



Tropical Nature Needs Us:

An expanded role for Canada in stemming global biodiversity loss

About ICFC

The International Conservation Fund of Canada is Canada's leading charity for conserving nature in the tropics and other places where the diversity of life is most at risk. Since 2007, in partnership with local non-government organizations, ICFC has invested more than \$27 million in 46 projects in 32 countries in Latin America, Africa and Asia.

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Note regarding the updating of this document in May 2021: Information on official bilateral aid for biodiversity was readily obtainable from the OECD and this was the focus of our analysis. More recently we obtained information on Canada's multilateral biodiversity aid and we have added that information to the report in view of its significance. We also updated the "How much is enough?" section that concerns conservation finance. The 2019 figures for bilateral aid are now available from the OECD, but we left our earlier analysis (to 2018) untouched.

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Lyle's flying fox. Photo: kajornyot

Preface

In mid-2020, the Covid-19 pandemic is unfolding as a deadly global health crisis. Disease outbreaks such as this resulting from the exploitation of wild animals are expected to increase as wildlife and habitats are put under more stress. The pandemic highlights the urgent need for a worldwide effort to address threats to ecosystems and wildlife, with increased flows of money going to the hardest hit regions. Let this be a turning point more broadly: instead of returning to business as usual, we need to place nature and its stewardship as the cornerstone of all human well-being and sustainable development plans.

Executive Summary

Canada has demonstrated leadership since 2015 in investing in nature conservation within its borders but has come up short in aiding the world's most threatened and biologically rich natural ecosystems in the tropics.

Offering just \$10 million in bilateral aid for biodiversity-related efforts in developing nations in 2018, Canada has been among the weakest supporters of international conservation of any nation in the Organisation for Economic Co-operation and Development (OECD). By contrast, some OECD countries are contributing hundreds of millions of dollars annually. In fact, Canadians may be surprised to learn that Canada ranks 19th in bilateral biodiversity aid among 28 members of the economic forum's Development Assistance Committee. For OECD countries overall, multilateral aid is a small portion of biodiversity aid, but Canada's multilateral biodiversity aid to developing countries is similar in magnitude to its bilateral aid.

Global biodiversity loss—now happening faster than at any time in human history—is widely recognized as an existential threat to life on Earth. In 2019, a UN panel found that about one million species are at risk of extinction. Most of these imperiled organisms live in the tropics.

The Covid-19 pandemic has experts pointing to the need to transform our relationship with nature in part by reducing human incursions into intact ecosystems and ending the wildlife trade. Reducing the risk of pandemics is one of many compelling reasons to redouble conservation efforts.

Canada and other signatory nations to the UN Convention on Biological Diversity (CDB) are creating a post-2020 strategic plan to address the biodiversity crisis. This country—well regarded internationally and with vast tracts of its own wilderness—could be a key architect of this future vision for nature. And Canada does aspire to lead. In a speech on World Environment Day, 5 June 2020, Prime Minister Trudeau said Canada was “stepping up as a world leader in biodiversity and nature conservation”. To that end, increasing support for tropical conservation is crucial.

This report offers three recommendations to help get us there:

1. Increase international assistance for biodiversity conservation to \$650 million per year—the level of the top tier of biodiversity aid donor countries.
2. Encourage all industrialized countries to commit to substantial support for conservation in developing nations in the post-2020 CBD framework.
3. Focus a substantial portion of aid for climate action on “nature-based climate solutions” in the tropics that provide simultaneous benefits to biodiversity and human well-being.

Protecting tropical nature makes sense for Canada—to meet our global responsibility and to defend the world's common natural heritage upon which humanity depends.



Introduction: Battling biodiversity loss

Three decades ago, when experts were drafting the world's largest, most ambitious wildlife conservation agreement in history, their instructions were clear: the deal must consider "the need to share costs and benefits between developed and developing countries".¹ From the beginning, the United Nations Convention on Biological Diversity (CBD) urged its almost 200 signatory nations to save nature not only within their borders but also to help lower-income countries preserve biodiversity.

The reason is simple: the sweeping tide of biodiversity loss is heedless of national boundaries. The crisis—like the climate emergency—is global and affects us wherever we live. The dwindling of nature's diversity puts at risk ecological systems across vast distances. At stake are the natural processes and climate regimes that support all life, including ours, from one end of the Earth to the other.

The lead-up to 15th meeting of the Conference of the Parties to the Convention on Biological Diversity, now postponed to 2021, marks a watershed in world wildlife conservation as the parties forge a framework for stronger action to address the biodiversity crisis.

Avoiding a conservation catastrophe

The timing is critical. Life on Earth is entering a sixth “mass extinction”.² The pace of species loss is as much as a thousand times quicker than the natural rate.³ Also ominous are declines in insect populations⁴ and the shrinking geographic ranges and populations of land vertebrates (mammals, birds, reptiles and amphibians), which represents a “massive erosion” of biological diversity and the vital benefits humans derive from natural ecosystems.⁵

In 2019, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)—similar to the UN expert panel for climate but focused on nature—published its most comprehensive and stark assessment of the status of life on Earth: we humans have put as many as *a million species* at risk of extinction.⁶ About one-fifth of the planet's vertebrate species are considered threatened, and the number continues to grow.⁷

Renowned Harvard biologist E.O. Wilson says that “unless we move quickly to protect global biodiversity, we will soon lose most of the species composing life on Earth.”⁸ This unconscionable loss of biodiversity would endure for millions of years.

The good news is that nature is resilient; it can recover and adapt. And it will—if governments around the planet act decisively to protect and restore it, while incorporating nature-based solutions in economic development plans.

Opposite: Emerald
Toucanet. Photo:
Christian Sánchez

Canada's conservation leadership

Canada is perhaps uniquely qualified to lead this worldwide charge. Canadians have long been seen as conservation champions. We were the first industrialized country to sign the Convention on Biological Diversity, and we host the Convention's international secretariat in Montreal. In 2010, we joined other signatory countries in Aichi, Japan, to—among other things—set benchmarks for progress on safeguarding biodiversity through 2020.

