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The 'Ahimsa Factor': Ecological Non-Violence Process Analysis in China and Its Implications for Global Paradigmatic Shifts

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Abstract

The world is witnessing the sixth extinction spasm in the annals of 4.2 billion years of life on Earth. We lose some 40,000 discrete populations of organisms every day. Species and habitat loss exceeds anything comparable during the last 65 million years. The human population is poised to hit between 9.5 billion and – in the absolute worst case scenario, 15 billion – with all of its accompanying consumption. A new global paradigm that can set the gold standard for ecologically-humble human behavior is urgently required and the nation of China – the largest country in human history, by far – has the potential to set in motion the global processes that are a prerequisite to a new gold standard for rectification of ecological violence. This will be no easy challenge, to be sure.

In this essay the authors examine some of the comprehensive biodiversity, global trade, ecological degradation, demographic and animal rights challenges facing the China of 2013 and suggest some solutions.

Keywords: *biodiversity, ecological degradation, human population, species, China.*

What is at Stake?

China's environmental predicament represents some of the best, but also the most vulnerable, of circumstances. In this precarious and dialectical regard it is not alone. The human condition has awakened, as if from a long slumber, to divine in its current situation both peril and promise.

Ecological schizophrenia captures both the upside and colossal downside of human affairs. We are all, each of us, free to choose our destinies. Evolution neither condemns nor liberates us. We alone must be the agents of inspired change.

In May of 2006, The European Environment Agency embraced a concept whose time is long overdue: that of 'halting the loss of [global] biodiversity

by 2010'.[1] This announcement echoed the avalanche of data and widespread alarm throughout the world's scientific communities by firmly acknowledging that we are now in the midst of the Earth's sixth massive extinction spasm in the known 4.2 billion history of known life on this planet. The recent acceleration in species extinctions is occurring some thousand times more rapidly than the presumed 'natural rate' of extinctions, which is estimated to be one out of every million species, or, between 10 and 100 extinctions annually. The rate of loss varies from location to location, of course. But in some areas we could be looking at literally hundreds of thousands of species wiped out forever in a day.[2]

As species disappear, their link to other populations is shattered, thus triggering larger and larger collapse of habitat, migratory viability, and the critical genetic robustness of interdependent communities, all of whose breakup can happen as rapidly as in a forest fire, or the calving of an ice shelf in Antarctica, where the root causes are deep within the texture, often beneath the radar screen of detection. 'Whether it's forests, marine systems, grasslands, you name it, they are in disrepair. For the sake of the planet, the biodiversity science community has to create a way to get organized, to coordinate its work across disciplines, and together with one clear voice advise governments on steps to halt the potentially catastrophic loss of species already occurring', said Dr. Watson, former chairman of the Intergovernmental Panel on Climate Change (IPCC) (CBD 2006).[3]

Little wonder, then, that approximately 40,000 discrete populations of organisms across the planet are being extinguished every day.[4]

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[1] URL: http://epaedia.eea.europa.eu/pag.php?pid=584.

[2] This assertion is born of three empirically driven sets of data. First, the astonishing revelations of Terry L. Erwin. In a study of one hectare (2.4 acres) of Ecuador's Yasuni National Park tropics, Erwin and colleagues extrapolated a reliable index of invertebrate abundance, and determined as many as 60,000 different species per hectare, many of them endemic within those very few acres of rainforest (Erwin 1988, 1966). Add to Erwin's findings the inevitability of biological co-dependents. Navjot Sodhi and Lian Pin Koh of the National University of Singapore, in a study focusing on some 12,200 plants and animals that are threatened or endangered, discovered that for every endangered species (often an invertebrate) two other known species appear to be equally imperiled. See http://www. planetark.com/dailynewsstory.cfm/newsid/27082/story.htm. Place this remarkable combination of species vulnerabilities beside the fires and bulldozers of development now accounting globally for as much as 200,000 acres of rainforest lost every day, and the loss in this generation becomes incalculably large. See http://www.rain-tree.com/facts.htm; www.satyamag.com/novdec00/keating.html.

[3] 'A majority of the nation's biologists are convinced that a "mass extinction" of plants and animals is underway that poses a major threat to humans in the next century, yet most Americans are only dimly aware of the problem, a poll says' (Warrick 1998).

