12 China on the World Stage*

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China's "going-out" policy of the late 1990s, which encourages Chinese state-owned and private enterprises to look overseas to invest and secure resources, is merely a formal iteration of the projection of China's newly found political and economic might on the world stage. In fact, as this chapter argues, China's impact on the planet is so great that the country deserves a major place in any consideration of the future of the global environment. A lengthy but nevertheless incomplete list of such impacts includes the following: climate change; transboundary air and water pollution; watercourse conflicts on rivers that have their headwaters in China; increased deforestation of timber in Asia and Africa since China's 2008 logging ban; biodiversity loss spurred by the growing middle-class market in wildlife and seafood; a catastrophic surge in illegal trade in endangered species, particularly of elephant tusks, tiger bones, rhinoceros horn, and shark fins and other products for use in ivory carvings, traditional Chinese medicine (TCM), or wealth displays; the economic impact of the consumption patterns of the very rich and aspiring rich on products as diverse as luxury goods and infant formula; the implications for global grain supplies and animal welfare of the shift from a plant-based diet to a meat-based diet; the decimation of small-seller livelihoods in the developing world in the face of a flood of inexpensive Chinese products; the flow of new capital from a BRIC (Brazil, Russia, India, and China) multilateral investment bank to fund infrastructure construction in the developing world, likely with weaker social and environmental screens than those required by the World Bank and International Monetary Fund; mining conflicts at some of China's international mines, as well as controversy over China's loans-for-oil programs in Ecuador and elsewhere; illegal and semilegal fishing

* Parts of this chapter appear in a different form in Judith Shapiro, *China's Environmental Challenges,* 2nd ed. Cambridge: Polity Books, 2016.

impacts, with an expanded distant-water fishing fleet, China having polluted its own coastal waterways and depleted fish stocks in its exclusive economic zones (EEZs); contribution to inflated real estate prices worldwide as Chinese shelter capital overseas; land grabs in developing countries in an effort to secure grainfields and other resource-rich properties; vigorous territorial claims in the East and South China Seas, energized at least in part by the presence of fossil fuels and fisheries, as well as shipping corridors; and active efforts to secure access to the fisheries and transport lanes emerging from melting Arctic ice.

China's rise has enormous implications for the decline of US hegemony and the creation of a multipolar world that challenges Western values of public participation, transparency, and the democratic process even as China continues to embrace the ethos of global capitalism. To allay global anxiety at the rapidity and power of its entry into global politics, the country is mounting an intense defense of its motivations, as evidenced by the government's use of terms like "peaceful rise," "ecological civilization," "harmonious society," "China dream," "China consensus," and foreign aid programs that it claims have no political agenda. Soft power projections like the Confucius Institutes are promoting the study of Mandarin and Chinese culture in universities worldwide, even as discomfort with the implied price tag of scholarly censorship seems to build.

This chapter takes no stand on that debate. Rather, it provides an empirical overview of China's environmental impacts, particularly for those who are not China specialists. It is primarily intended to encourage scholars and students of global environmental politics, and particularly observers of the geopolitical implications of life on the New Earth, to pay closer attention to China's planetary footprint. I hope that readers will join the rich community of scholars and activists who participate in information centers like chinadialogue.net, monitor global news media with excellent China coverage, and subscribe to China-based newsfeeds. There are excellent films that dramatize China's environmental degradation and activism, as well as excellent books on China's environmental challenges. As Joyeeta Gupta writes eloquently in chapter 11, we live in a world of limited ecospace. No scholar of New Earth politics can afford to ignore China.

This chapter is organized into the following sections: China's contribution to climate change and the environmental implications of its efforts to reduce its carbon dioxide emissions; traditional Chinese cultural practices relating to the consumption of animals and plants and their impact on biodiversity; projection of economic clout beyond China's borders; and geopolitics with resources-securing aspects. These four sections inevitably

overlap but I hope they will be useful ways of organizing our thoughts about a complex situation whose importance is growing by the day.

China and Climate Change

In global negotiations on climate change, China has long claimed that it is a developing country, and in accordance with the principle of "common but differentiated responsibilities" articulated at the Rio Earth Summit in 1992, it should not have to agree to binding targets to reduce its emissions. China argues that the developed world created the problem, enjoys the benefits of a fossil fuel–powered economy, and continues to extract and emit carbon in support of luxury lifestyles.