As well, Canada is a multicultural society with immigrants from around the world giving us connections to and understanding of other countries.

Canada's recent domestic conservation efforts are impressive (see page 16), but it will take more than saving nature at home to end the biodiversity crisis that's gripping the wider world. The next CBD Conference of the Parties is expected to adopt a post-2020 global biodiversity framework to pave the way for what the Convention is calling the "2050 Vision of Living in Harmony with Nature". To get there, countries must keep their eye on the biodiversity agreement's original aims, focusing attention on tropical nature most in need of help.

Canada's conservation leadership includes a history of conserving wildlife beyond our borders. More than a century ago, Canadians helped pen the planet's first international conservation agreement: the Convention for the Protection of Migratory Birds in the United States and Canada. A Canadian—Maurice Strong—was at the helm of the United Nations Conference on Human Environment in Stockholm in 1972 when it launched the groundbreaking United Nations Environment Program. Strong led the UNEP, including its work transforming international conservation, for many years. In 1992, he stepped up again to organize the Rio Earth Summit—the meeting that gave us the CBD as a forum for international action.^{9,10}



Maurice Strong
(Getty images)

This report

This report explains the need for Canada to expand its action on global biodiversity loss beyond its borders.

Part 1 outlines why this is so vital. It describes the science connecting our own welfare to the ecological health of the tropics. Part 2 examines Canada's past financial support for tropical conservation and reports—for the first time—how this country has fallen far behind its peers in financing crucial efforts by developing nations to curb biodiversity loss. To forge a new global vision for nature, Canada must look farther than its three wide coasts and its long southern border, past its own great wildernesses to the remarkable grandeur of life's diversity wherever it lives and is threatened on the planet.

Photo: Shawn Carey



The Amazon region of South America is a tropical expanse that supports the world's largest tropical rainforest and about a quarter of all terrestrial species. The Amazon's lowland forest has more than 14,000 plant species, including 6,727 species of tree (compared with 140 species native to Canada).¹¹ The Amazon is also crucial to the regional climate, cooling the air by pumping about 7 trillion tons of water into the atmosphere each year through evapotranspiration. Its cycling of atmospheric water forms "aerial rivers" responsible for rainfall and humidity across vast areas of the southeast and center of South America¹² and into North America.¹³ Worryingly, the Amazon forest is believed to be approaching a tipping point beyond which it will not generate enough rainfall to sustain itself.¹⁴ Protecting what remains is crucial.



PART 1: Tropical nature needs Canada

*The immense variety of tropical life is among our planet's great wonders. The tropics are home to more than three-quarters of the world's amphibians, land mammals, freshwater fish, ants, flowering plants, and marine fish. The tropics have 91 percent of land bird species and almost all shallow-water corals.*¹⁵

The tropics matter to the entire planet. Humid tropical forests cover less than 12 percent of the planet's ice-free land surface, but are responsible for one third of Earth's productivity, converting sunlight into energy that supports life.¹⁶ Terrestrial ecosystems are vital in regulating climate, supplying and filtering water and providing pollinators for the world's food crops. Tropical forests transpire massive amounts of water causing evaporative cooling and sunlight-blocking cloud formation. They store a quarter of the carbon trapped by the terrestrial biosphere, keeping it out of the atmosphere and mitigating climate change.¹⁵

Tropical ecosystems under siege

Unfortunately, the tropics are affected by some of the highest rates of land-use change and land degradation as well as other threats. Tropical forests have been losing ground by an area twice the size of Nova Scotia every year. Much of this loss is to feed the growing demand for cattle farms, crops, biofuels, timber, and wood for fuel, generally without consideration for the value of what is being lost.

In the Amazon alone during the past four decades, an area of rainforest larger than France—more than 750,000 square kilometers—has been destroyed across Brazil, Peru, Colombia, Bolivia, Venezuela, Suriname, Guyana, and French Guiana.¹⁶ In 2019, the number of fires in the Amazon region (almost 90,000) sparked international outrage.¹⁷ Illegal deforestation is rising in Brazil in 2020 and fires are once again raging with the onset of the drier season (August to October) when newly cleared patches are typically set ablaze to prepare the land for cattle grazing, sparking wildfires.¹⁸

Erosion and pollution, including sediment and nutrients unleashed by forest loss and the excessive use of agricultural fertilizers, are impacting tropical freshwater and coastal ecosystems. Coral reefs provide fish resources for the 275 million people who live within 30 km of them.¹⁹ Overfishing has left a third of all tropical coral reefs with 75 percent less fish (by mass).²⁰ Hunting and poaching has wiped out African elephants, rhinoceros, great apes and large predators across much of their original ranges. Ranges of more than half of Africa's mammals have contracted by 80% or more.⁵ Invasive species have been important drivers of vertebrate extinctions since 1500.²¹ The multi-billion-dollar exotic pet trade, meanwhile, has hammered bird, reptile and fish species in almost every tropical corner.²²

Opposite: The Xingu River flows through Kayapo Indigenous Territories in the Brazilian Amazon, which represents the world's largest continuous area of tropical forest under some form of protection. Photo: Cristina Mittermeier



Figure 1. Selected ecoregions recommended as priority areas for global conservation based on species richness and conservation status of small-ranged vertebrates (using a 10 X 10 km spatial scale). From Jenkins, Pimm, & Joppa 2013.²³

On top of it all, climate change is bringing tropical issues to a boil. Although warming is greater at higher latitudes (including, notably, Canada’s north), biologists are observing significant climate change impacts on tropical nature.²⁴ Unlike species in temperate and boreal zones, species in the tropics are adapted to a very narrow range of temperatures and small increases in temperature affect them greatly.²⁵

In 2007, none of things identified by the World Economic Forum as the “Top 5 Global Risks in Terms of Likelihood” were environmental. In 2020, all five were environmental, including biodiversity loss, which ranked fourth. In the Forum’s other list of “Top 5 Global Risks *in Terms of Impact*”, biodiversity loss ranked third (after climate action failure and weapons of mass destruction).²⁶

Spending on wildlife works

The good news is that conservation works. One research finding is that without conservation, the worsening conservation status of vertebrate species would have been 20 percent greater.²⁷ Another is that recent biodiversity funding in 109 countries succeeded reducing biodiversity loss by almost a third (on average). In seven countries, measures of biodiversity actually improved.²⁸

That’s important because around the globe the 40 countries where conservation is most underfunded are home to almost a third of threatened mammal species and are some of the most species-rich regions on Earth.²⁹ Many of these are lower-income countries that could do much more with help from countries like Canada.