[4] See Michael Tobias' interview with Paul Ehrlich at URL: http://www.forbes.com/sites/michaeltobias/2013/01/16/the-ehrlich-factor-a-brief-history-of-the-fate-of-humanity-with-dr-paul-r-ehrlich/.

Ecological Renaissance

Along with the European Environment Agency, China, too, has long embraced an environmental calling. Eco-science, biodiversity protection, renewable energy R&D, pollution mitigation, reforestation and many other ecological sectors have seen a true coming-of-age across the People's Republic. China is well on its way – notwithstanding enormously complex challenges – to becoming a leader in that universal predilection to engender a global ecological civilization. Cutting-edge environmental restoration has been much discussed in Chinese academic and civil engineering circles for years. Eighteen months ago, an important case study of ecopolis, beginning with Hangzhou City, was published by the Research Center for Eco-Environmental Sciences at the Chinese Academy of Sciences in Beijing. Therein, the author Rusong Wang described the 'ten big eco-infrastructure projects and 1250 eco-engineering projects [that] have been carried out in areas [such] as free-bicycle service system, eco-agriculture and eco-industrial transformation, sustainable consumption, eco-community, wetland restoration, rural sewage treatment, municipal wastes regeneration, eco-cemetery, eco-mapping'. Wang adds, 'Up to now, 30 per cent and 70 per cent of its townships have met the State and Provincial ecopolis standards respectively, and 6 counties/districts were granted as eco-counties'.[5]

Many of the most provocative implications and exciting opportunities inherent to the ecopolis sustainability design concept are discussed on the Harvard Business, and Harvard Design Schools website devoted to ecopolis.[6] In a recent article, the vertical sustainability and 'best practices' approach being employed in the world's second highest building, the Shanghai Tower, are examined.

Among the numerous other indicators of a Chinese ecological renaissance are the country's recent National Strategy for Plant Conservation (BGCI 2007) aimed at safeguarding the future of nearly 5,000 specifically identified threatened plants within the country, to her efforts to expand an in situ network of protected areas. China's massive 10-year reforestation project is aimed at covering 97 per cent of the country, the largest initiative of its type in any country in history. Initially, an area twice the size of Colorado was planted.[7] By 1998 commercial logging in China's one designated biological hotspot – the Hengduan Shan, or Mountains of the Southwest – had been halted.[8]

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[5] See URL: http://www.eco.confex.com/eco/2011/preliminaryprogram/abstract_27375.htm.

[6] See URL: http://www.sustainablecitiesfinance.wordpress.com/.

[7] See URL: http://www.china.org.cn/english/2002/May/32599.htm; www.fadr.msu.ru/rodale/agsieve/txt/vo14/issue1/1.html; www.eurekalert.org/pub_releases/2006-09/ci-uac091406.php.

[8] A 'hotspot' so defined refers to a region that has at least 1500 endemic vascular plants (indicator species) in terrain of which at least 70 per cent has been lost from its original extent. See Tobias *et al*. n.d.

Ecological Challenges

Here is where the much discussed inherent contradictions within Chinese tradition have been pointed out, namely, a reverence for nature in ancient Daoist tradition – seen in so much of Chinese aesthetic appreciation on canvass, in literary and other art and philosophical forms – but, alas, a simultaneous predilection to undermine that very spirituality, in some instances (Wenhui 1997). To date, for example, many individuals continue to ignore the government ban on cutting down forest and data suggests that as little as 5 per cent of the overall forests in Hengduan Shan remain (Mittermeier *et al.* 2004).

Similarly, in spite of major botanical restoration work with endemics and floristic medicinals, it is likely that Chinese wild rice could disappear in little over a decade from now. 'Chinese wild rice will become extinct in fifteen years', says Peking University Professor Dr. Lu, in a new report detailing the country's fast disappearing natural heritage and just some of what is at stake (Yardley 2007). These are just two examples out of many. Such ecological contradictions are rife within every nation, but for China – that has so much wilderness yet to lose – such contradictions could prove heartbreaking if the challenges they pose are not overcome.

Halting the Loss of Biodiversity

The crisis of disappearing biodiversity cannot be understated: it is the core loss that a nation and her people must fear the most, lest they end up like the extinct culture of Easter Island. As with every economy, China's spectacular growth is altogether dependent on the vast treasure troves of her natural heritage, no matter how hard it, or any other country, tries to cover-up in situ depletion by trying to import natural resources from outside her political borders, ecologists call a syndrome of 'the Netherlands Fallacy': an equation that correlates sustainability with carrying capacity.[9]

Should China see its natural heritage go bankrupt to any demonstrable extent, it would be bereft of more than its soul: China herself would be lost.