Indeed, when carbon consumption is considered on a per capita basis, China's position was quite understandable and ethically defensible until recently, if untenable in terms of the endurance of the planet's most basic infrastructure. China has earned itself a reputation as obstructionist in global negotiations, never more dramatically than at the 2009 Copenhagen meeting on climate change, when the Chinese delegation was widely perceived as sabotaging the negotiations, and again in 2010 at Cancun, when it continued obstructionist behavior. In 2002 China's aggregate emissions surpassed those of the United States, making it the largest emitter in the world; in 2014, according to the Global Carbon Project, its per capita emissions surpassed those of the EU, making it the second largest per capita emitter after the United States and rendering its basic position indefensible. Thus, China's 2014 commitments, made through a bilateral agreement with the United States during the November Asia-Pacific Economic Cooperation summit meeting, are a long time in the making and highly welcome. They signal that China is stepping up to its global responsibilities now that it appears that the United States is doing the same.

We will examine the potential environmental impacts of that agreement, but first it must be noted that for a long time, China has been doing more on climate change than is usually recognized. As early as 2009, it started measuring emissions intensity as a factor of economic growth, claiming success in reducing the rate of increase of such intensity. Of course, emissions intensity, a creation of the George W. Bush White House, tends to mask the fact that absolute numbers continue to grow. Nevertheless, unlike the United States, China has consistently acknowledged that anthropogenic climate change is real and dangerous. The major cities of Shanghai, Tianjin, and Guangzhou are at risk from rising sea levels, with a 1 meter rise projected to displace 67 million people; glacier melt promises first to flood,

then parch the already water-starved regions of North China, including Beijing; severe storms, droughts, and floods have already ravaged the country with increasing frequency. Thus, it is in China's national interest to control carbon, even independent of any global agreement to do so. At least some of China's reluctance to adopt binding targets under a post-Kyoto treaty may be due more to concerns about sovereignty and equity than about lack of recognition that climate change is an urgent global problem. China is particularly sensitive about its global status and sees itself as reassuming the mantle of greatness that was taken from it during imperialism, Japanese invasion, civil war, and the economic stagnation of the Mao years (the last acknowledged only unofficially). Only when President Obama took unilateral steps to curb power plant emissions and regulate carbon in the United States did China appear assured that making a commitment would not cause the country to lose face by seeming to kowtow to developed country demands.

Another factor that pushes China to curb its carbon emissions is the intensity of its ground-level air pollution, which is so intense that popular discontent promises at times to destabilize, if not the entire country, then certain cities and regions. Pollution is one of the three main issues that drive Chinese anger at the Communist Party, together with government corruption and social inequality. The potential for cobenefits on carbon reduction and particulate air pollution control is thus very attractive to the Chinese government, particularly with respect to coal. Coal burning causes the crippling air pollution that blankets the developed eastern part of the country and, increasingly, cities in the less developed West. The Beijing air was, famously, dubbed "crazy bad" by a US embassy official in a November 2010 tweet. In late 2013, when coal-fired plants were fired up for winter heat, the city of Harbin was completely shut down when bus drivers could not see far enough to navigate the roads. Beijing's "airpocalypse" recurred several times in 2014, the "APEC blue" summit, which saw the government shut down industry and forbid much vehicular travel notwithstanding. For this reason China is already doing a great deal to reduce carbon output. Measures include producing and installing solar and wind energy technologies, constructing dams on rivers throughout the western part of the country, building nuclear power plants, exploring potential for fracking, banning "dirty coal" and increasing fines for polluters, and finding ways to tie government officials' performance not only to economic growth but also to environmental protection. There are already seven pilot emissions-trading schemes in operation, with a plan to launch the largest carbon market in the world sometime in 2016. In the 2011–2015 Twelfth Five-Year Plan,

dubbed the greenest in China's history, China committed to further reduce its energy intensity by 16 percent, having already reduced it by 20 percent during the Eleventh Five-Year Plan, and to shift its energy mix to 11.4 percent renewables. The Thirteenth Five-Year Plan is expected to set even more aggressive targets. If everything goes as planned, China's emissions will have peaked, or stopped increasing, by 2030, a remarkable achievement by any standard, albeit insufficient to halt the earth's progression to catastrophic warming absent other actions.

Problems and challenges have already arisen. China's dominance of the low-cost solar panel market, which found its way to the World Trade Organization adjudication panel after accusations of price manipulation, is to be welcomed by environmentalists. But solar panel manufacture is a toxic business, and there have been protests against the pollution created in these plants, as well as problems with distribution on a wide enough scale to make a meaningful contribution to China's energy needs. In sunny Tibet, where many villages are far from any electric grid, it is common to see a small solar-powered kettle in a courtyard. But in the heavily polluted eastern part of the country, the overcast skies interfere with rooftop solar panels' ability to absorb radiation, and their surfaces can become sooty. In wind power, as well, China has become the world's leading manufacturer and a top user, especially in Inner Mongolia, where the flat, open grasslands are a constant source of such energy. But linking the energy to the grid is still largely in the aspirational stages. For now, much of China's renewable technology, particularly solar, is headed for export overseas, with huge investments continuing as China seeks to live up to its path-breaking promises to increase the percentage of renewables in its portfolio.