Biodiversity loss is among the top risks to the world economy, according to the World Economic Forum

Why should Canada care?

The problems threatening tropical species are dire, but unlike many concerns facing the environment, biodiversity loss can be readily addressed through conservation. A concerted effort by world nations to protect and restore wild species and their habitats can make a profound difference.

However, for Canadians—most of whom live in cities far from the tropical places that so many of the Earth’s species call home—understanding what conservation in these regions has to do with us can be difficult. Tropical landscapes may be jewels of biodiversity, but they’re thousands of kilometres away. They are for the most part out of sight and out of mind.

Yet the reasons to care are many. Wildlife diseases transmitted to humans are now top of mind as the world deals with the impacts of the Covid-19 pandemic. The outbreak is believed to have originated at a market that sold wild-caught animals and their products. Wildlife disease experts warn that human incursions into intact ecosystems and the destruction of nature are linked to the risk of viral outbreaks.³⁰

For Canada, there are other direct connections. More than a billion land birds migrate from the vast boreal forest of Canada (and Alaska) to winter in the mainly tropical regions of Mexico, Brazil, Colombia, and Venezuela.³¹ Many well-loved Canadian species—olive-sided flycatcher, eastern and western wood-pewees, alder flycatcher, Swainson’s and gray-cheeked thrushes, bay-breasted, Blackburnian, Canada, and blackpoll warblers and black-billed cuckoo—depend on Andes and Amazon forests in winter.³² It is telling that Canada’s migratory birds that winter in South America have seen their populations fall by almost a third between 1970 and 2016.³³

The Canada Warbler is listed as Threatened under the Canada’s Species at Risk Act. Loss of primary forest on the wintering grounds in South America is considered a likely cause of its decline.
Photo: Paul B. Jones





Other migratory species linking us to the tropics include fish, marine mammals such as humpback whales, and some insects. Migrants play a role in directly connecting ecosystems in Canada to those of the tropics. As they travel between locations, they can transport nutrients, diseases, and even spores and seeds, linking habitats otherwise separated across large distances.³⁴

Canadians themselves migrate south in winter and many enjoy ecotourism in tropical countries—another reason to care about tropical ecosystems.

Biodiversity, wherever it lives, is a global concern. A recent OECD report makes the economic and business case for biodiversity protection and observes that it is “fundamental to achieving food security, poverty reduction and more inclusive and equitable development”. At stake along with species extinctions are ecosystem services such as crop pollination, water provision and purification, flood protection and carbon sequestration worth an estimated US\$125-140 trillion per year globally—more than one and a half times global GDP.³⁵ The costs of inaction on biodiversity loss are high.

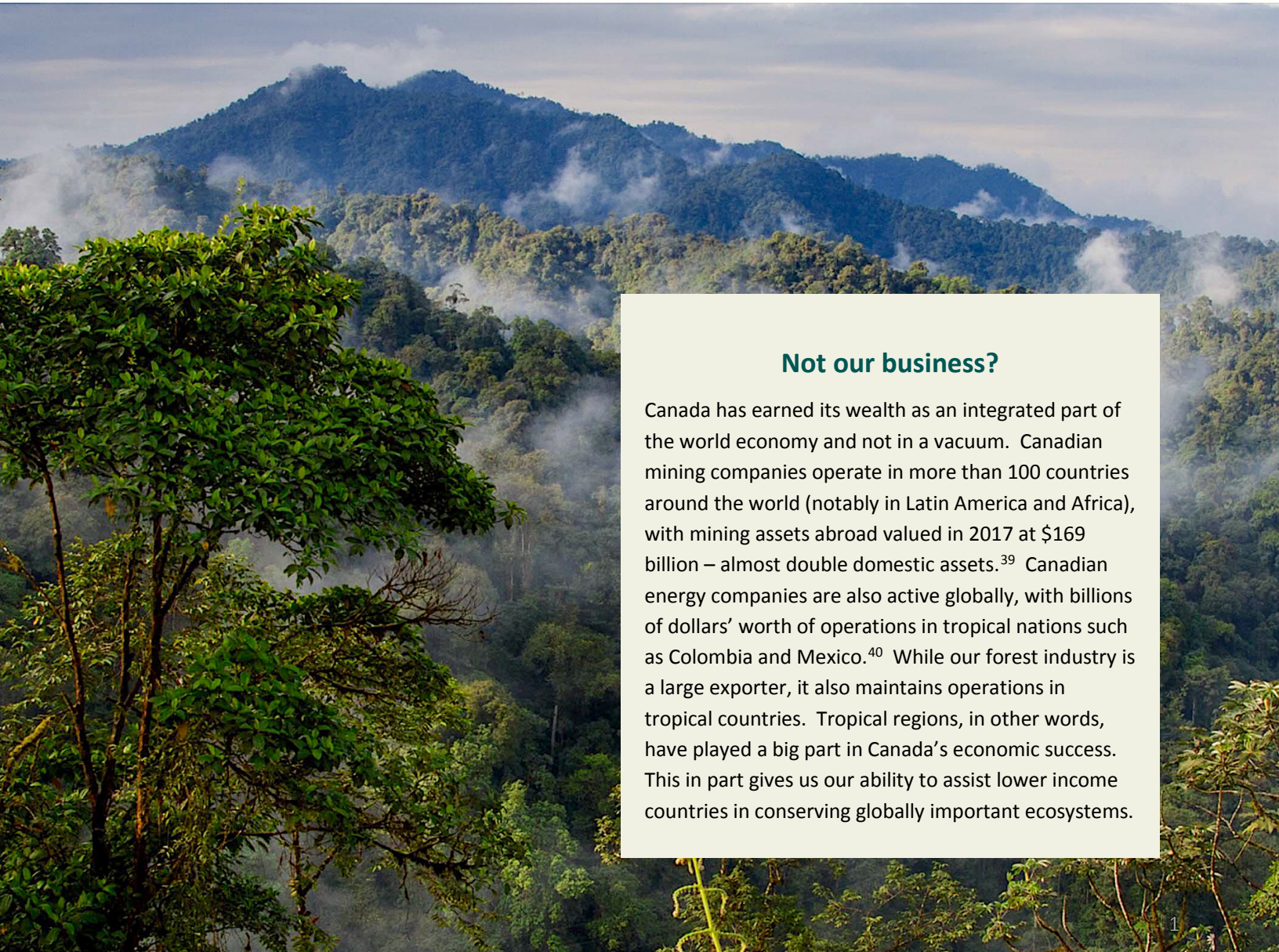
Critical to Canada and the world is the role of tropical regions in global climate change. In 2018, the UN’s environment, development, and agriculture chiefs issued a joint statement declaring that “forests are a major, requisite front of action in the global fight against catastrophic climate change – thanks to their unparalleled capacity to absorb and store carbon.”³⁶ A review article on land sector climate solutions warns that “maintaining tropical and peatland forests is particularly critical because both store a large fraction of terrestrial carbon per unit area and have high biodiversity”.³⁷ A recent

