Pr., 2006)

<sup>xxi</sup> It is of course the multiplicative interaction of three drivers that gives the total impact. The classic exposition remains Ehrlich, P. & J. Holdren (1972). 'One-Dimensional Ecology'. *The Ecologist*, 2 (2), 1972: 11-21. See also <http://www.ecologyandsociety.org/vol11/iss2/art29/>

<sup>xxii</sup> See:

<http://www.balance.org/index.html>

<http://www.carryingcapacity.org/>

<http://desip.igc.org/populationindex.html>

<http://www.npg.org/>

<http://www.numbersusa.com/index>

<http://www.optimumpopulation.org/>

<http://www.overpopulation.org/>

<http://www.populationconnection.org/>

<http://www.susps.org/overview/numbers.html>

<sup>xxiii</sup> Contrary to the so-called demographic transition theory ("affluence is the best contraceptive"), migrants to the USA from poorer countries tend to parent larger families than they would have had if they had stayed at home. Birth rates went up during the 'Roaring Twenties' but went down in the 'Depressed 30s', again confounding the wishful thinking that a bit more prosperity will defuse the population bomb. Today, some of the fastest growing populations are in oil-rich countries where a mix of religious dogma and male chauvinism play a bigger part than economics. Political correctness normally forbids frank discussion of such matters and most movies seem to have been struck dumb.

<sup>xxiv</sup> <http://www.punchng.com/Articl.aspx?theartic=Art200809211491067>

<sup>xxv</sup> <http://www.ageofstupid.net/taxonomy/term/58>

<sup>xxvi</sup> It is possible to deal with the issue in fiction as in the comic book *Death Be My Destiny* which depicts visit to an overpopulated planet, a narrative device used in the *Mark of Gideon* episode of TV's *Star Trek* series.

<sup>xxvii</sup> For example:

De Graaf, J. et al (2005) *Affluenza: The All-consuming Epidemic* Berrett-Koehler

Frank, R. (2000). *Luxury fever: Why Money Fails to Satisfy in an Age of Excess*. Free Press.

Hamilton, C. (2005). *Affluenza: When Too Much is Not Enough*. Allen & Unwin.

James, J (2007). *Affluenza*. Vermillion.

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Seabrook, J. (1988). *The Race for Riches: The Human Cost of Wealth*. Green Print

Wann, D. (2005). *Affluenza: The All-Consuming Epidemic*. Berrett-Koehler.

See also:

Ehrlich P. et al (2003). 'Effects of household dynamics on resource consumption & biodiversity'. *Nature*, 421 (30) January. 530-533

Hall, C.A.S., et al (1994). 'The environmental consequences of having a baby in the United States'. *Population & Environment*, 15 (6), 1994: 505-524. The need to see population growth in context of material expectations & consumption patterns.

Myers, N. & J. Kent, eds. (2004). *The New Consumers: The Influence of Affluence on the Environment*. Island Pr. Impact of rising per capita consumption in countries like China & India.

As well as [http://www.steadystate.org/Dietz\\_et\\_al\\_on\\_Ecological\\_Footprint.pdf](http://www.steadystate.org/Dietz_et_al_on_Ecological_Footprint.pdf)

A good case study is the explosion of India's car population. See

<http://www.guardian.co.uk/india/story/0,,2238983,00.html> &

<http://news.bbc.co.uk/1/hi/business/7180396.stm>

Movie stars often illustrate the problem in their personal lifestyles. See, for example:

Glancy, J. (2004). 'hi honey I'm Home' *The Guardian*, 16/01/04. The quite unsustainable lifestyle of John Travolta.

<sup>xxviii</sup> See Farrelly, E. *Blubberland*. MIT Press. See also Barber, B. (2007). *Consumed*. Norton; Miller, J. (1997). *Egotopia: Narcissism & the New American Landscape*. University of Alabama Pr.; De Graff, J. et al (2007). *Affluenza*. Berrett Koehler.

<sup>xxix</sup> See <http://www.ninapaley.com/NinasAdventures/NewAdv6.htm>

<sup>xxx</sup> For example, see <http://www.storyofstuff.com/> & <http://www.jbmovie.com/> Part of consumerism is the search for seeming bargain price goods on offer at hypermarkets. The resulting threat to local communities (& more by implication, the unsustainable level of related 'food miles') is depicted in *Wal-Mart: The High Cost of Low Price* (2005)

<sup>xxxi</sup> See especially Tenner, E. (1997). *Why Things Bite Back: Technology & the Revenge of Unintended Consequences*. Vintage. Also of note are Abramovitz, J. (2001). *Unnatural Disasters. Worldwatch Report*; Mileti, D. (1999). *Disasters By Design*. Henry Joseph Pr.; and Zebrowski, E. (1999). *Perils of a Restless Planet: Scientific Perspectives on Natural Disasters*. CUP.