An epidemic of hydroelectric dam building is making local communities angry at forcible relocations and neighboring countries highly nervous about reductions in river flow. The Three Gorges is only the most famous of the more than one hundred dams under construction in western China, including those on Yangzi River tributaries and along the pristine Nu River (Salween) near the Burma border, a cause célèbre of Chinese environmental groups, as well as on the headwaters of the Lancang (Mekong), and on the Yarlong Tsangpo (Brahmaputra). The recent APEC climate change commitments are likely to put some of the most controversial dams, temporarily shelved because of local and international opposition, back on the table.

The APEC declaration was issued during the "APEC blue" meeting held during two weeks of artificially blue skies as regional industry was shut down and ordinary people were made to curtail their activities and travel.

Those visiting ancestral graves were prohibited from burning traditional paper bank notes and those getting married forbidden to set off firecrackers, sparking widespread resentment even as the people were reminded of the loveliness of a blue sky. China now promises that the country's carbon emissions will peak by 2030, at which time 20 percent of the energy mix will be from renewables. This is remarkable, because it is the first time China has agreed to a non-intensity-based target. To get there, analysts say, China will need not only substantially to shift from coal but also to add 800 to 1,000 gigawatts of energy from solar, wind, and hydro, while building hundreds of new nuclear power plants, a thought that anyone familiar with China's terrible industrial safety record will find quite worrisome. Another element of this program is a plan to shift China from heavy industry toward service industries, a path that the United States and other developed countries followed when they outsourced so much production to China. As a November 19, 2014, an Associated Press headline trumpeted, "Province near Beijing Aims to Move Polluting Industries Overseas." By 2023, Hebei plans to relocate its dirty factories to Africa, Latin America, and Central Asia. For students and scholars of global environmental politics familiar with concepts like displacement of environmental harm, dirty migration, and environmental justice, that would be small comfort indeed. As Joyeeta Gupta reminds us in chapter 11, global ecospace cannot be expanded.

Traditional Chinese Practices, Biodiversity, and Animal Welfare

A classic saying about the people of Guangzhou is that they will eat anything that has four legs except a table. But Cantonese cuisine is just the most obvious example of how traditional Chinese preferences can increase pressure on endangered species. The close association between food and medicine is well established in Chinese culture and deeply rooted in ancient historical study and practice. In addition to the use of herbs, acupuncture, and movement practices like tai qi and qigong that do not have negative environmental impacts, traditional Chinese medicine (TCM) often makes use of the body parts of endangered species, as well as of some plants that are endangered, such as ginseng root, which sometimes resembles the shape of a human being and is considered an aphrodisiac. In TCM, the consumer is often believed to acquire the characteristics of the animal eaten, such as fierceness, sexual prowess, vigor, or longevity. TCM ingredients include tiger bones and claws, rhinoceros horns, shark fins, and the fetuses, scales, and blood of the less-well-known pangolin, a type of scaly

anteater whose Southeast Asian population is being decimated for meat and medicine. A broad spectrum of turtle species, including sea turtles, is now disappearing due to the demands of the Chinese market. Other less-well-known endangered species used in TCM include the musk deer, sun bear, and Chinese alligator. In an example of how widespread and arcane this problem can be, an elderly Chinese man from California was convicted in 2014 of smuggling bladders from the International Union for Conservation of Nature red-listed totoaba fish from the Gulf of Mexico. Each bladder is worth $5,000 in the resale Chinese market and is considered a cure for infertility, poor circulation, and skin problems.

Until recently, the high cost of these rare wild animals and plants meant that only the elite could afford them, and their purchase and consumption were often associated with status, luxury wealth display, gift giving, and demonstrations of filial piety (TCM products are often given to revered elders in need of a pick-me-up). But the skyrocketing purchasing power of the Chinese middle class has placed extreme pressure on these species. This is despite China's adherence to the Convention on the International Trade in Endangered Species (CITES), which China joined in 1981 and which it supports with twenty-two branch offices. Although CITES is one of the global community's oldest environmental treaties, it is underfunded, undermonitored, and poorly enforced at borders, where customs officials often lack training to differentiate between permitted and illegal goods; there is far more pressure to screen for drugs and illegal immigrants. However, as is now well documented, the illegal trade in such creatures has a global value estimated to be in the hundreds of millions of dollars a year and is often associated with other, better-known illegal activities.[1]