Above: Red knots breed in the Canadian Arctic and congregate in large numbers at wintering areas and migration stop-over sites across the Americas. The species has undergone a marked population decline. Photo: Patrícia M. González

global analysis identified natural areas with high concentrations of carbon where carbon loss is “irrecoverable on timescales relevant to avoiding dangerous climate impacts” and where carbon stores can be affected by local activities (as opposed to climate change itself). The most important include large expanses of tropical forest in the Amazon, Congo, Guiana Shield and southeast Asia.³⁸

There is also a North-South fairness issue. Canada and other first world countries developed their economies by making full use of their natural resources, converting vast tracts of land from prairies, primary forest and wetlands to agriculture and sprawling cities. The impact can be seen in the hundreds of at-risk species in Canada and the disappearance of phenomena such as large herds of buffalo roaming the prairies. And yet, developed countries are now asking developing nations to follow a different, more difficult development pathway, valuing conservation over short-term gain. Some developing countries have responded that they would be willing to do so but need financial support if they are going to forgo potential revenue to protect nature. As we shall show, some countries have heeded this call. Canada has not—yet.

Reserva Canandé in Ecuador. Photo Fundación Jocotoco



Not our business?

Canada has earned its wealth as an integrated part of the world economy and not in a vacuum. Canadian mining companies operate in more than 100 countries around the world (notably in Latin America and Africa), with mining assets abroad valued in 2017 at \$169 billion – almost double domestic assets.³⁹ Canadian energy companies are also active globally, with billions of dollars’ worth of operations in tropical nations such as Colombia and Mexico.⁴⁰ While our forest industry is a large exporter, it also maintains operations in tropical countries. Tropical regions, in other words, have played a big part in Canada’s economic success. This in part gives us our ability to assist lower income countries in conserving globally important ecosystems.

PART 2: Is Canada a world wildlife cheapskate?

Saving nature is both possible and affordable if nations around the world provide adequate support. Yet international efforts have so far failed to stop wildlife populations from plummeting and more species from inching toward oblivion.⁴¹ Canada has demonstrated leadership since 2015 in investing in nature conservation within its borders, but has come up short in aiding the world’s most threatened and biologically rich natural ecosystems in the tropics.

Canada’s federal Budget 2018 committed an unprecedented \$1.3 billion—including \$500 million toward a Nature Fund—over five years to establish new protected areas and to carry out recovery measures for threatened species in Canada. In 2019, the government pledged to protect 25 percent of Canada’s ocean waters and land by 2025 and 30 percent by 2030. Canada’s domestic spending (federal and provincial/territorial) compares well with that of other countries (Table 1).

The progress *within* Canada is historic (although many voices call for greater action still). And the development of partnerships with Indigenous peoples as stewards of new Indigenous protected areas across Canada is encouraging. Our investment and support for conservation elsewhere in the world, however, is something else.

Canada’s meagre support for international conservation

Despite Canada’s potential as a global conservation leader, Canada pays scant attention to the protection of nature beyond its borders. *The 2020 Biodiversity Goals and Targets for Canada*, which the government announced in 2015, makes no mention of international conservation needs and importance.⁴³

Bilateral Official Development Assistance (ODA) comprises the lion’s share of public spending by donor governments for biodiversity conservation in developing nations. Canada’s bilateral biodiversity-related ODA to developing countries averaged just US\$7.97 million (10.3 million CAD) per year in recent years (2016-2018).^{44,45} That is

Table 1. Domestic and international bilateral expenditures on biodiversity conservation (2016-2018 average).⁴²

	Biodiversity spending (millions USD)	
	<i>Domestic</i>	<i>International</i>
France	2,104	1,136
Germany	1,925	1,056
Norway	176	252
Sweden	223	181
Canada	1,123	8

just four percent of the annual average of US\$183 million for 28 OECD Development Assistance Committee (DAC) countries in those years, despite Canada having the 8th largest Gross National Income (GNI) in this group. In *per capita* terms, Canada ranked 22nd of 28 OECD DAC nations (Table 2) and 23rd in aid as a percentage of GNI.⁴⁶

The top three donors offer a stark contrast (Fig. 2). France and Germany each contributed over a billion US dollars annually during that period, while the United States exceeded US\$1.2 billion in 2016, dropping off in 2017-2018 (Fig. 3). The citizens of Norway—an energy-rich country like Canada—paid the equivalent of US\$47.80 per person per year to help developing countries fight biodiversity loss (Table 2). The French paid US\$17.01 per person for biodiversity aid and the Germans US\$12.80.

Canadians were well behind, paying just US\$0.22 (29 cents CAD) per person to lower-income nations for protecting the world’s wildlife.

While our global standing as a biodiversity aid donor is poor, it is also nothing new. Canada has not been among the top donors of biodiversity-related bilateral ODA since 2012 (Fig. 3). While other OECD donors have increased (in some cases hugely) their biodiversity conservation aid, Canada’s contribution has remained low.