History has not been kind to the twenty-two great civilizations of the past that ignored the ecological warning signs, as outlined all too clearly by such notable historians as Arnold Toynbee and Jared Diamond (Toynbee 1976; Diamond 2005; Tobias 1994). In *Collapse*, Diamond points to three developmental leviathans in China that together emblemize 'the world's largest development projects, all expected to cause severe environmental problems'. They are the Three Gorges Dam in Hubei Province, the South-to-North Water Diversion Project, and the overall runaway development across much of Western China (Diamond 2005: 367).

[9] See URL: http: www.pregnantpause.org/overpop/nethfall.htm.

As previously indicated, The People's Republic has as much or more to lose in terms of biodiversity than any country in history. Consider some of the nation's 'basal ecological metabolism': nearly 18 per cent of the country remains clad in forest, or 175 million hectares (420 million acres or nearly 700,000 square miles). At least 6,347 vertebrate species including 581 mammals, 1,244 bird species, 284 species of amphibian, 376 species of reptile and at least 20,000 marine species exist within that vast and scattered canopy (SEPA 2005). In addition, nearly 8 per cent of the Earth's plant species are represented in China, or some 30,000, a third of which are endemic (found nowhere else). From the summit of Everest to the Turfan Depression 154 m below sea level, China's altitudinal variations are the largest in the world, ensuring an astonishing turnover rate of species diversity across the vast arrays of China's numerous mountain ranges, deserts, tropical, temperate and marine biota.

Among the country's most critically endangered iconic species are not only the highly threatened Giant Panda, but lesser known creatures, not least of which, the world's 'greatest concentrations of endangered primate species', including the snub-nosed monkeys of the genus Rhinopithecus, and the Hainan gibbon (Mittermeier R., Gil, and Mittermeier C. 1997). Other astonishing 'Chinese citizens' include Yangtze river dolphins and Père David's deer, snow leopards, Chinese alligator, and the world's largest number of endemic pheasants, not to mention a quarter of the world's unique Rhododendron species, plus some of the most diverse lichens, ferns and other bryophytes on Earth.

Like the countries of the European Union, the People's Republic has committed to halting biodiversity loss, with ever-present benchmarks. The Conservation International authors of the critical book *Hotspots* in their assessment of China write, '...time is short ... pressures on fragmented natural habitats from grazing, clearance, hunting, and collection of forest produce remain, and new threats, such as dam building on all main rivers in the hotspot, mining, and unplanned mass tourism development accompanied by road expansion and wildlife consumption are emerging. This means that the extinction of many of the restricted-range species of plants and animals is a realistic and immediate possibility' (Mittermeier *et al*. 2004: 160).

These warnings are being countered by strong collective endeavors evidencing China's awareness of, and resolve to counter biological degradation with significant sustainability initiatives, as heretofore referenced. While China – like most other nations – has realized the vulnerability of its indigenous flora and fauna, it also knows well the spectacular global scope and importance of such biodiversity. And unlike, say, a place like Yasuní National Park in Ecuador, where insects and spiders have been tracked uniquely for nearly two decades, the invertebrates of China have enjoyed only preliminary research, yet the indications suggest an even more astonishing array of creatures yet to be discovered (Xu MuQi and Zhang ZhiBin 2002).

This generation of young Chinese ecologists has much to be hopeful about. But, as is consistent with any mixed record, it will not be an easy path. For example, the 2005 Environmental Sustainability Index (ESI) ranked China 133 out of 146 (with North Korea being 146).[10] By 2008, the Environmental Performance Index showed some improvement: China had risen to a ranking of 105 out of 149 nations listed. China fell behind Myanmar and was just barely ahead of Uzbekistan.[11] But last year, China fell again to 116 out of 132.[12] Much of this can be attributable to China's air and water pollution issues, but also to biodiversity loss.