Not all biodiversity loss associated with traditional Chinese culture is related to food and medicine. Ivory has been a favored medium for Chinese carvings and trinkets since the Ming dynasty, albeit less favored than jade; entire tusks can be seen in museums, carved with elaborate scenes of people and landscapes. The current decimation of African elephant populations is so grave that experts predict the animal's extinction in the wild within decades if the situation is not brought under control. However, the slaughter of elephants is closely tied to organized criminal syndicates run out of China that also deal in human trafficking and drugs and channel funds to rebel armies and rogue militias; about 70 percent of the ivory is destined for China (with the United States and its large Asian population the second largest market). Poaching has increased dramatically in areas where Chinese are building roads and other major infrastructure projects. In effect, elephant tusks have become the "blood diamonds" of this century;

elephant poaching has been tied to the Lord's Resistance Army, where the warlord Joseph Kony has reportedly demanded tusks to help pay for his atrocities, as well as to state-sponsored militias and rebel groups in Congo, Sudan, South Sudan, and Uganda. The situation has gotten so dire that poachers are using helicopters to shoot their prey and chainsaws to remove tusks, and park rangers routinely lose their lives in an effort to defend their charges. Fortunately, Chinese awareness of the threat to the elephant is increasing. In Hong Kong, some public events have recorded the destruction of smuggled and seized ivory products.

Another example of the pressures that traditional Chinese preferences are exerting on biodiversity is in the fishing industry, where aesthetic and cultural values are inadvertently promoting the destruction of coral reefs in Southeast Asia and the Pacific. The Chinese favor fish that are alive and colorful (especially the auspicious red), believing them to be fresher; living fish can fetch five times the price of dead ones. Consumers prefer to purchase living animals in wet markets and select them as they swim in tanks in restaurants; some dishes require the living fish to be placed directly in hot oil. The Chinese market's impact is particularly intense in the Philippines and Indonesia, where poor fishermen often feel they have little choice but to resort to illegal fishing methods so as to harvest as many fish as possible. These include injecting cyanide directly into polyps, which kills the coral and disorients and half-paralyzes the resident fish, making it easy to net them, and placing dynamite on the reef, a process that kills most of the fish but allows the harvest of some living ones. The center of the live fish trade is in Hong Kong, where about 30 percent of the catch is reexported to China.

Sharks, usually harvested by slicing the fins and throwing the animals into the sea to drown (a technique that allows a vessel to magnify its take), are prized for cartilage that is largely tasteless and supplies texture; claims that it has medicinal properties are specious. Yet shark fin soup remains a high-status delicacy at weddings and expensive restaurants wherever there are concentrations of Chinese. So lucrative is the trade that a pound of fin can sell for $300, despite increasingly urgent attention from CITES, which has placed four species on its Appendix II list, and a public education campaign from the environmental nongovernment organization Wild Aid featuring basketball star Yao Ming. With the expansion of Chinese global economic might, shark fishing now has worldwide reach, with coastal Africa particularly vulnerable as poor fishermen see opportunities and new markets. In Tanzania, dolphins are dynamited to use as shark bait, while in Mozambique, the fin trade is frightening off the international reef divers

drawn to a nascent ecotourism industry.[2] South Africa is a hub of illegal shark fishing in the region, although Hong Kong is its global center. The Taiwanese mafia is also heavily involved in the shark fin trade, particularly in Latin America. The Yao Ming campaign does seem to have been effective; awareness of the cruelty of the finning practice, as well as of the ecological impact of removing apex predators from the ocean, seems to be spreading among younger Chinese, and important hotel chains are removing the soup from the menus.

We now shift to an example of a terrestrial animal under threat because of traditional beliefs: many species of bears are vulnerable due to their role in CTM. The use of bear bile is mentioned in Chinese medical texts as early as the seventh century. Within China, some 7,000 bears on 200 farms spend their lives in cages, with tubes inserted into their gall bladders to extract bile. Unlike some of the other TCMs that use endangered species parts, it seems that bear bile does have an efficacious effect on some diseases, although synthetic substitutions do just as well. It is difficult to persuade Chinese consumers, however, that chemical replacements work, even as they remain persuaded that bile taken from a wild bear is more effective than that tapped from a captive. Bear bile farming and consumption tends to be a domestic Chinese issue of concern because of its horrific implications for animal welfare, although not only. With the decimation of bear populations in China and nearby countries, hunters have shifted as far away as the United States. There they target American black bears in the mountains of the Shenandoah, Appalachians, Berkshires, and elsewhere; although the US species is not protected under CITES, the export of bear gall bladders is illegal as it is covered under the Lacey Act. Within the United States, bear gall bladders are made into medicine or sold whole, often in New York, California, and other states with large Chinese populations. Smugglers have been caught digging ginseng in North America as well, particularly in the Great Smoky Mountains National Park. Meanwhile, an epidemic of rhino horn thefts associated with an Irish ring active in Asia has struck the museums and private collections of Europe and the United Kingdom, with rhino horn worth as much as $65,000 per kilogram on the black market even though it is made of the same keratin as a human fingernail.

