CMS

BACKGROUND GUIDE

NHSMUN
National High School Model United Nations

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Dear Delegates,

My name is Maya Checchi, and I am pleased to welcome you to the Committee on the Convention of Migratory Species (CMS) for NHSMUN 2025! My Co-Director, Ana Tejeda, and I look forward to this exciting and fruitful debate, exploring the complexities of wildlife conservation in Africa and Latin America. This background guide will inspire you to protect migratory species and address the socio-economic needs of communities across these continents.

Last year, I had the privilege of serving as an Assistant Director for the Special Political and Decolonization Committee (SPECPOL), an experience I truly loved. Before joining NHSMUN staff, I actively participated in my high school's Model UN team for three years, eventually leading the team as captain during my senior year. Attending NHSMUN was a once-in-a-lifetime experience that left a lasting impression on me, and as soon as I saw the opportunity to join the NHSMUN staff, I knew I had to apply! Model UN has profoundly impacted my life, deepening my understanding of global issues and teaching me the value of diplomacy, teamwork, and leadership while connecting me with students worldwide.

I am pursuing a Politics and International Relations degree in my second year at University College London. Although I now live in the UK, I was born and raised in Los Angeles, California, by my vibrant and resilient Italian parents. Growing up in a multilingual household, I developed a deep appreciation for languages, speaking Italian, Spanish, and English at home. I am also an avid reader with a particular passion for Spanish literature—whether it's immersing myself in Isabel Allende's romance novels or Pablo Neruda's epic poems. In my free time, I enjoy running in London's vast and colorful parks and traveling to Italy to visit my many relatives, whom I love and miss dearly.

After extensive research, Ana and I selected "Preventing the Illegal Exploitation of African Elephants" and "The Conservation of River Dolphin Habitats in the Amazon River" for this year's Committee on the Convention of Migratory Species. We chose these topics intending to prompt research into the numerous challenges these regions face, leading to severe animal endangerment. These issues require us to delve into the root causes of major global problems—such as war, poverty, and development—which are crucial to understand when addressing protecting our planet's environment. Furthermore, these topics emphasize the urgent need to protect our world from the escalating threats of climate change. Through these discussions, we hope delegates will better understand our generation's complex challenges, preparing them to navigate the future political landscape.

Please do not hesitate to contact me with any questions you may have. Good luck researching, and I look forward to meeting you all in March!

Maya Checchi
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Dear delegates,

My name is Ana Tejeda, and I am honored to welcome you to the Convention of Migratory Species (CMS) committee of NHSMUN 2025. I am very excited to guide you through the sessions. Together with my co-director, Maya, we have prepared the background guide as a source of information and a tool to inspire critical thinking and spark innovative solutions. We are working hard in hopes that you gain a new international perspective while enjoying every minute of your time at NHSMUN. My experience with Model United Nations has been extensive and memorable. I have had the opportunity to attend eighteen different conferences and have proudly made NHSMUN my second home since 2020—starting when I was a delegate in SOCHUM representing Chile.

In 2023, I had the opportunity to join the NHSMUN staff as an Assistant Director of the United Nations Environment Assembly (UNEA) Committee, a truly unforgettable experience. This year, I have returned to NHSMUN as the Session II Director for the Committee of the Convention of Migratory Species of Wild Animals (CMS). I aim to foster a collaborative environment with fair play and a genuinely nurturing academic experience for this session. It has already been a pleasure, and I genuinely cannot wait to see everyone working hard during the conference. I graduated with a degree in International Relations this year—shout out to the class of 2024! My time at university and my love for my career exposed me to beautiful projects and, above all, my closest friends. My main areas of study were Asia and Africa, so the privilege of managing these topics overjoyed me! Quick fun facts about me are that I'm a bookworm, enjoy volunteering, and love exploring and finding new adventures. The more I learn about the world, the happier I will always be.

This year, the CMS committee will address two important topics: Combating Illegal Taking and Exploitation of African Elephants and The Conservation of River Dolphin Habitats in the Amazon River. My expectations for the present delegations are that they deep dive into the issue's importance, foster cooperation with others, and propose solutions that follow the scope of the Convention. That said, March is just right around the corner. If you have any questions or concerns we can help with to ensure you have an unforgettable NHSMUN experience, never hesitate to ask. Thank you for your dedication and commitment to this important work.

I look forward to meeting you and embarking on this journey together,

Ana Shadai Tejeda Bueno
Director of the Convention of Migratory Species (CMS)
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Table of Contents

A Note on the NHSMUN Difference

Esteemed Faculty and Delegates,

Welcome to NHSMUN 2025! We are Terry Wang and Jordan Baker, and we are this year's Secretary-General and Director-General. Thank you for choosing to attend NHSMUN, the world's largest and most diverse Model United Nations conference for secondary school students. We are thrilled to welcome you to New York City in March.

As a space for collaboration, consensus, and compromise, NHSMUN strives to transform today's brightest thinkers, speakers, and collaborators into tomorrow's leaders. Our organization provides a uniquely tailored experience for all through innovative and accessible programming. We believe that an emphasis on education through simulation is paramount to the Model UN experience, and this idea permeates throughout numerous aspects of the conference:

Realism and accuracy: Although a perfect simulation of the UN is never possible, we believe that one of the core educational responsibilities of MUN conferences is to educate students about how the UN System works. Each NHSMUN committee is a simulation of a real deliberative body so that delegates can research what their country has said in the committee. Our topics are chosen from the issues currently on the agenda of that committee (except historical committees, which take topics from the appropriate time period). We also strive to invite real UN, NGO, and field experts into each committee through our committee speakers program. Moreover, we arrange meetings between students and the actual UN Permanent Mission of the country they are representing. Our delegates have the incredible opportunity to conduct first-hand research, asking thought-provoking questions to current UN representatives and experts in their respective fields of study. These exclusive resources are only available due to IMUNA's formal association with the United Nations Department of Global Communications and consultative status with the Economic and Social Council. No other conference goes so far to deeply immerse students into the UN System.

Educational emphasis, even for awards: At the heart of NHSMUN lies education and compromise. Part of what makes NHSMUN so special is its diverse delegate base. As such, when NHSMUN distributes awards, we strongly de-emphasize their importance in comparison to the educational value of Model UN as an activity. NHSMUN seeks to reward students who excel in the arts of compromise and diplomacy. More importantly, we seek to develop an environment in which delegates can employ their critical thought processes and share ideas with their counterparts from around the world. Given our delegates' plurality of perspectives and experiences, we center our programming around the values of diplomacy and teamwork. In particular, our daises look for and promote constructive leadership that strives towards consensus, as real ambassadors do in the United Nations.