Ecological Costs/Benefits

The approximated cost/benefits accompanying ecological damage in a country the size of China is unambiguous. With net annual losses far exceeding the nation's US$ 10 billion monthly trade surplus average (see Lardy 2008; BBC 2008) and a general demographic reversal in terms of increasing preferred family size (2 rather than 1), consumerism in China is taking a terrible toll, in spite of the country's trillion dollar plus 'cash hoard' (Mukherjee 2007). Metropolitan statistical areas, with their tally of low sulfur coal-fired power plants, spring up virtually overnight, and the fast-growing number of automobiles is outstripping even the human population explosion. Increasingly, more and more landscapes are being converted to sacrifice areas.

Of course, the targeting of China's growing surplus at an environmental safety net is no less critical than a nation-wide pension fund. While China's official press agency *Xinhua* cited former Vice Premier Zeng Peiyan, as declaring 'coal, iron and oil' to be the purchases of choice with all of China's cash surpluses (*Ibid.*), two other looming realities must sound a wake-up call for the country: 1.45 billion Chinese by 2050, a large percentage of whom will be elderly; and vastly truncated natural capital (Zhou 2006). These represent a potentially lethal combination for biodiversity.

The Agricultural Conundrum

One of the most problematic areas of concern, when speaking of a green future amid environmental disparity and biodiversity loss, involves agriculture. In a provocative Washington Post editorial in March 2011, Lester Brown asked, 'Can the United States feed China?' It raised many eyebrows and also provided ample opportunity to reflect on current grain import/export dilemmas, desertifi-

[10] See http:www.infoplease.com/ipa/A0930889.html.

[11] Environmental Performance Index Summary for Policymakers, Yale Center for Environmental Law and Policy; Center for International Earth Science Information Network, Columbia University, in Collaboration with the World Economic Forum, Geneva, Switzerland, and Joint Research Centre of the European Commission, Ispra, Italy, 2008.

[12] URL: http://epi.yale.edu; http://epi.yale.edu/epi2012/rankings.

cation and falling water tables across the North China Plain. Brown writes, 'Just as China is America's banker, America could become China's farmer'. He explains this scenario by examining how 'China requires 80 million tons of grain each year to meet just one-fifth of its needs'. If, as Brown speculates, China 'charges into the US grain market, American consumers will find themselves completing with nearly 1.4 billion foreign consumers'. Politically-destabilizing spikes in agricultural prices would not make for the best diplomacy. Brown says, 'If China pushes US food prices higher, tensions between the two countries may escalate' (Brown 2011).

That is one bad side of the equation. Another concerns the basic ecological overshoot and what such consumption, if predicated upon a scenario of exhausted Chinese soils and watersheds, bodes, namely, additional biodiversity fragmentation. Considering that the aforementioned IUCN in China has already published information attesting to the fact that 'more than 27 per cent of species are considered threatened'.[13] That adds yet another whopping dimension to the challenge of engendering a global ecological civilization with China at the helm, given its size, population, wealth accumulation and biological diversity. Then add the animal rights side of the equation and there are further difficulties. Indeed, as many luminaries from China's own Lao Tzu, Confucius, and Hseigh Ling-Yun, to Leonardo Da Vinci, Mahatma Gandhi and Einstein have said, a human civilization can be judged according to its treatment of other animals. Animal rights are the most telling mirror of the ethical and spiritual challenges facing any nation. For China, the myriad of animal rights and basic animal protection issues are mired in a web of insufficient legislation, monitoring, or regulatory statutes guaranteeing any nation-wide coverage. Even across its 31 Provinces, and at least 50 widely varying cultures and language groups, a singular lack of homogeneous ethics in China militates against the likelihood of any surge in empathy towards non-human animals anytime soon.

This constitutes probably the severest crisis in process-formulation that China must contend with, for it underscores all other ecological malfunctions; placing the nation on a path towards those many other civilizations in past centuries and millennia that have actually gone extinct. Twenty-two such civilizations were chronicled by the late British historian Arnold Toynbee. Clarence Glacken, from the University of California-Berkeley made similar strides, as did men like Oswald Spengler, Jared Diamond, and the author of this essay in his 1994 book (and film), *World War III: Population and the Biosphere at the End of the Millennium*.

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[13] URL: http://www.iucn.org/about/union/secretariat/offices/asia/asia_where_work/china/iucnch_work/iucnch_biodiversity/. See Population Reference Bureau Data Comparisons at URL: http://www.prb.org/Datafinder/Topic/Bar.aspx?sort=v&order=d&variable=92, and 93.