Finally, we would be remiss not to note that the Chinese shift toward a meat-based diet, away from a cuisine where sliced meat was used as a condiment or accent ingredient rather than the main dish, has implications for global croplands conversion, water scarcity, animal welfare, and climate change. We know that every 1 pound of feedlot-produced beef requires 7

pounds of grain. From an environmental point of view, meat consumption is a singularly inefficient use of energy, water, and land; from an animal welfare perspective, it is worse still. China is seeking to "modernize" its meat production system through the introduction of concentrated animal feeding operations (CAFOs) like those common in the developed world; it has also purchased foreign meat and fish suppliers, including the US pork producer Smithfield Foods, as well as rights to some of the offshore fisheries of Peru. These are excellent investments from the Chinese perspective, given the widespread mistrust of domestically produced meats, vegetables, and milk following a long series of scandals and discoveries of heavy metals and pesticides in everything from rice to tea. It is also a way of compensating for China's paucity of arable land and water. As Mark Bittman put it in a *New York Times* opinion piece, "The Smithfield deal is a land and water grab."[3]

As we see from the examples and trends, traditional Chinese belief systems and aesthetic values, coupled with a newly wealthy middle class with adventurous food tastes and a widespread mistrust of domestically produced food, are a toxic combination for global biodiversity. While climate change may eventually become the final blow, habitat loss, pollution, overharvesting, invasive species, and destructive technologies are already causing a global collapse of life forms.[4] Unfortunately, Chinese consumers are a big part of that story.

Projection of Economic Clout beyond China's Borders

The examples introduced the international impact of China's traditional culture on biodiversity, but China's extraction of raw materials such as fossil fuels and minerals, timber, and grain is, if anything, even more stunning in its effects on the planet (and exerts an indirect impact on nonhuman species through habitat loss, pollution, and carbon emissions). Such extraction provides raw materials for China's domestic consumption needs. But it also provides raw materials for the massive manufacturing project China has undertaken to meet global consumption demands. Control of raw materials is also considered a good business move by Chinese institutions and individuals looking for a place to invest their enormous wealth. The sheer size of China's global environmental footprint in an age of globalization and massive capital flow dwarfs anything the world has heretofore seen.

To ensure a steady supply of primary materials, Chinese state-owned companies have invested heavily in infrastructure like roads and deep

ports, often in the name of foreign aid. Some of these projects are funded with private capital, usually with strong government ties; a Chinese telecom magnate with murky connections is building a canal across Nicaragua to rival the Panama, and the Chinese government is building a railroad through the Amazon to link the Peruvian coast with Brazil, with an eye to building a transcontinental railway across the entire continent. In the face of US opposition, China has led the BRIC countries to set up the New Development Bank to counter the influence of the dollar and the World Bank and International Monetary Fund, with the promise of providing credit for infrastructure projects in the developing world (which would facilitate the trade in resources). Other innovative financing mechanisms include the much-criticized loans-for-oil deals signed with the governments of Ecuador and Venezuela. This section examines several examples of the environmental impacts of China's global resources quest.

Ecuador, in a difficult financial position after defaulting on its loans in 2008, began trading oil for Chinese loans in 2009. Heavily dependent on Chinese credit, the Correa government in 2013 concluded an agreement to give drilling rights to Petro China to extract oil from beneath the highly biodiverse and sensitive Yasuni National Park in the Amazon rain forest. This is a UNESCO Biosphere Reserve that is home to the Huaorani as well as other indigenous groups, two of them uncontacted. The deal was widely criticized, not only because the region is a crown jewel of global biodiversity but also because negotiations were conducted while the government claimed to be trying to raise international donations to put the reserve off-limits to drilling. Ecuador will get an initial $1 billion in favorable credit from the China Development Bank, secured by oil to be sold at a fixed price (critics point out that if oil prices rise, Ecuador will be unable to benefit, although recent oil price declines could work in Ecuador's favor). The arrangement is one of the starkest illustrations of China's willingness to step in where other nations, more subject to civil society pressure and public opinion, hold back. The China Development Bank has been active throughout Latin America and Africa, providing generous credit in exchange for guaranteed access to resources, often in regions where corruption or political unrest make them the only game in town.[5]

Mining is one of the world's most conflicted extractive industries, and Chinese mines been associated with social unrest and environmental degradation in Africa and Latin America. In Zambia, the government announced in 2014 that it would take over the strife-ridden Collum copper mine, which had drawn attention from international human rights groups;[6] in Ghana, discontent runs high over small-scale illegal Chinese gold miners.