Debate founded on strong knowledge and accessibility: With knowledgeable staff members and delegates from over 70 countries, NHSMUN can facilitate an enriching experience reliant on substantively rigorous debate. To ensure this high quality of debate, our staff members produce detailed, accessible, and comprehensive topic guides (like the one below) to prepare delegates for the nuances inherent in each global issue. This process takes over six months, during which the Directors who lead our committees develop their topics with the valuable input of expert contributors. Because these topics are always changing and evolving, NHSMUN also produces update papers intended to bridge the gap of time between when the background guides are published and when committee starts in March. As such, this guide is designed to be a launching point from which delegates should delve further into their topics. The detailed knowledge that our Directors provide in this background guide through diligent research aims to increase critical thinking within delegates at NHSMUN.

Extremely engaged staff: At NHSMUN, our staffers care deeply about delegates' experiences and what they take away from their time at NHSMUN. Before the conference, our Directors and Assistant Directors are trained rigorously through hours of workshops and exercises both virtual and in-person to provide the best conference experience possible. At the conference,

delegates will have the opportunity to meet their dais members prior to the first committee session, where they may engage one-on-one to discuss their committees and topics. Our Directors and Assistant Directors are trained and empowered to be experts on their topics and they are always available to rapidly answer any questions delegates may have prior to the conference. Our Directors and Assistant Directors read every position paper submitted to NHSMUN and provide thoughtful comments on those submitted by the feedback deadline. Our staff aims not only to tailor the committee experience to delegates' reflections and research but also to facilitate an environment where all delegates' thoughts can be heard.

Empowering participation: The UN relies on the voices of all of its member states to create resolutions most likely to make a meaningful impact on the world. That is our philosophy at NHSMUN too. We believe that to properly delve into an issue and produce fruitful debate, it is crucial to focus the entire energy and attention of the room on the topic at hand. Our Rules of Procedure and our staff focus on making every voice in the committee heard, regardless of each delegate's country assignment or skill level. Additionally, unlike many other conferences, we also emphasize delegate participation after the conference. MUN delegates are well researched and aware of the UN's priorities, and they can serve as the vanguard for action on the Sustainable Development Goals (SDGs). Therefore, we are proud to connect students with other action-oriented organizations to encourage further work on the topics.

Focused committee time: We feel strongly that face-to-face interpersonal connections during debate are critical to producing superior committee experiences and allow for the free flow of ideas. Ensuring policies based on equality and inclusion is one way in which NHSMUN guarantees that every delegate has an equal opportunity to succeed in committee. In order to allow communication and collaboration to be maximized during committee, we have a very dedicated administrative team who work throughout the conference to type up, format, and print draft resolutions and working papers.

As always, we welcome any questions or concerns about the substantive program at NHSMUN 2025 and would be happy to discuss NHSMUN pedagogy with faculty or delegates.

Delegates, it is our sincerest hope that your time at NHSMUN will be thought-provoking and stimulating. NHSMUN is an incredible time to learn, grow, and embrace new opportunities. We look forward to seeing you work both as students and global citizens at the conference.

Best,

Terry Wang
Secretary-General

Jordan Baker
Director-General

A Note on Research and Preparation

Delegate research and preparation is a critical element of attending NHSMUN and enjoying the debate experience. We have provided this Background Guide to introduce the topics that will be discussed in your committee. We encourage and expect each of you to critically explore the selected topics and be able to identify and analyze their intricacies upon arrival to NHSMUN in March.

The task of preparing for the conference can be challenging, but to assist delegates, we have updated our **Beginner Delegate Guide** and **Advanced Delegate Guide**. In particular, these guides contain more detailed instructions on how to prepare a position paper and excellent sources that delegates can use for research. Use these resources to your advantage. They can help transform a sometimes overwhelming task into what it should be: an engaging, interesting, and rewarding experience.

To accurately represent a country, delegates must be able to articulate its policies. Accordingly, NHSMUN requires each delegation (the one or two delegates representing a country in a committee) to write a position paper for each topic on the committee's agenda. In delegations with two students, we strongly encourage each student to research each topic to ensure that they are prepared to debate no matter which topic is selected first. More information about how to write and format position papers can be found in the NHSMUN Research Guide. To summarize, position papers should be structured into three sections:

I: Topic Background – This section should describe the history of the topic as it would be described by the delegate's country. Delegates do not need to give an exhaustive account of the topic, but rather focus on the details that are most important to the delegation's policy and proposed solutions.

II: Country Policy – This section should discuss the delegation's policy regarding the topic. Each paper should state the policy in plain terms and include the relevant statements, statistics, and research that support the effectiveness of the policy. Comparisons with other global issues are also appropriate here.

III. Proposed Solutions – This section should detail the delegation's proposed solutions to address the topic. Descriptions of each solution should be thorough. Each idea should clearly connect to the specific problem it aims to solve and identify potential obstacles to implementation and how they can be avoided. The solution should be a natural extension of the country's policy.

Each topic's position paper should be **no more than 10 pages** long double-spaced with standard margins and font size. **We recommend 3–5 pages per topic as a suitable length**. The paper must be written from the perspective of your assigned country and should articulate the policies you will espouse at the conference.

Each delegation is responsible for sending a copy of its papers to their committee Directors via myDais on or before **February 21, 2025**. If a delegate wishes to receive detailed feedback from the committee's dais, a position must be submitted on or before **January 31, 2025**. The papers received by this earlier deadline will be reviewed by the dais of each committee and returned prior to your arrival at the conference.

Complete instructions for how to submit position papers will be sent to faculty advisers via email. If delegations are unable to submit their position papers on time, please contact us at info@imuna.org.

Delegations that do not submit position papers will be ineligible for awards.