Chinese Animal Rights Issues

In a Forbes interview with Peter J. Li, Associate Professor of University of Houston, Dr. Li has gone into many details specific to China's not entirely unique situation. Dr. Li says that, 'The sheer number of farm animals in China suggests the world's great number of farm animal are raised in welfare compromised farming conditions in China'. He also speaks about the crisis of Chinese bear farming, 'shocking farming and slaughter practices', 'dog slaughter', 'a collective fear of hunger in the minds of people over the age of 50 in China' that might add to what is, in essence, a stark abnegation of traditional Chinese ethical and aesthetic values; and the overall situation across China given that, as Dr. Li puts it, the country has 'lagged behind the industrialized nations in animal protection law-making for more than 180 years'. Dr. Li writes, 'Never in its 5,000 year history did China ever raise and keep hundreds of millions of wildlife species in captivity as it is today'.[14]

Indeed, Dr. Li reminds us that China surpassed the USA as the world's biggest meat producer in 1990. And he adds that, 'While Westerners greet each other by asking "how are you", Chinese people traditionally greeted each other by saying "Have you eaten?"' (*Ibid.*). Dr. Li remembers how, when he 'met some of [his] old classmates back in China 30 years after graduation, [he] was some 40 pounds lighter than they were. They actually wondered if [he] got enough to eat in the US' (*Ibid.*). In terms of food, Dr. Li points to the fact that 'China's rapid industrialization has threatened the survival of 398 species of vertebrates' across China. And he has examined traditional Chinese medicine in terms of its exploitation of Chinese biodiversity, for tiger bone wine with its 'dubious curative effect' and Dr. Li goes on to ask 'whether all these allegedly indispensable and life-saving ingredients for illnesses ranging from eye irritations to cancers, coma, severe acute respiratory syndrome (SARS) and even liver transplants are really nothing more than the wildlife farming industry capitalizing on the anxiety of patients' (*Ibid.*).

And it is not just Chinese medicine, but a penchant for all things ivory, yet another disastrous cultural addiction that is the primary engine for destruction of African and Asian elephants – the largest land mammals on Earth who share with us, humans, deep self-awareness, emotional and cognitive bonds.

Dr. Li concludes that, 'Animal suffering is unprecedented in China in magnitude in both numerical terms… and in welfare conditions. With regard to China's ranking on a global report car, so to speak, I would not hesitate to say that it [China] may be at the bottom…' (*Ibid.*)

And yet, he is not all despair and pessimism, pointing out that today, China 'has an estimated 130 million dogs, many of whom are household pets. As a re-

[14] See interview with Michael Charles Tobias for Forbes, at URL: http://www.forbes.com/sites/michaeltobias/2012/11/02/animal-rights-in-china/.

sult, China's animal protection community is expanding. Some Chinese activists estimated that as many as 30 to 50 million Chinese are animal lovers, bigger than the total population of Canada' (*Ibid.*).

China's Profound Ecological Opportunity

Conversely, despite the aforementioned difficulties, these 'negative externalities' could actually – if reversed – pose the greatest opportunity in Chinese history to conserve biological heritage so as to guarantee all the basics for a huge population: clean water, clean air, healthy soils, ample storehouses of grain, home grown fruits and vegetables, not to mention a legacy of ecological nonviolence and enthrallment for future generations. With such opportunities come the most exciting and noteworthy prospects for ecological entrepreneurs ever, within any country.

For this to happen, Chinese conservation and business need to work hand-in-hand, while the Government hopefully continues to proactively urge the adoption of smart, nation-wide strategies for identifying biodiversity rarity; setting priorities for large scale ecosystem protections to mitigate corresponding economic progress; allocating significant ecological resources; distributing the 'green benefits' of virtuous engagement with the natural world; implementing national 'polluter pays' protocols and precautionary principles; and exacting much stricter monitoring and enforcement of current environmental and animal rights legislation.

The challenges are exacerbated by the time-frame, which is short. China's position vis à vis other countries is one of significant loss: among those nations with the largest number of threatened and endangered plant and animal species, China is one of the worst, ranking 14th and 7th from the bottom, respectively. And while the country has focused considerable attention on the prospects of ecotourism, it has done so without any overall sustainability plan (Han and Zhuge 2001).