In the Democratic Republic of the Congo, however, fortune smiles on China: in a variant of the debt-for-oil model, a resources-for-infrastructure project financed by the China Development Bank has revived plans for a huge controversial iron and cobalt mine, Sicomines.[7]

Peru is the Latin American country where Chinese mining interests, particularly in iron ore and copper, are arguably most active. National policies under President Humala actively court foreign mining investment in a sort of new left-wing wave of resource extractivism intended to fund government social programs. Chinese companies seem to be learning from the negative experience of the decades-old Shougang iron ore mine, notorious for strikes and worker discontent. The Chinese are often seen as poor at dealing with local citizens' groups. They assume that a government contract means the project will go forward, since such has been their experience at home in ethnic minority regions like Inner Mongolia, Xinjiang, and Tibet, where mining usually proceeds with little local consultation, sometimes in contravention of indigenous knowledge and spiritual practices. However, Chinalco successfully relocated the town of Morococha at the Toromocho copper mine to make way for an expansion. Activists had expected it would lead to widespread unrest, but the Chinese hired an international consulting firm that gained residents' trust and built a new town better than the old one. In 2014 China purchased Las Bambas, one of Peru's largest copper projects, from Glencore Xstrata, which had been repeatedly fined for environmental violation, in a $7 billion cash deal. Local activists are anxious. How the Chinese consortium, led by state-owned Minmetals, handles construction and community labor relations will show whether it has understood that failure to mitigate environmental impacts and gain community support is ultimately poor business practice. Additional impacts fan out from large projects: In Northern Peru, Chinese buyers of maca, a ground-grown tuber thought to have aphrodisiac properties, have sent prices skyward and brought crime and unexpected wealth to remote highland areas. The tubers are required under Peruvian law to be processed in the country, but smugglers are transporting them overland to Bolivia. Peruvians fear seed stealing and the eventual production of maca in China, with a loss of seed sovereignty.[8]

Timber, too, especially the illegal trade, is often destined for the Chinese market. Liberia, Madagascar, Southeast Asia, Central Asia, and eastern Russia are among the many parts of the world where a global supply chain analysis shows how trees harvested in some of the world's most precious forests are exported over circuitous routes, often relabeled as to wood type and origin along the way. The timber is eventually imported to China,

where it is turned into furniture and wood pallets, and thence exported to developed world consumers. Major outlets like IKEA and Home Depot have enormous difficulty verifying the sources of the raw materials that go into their products. Often even Chinese manufacturers have no way to trace the origin of the wood. The timber trade's clear-cutting has devastating impacts on wildlife, as well as the biodiversity of the trees themselves.

One more commodity worth flagging as we survey China's international environmental impact is grain, as China is a major player in the global rush to secure farmland. China is far from the only actor as multinational agribusinesses lead the charge, but China's impact on farmland is felt worldwide, with the Ministry of Agriculture encouraging investors to identify stable, resource-rich, friendly countries as sources for grain, soybeans, corn, and rice. China is particularly sensitive about grain supply; the country has been plagued by famine throughout its history. During the Cultural Revolution, Take Grain as the Key Link was a dominant political campaign, as urban dwellers young and old were sent to the far reaches of the country to try to convert wetlands and fill in lakes to try to increase arable land and secure China's grain supply.[9] Until China's full entry into the global capital system, it was a point of national pride to try to be self-reliant in grain; the loss of arable land domestically to developers and urbanization has been so worrisome to policymakers that a "red line" of 120 million hectares was established in the 2006 Eleventh Five-Year Plan, below which acreage of arable land should not drop. However, given increased attention to heavy-metal soil pollution (cadmium was recently discovered in Hunan's rice) and China's "going out" policy, Chinese investors have seized the opportunity to grow crops overseas. The conversion of forests to grainfields, and the dispossession and displacement of small farmers, is part of a global land grab that groups like the International Land Coalition, GRAIN, and farmlandgrab.org are struggling to document and resist.

A final driver of the expansion of China's environmental footprint overseas is migration: the sheer number of Chinese seeking better economic opportunities (and political freedom) abroad is a testament to an adventurous, entrepreneurial spirit that is far from new (consider, for example, the Chinese construction of America's Transcontinental Railroad). However, the ease with which ordinary Chinese can now get passports (rare, if not impossible, during the Mao period and subsequent decade), and their ability to fund their initial voyage, mean that Chinese small businesses can be found throughout the world, often in unlikely places such as Zambia, where Chinese entrepreneurs are harvesting old-growth redwoods.[10] Although Chinese may be no better or worse than poor people seeking to

make a buck from other parts of the world, they seem unusually visible, inexperienced at respecting local customs, and willing to do whatever it takes to turn a profit. Chinese immigrants are not only highly active in industries like mining and fisheries, but they are even cornering the market on obscure commodities like lavender and maca.