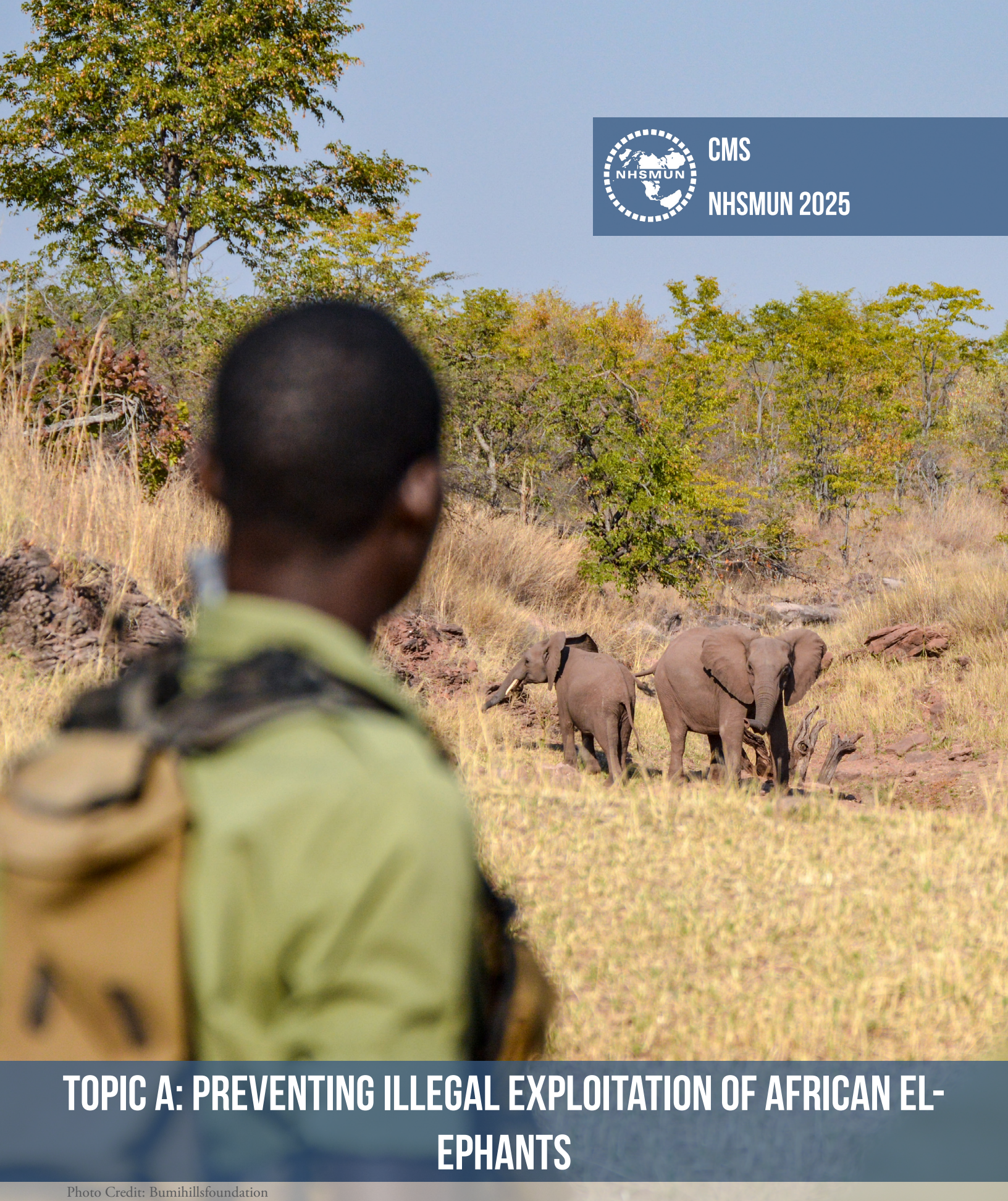
Committee History

The Convention on Migratory Species was founded in 1979 under the supervision of the United Nations Environment Programme. It was created to address the increasing need for conservation efforts of migratory species and their habitats, which would need the cooperation of all states "in which such species spend any part of their life cycle."[1] They define migratory species as "species that cyclically and predictably cross one or more national jurisdictional boundaries."[2] Currently, it is the only convention that centers on the preservation of migratory species, migratory routes, and their habitats.[3] The Convention on Migratory Species prioritizes bringing awareness to and creating solutions for issues such as endangered migratory species and the influence of climate change on biodiversity. The convention discusses possibilities to solve problems that have been negatively affecting animal populations, bringing innovative approaches through partnerships and the adoption of new strategies throughout the years.[4]

CMS protects two types of vulnerable populations: Appendix I and II. CMS works to protect animal species that are considered endangered by the International Union for Conservation of Nature's (IUN) Red List Criteria.[5] Those species are listed under Appendix I, and member states agree to take action to protect them. Under Appendix II are species with "unfavorable conservation status," and members are encouraged to reach international agreements to their conservation. The convention works to protect a range of migratory species, such as birds, sharks, whales, insects, and reptiles, to preserve biodiversity. The decision-making body of CMS is the Conference of Parties, which meets to make decisions on CMS-related issues. Annually, climate problems linked to the scope of the committee are debated at the Conference of the Parties (COP), which is very important as it affects and gives new meaning to the mission and purpose of each country.[6]

CMS often works with international organizations, member states' governments, and private organizations.[7] CMS is usually called upon by other organizations to assist in creating solutions that impact biodiversity and animal welfare, such as the United Nations Environment Programme.[8] The convention collaborates frequently with BirdLife International and Wetlands International, which have worked several times with the United Nations but are not officially a part of the UN.[8] As of February 24, 2024, CMS has a total of 133 member states.[9] Although CMS has a large scope and has been effective thus far, its impact has been limited in the nonmember states and by the advancement of climate change. Furthermore, developed and developing countries do not receive equitable treatment, especially in the face of such demands. However, shortly after the 13th Session of the Conference of Parties, a resolution was adopted which allowed developing states to receive further financial assistance concerning conservation efforts.[10] Promoting major acts on a global scale has worked constantly in various regions. New partnerships with other organizations symbolize progress in the fight for the principles that guide the Conventions on Migratory Species.