<sup>xxxii</sup> On dune buggies & the like, see Wuerthner G. (2007). *Thrillcraft: The Environmental Consequences of Motorized Recreation*. Chelsea Green.

<sup>xxxiii</sup> Useful studies to the limits of any technology include:

Cook, E. (1982). 'The Consumer as Creator: A Criticism of Faith in Limitless Ingenuity'. *Energy Explor. & Exploit.*, 1(3): 189-201.

Edgerton, D. (2008). *The Shock of the Old: Technology & Global History Since 1900*. Profile. A salutary reminder how long many old technologies live on while new ones rise & crash.

Holdren, J. (1976). 'Technology, Environment & Well-Being'. *In* C. Cooper, ed. *Growth in America*, Westview.

Lovins, A. (1977). 'The Limits To Energy Conversion'. *In* D. Meadows, ed., *Alternatives To Growth 1*, Ballinger.

McDermott, J. (1972). 'Technology: Opiate of the Intellectuals'. *In* Teich, A., ed. *Technology & Man's Future*. St Martin's Pr.

Schwartz, E. *Overskill*. Ballantine, 1971. The best refutation of the illusion we can simply invent our way out of social & environmental crises by means of 'technofixes'.

Tenner, E. (1997). *Why Things Bite Back: Predicting the Problems of Progress*. Fourth Estate.

Trainer, F. (1995). 'Can Renewable Energy Sources Sustain Affluent Society'. *Energy Policy*, 23(12): 1009-1026.

Waters, W.B. (1973). 'Landing a Man Downtown'. *Bull. Atom. Scientists*, 29(9), 1973: 34-35. A useful essay which looks at the oft-made remark that 'if we can put people on the moon, surely we can solve problems like...down here on Earth'.

Woodwell, G.M.(1976). 'Short-Circuiting the Cheap Power Fantasy'. *In* R.L. Smith, ed. (1976). *The Ecology of Man*. Harper & Row.

<sup>xxxiv</sup> See <http://www.ejumpcut.org/archive/jc47.2005/palerider/index.html>

<sup>xxxv</sup> An example is the loss of the night sky due to innumerable individuals & institutions bearing the midnight light. So too is the loss of urban greenery due to the concreting of gardens & construction of decking. Most oil on the beach comes not from tanker spills but individuals pouring the substance down their drains. For amplification of this perspective, see:

Costanza, R. (1987). 'Social Traps & Environmental Policy'. *Bioscience*, 37/6, 1987: 407-412

Kahn, A. E. (1968). 'The Tyranny of Small Decisions' *Kyklos*, 1, 1968: 23-47.