Conversely, with her increasing economic success, and vast opportunities for international carbon credits by mitigation within China, the economics of environmental remediation suggest an industry that will transcend all others in the country, thus providing a win-win for one of the last standing aggregates of critical biodiversity on Earth. In this spirit, China's National Environment Protection Agency has long avowed that 'the survival of mankind cannot be separated from that of other species' (NEPA 1998).

On Point

To this end, China appears clearly on point: recognizing her unique threatened endangered species status since signing on to the Convention on Biological Diversity in 2004, China has endeavored to put in place such groundbreaking

legislation as its Law on the Protection of Wildlife, while engendering an in-country network of protection mechanisms.[15]

Ten years ago, the Chinese Academy of Sciences embarked on saving endangered vascular plant varieties throughout the country in a grid of gardens with the ultimate goal being some 458 square kilometers of plant protection, the largest collective botanic garden network in the world.

Hundreds of wildlife breeding stations have been created, and measurable progress noted with rare species like the Panda, the Chinese alligator, Eld's deer and Tibetan antelopes.[16] These biological and endangered species endeavors should be viewed as a kind of barometric reading; the baseline for assessing environmental amelioration. Because all economics are a sub-set of Mother Nature, what is good for the Giant Panda is good for all of China.

What is Good for China Should be Good for the World

When Jeremy Rifkin spoke last year before the European Commission, treating of what he has characterized as the 'third industrial revolution', he described how Germany 'is expected to produce 35 per cent of its electricity from renewables by 2020'; how 'Daimler, the company that invented the internal combustion engine that ushered in the Second Industrial Revolution, is readying hydrogen fuel stations in preparation for the mass production of its fuel cell automobiles in 2015'. He described a new vision for the EU's, putting forth the prospect of [the European Union] becoming the largest and wealthiest internal commercial market in the world.

'The key, – said Rifkin, – was in creating a seamless distributed renewable energy régime, a green electricity Internet, and a communication and transport network that will allow one billion people to engage in sustainable commerce and trade across the European continent and its periphery. By such means the European Union will come of age' (Rifkin 2012).

Now, consider China's future. I, too, have a dream for a nation that can also seamlessly fulfill a similar promise as that divined by Rifkin for the EU. That dream involves China that is ecologically compassionate in her embrace of regional biological integrity, and brilliantly proactive in terms of the responsibilities and duties attendant upon every nation in what is, as never before in human history, a globally interdependent environmental commons.

This was well stated during the December 2012 IUCN China roundtable on what was called 'Nature Based Ecological Civilization'. The IUCN Chair of the Commission on Education and Communication, Dr. Juliane Zeidler, brought forth the concept of 'Love, Not Loss', suggesting that the 'best way to rekindle our connection with nature' was by remembering not just all that which has gone

[15] URL: http://www.china.org.cn/english/features/China2004/107041.htm.
[16] *Ibid.*

extinct or is threatened with extinction, but also, and critically, that which 'we loved in the first place… [to] reconnect our daily lives with nature'. Moreover, the new IUCN President, Mr. Zhang Xinsheng, has long been committed, as he has put it, to 'building consensus among all stakeholders for development of a green and sustainable future'. Considering that he has also recognized the continuing plight of poverty throughout much of the world, and a myriad of environmental crises, Zhang Xinsheng's optimism and resolve to create a better world speaks not only to the mission of the IUCN, but to that of China, as well (IUCN 2012).

Conclusion

The necessary global processes that might transform China as a whole into a champion of ecological non-violence will necessitate a vision of one of the most ancient, powerful and elegant countries in the world setting the highest possible benchmark for all things green, sustainable, compassionate, and tolerant; a nation that – were it to do so – has every reason to become an ecological beacon for world civilization and harmony.

References

BBC. 2008. *Imports Cut China's Trade Surplus.* April 11. URL: http://news.bbc.co.uk/1/hi/business/7341962.stm.

BGCI (Botanic Gardens Conservation International). 2007. *China Launches 'Mammoth' Plan to Halt Biodiversity Crisis.* July 4. URL: http://www.bgci.org/china_en/news/0376/.

Brown L. R. 2011. Can the United States Feed China? *Washington Post.* March 11. URL: http://articles.washingtonpost.com/2011-03-11/opinions/35208618_1_corn-futures-soybe an-futures-grain-harvest.