1 Convention on the Conservation of Migratory Species, Convention on the Conservation of Migratory Species of Wild Animals, June 23, 1979, https://www.cms.int/sites/default/files/instrument/CMS-text.en_.PDF.
2 CMS, FAQ, https://www.cms.int/en/faq.
3 CMS, Introduction, Www.cms.int. https://www.cms.int/en/legalinstrument/cms.
4 Ramírez, Iván, CMS Mandate and Role of MIKT Update from CMS COP14, 2024, https://www.cms.int/sites/default/files/document/5.%20CMS%20Mandate%20and%20lessons_RAMIREZ.pdf.
5 CMS, Appendix I & II of CMS, 2020, https://www.cms.int/en/species/appendix-i-ii-cms.
6 New Zealand Department of Conservation. "Convention on the Conservation of Migratory Species of Wild Animals (CMS)." Government of New Zealand. 2020. https://www.doc.govt.nz/about-us/international-agreements/species/migratory-species/#:~:text=The%20decision%2Dmaking%20body%20of.
7 CMS, United Nations Environment Programme, Inputs Towards Enhancing the Relationship Between the CMS Family and Civil Society, UNEP/CMS/StC45/Inf.1, November 6, 2016, https://www.cms.int/sites/default/files/document/cms_stc45_Inf.1_e.pdf.
8 CMS, UNEP, Report of the United Nations Environment Programme, UNEP/CMS/StC53/Doc.8, October 19, 2022, https://www.cms.int/sites/default/files/document/cms_stc53_doc.8_unep-report_e.pdf.
9 CMS, Historic UN Wildlife Meeting Concludes with Major Set of Actions for the Conservation of Migratory Species of Wild Animal,. February 17, 2024, https://www.cms.int/en/news/historic-un-wildlife-meeting-concludes-major-set-actions-conservation-migratory-species-wild#:~:text=Among%20the%20measures%20agreed:%20the.
10 Sellheim , Nikolas, and Jochen Schumacher, "Increasing the Effectiveness of the Bonn Convention on the Conservation of Migratory Species." *Journal of International Wildlife Law & Policy* 25, no. 4 (December 15, 2022): https://doi.org/10.1080/13880292.2022.2153461.



CMS

NHSMUN 2025

TOPIC A: PREVENTING ILLEGAL EXPLOITATION OF AFRICAN ELEPHANTS

Photo Credit: Bumihillsfoundation

Introduction

Due to the effects of ivory poaching and habitat loss, the African forest elephant (*Loxodonta cyclotis*) and the African savanna elephant (*Loxodonta africana*) have become endangered.[1] The African elephant population has declined from an estimated 12 million to around 400,000 in the past century. African forest elephants were the most affected; their populations fell by 62 percent between 2002 and 2011. The African savanna elephant population declined by 30 percent between 2007 and 2014.[2] This population decline unravels a set of pressing issues. Elephants play an essential role in maintaining the health of ecosystems. African forest elephants are commonly called 'climate heroes' given their contributions to mitigating climate change. They eat more than 400 pounds of food daily, reducing vegetation density through their feed and travel, allowing slower-growing trees to grow larger. Less density means less competition for these trees to survive, increasing their capacity to remove more heat-trapping carbon dioxide (CO2) from the atmosphere.[3]

Aside from reducing years' worth of emissions, elephants' feeding helps promote forest growth. They disperse undigested seeds through their dung. If these seeds weren't chewed beforehand, their tough coverings would make it difficult for them to sprout. Therefore, elephants are vital to helping populate the forest with its largest trees and lush landscapes.[4] Nonetheless, detrimental human activities such as ivory poaching and habitat destruction further put the African elephant population at risk. Habitat loss and fragmentation caused by the manipulation of forests for agriculture, human settlements, and livestock farming have increased human-elephant conflict[5]. For example, elephants are being killed in retaliation for wandering into farmlands or homes.[6] This is caused by needing more room to roam, with their geographical range shrinking from three million square miles in 1979 to over one million in 2007. This loss of habitat due to commercial intervention and various resource extraction industries has indirectly helped ivory poachers easily access elephants in remote forests.[7]

At least 20,000 African elephants are illegally killed for their tusks every year.[8] There have been promising efforts that have declined poaching in the eastern hemisphere since 2012, but markets present in Asia, Africa, and globally are still providing high supplies of ivory. In 2016, the highest volume of illegal ivory since 1989 was seized. Managing this conflict is difficult, given that transnational organized crime networks facilitate the illicit ivory trade. Conservation efforts are stifled by limited resources, making it difficult to properly monitor the vast areas of remote elephant habitats for protection. African elephants have benefited from various laws and conservation programs to protect the species and its ecosystem. These initiatives have helped decrease the annual rate of elephant deaths, curbed poaching and wildlife crime, and established protected areas and conservation programs. While these achievements have produced positive results, substantial progress from governments, organizations, and institutions is still required to ensure the long-term survival of the African elephant population.[9] The Convention on Migratory Species of Wild Animals recognizes the dangers faced by African elephants. In collaborative efforts with several conservation-focused organizations, the CMS has moved to reduce human-elephant conflict, maintain elephant habitats,

1 The International Union for Conservation of Nature, "African elephant species now Endangered and Critically Endangered - IUCN Red List," news release, March 21, 2021, https://iucn.org/.
2 "African Elephant Facts", The World Wide Fund for Nature, accessed August 25, 2024, https://www.worldwildlife.org/species/african-elephant.
3 Whitney Kent, "Why are African forest elephants climate heroes?" The World Wide Fund for Nature, last modified February 29, 2024, https://www.wwf.org.uk/.
4 The World Wide Fund for Nature, "Why are African forest elephants climate heroes?"
5 "African Forest Elephant Facts", The World Wide Fund for Nature, accessed September 6, 2024, https://www.wwf.org.uk/.
6 Kubania, "Why We Need to Conserve African Elephants."
7 The World Wide Fund for Nature, "African Forest Elephant Facts"
8 "Stopping Elephant Ivory Demand", WorldWildLife, accessed September 7, 2024, http://www.worldwildlife.org/.
9 The World Wide Fund for Nature, "African Forest Elephant Facts"

restore connectivity, and reduce the illicit poaching and trade of elephant products. Moreover, the Convention encourages policymakers, local communities, and interest groups to strengthen cooperation to ensure the objective of protecting and conserving the African elephant species is achieved.[10]

History and Description of the Issue

Combating Illegal Ivory Trade

Ivory primarily comes from elephant tusks. Tusks are teeth that grow throughout the elephant's lifetime. They are sought-after because of their large size due to layers of ivory forming over time. To remove the tusks, poachers kill the elephant in the process. The increase in demand for ivory has caused elephants to become targets of illegal hunting.[11] Ivory is valued for its color, texture, durability, and malleability qualities.[12] Ivory has had diverse uses throughout history. It has been used as raw material to craft everyday objects like tools and tableware. Moreover, ivory has been reserved as a traditional medicine in many parts of the world. For example, in China, it is said that ivory can purge the body of toxins, even though there is no medical evidence that supports such a statement.