China's new economic clout, its enthusiasm for international investment encouraged and enabled by government policy and generous financing, and population outflow are transforming landscapes across the globe. Where others fear to tread, China marches in, often with large numbers of workers and support personnel. Where others hesitate to pursue an opportunity because of high prices or social and environmental concerns, China is ready with an open wallet. At a moment when the environmental transformation of the planet seems to be occurring at warp speed, China's funds, personnel, and investment philosophy act as catalysts and magnifiers. The rest of the world is often preoccupied with other concerns, and countries on the receiving end of so much Chinese attention have little context to understand their new suitor or time to absorb what it all means. Attention to environmental injustice on the global scale sensitizes us to the fact that poor countries are in little position to resist when China comes courting, even when the resources they sell are not renewable or when they give up legal rights to their own land and dispossess their most vulnerable people.

Geopolitics with Resources-Securing Aspects

China's resources push has raised geopolitical tensions. This is particularly evident in four cases: dam building, territorial claims to islands in offshore waters, claims to Arctic resources and shipping lanes projected to become available due to climate change, and oil and gas pipelines from Russia and Central Asia to East Asian ports. This section gives an overview of each of these.

The Tibetan Plateau is home to the headwaters of most of the major rivers of South and Southeast Asia. Particularly contentious are rivers already built or being built on the Mekong (in China, Lancang), Nu (in China, Salween), and Irawaddy Rivers, as well as Chinese sponsorship of dams across the border in Laos and Burma. China has declined full membership in the Mekong River Commission. Domestic campaigns against dam building in the southwest part of China, as well as concerns about risks of dams built in seismically active regions (the 2008 Sichuan earthquake is one such example, some experts arguing that the weight of the water caught

above the Zipingbu dam may have caused "reservoir-induced seismicity"), have only sporadically delayed plans to make hydropower a central part of China's renewable energy portfolio. However, the countries of Southeast Asia have little power to resist the gigantic Chinese dam-building machine. An even greater geopolitical flashpoint may be in India's concerns about dams on the Brahmaputra, the first of which, the Zangmu, is already under construction.[11] China and India remain in a contentious geopolitical relationship, with long stretches of the border disputed, while China's cozy relationship with Pakistan and export of nuclear energy technology are another source of tension. China has attempted to reassure India that such dams will not have a significant impact downstream, but India remains suspicious of China's intentions.

The most famous geopolitical flashpoint is doubtless the tensions over the Spratleys, Paracels, and other islands in the South China Sea and the Senkaku (Diaoyu) islands in the Sea of Japan (East China Sea). While some might argue that China's muscular claims have more to do with nationalism and settling historical scores than they do with resources, offshore oil and gas reserves are more accessible than ever before due to new technologies, and China has built an oil rig in the Paracels within an EEZ claimed by Vietnam, accompanied by People's Liberation Army warships, constructed islands out of coastal reefs through dredging, and stepped up deepwater oil and gas exploration in both disputed and undisputed waters. Moreover, the rich fishing grounds and shipping lanes of the region are an important resource, especially now that China has essentially fished out or poisoned the fish stocks near its clearly defined coastal EEZs, with an estimated 30 percent collapsed and another 20 percent severely stressed.[12] Disputes over how EEZ lines should be drawn, which are especially tense with the Philippines and Vietnam, have led China to reject the UN Convention on the Law of the Sea's' efforts to mediate. China claims instead that ancient historical maps prove its ownership of the islands and the extensive EEZ rights that it conveys. Because the United States has traditional security relationships in the region, particularly with the Philippines and Japan, such flashpoints are highly volatile, contentious, and dangerous.

China's 4,000-vessel distant water fleet is often the first projection of military intentions in disputed waters and can be outfitted with sophisticated surveillance and navigation technologies; boats that fish in territorial waters are often sufficient to set off international incidents. South Korea alone has captured almost 4,000 such boats fishing in its waters since 2001.[13] It is alleged that China has threatened to withdraw infrastructure aid programs if developing countries do not provide fisheries access and

agree to turn a blind eye to unsustainable fishing practices, particularly in the coastal waters of West Africa, which has the most illegal, unreported, and unregulated fishing vessels on earth. China now lands more wild fish than any other country, with Peru, which sends almost all of its anchovy catch to China, coming in second.