Information on multilateral aid for biodiversity (which is harder to find and was not central to our analysis) reflects more favourably on Canada.

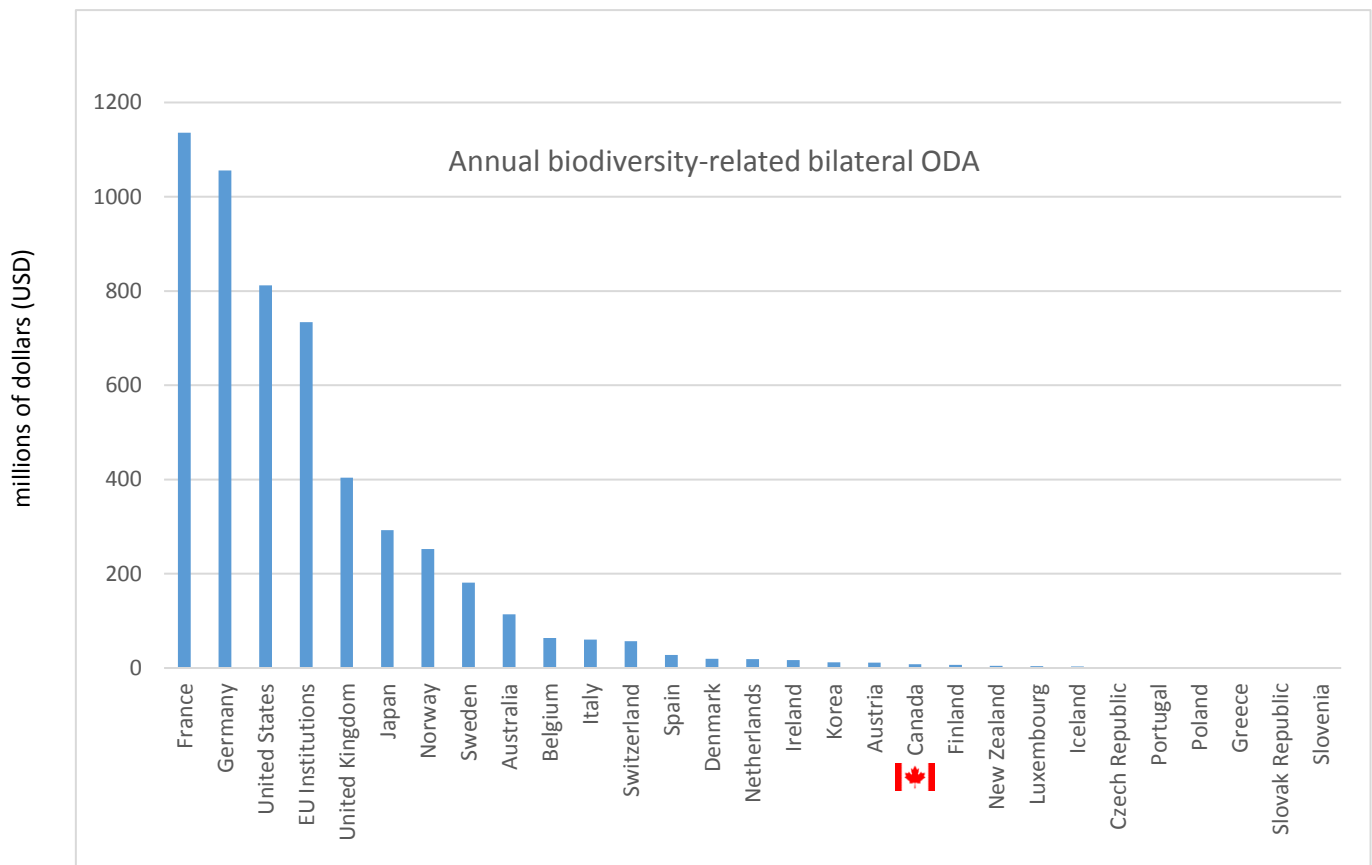


Figure 2. Average annual biodiversity-related Official Development Assistance (bilateral) for 2016-2018 by donor nations of the OECD Development Assistance Committee.⁴⁵