However, it has mainly been used for luxury goods like jewelry or statues as it symbolizes wealth and status.[13] A study conducted by research firm GlobeScan based on the ivory purchases of more than 2,000 people across 15 Chinese cities provided a clearer understanding of why it attracts consumers. Men and women, even with lower than average incomes, buy elephant ivory due to its cultural significance, its use as a status symbol, and its high investment potential for never going bad.[14] Ivory poaching mainly took place throughout the 20th century. Poaching means "the illegal hunting or capture of animals that are not one's own. In many cases, poaching involves killing animals with the intent to acquire their meat, horns, scales, or other body parts."[15] Nevertheless, there was a considerable increase in the 1970s due to the proliferation of assault rifles. Approximately 100,000 elephants were poached yearly, and herds were reduced to 80 percent in many regions.[16] In the 1960s, there was an international discussion of regulating wildlife trade. The need for such debate was evident, as global trade is a business of billions of dollars at the detriment of plants and animals. All of this led to the creation of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), an international agreement aimed at ensuring that international trade of wild animals and plants does not threaten the species' survival. In 1963, at a meeting of the World Conservation Union (IUCN), the representatives of 80 countries drafted the text of the Convention. It was not until 1975 that CITES came into force.[17]

International cooperation is necessary to regulate the cross-border trade in wild animals and plants to prevent the overexploitation of some species. These ideas created CITES. More than 40,000 species of plants and animals are now protected to varied degrees by it, whether traded as live specimens, fur coats, or dried herbs.[18] For example, the trade of live elephants is restricted under the CITES recommendations. Depending on the area of origin of the animals, different trade restrictions apply to trading live elephants taken from the wild. Appendix II of CITES includes African elephants found in Botswana, Namibia, South Africa, and Zimbabwe. These African elephants are deemed not to be drastically threatened with extinction.[19] CITES Parties have agreed to strictly regulate these species' international trade to avoid exploitation incompatible with survival. Appendix I of the Convention lists all Asian and African elephants from

10 "The African Elephant Fund", United Nations Environment Programme, accessed September 6th, 2024, https://www.unep.org/.
11 "What is Ivory?" IFAW, June 4, 2024, https://www.ifaw.org/international/journal/what-is-ivory.
12 Rebecca J. Rosen, "What Is It About an Elephant's Tusks That Make Them So Valuable?" *The Atlantic*, September 6, 2012, https://www.theatlantic.com/business/archive/2012/09/what-is-it-about-an-elephants-tusks-that-make-them-so-valuable/262021/.
13 IFAW, "What is Ivory?"
14 Sandy Ong, "Why Do People Buy Elephant Ivory?", *World Wildlife Magazine*, September, 6, 2018, http://worldwildlife.org/.
15 "What is poaching?" IFAW, April 16, 2024, https://www.ifaw.org/international/journal/what-is-poaching.
16 Joshua Hammer, "The Race to Stop Africa's Elephant Poachers," Smithsonian Magazine, July 2014, https://www.smithsonianmag.com/science-nature/race-stop-africas-elephant-poachers-180951853/?no-ist.
17 "What is CITES?" CITES, accessed August 28, 2024, https://cites.org/eng/disc/what.php.
18 "What is CITES?," The Convention on International Trade in Endangered Species of Wild Fauna and Flora.
19 "Quick Guide- CITES Controls on International Trade In Live Elephants," The Convention on International Trade in Endangered Species of Wild Fauna and Flora, accessed 25, 2024, https://cites.org/eng/prog/terrestrial_fauna/elephants/quick_guide

Men After an Ivory Hunt in the 1900's.
Credit: United States Library of Congress

other States deemed threatened with extinction. Accordingly, importing live animals for commercial purposes is illegal to prevent further endangering the elephants' survival.[20] CITES is legally binding on the Parties, meaning States that adhere to the Convention must follow it. However, it does not replace national laws. Instead, it provides a framework to be followed by each Party, empowering all countries to adopt their domestic legislation to ensure its implementation. This legislation sets minimum standards for the international species trade regulated by CITES. However, it's up to the Parties to enforce these provisions. CITES, one of the conservation conventions with the largest membership, currently has 184 Parties, each with the power to make a difference through their national legislation.[21]

To ensure that Parties meet the expectations of CITES, the CITES National Legislation Project was established. This project provides the Secretariat with a mandate to analyze parties' legislation and categorize it based on its effectiveness. The evaluation includes whether the country has designated at least one CITES management authority and one scientific authority, if it prohibits trade in species violating the Convention, if such trade is penalized, and if the country confiscates specimens illegally traded or possessed. Some states have incorporated CITES into biodiversity laws and supplemented them with regulations on international trade, while others have adopted specific laws on trade in endangered species. The status of the legislation can be found on the CITES website, providing reassurance that over 100 of the 184 parties have adopted adequate legislation according to the analysis carried out by the Secretariat.[22]

CITES has not been the only effort to stop the ivory trade and poaching. The International Union for Conservation of Nature (IUCN), an international organization working in nature conservation, led a global agreement in 2013. Essentially, countries from Gabon, Kenya, Niger, Zambia, Vietnam, Malaysia, China, Thailand, and the Philippines agreed to classify wildlife trafficking as a "serious crime" and increase punitive sentences.[23] The most crucial factor of the agreement is that the countries that were part of such a trade chain were from all parts of the ivory trade chain—from source to transit and destination. Inputs from 20 governments, 21 NGOs, and four inter-governmental organizations went into

20 "Quick Guide- CITES Controls on International Trade In Live Elephants," The Convention on International Trade in Endangered Species of Wild Fauna and Flora,
21 CITES, "What is CITES?"
22 "Convention on International Trade in Endangered Species of Wild Fauna and Flora," WTO, accessed August 28, 2024, https://www.wto.org/english/res_e/booksp_e/int_exp_regs_part1_1_e.pdf.
23 Ann Linder, "Detailed Discussion of Elephants and the Ivory Trade," Michigan State University, 2016, https://www.animallaw.info/article/detailed-discussion-elephants-and-ivory-trade.

drafting the Urgent Measures. Nevertheless, the agreement has not been proven successful since the IUCN does not have an enforcement mechanism, and the terms are nonbinding.[24]