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- Odum, W. (1982). 'Environmental Degradation & the Tyranny of Small Decision'. *Bioscience*, 32(9), 1982: 728-729.
- Ophuls, W. (1993). *Ecology & the Politics of Scarcity*. Freeman. Part Two is the best exposition of the Tragedy of the Commons argument, the most famous (or infamous!) writer on which was the American biologist Garrett Hardin.
- Schelling, T. C. (1971). 'On the Ecology of Micromotives'. *The Public Interest*, 25, 1971: 59-98.
- <sup>xxxvi</sup> See:
- Diamond, J. (1998). *Guns, Germs and Steel: A Short History of Everybody for the Last 13,000 Years*. Vintage.
- Ponting, C. (1991). *A Green History of the World*. Penguin.
- McNeill, J. R. And W. McNeill (2003). *The Human Web: A Birds-Eye View Of World History*. W.W. Norton
- Sale, K. (2007). *After Eden: the Evolution of Human Domination*. Duke UP.
- Shepard, P. (1998). *Coming Home to the Pleistocene*. Island Pr.
- <sup>xxxvii</sup> For example, see [http://www.mediarights.org/film/biodiversity\\_the\\_variety\\_of\\_life](http://www.mediarights.org/film/biodiversity_the_variety_of_life)
- <sup>xxxviii</sup> Daston, L. (2006). *Thinking with Animals: New Perspectives on Anthromorphism*. Columbia University Pr.
- <sup>xxxix</sup> Mayumi, K. et al (2005). 'The ecological and consumption themes of the films of Hayao Miyazaki'. *Ecological Economics*, vol. 54, (1), pp 1-7.
- <sup>xi</sup> The best recent study is Wright, R. (2005). *A Short History of Progress*. Canongate. See also: Arndt, H.W. (1989). *Economic Development: The History of an Idea*. Chicago UP.
- Devall, B. & G. Sessions (1984). "The Development of Natural Resources & the Conservation of Nature". *Environmental Ethics*, 6: 293-322.
- Ferrarotti, F. (1985). *The Myth of Inevitable Progress*. Greenwood.
- Gomer, R. (1968). 'The Tyranny of Progress In B. Rothblatt, ed., *Changing Perspectives on Man*, Univ. Chicago Pr.
- Foreman, D. (2001). 'The Cornucopian Myth'. *Wild Earth*, Summer, 11(2); inside cover, 2-5.
- Gowdy, J. (1994). 'Progress & Environmental Sustainability'. *Environmental Ethics*, 16, Spring: 41-47.
- Gray, J. (2004). *Heresies* Granta. Especially Part 1: 'The Illusion of Progress'.
- Hardin G. (1982). *Naked Emperors: Essays of a Taboo Stalker*. Kaufmann, especially the chapter 'Ecology & the Death of Providence'.
- Lasch, C. (1991). *The True & Only Heaven: Progress & its Critics*. Norton.
- Skolimowski, H. (1974). 'The Myth of Progress'. *The Ecologist*, 4(7): 248-258.
- Bury, J. B. (1932). **The Idea of Progress**. Macmillan. A true 'oldie but goldie'.
- Geisinger, A. (1999). 'Sustainable development & the domination of nature'. Posted @ [http://findarticles.com/p/articles/mi\\_qa3816/is\\_199910/ai\\_n8853134/pg\\_1](http://findarticles.com/p/articles/mi_qa3816/is_199910/ai_n8853134/pg_1)
- Rist, G. (2002). *The History of Development: From Western Origins to Global Faith*. Zed.
- Sachs, W. (1991) 'Environment & Development : the Story of a Dangerous Liaison.' *The Ecologist* 21(6): 252-257
- <sup>xii</sup> It is a film that ought be compulsory viewing for those who demand a New Deal to tackle the economic downturn. Roosevelt's original programme did much ecological damage and did not make great difference to the course of the 30s Depression. See Chandler, W. (1984) *The Myth of the TVA: Conservation and Development in the Tennessee Valley, 1933-80*. Ballinger.
- <sup>xiii</sup> According to a report in *The Independent* (08/02/09), in the Los Angeles region the film industry generates proportionate to its size more air pollution than any other industry except fuel refineries! The production of film prints from celluloid generates significant amounts of solid waste as well as direct water pollution. Digital technologies seem likely to cut silver pollution. For more sustainable alternatives see <http://www.glasseyepix.com/html/low.html> , <http://filmgreener.com/> & <http://www.ema-online.org/images/greenseal/GreenSealScorecard1108Sheet1.pdf>
- <sup>xiiii</sup> <http://www.guardian.co.uk/environment/2009/feb/26/the-age-of-stupid-climate-change>
- <sup>xliv</sup> For the record, around 90 percent of the large predator fish are gone, and 75 percent of marine fisheries are now overfished or fished to capacity. Almost 50% of coral reefs are gone or are seriously threatened. Fertiliser run-off and other pollutants have created hundreds of dead zones in the seas.
- <sup>xlv</sup> See Benjamin, A. & B. McCallum (2008). *A World Without Bees*. Guardian Books.
- <sup>xlvi</sup> The best writers on these issues are probably Nicholas Georgescu-Roegen and Herman Daly.
- <sup>xlvii</sup> Or, to put matters another way, human society is in 'overshoot'. See for instance:

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Goodland, R. (1992). 'The Case that the World Has Reached Its Limits: More Precisely that Current Throughput Growth in the Global Economy Cannot Be Sustained'. *Population & Environment*, 13(3): 167-182.

Meadows, D. et al (2004). *Limits To Growth: The 30-Year Update*. Chelsea Green.