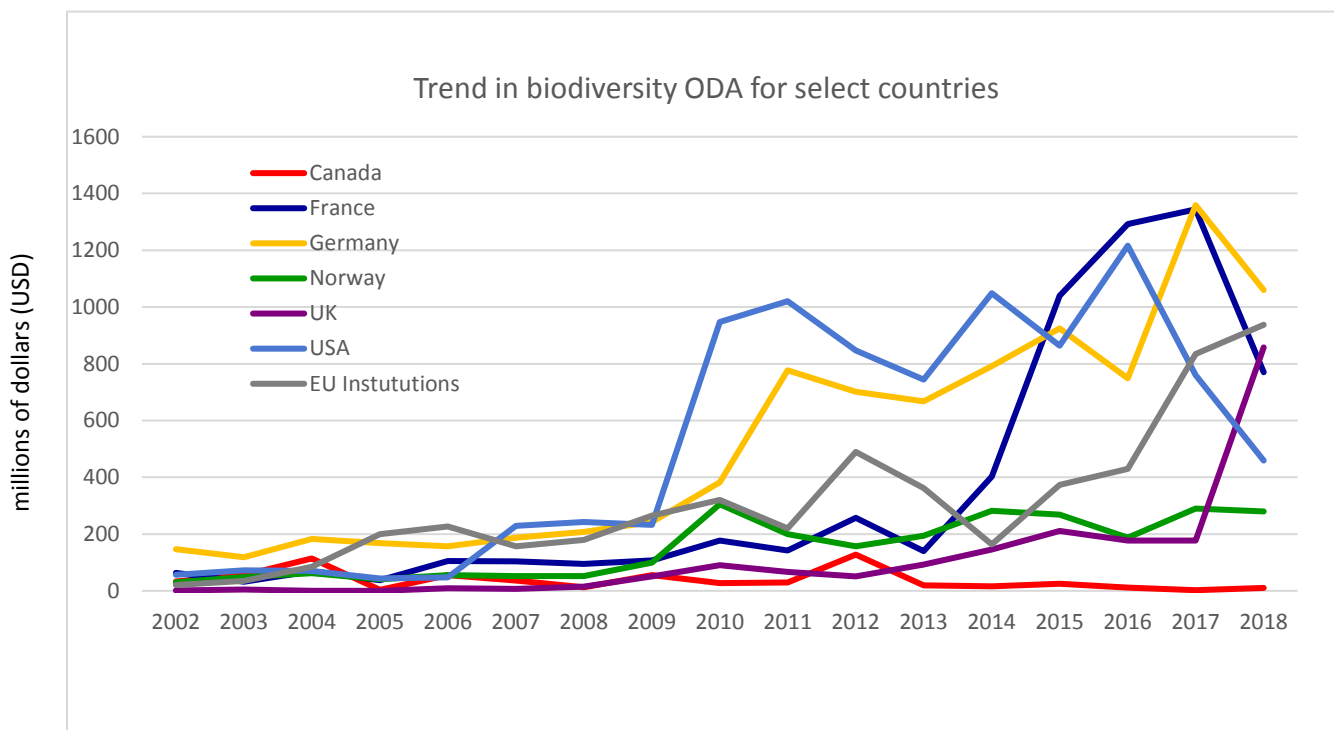


Figure 3. Biodiversity-related Official Development Assistance (bilateral) by select OECD nations since 2002 (as constant 2017 US dollars, millions).⁴⁵

Multilateral aid

Multilateral aid is another avenue through which developing nations access support for conservation. At US\$565 million, multilateral aid made up 9 percent of the international public biodiversity finance to developing nations in the period 2015-2017.⁴⁷ However, for Canada the portion that is multilateral is higher.


Global Affairs Canada reported international assistance of \$228 million in 2018-2019 for environmental protection, of which most (\$197 million) was for environmental policy and administrative management, \$2.6 million was for biodiversity and another \$2.24 million for “site preservation”.⁴⁸ Canada ranked sixth among countries contributing to the Global Environment Facility (GEF) during the GEF Replenishment period of 2014-2018, contributing an average of \$54.75 million annually.⁴⁹ About 20% of GEF’s funding is applied for biodiversity conservation in developing countries, hence Canada’s GEF contribution represents about \$11 million annually for those years.

Opposite: Brazil nut trees provide for sustainable non-timber commerce. Photo: Associação Floresta Protegida

Philanthropic support

Although not the focus of this report, in the philanthropic sector, Canadians contribute modestly to international conservation. Recent annual spending by Canadian charities for biodiversity outside Canada was \$7.8 million (US\$6.5 million),⁵⁰ compared with US\$592 million in international conservation expenditures by twelve top American conservation NGOs surveyed.⁵¹

Table 2. Average annual per capita bilateral biodiversity aid to developing countries, 2016-2018.⁴⁵

		US Dollars per capita
1.	Norway	47.80
2.	Sweden	18.16
3.	France	17.01
4.	Germany	12.80
5.	Iceland	9.04
6.	Switzerland	6.76
7.	Luxembourg	6.70
8.	United Kingdom	6.13
9.	Belgium	5.60
10.	Australia	4.62
11.	Ireland	3.54
12.	Denmark	3.35
13.	United States	2.50
14.	Japan	2.31
15.	Austria	1.26
16.	Finland	1.16
17.	Netherlands	1.10
18.	New Zealand	1.02
19.	Italy	1.00
20.	Spain	0.59
21.	Korea	0.24
22.	Canada 	0.22
23.	Czech Republic	0.14
24.	Portugal	0.07
25.	Slovenia	0.03
26.	Greece	0.02
27.	Slovak Republic	0.02
28.	Poland	0.01

How much is enough?

Conservation finance needs to increase between five-fold and eight-fold, according to a recent report by the Paulson Institute, The Nature Conservancy and Cornell.⁵² The report estimates the finance need for biodiversity at US\$722-968 billion annually, compared with spending of approximately US\$124-143 billion in 2019 on biodiversity protection. This leaves a “biodiversity financing gap” of US\$598-824 billion annually.

Governments, the report says, should also incentivize the private sector to make investments that protect biodiversity.

Most biodiversity conservation funding is spent by countries like Canada within their own borders. A far smaller amount overall is spent to assist conservation in developing nations. This remains the case although foreign aid for biodiversity has been increasing in absolute terms and as a percent of development assistance. The Paulson report gives a mid-range estimate of \$6 billion for total international biodiversity finance. It calls for a doubling of foreign aid for biodiversity, especially to biodiversity-rich countries. This appears conservative in relation to the call for a five-fold to eight-fold overall increase.

The costs of inaction on biodiversity loss are high. From 1997 to 2011, the world lost an estimated US\$4-20 trillion per year in ecosystem services owing to land-cover change and US\$6-11 trillion per year from land degradation.³⁵



Conservation NGOs have averted the extinction of the hooded grebe, which breeds on remote plateaus in Argentina and is impacted by introduced American mink. Photo: Daniel Pettersen

Kayapo leaders meet
in the Brazilian
Amazon. Indigenous
people are important
allies in conservation.
Photo: Andre D'Elias



How much should Canada spend internationally?

This can be approached in various ways. We suggest three here; none involve spending less domestically.

One approach is that, to play a leadership role, Canada could aim to match the top donor countries (Norway, France, Sweden, Germany) in biodiversity spending in relation to Gross National Income. The four countries spent on average 0.0878 percent of their GNI on biodiversity (at home and internationally) in recent years.⁵³ If Canada matched that percentage, it would mean annual spending of \$2.13 billion. Subtracting Canada's domestic spending leaves ~\$650 million that could be applied to international biodiversity support—\$17 per Canadian.

A second approach considers that Norway and Sweden spend about as much on conservation internationally as they do at home, and Germany and France spend about half as much internationally (Table 1). Canada could aim to spend as much internationally as it does at home—about \$1.5 billion— or half as much—\$750 million.