Despite all of these efforts, in 2008, China successfully lobbied the Convention to authorize a one-time sale. In such a sale, 62 tons of ivory from African stockpiles were sold to China. This sale led to an increase in poaching levels in 2009. Additionally, over 100,000 elephants were killed between 2010 to 2012. The numbers are very concerning as the poaching rate became 7.4 percent, exceeding the growth rate of elephants, which is five percent. Hong Kong, which is one of the ivory trade's main transit points, ivory trade rose from 3.2 tons in 2010 to 7.9 tons in the first ten months of 2013, which is the equivalent of 1,675 dead elephants. Vietnam, Thailand, Taiwan, and the Philippines became one of the major ivory purchasers.[25] Elephant poaching in Africa increased dramatically in the early 2010s. This is due to the high demand for ivory in countries like China, where this material is a symbol of luxury and is used for religion or decor.[26] The illegal wildlife trade is one of the largest black markets in the world. With over USD eight billion in the industry, illicit wildlife trading is devastating the biodiversity and ecosystems of different species and continues to disrupt the natural imbalance and existence of different species.[27]

Poverty has been one of the leading drivers of the illegal trade in Africa. Poaching can be a way out of poverty in places of limited economic opportunities and where elephants are present. Nevertheless, poverty is not the only cause. Recently, the illegal trade has become organized and international. However, in recent years, poaching has become more organized, international, and militarized. Still, poverty contributes to creating an environment where these sorts of criminal operations may thrive. Political corruption and a lack of police power also enable poachers throughout many parts of Africa. Interpol has reported that illegal trade is directly linked to organized crime and terrorism. The Lord's Resistance Army, the Janjaweed, and Al Shabaab are profiting from the contraband ivory trade. The profits from such sales have been used in the illegal arms trade.[28] Currently, international criminal networks that continue to traffic large quantities of ivory have a significant impact on conservation efforts. This highlights that the ivory trade in black markets must be addressed in international committees to propose solutions to the challenges faced by States with protection measures for the African elephant. [29]

The history of the illegal ivory trade and the introduction of legal ivory sales in 1989 has left a huge scar that has affected conservation efforts. Although the immediate benefits of the ban on ivory trade were significant, there is currently no progress. Issues such as cultural aspects, Africa's role in the international community, and regulatory permits for the use of ivory in different situations outside of trade have not been discussed.[30] The conservation of the African elephant species is currently of utmost importance to the various governments of African countries as they attempt to focus on protecting species. One of the major contributions has been the regulation of the parks that house the African elephant, the regulation of ivory trade corruption issues, and the collaboration of bordering countries that support the capture of poachers with different high-end technologies.

Community-Based Conservation Initiatives for Elephant Conservation and Protection

The African elephant is a cornerstone of Africa's ecosystems. Its presence is often associated with lush savannas, but its future is uncertain due to the threats of poaching and habitat loss. Therefore, community-based conservation initiatives for elephant conservation and protection are of utmost

24 "Nations agree "Urgent Measures" to curb elephant poaching," Traffic, December 5, 2013, https://www.traffic.org/news/nations-agree-urgent-measures-to-curb-elephant-poaching/.
25 Hammer, "The Race to Stop Africa's Elephant Poachers."
26 Mramstead. 2021. "Fighting to End the Elephant Ivory Trade." WWF, May 19, 2021. https://www.wwf.org.uk/updates/fighting-end-elephant-ivory-trade.
27 Jonah Williams, "The Convoluted Nature of the African Ivory Trade: Possible Solutions for Curbing the Destructive Nature of Poaching and Promoting Elephant Conservation." The Journal of Sustainable Development, February. https://journals.library.columbia.edu/index.php/consilience/article/view/3931/1705.
28 Linder, "Detailed Discussion of Elephants and the Ivory Trade."
29 "Combating the Illegal Trade in African Elephant Ivory With DNA Forensics." Conservation Biology 22 (4): 1065–71. https://doi.org/10.1111/j.1523-1739.2008.01012.x.
30 Hammer, "The Race to Stop Africa's Elephant Poachers."

importance.[31] The conservation of African elephants is not only a matter of saving a symbolic species from extinction but also crucial for addressing climate change. Elephants possess an essential role in maintaining healthy ecosystems due to their contributions to natural carbon capture.[32] Natural carbon capture is "the capturing, removal, and permanent storage of CO2 from the earth's atmosphere. It's recognized as a key method for removing carbon from the earth's atmosphere."[33] Elephants perform the tasks of environmental engineers when they make their way through the rainforests and search for food. In that process, their large steps flatten young trees and feed on vegetation, reducing the competition for space, water, and light. The trees left untouched by elephants then have more access to water and light—and thus have a higher chance of becoming large, taller trees. These trees then capture CO2, transforming it into biomass through photosynthesis. Understanding that the carbon capture is valued in terms of carbon credits, the carbon value of a single forest elephant is USD 1.75 million.[34]

Moreover, African elephants play a crucial role in maintaining their habitat. For example, the African savanna elephants limit the growth of acacia trees and shrubs. The constant grazing and consumption of immature acacia trees prevents the savanna from becoming a dense forest woodland. Areas of the savannas where elephant absence is reported show evidence that dense woodlands are forming. This is mainly due to human intervention over time disrupting the elephants from grazing in herds.[35] African savanna elephants are considered 'keystones' because their presence benefits the ecosystem. If they cannot maintain the grasslands being replaced by woodlands, other species such as antelope, wildebeest, impala, and gazelles that consume grass are affected. Elephant's tusks can also dig for underground water during droughts, and their large frames can easily clear paths through forests and thick brush, which are aspects that several animals are dependent on as well.[36] Conclusively, preserving the areas where elephants live because they are rich in biodiversity helps combat deforestation, promotes the growth of flora and fauna, and reduces greenhouse gas emissions. Furthermore, these ecosystems are restored thanks to the species' natural ability to share the environment as they create water holes and paths and promote the productivity of the land.[37] With all this, the conservation challenges are crucial in maintaining ecological balance and biodiversity in Africa. The comparison of community and national governance approaches can be quite different. On the one hand, community-based conservation involves communities living in ecosystems with the species and employing a traditional approach to conservation practices. On the other hand, national governance plays a critical role in conservation by implementing regulations and legislation. Community involvement is essential so that the efforts, goals, and objectives can be achieved in time. Effective legislation often requires stricter measures due to the severity of the issues.