Vitousek, P. et al. (1986). 'Human Appropriation of the Products of Photosynthesis'. *Bioscience*, 34(6): 388-373. How humans are not only eating bigger and bigger slices of the Earth 'cake' but are also threatening, thereby, to destroy the 'bakery' itself.

A picture of a really sustainable alternative can be found in Ted Trainer's *The Conserver Society* (Zed, 2005). A veritable oldie but goldie is *The Blueprint for Survival* by Edward Goldsmith et al (Penguin, 1972), See also:

McKibben, B. (2007). *Deep Economy: The Wealth of Communities and the Durable Future*. Times Books.

Odum, H. et al (2001). *A Prosperous Way Down: Principles & Policies*. Colorado UP.

Pimentel, D. et al, eds. (2000). *Ecological Integrity: Integrating Environment, Conservation, & Health*. Island Pr.

<sup>xlviii</sup> [http://en.wikipedia.org/wiki/Ernest\\_Callenbach](http://en.wikipedia.org/wiki/Ernest_Callenbach) His *Ecology: a Pocket Guide* (University of California Pr., 2008) is also the best short introduction to the ecological ideas underpinning this article. Callenbach recently informed this author (February, 2008) that movie business has shown interest in adapting *Ecotopia* though he did express concern that it might be made into some sort of *Brazil* with the ecological themes correspondingly muted.

<sup>xlix</sup> See *America on Film: Representing Race, Class, Gender, and Sexuality in the Movies* by Harry Benshoff & Sean Griffin (Blackwell, 2004).

<sup>i</sup> See <http://www.sovereignty.org.uk/siteinfo/newsround/idio.html> For another case study, see <http://www.guardian.co.uk/film/2006/sep/08/johnpatterson>

<sup>ii</sup> The author once walked with a Pacific Rim National Park guide in Canada through secondary growth woodland and then into primal forest. The difference between, even over a few feet, was staggering. Yet it would be hard to convey on a normal feature film.

<sup>iii</sup> The latter can be sampled in four excellent anthologies:

Drengson, A. & Y. Inoue, eds. (1995). *The Deep Ecology Movement: An Introductory Anthology*. North Atlantic Books.

Hughes, J. Donald & Schultz, R., eds. (1981). *Ecological Consciousness*. Univ. Pr. of America.

Mills, S., ed. (1990). *In Praise of Nature*. Island Pr.

Sessions, G. ed. (1995). *Deep Ecology for the 21st Century*. Shambhala Books.

Also see: <http://www.ecospherics.net/pages/EarthManifesto.html>

<sup>iiii</sup> See, for example, the Year 2 coursework guidance where explicit encouragement could have been given.

<sup>liv</sup> There is not space to delve into these matters. But anyone interested might profitably read: Dews, P. (1987). *Logic of Disintegration: Post-Structuralist Thought & the Claims of Critical Theory*. Verso,

Eagleton, T. (1995). 'Where do post-modernists come from?'. Posted @ [http://www.findarticles.com/p/articles/mi\\_m1132/is\\_n3\\_v47/ai\\_17228740](http://www.findarticles.com/p/articles/mi_m1132/is_n3_v47/ai_17228740)

Ehrenreich, B. (1999). 'Farewell to a fad'. @ <http://www.physics.nyu.edu/faculty/sokal/ehrenreich.html>

Gross, M. & N. Levitt (1997) *Higher Superstition: The Academic Left and Its Quarrels with Science*. John Hopkins Univ. Pr.

Sokal, A. & J. Bricmont ((1998). *Intellectual Impostures: Post-modern Philosophers' Abuse of Science*. Profile Books. See also: <http://www.physics.nyu.edu/faculty/sokal/>

Palmer, B. (1990). *Descent into Discourse: The Reification of Language and the Writing of Social History*. Temple University Press.

Sessions, G. (1995). 'Postmodernism, Environmental Justice & the Demise of the Ecology Movement?' *Wild Duck Review*, June/July: 14-16. Argues that postmodernism fails to deconstruct its own brand of humanistic arrogance.

Soulé, M. & G. Lease, eds. (1995). *Reinventing Nature?: Responses to Post-modern Deconstruction*. Island Pr.

Stangroom & O. Benson (2007). *Why Truth Matters*. Continuum.

Windschuttle, K. (2000). *The Killing of History: How a Discipline Is Being Murdered by Literary Critics & Social Theorists*. Encounter Books.

Worster, D. (1997). 'The Wilderness of History'. *Wild Earth*, Fall: 9-13.