Whatever the goal, some of the expenditure can take place through the nature-based solutions component of Canada's climate finance assistance to developing countries (see page 23). And Canada will want to apply it for maximum benefit.

“

Why, our descendants will ask, by needlessly
extinguishing the lives of other species, did we
permanently impoverish our own?

- Edward O. Wilson, *The Future of Life*

Photo: Scott Hecker





Logging primary forests in South America initiates a cascade of exploitation typically ending in unsustainable cattle ranching or large-scale soy production. Photo: Martin Schaefer

Nature-based climate solutions and biodiversity

It is now clear that to have any realistic chance of meeting the world's Paris Agreement climate target, we need to rapidly reduce fossil fuel emissions and to also take advantage of the large potential for nature-based climate solutions (NCS). If done in parallel with rapid decarbonization of economies, NCS can achieve *a quarter or more* of the cost-effective mitigation needed to achieve the 2030 Paris emissions-reduction target without compromising food and fiber security.^{54,55} Key NCS measures involve avoiding emissions from the loss and degradation of natural ecosystems, notably tropical forests. There is also a large potential for negative emissions (drawing CO₂ out of the atmosphere) by restoring degraded forests and improving sustainable management of production forests.

Almost two-thirds of the global potential for NCS lies in the tropics. A recent study involving 76 tropical countries found that cost-effective NCS could mitigate more than half of each country's national emissions, and in more than a quarter it could exceed national emissions.⁵⁶

Canada and other industrialized countries affirmed in the Paris Climate Agreement their commitment to mobilizing US\$100 billion per year to help developing countries mitigate and adapt to climate change. Canada committed \$2.65 billion over five years from 2015/2016 to 2020/2021. So far, the bulk of Canada's funding has gone toward technological approaches to mitigation such as clean energy and to climate adaptation measures. A relatively small portion has been applied to conserve and restore natural ecosystems and other natural climate solutions.⁵⁷ Many nature-based solutions are cross-cutting, offering adaptation and mitigation gains while also benefiting biodiversity and local and indigenous communities and women. If more goes to nature-based solutions with high biodiversity value, it's a win for climate biodiversity and local people.

A word about REDD+: Countries giving the most biodiversity aid have applied much of it to REDD+ — the UN-devised framework for Reduced Emissions from Deforestation and forest Degradation. Canada can learn from the experience of other countries such as Norway^{58,59} and aim for better results.

Covid-19 and wildlife: Key points

Excerpted from a Global Environment Facility statement at the 58th GEF Council Meeting, June 2-3, 2020.⁶⁰ Bolding is our emphasis.

1. The current coronavirus pandemic is forcing humankind to confront what we have long suspected but too often chose to ignore: **what ultimately drives the transmission of infectious pathogens from wildlife to human populations, with mounting social and economic impact, is the unrelenting degradation of nature.**

The COVID-19 pandemic is just the most recent and vivid example of how human pressure on nature and natural systems is exposing humans to grave health risks, with wide-ranging and lasting consequences for society and for the stability of national and global economies.

2. ... while the world is rightly focused on how to cope with the pressing issues of the day, it is crucial to understand better the root causes of COVID-19 as well as how to anticipate and prevent future crises.

3. What we can say with confidence is that, at its core, **COVID-19 is a result of the direct collision between natural systems and human systems.** The remarkable economic growth experienced during the last half century has disrupted ecosystems through unplanned urbanization and expansion of human settlements at rates higher than population growth, through rampant deforestation, and through widespread land degradation.

4. With this disruption, people can more closely interact with wildlife, with zoonosis hotbeds erupting as a consequence. What we are experiencing should not have come as a surprise. Experts armed with a solid body of science-based evidence have long alerted that a COVID-19-type of crisis would happen; and that it was not a matter of “if” but “when”.

5. ... **the only lasting solution to COVID-19 and other such diseases is to promote transformational change to the human systems,** be they energy, cities, food and production / consumption, **so that a balance between natural systems and human systems be restored within planetary boundaries.**



Trade in pangolins and other wildlife is putting species at risk and increasing the likelihood of pandemics.
Photo: KTK-BELT

Policy in a pandemic prone world

The world must heed the lessons learned from Covid-19 and other zoonotic epidemics. To restore a healthy relationship between humankind and wild nature, we need to protect the Earth's remaining natural ecosystems, accelerate the transformation of food systems, take strong action to curb the illegal trade in wildlife, and address the root causes of the demand for bushmeat and wildlife products. What we need to *avoid* doing is deregulation, re-introduction of harmful agricultural and fossil fuel subsidies, and weakening measures taken toward sustainable sourcing.

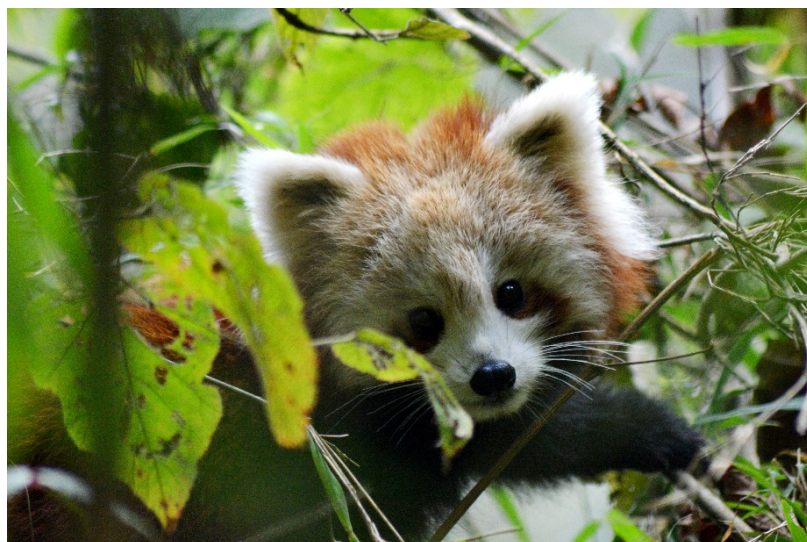
There are widespread calls for a “Green Recovery” that hastens the transition to a sustainable, low-carbon, low-polluting economy. This path of necessity integrates safeguarding nature with inclusive economic development. The end result is a society more resilient to climate change and natural and manmade disasters.