China's role in the Arctic also has potential for conflict. China is not an Arctic nation, yet sheer influence has earned it permanent observer status at the eight-member Arctic Council as of May 2013, together with India and Japan. Although decision making still largely rests with the eight Arctic nations, China has made it clear that it considers itself a player. Access to Arctic shipping lanes will shorten shipping times between Shanghai and Hamburg by 4,000 miles as compared with the usual route via the Suez Canal. Moreover, the rich Arctic fishing grounds are tempting, and China is attempting to keep as much area as possible accessible. There have been contained tensions with Russia over its claims to extended continental shelf rights. China has built an icebreaker and joined Arctic research institutions; Chinese buyers claiming to be interested in building tourist facilities have been strangely active in Stavanger, in Norway's Arctic.[14]

Finally, pipeline disputes are potential geopolitical flashpoints, particularly as China, Japan, and South Korea rival for Russian gas and oil, as well as agents of environmental degradation in and of themselves. For example, the East Siberia–Pacific Ocean oil pipeline was embroiled in accusations that China had underpaid on its obligations; the Gazprom monopoly has repeatedly obstructed China's efforts to gain access to Russian natural gas supplies. Eighty percent of China's gas now comes from the countries of Central Asia via an interlinked Central Asia–China pipeline, even as these countries are prone to territorial disputes among themselves. Moreover, Sino-Japanese relations have reached new lows in recent years, revolving around territory but also around end points for Russian pipelines and the Japanese treatment of World War II in textbooks, Japanese leaders' visits to war dead shrines, and China's withholding of export of the rare earths over which it holds a near monopoly, and that Japan desperately needs for manufacture of electronics, solar panels, and other technological applications.

In sum, China's quest for resources catalyzes geopolitical risk. Contested resources range from hydropower captured on transboundary watercourses, distant fisheries, shipping lanes, and oil and natural gas. While it is well established that resources competition is generally a contributor to conflict rather than a direct cause, China's relationships worldwide are clearly influenced by the global race to secure resources in a shrinking

world. The desire to capture resources can be seen in China's relationships with its immediate neighbors, its historical rivals, and its beneficiaries in the developing world. China's environmental footprint is thus not only a matter of supply and demand but one of projection of hard power by a new global superpower.

Conclusion

China's environmental challenges shape broad world politics surrounding the environment and beyond. Its fossil fuel emissions and efforts to curb them have impacts worldwide. Traditional cultural practices related to cuisine and traditional Chinese medicines are having an impact on species around the globe, including both charismatic megafauna and little-known plants and fish. China's drive to secure basic raw materials for its production lines expresses itself through new funding and foreign aid mechanisms in the developing world, as well as direct competition with developed countries on the open market. So rapid and aggressive is China's rise that environmental issues have assumed geopolitical importance. The country's policymakers understand securing resources as part of a legitimate central strategy to which China is entitled by virtue of historical unfairness and its current huge population and vast landmass. While other countries also have a huge "shadow ecology" that extends beyond their borders, none of the others have seen so dramatic a change in such a short time, and none have the global reach to affect the economies and landscapes in the most remote places on earth. The most obscure commodities have changed fortunes when the Chinese spotlight shines, along with the ownership of global brands and extractive projects.

China's global environmental footprint is a moving target. The unimaginable has become possible; the possible has become likely; the likely is already in the past. Scholars of global environmental politics would do well to take heed. China claims to want to play by global rules, but it also claims to want to rewrite them, replacing the Washington Consensus with the China Consensus, supplementing the Bretton Woods Institutions with a developing world bank that will challenge the dominance of the dollar. While Chinese environmentalists are among the world's bravest and most creative, the sheer magnitude of China's global reach limits their influence. It is essential that the world community involve China in the quest for global environmental governance such that the world's largest emerging economy can become a champion of norms of justice and sustainability.

Notes

1. "Wildlife Trade: Background,"n.d.

2. Smith, "Chinese Appetite for Shark Fin Soup Devastating Mozambique Coastline."

3. Bittman, "On Becoming China's Farm Team."

4. Kolbert, *Sixth Extinction*.

5. Sanderson and Forsythe, *China's Superbank*.

6. Human Rights Watch, "You'll Be Fired If You Refuse."

7. Jansson, "The Sicomines Agreement Revisited."

8. Neuman, "Vegetable Spawns Larceny and Luxury in Peru."

9. Shapiro, *Mao's War against Nature*.

10. French, *China's Second Continent*.

11. Chellaney, *Water: Asia's New Battleground*.

12. Blomeyer et al., "The Role of China in World Fisheries."

13. Mallory, "China's Distant Water Fishing Industry."

14. Lewis, "Chinese Investor Eyes Norway's Arctic Islands."

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