Kenya has implemented strict anti-poaching laws and recorded a significant decline in elephant poaching incidents. The country has established specialized wildlife protection units and increased penalties for poachers, contributing to the recovery of its elephant population. For example, Kenya's Wildlife Conservation and Management Act of 2013 states that any person in possession or in the trade of a wildlife trophy will face fines or prison. Given the growing demand from international buyers, Kenya increased military training for rangers to combat wildlife poaching. In April 2016, authorities burned over 100 tons of elephant tusk ivory from 8,000 illegally killed elephants.[38]

Human-elephant conflict (HEC) has been identified as one of the greatest threats to African elephants, mainly because the species is forced to migrate to avoid interacting with local communities. In cases where elephants are forced to live in contact near humans, they are rarely tolerated, leading to

31 "Climate Science and African Elephant: What Do Elephants Do for Their Natural Environment?", Tsavo Trust, accessed May 13, 2022,https://tsavotrust.org.
32 Ralph Chami et al., "The Secret Work of Elephants", International Monetary Fund, accessed September 6, 2024, http://www.imf.org/.
33 "What is carbon sequestration?", National Grid, accessed September 6, 2024, http://www.nationalgrid.com/.
34 Ralph Chami et al., "The Secret Work of Elephants"
35 Tsavo Trust. "Climate Science and African Elephant: What Do Elephants Do for Their Natural Environment?"
36 Tsavo Trust. "Climate Science and African Elephant: What Do Elephants Do for Their Natural Environment?"
37 "How Does Elephant Conservation Build a Sustainable Future for the Planet?" Tsavo Trust, May 19, 2023. https://tsavotrust.org/five-ways-in-which-elephant-conservation-builds-a-sustainable-future-for-the-planet/.
38 Arijeta Lajka. "Wildlife poaching in Kenya is not punishable by death", *AP News,* December, 27, 2019, http://apnews.com/.

Elephant Damages in a Residential Area in India
Credit: Ganesh Raghunathan

them being killed, especially in areas where there are scarce resources.[39] For example, elephants often migrate from protected areas to the community lands for food and water in Kenya's Amboseli region. This displacement is due to the loss and fragmentation of the habitat caused by agricultural expansion and human activity. When the elephants invade farmland, they may destroy crops and sometimes threaten human lives, resulting in conflict. To address this situation, various groups of conservationists have implemented a variety of measures. These include installing fences to deter elephants from farmland territory, creating wildlife corridors to facilitate their safe mobility, and encouraging community-based conservation programs that create consciousness about the protection of the species.[40] These efforts aim to reduce human-elephant conflicts and protect both elephants and human livelihoods.

Community-based conservation initiatives play an important role in protecting and conserving African elephants. One major example is the Conservation Response Unit (CRU) model, which plays a key role in the unique relationship between elephants, their caretakers, and rangers to carry out different conservation interventions on the ground.[41] This is a relevant case study of a two-pronged approach that has mitigated HEC, reduced wildlife crime activities via forest patrol and monitoring, and raised awareness amongst locals of the importance of protecting elephants. The successful conservation of African elephants will require local intervention. The local level is concerned with the more immediate problems of elephants and their habitat protection. Educational solutions range from the development of awareness, capacity building, resource management, and technical support. Furthermore, solutions such as elephant population reporting, protected area management, law enforcement, and increasing research cannot go understated either. This concludes that local interest groups are an essential piece to the puzzle of creating reliable conservation actions.[42] Delegations must implement comprehensive strategies addressing ecological and socioeconomic factors to effectively protect and conserve African elephants by reducing HEC.

39 Gunaryadi, Donny, Sugiyo, and Simon Hedges. 2017. "Community-based Human–elephant Conflict Mitigation: The Value of an Evidence-based Approach in Promoting the Uptake of Effective Methods." PloS One 12 (5): e0173742. https://doi.org/10.1371/journal.pone.0173742.
40 "Human-elephant conflict: What it is and why it's a major threat", IFAW, last modified July 20, 2023. http://www.ifaw.org/.
41 "Community Based Protection of Sumatran Elephant Populations and Habitat in Sumatra Through Conservation Response Units (CRU) and Elephant Response Units (ERUs) Sumatra, Indonesia." International Elephant Foundation. March 6, 2024. https://elephantconservation.org/portfolio-items/community-based-protection-of-sumatran-elephant-populations-and-habitat-in-sumatra-through-conservation-response-units-cru-and-elephant-response-units-erus-sumatra-indonesia/.
42 Stephen Blake, "The Ecology of Forest Elephant Distribution and Its Implications for Conservation", Save the Elephants, accessed September 6th, 2024, http://savetheelephants.org/.

A balanced approach with sustainable practices, an involved community, and strong conservation initiatives is required. If the international community fosters collaboration to improve human-elephant interactions, the long-term survival of this species is possible.

Ecotourism and Elephant Breeding Conservation

Tourism can help fund and protect habitats and their flora and fauna with the profits from entrance fees. Financial benefits that ecotourism can provide to conservation agencies and their protection areas include funds for poaching patrol units, maintaining infrastructure, and veterinary interventions. Additionally, tourists spend money on accommodations, businesses, and guides, directly contributing to the country's economy.[43] An example of African elephant conservation success can be found in Kenya's Namunyak Wildlife Conservancy, a community-driven conservation effort aimed at protecting African wildlife from the poaching crisis. Sarara Camp, set within the Conservancy, is managed by over 1,200 families of the Indigenous Samburu community and has helped over 4,000 elephants return to safety.[44]

The Saramburu's efforts have demonstrated that community conservation and its ecotourism model of converting the Sarara Camp into a luxury retreat benefit the Indigenous peoples and the African elephant population. Nonetheless, the Sarara Camp and its success are not commonplace amongst other Indigenous communities. The Unrepresented Nations and Peoples Organization (UNPO) states that privately-owned ecotourism projects do not follow the principles of community-based conservation, leaving the Indigenous peoples without economic benefits from tourism and, in some cases, forcing them from their ancestral lands.[45] Nonetheless, the international community must also be aware of the limitations of the role of ecotourism in wildlife conservation. Its implementation could be better: income from tourism may not cover the costs of protected areas, which is why successful community-run tourism projects are not abundant. Some factors can back ecotourism efforts, such as political instability and corruption; therefore, the international community must realize that reality and implementation fall short.[46]

Negative effects related to ecotourism have been reported as a potential stressor to different species. These stressors include habitat alteration, destruction, ecosystem pollution, reduced reproductive output, increased animal mortality, and negative effects on the animal's diet.[47] Research shows that wildlife tourism can stress African elephants by feeding them excess calories from tourist interactions. Ecotourism contributes to protecting species and habitats and the host country's economy. It is suggested that local management of ecotourism sites should be thoroughly guided by scientific research into how wildlife tourism may affect African elephants. Implementing the protection of African elephants and educating tourists to comply with rules to limit potential stressors can help improve wildlife tourism's success for all parties involved.[48]