CBD. 2006. Earth Facing 'Catastrophic' Loss of Species. *China Daily*. July 21. URL: http://english.biodiv.gov.cn/zyxw/200609/t20060904_92241.htm.

Diamond J. 2005. *Collapse – How Societies Choose To Fail or Succeed*. New York: Viking Press.

Erwin T. L. 1966. Biodiversity at its Utmost: Tropical Forest Beetles. *Biodiversity* II / Ed. by M. L Reaka-Kudla, D. E. Wilson, and E. O. Wilson, pp. 27–40. Washington: Joseph Henry Press.

Erwin T. L. 1988. The Tropical Forest Canopy: The Heart of Biotic Diversity. *Biodiversity* / Ed. by E. O. Wilson, pp. 123–129. Washington: National Academy Press.

Han N., and Zhuge R. 2001. Ecotourism in China's Nature Reserves: Opportunities and Challenges. *Journal of Sustainable Tourism* 9(3): 228–242.

IUCN. 2012. *Nature Based Ecological Civilization*. December 20. URL: https://www.iucn.org/news_homepage/news_by_date/2012/?11707/6.

Lardy N. 2008. Parsing China's Trade Surplus. *Business Week.* URL: http: www. businessweek.com/bwdaily/dnlash/jan2006/nf20060113_8659_db053.htm.

Mittermeier R. A., Gil P. R., Hoffmann M., Pilgrim J., Brooks Th., Mittermeier Ch. G., Lamoreux J., and Gustavo A. B. 2004. *Hotspots Revisited – Earth's Biologically Richest and Most Endangered Terrestrial Ecoregions.* Cemex: Conversation International.

Mittermeier R. A., Gil P. R., and Mittermeier C. G. 1997. *Megadiversity: Earth's Biologically Wealthiest Nations.* Agrupacion Sierra Madres, S. C. Mexico: Cemex.

Mukherjee A. 2007. Spending China's Cash Hoard. *International Herald Tribune*. URL: www.iht.com/articles/ 2007/01/09/bloomberg/sxmuk.php.

NEPA. 1998. *China's Biodiversity: A Country Study.* Beijing: National Environment Protection Agency of China. URL: http://bpsp-neca.brim.ac.cn/books/cntrysdy_cn/ index.html.

Rifkin J. 2012. *Beyond Austerity. A Sustainable Third Industrial Revolution Economic Growth Plan For the European Union* (An Executive Summary of Jeremy Rifkin's Keynote Speech for the Mission Growth Summit: Europe at the Lead of the New Industrial Revolution, hosted by The European Commission, May 29th). URL: http:// ec.europa. eu/enterprise/policies/innovation/files/mg-speech-rifkin_en.pdf.

SEPA (State Environmental Protection Administration of China). 2005. *China's Third National Report on Implementation of the Convention on Biological Diversity.* September, 15. P. 7.

Tobias M. Ch. 1994. *World War III – Population and the Biosphere at the End of the Millennium*. Santa Fe, NM: Bear & Co.

Tobias M. Ch., Morrison J. G., Mittermeier R., *et. al*. N.d. 'Hotspots', the Feature Film Documentary. A Dancing Star Foundation/PBS Feature. URL: http://www. hotspots-thefilm.org.

Toynbee A. 1976. *Mankind and Mother Earth.* New York: Oxford University Press.

Warrick J. 1998. Mass Extinction Underway, Majority of Biologists Say. *Washington Post*. April 21.

Wenhui H. 1997. Reflections on Chinese Traditional Ideas of Nature. *Environmental History* 2(4): 482. URL: http://connection.ebscohost.com/c/articles/8262229/reflections-chinese-traditional-ideas-nature.

Xu MuQi, and Zhang ZhiBin 2002. An Overview of Invertabrate Ecology in China. *Current Ecology* 48(5): 689–694. URL: http://www.actazool.org/paperdetail.asp?id=495.

Yardley J. 2007. China's Turtles, Emblems of a Crisis. *The New York Times*. December 5. URL: www.ny times.com/2007/12/05/world/asia/05turtle.html.

Zhou S. 2006. China's Reverse Population Bomb Who Writes, 'China is Getting Older Faster Than It's Getting Richer'. *Asia Times*. November 1. URL: www.atimes. com/atimes/china/ HK01Ad01.html.