One immediate concern: Amid the pandemic, there is an urgent need to sustain essential conservation functions such as the work of rangers defending protected areas.

Recap of benefits of conservation

- Conserving biodiversity maintains ecological integrity and resilience and reduces the risk of ecosystem collapse.
- Natural ecosystems mitigate climate change, protect and purify water sources, generate rainfall, furnish pollinators, and prevent erosion and run-off of fertilizers and chemicals that are causing “dead zones” in oceans and lakes.
- Natural ecosystems are vital to livelihoods of hundreds of millions in rural areas; they are crucial in maintaining agricultural systems and fisheries, avoiding desertification and reducing the risk of flooding and droughts.
- Conservation lowers the risk of zoonotic epidemics.
- Biodiversity has its own intrinsic value! Other species matter.

The red panda suffers from to the illegal wildlife trade as well as habitat loss and is classified as Endangered by the IUCN. This cub was photographed in Nepal by the Red Panda Network.



Conclusion

Canada has shown the world that it values nature and biodiversity conservation—at least, that is, when it comes to its own backyard. Outside its borders, however, Canada has provided insufficient support for conserving biodiversity. Canadian efforts to meet Aichi biodiversity targets at home without also addressing the biodiversity crisis where it counts most misses the UN CBD's essential, global purpose. We have the capacity to complement our growing domestic conservation commitment with a commitment to global biodiversity. We must act on it.

Here is what Canada can do to help lower-income countries protect the world's biodiversity:

1. *Increase Canada's international assistance for biodiversity conservation to \$650 million annually—the level of the top tier of biodiversity aid donor countries.*

This can be done through the Global Environment Facility, bilateral aid, and partnering with non-governmental conservation organizations.

2. *Encourage all industrialized countries to commit to substantial support for conservation in developing nations in the post-2020 CBD framework*

Canada should urge Convention on Biological Diversity signatory nations to prioritize increased support for conservation in developing nations in the post-2020 CBD framework. This should be a key element in the CBD's 2050 Vision of "Living in Harmony with Nature".⁶¹

3. *Focus aid for climate action on "nature-based climate solutions" in the tropics that provide simultaneous benefits to biodiversity and human well-being.*

Applying a substantial amount of Canada's international climate finance to nature-based climate solutions (NCS) would complement Canada's plans for NCS within Canada and yield major cost-effective benefits for biodiversity as well as climate. Priorities are reducing deforestation, especially of primary forest, restoring degraded forest, and avoiding the loss and degradation of coastal ecosystems and peatlands.

Canada should also raise awareness among Canadians of the importance of tropical biodiversity to Canada and the world, highlighting the need to act now to save it.

Ottawa's commendable push for more protected areas since 2015 and its 2018 financial commitment for nature conservation in Canada and to meet our international obligations under the CBD are good news stories. Yet this country will only realize its potential as a global conservation champion by extending its support to countries where nature is most threatened.



Photo: Jorge Solórzano-Filho



Photo: Martin Schoeller

Canada's leadership role can go beyond spending

In addition to the recommendations in our Conclusion, here are specific actions Canada can take:⁶²

Call for a moratorium on logging in intact tropical forests. We need a moratorium on further loss of intact forests in the tropics. Many nations recognize this need and may well be receptive if Canada were to (a) call for a moratorium in conjunction with like-minded nations such as Norway, Germany, China and others and (b) provide seed money for a fund that provides payments to nations with tropical forests to offset their lost revenues.

Support restoration of tropical forests: Most of the world's remaining forest has been degraded or fragmented, impacting biodiversity and carbon stores. The main solution (more important than planting trees) is to protect forest against fires and further degradation, allowing the forest to restore itself with natural seed stock. Financial and other support from Canada could greatly enhance these restoration efforts in tropical regions by private companies, governments and nonprofit organizations.

Set up and administer a faunal restoration fund: Poaching and the wildlife trade have led to the disappearance of megafauna, many of which are key elements in ecosystems and for the maintenance of biodiversity. Ongoing rewilding and restoration is popular with the general public and cost effective. Canada could set up a faunal restoration fund administered by the Canadian government or through a nonprofit.

Call for an end to the commercial trade and exploitation of threatened wildlife globally: The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is aimed at curbing trade in endangered species, but it has been hindered by powerful lobbying interests and lack of enforcement in some countries. Ebola, MERS, SARS and now Covid-19, which resulted from the exploitation of wildlife, have cost national governments and global citizens many times the commercial value of such trade globally. Canada has the moral force to call for a halt to this trade.

The Canadian Centre for DNA Barcoding has led the development of DNA barcoding, a cost-effective state-of-the art technology for taxonomic identification. This represents a major Canadian contribution to biodiversity science and conservation. Canada could subsidize use by developing countries of the Centre's barcoding capacity in aid of tropical conservation.

Afterword: Role of the private sector

The report addresses the need for more public support for tropical conservation, specifically from Canada.

It should be noted that the private sector also plays an important role in addressing global biodiversity loss. This comes about from companies reducing the biodiversity impacts of their operations or supply chains and from directly supporting conservation efforts. Consumer demand for “deforestation-free” and similar products and the demand for “environmental, social and governance investing” plays into this. Biodiversity is benefiting from a trend toward corporate commitments to become net-zero in carbon emissions, in part through forest carbon projects and other conservation work.

Canada might consider legislation along the lines proposed in the U.K. that would require larger companies operating in Canada to show where commodities such as cocoa, soy, rubber and palm oil originated and that they comply with laws to protect nature in countries of origin.

We point out as well that in addition to public protected areas and reserves owned by conservation organizations and land trusts, there is a hard-to-measure contribution from individuals who own land that is effectively conserved but lacks official protected status.

A concerted and increased effort by governments, business, and the philanthropic sector is needed to stem global biodiversity loss. There is no time to lose.



Photo: Karl Zuzarte

Endnotes:

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⁶² We are grateful to conservationist Gerard A. Bertrand for proposing the first four of these measures.

Notes



Photo: Marine Conservation Cambodia