Regarding conservation efforts and noting the importance of reducing the stressors in ecotourism, much debate is centered around the moral implications of breeding African elephants to maintain and increase their population. There's also much discussion on whether breeding elephants in Africa is successful. Sources of information either state that it's an easy and widely beneficial process, while other sources state that captive elephants have poor fertility and cannot conceive.[49] Yet, this discussion is solely towards captive breeding. The moral perspective on captive breeding varies depending on the facility, with zoos and animal rights organizations generally having opposite views. The three ways captive elephants can reproduce are through artificial insemination, forced breeding, or housing breeding—pairing elephants together, hoping they will naturally reproduce. The first two options have been reported to produce mental and physical trauma in female

43 "Isabelle Szott, "The impact of wildlife tourism on elephants, *Loxodonta africana*, in South Africa", Liverpool John Moores University, last modified September 7, 2022, https://researchonline.ljmu.ac.uk.
44 Michaela Trimble, "How Tourism Helps Elephants—and People—Make a Home", National Geographic, accessed September 7, 2024,
45 Trimble, "How Tourism Helps Elephants—and People—Make a Home"
46 Szott, "The impact of wildlife tourism on elephants, *Loxodonta africana*, in South Africa"
47 Szott, "The impact of wildlife tourism on elephants, *Loxodonta africana*, in South Africa"
48 Szott, "The impact of wildlife tourism on elephants, *Loxodonta africana*, in South Africa"
49 Danielle Carnahan, "Can Elephants Breed in Captivity?", The Call to Conserve, accessed September 7, 2024, http://www.thecalltoconserve.com/.

elephants. Moreover, captive-born elephants are rarely released into the wild, which leads to the discussion of whether the practice helps conserve the population.[50]

While the natural breeding of elephants is more challenging to achieve, it has fewer negative moral implications. Evidence suggests that natural breeding requires that protected areas be connected to allow the population to stabilize naturally. Yet, this practice is inconsistent across all African regions due to high percentages of the population destabilizing due to poaching. That said, anti-poaching conservation efforts can promote natural breeding to increase population growth rates successfully.[51] Ecotourism's success in wildlife conservation and economic development is contingent on the adoption of community-based conservation models. By prioritizing these models, we can minimize the negative impacts on wildlife populations and ensure the long-term success of ecotourism. Furthermore, promoting scientific research and educating both tourists and conservationists can help address the challenges and potential disadvantages of ecotourism, empowering the international community to contribute to protecting African elephants and the livelihood of local communities.

The Economic Impacts of Elephant Poaching in the African Communities

The illicit trade of animals is a global problem, leading to the extinction of many endangered species. In 2022, it is estimated that 25,000 elephants were killed last year for their ivory tusks. Overall, the illicit trade is facilitated by the economic forces of supply and demand.[52] The ivory trade is a vast business, estimated to be worth around USD 23 billion per year, with the average price of ivory at USD 3,300 per pound. Therefore, criminal networks view profitability as enough motivation to continue in the illicit trade regardless of international law enforcement and regulations.[53] While the economic logistics of ivory poaching are beneficial to criminal networks, it is quite the opposite for the affected African economies. Currently, research states that ivory poaching is costing African economies nearly USD 25 million a year in lost tourism dollars and that the potential extinction of African elephants could make the economic damages worse.[54] The numeric value of USD 25

50 Carnahan, "Can Elephants Breed in Captivity?"
51 Ryan Huang et al., "Protected Areas for Elephants Work Best if They Are Connected", *Duke Centennial,* January 5, 2024, http://www.nicholas.duke.edu/.
52 "The Economics of the Illicit Ivory Trade", National Geographic, accessed September 7, 2024, http://www.education.nationalgeographic.org/.
53 "14 Things you Didn't Know About Today's Ivory Trade", WildAid, last modified December 13, 2022, http://www.wildaid.org/.
54 Kevin Loria, "Elephant poaching costs economies $25 million a year — and the threat of extinction makes it much worse", *Business Insider,* last modified November 1, 2016, http://www.businessinsider.com/.

Volunteering Through Ecotourism
Credit: NASA/Dorian Janney

million a year is crucial because it exceeds the costs necessary to stop the decline of African elephant populations. Therefore, it is a wise investment decision for countries with protected areas in Africa to prioritize solutions that halt the poaching of ivory.[55]

Preventing wildlife killings could significantly increase job opportunities across the African region. Dr. Adelhelm Meru, the permanent secretary of Tanzania's Ministry of Natural Resources and Tourism, highlights that poaching could affect as many as 3.8 million tourism jobs across Africa. In Tanzania alone, there are 700,000 tourism-related jobs, and this number could potentially skyrocket into the millions if the killing of wildlife species for monetary gain is halted.[56] The suggested conversation responses to the crisis have already shown promise, with a reduction in ivory demand in Asia incentivizing local communities to act as protectors of elephants. For instance, China's elephant ivory ban is a significant step towards protecting the African elephant species and reducing the economic burden on African economies.[57] However, for these efforts to be truly effective, country governments sharing elephant populations must increase their investments in conservation. This task is challenging, as most African economies have other pressing development priorities. Justifying conservation on a return-on-investment basis is difficult, as the economic benefits of animal conservation are not well documented. Yet, the potential for these investments to not only protect wildlife but also stimulate local economies is significant, making it a cause worthy of support.[58]

Yet, evaluating the economic impact of preventing elephant poaching in African communities can be viewed as one-dimensional and even unsustainable. Elephant conservation tends to prioritize economic and ecological values much more over others. For example, the significant value of the ivory trade and its effects on the African economy, or the USD 1.75 million carbon capture value per African elephant mentioned in this guide's Community-Based Conservation Initiatives for Elephant Conservation and Protection section.[59] These assessments have only quantified the benefits of protecting elephants in terms of their monetary value, often used to argue for their conservation. However, a one-dimensional perspective can lead to conservation approaches outside of international principles, such as the Sustainable Development Goals, the Convention on Biological Diversity, and the United Nations Declaration on the Rights of Indigenous Peoples. To develop effective conservation policies and practices, it is crucial to consider the values of elephants, the environment, and people. This balanced approach is known as a mutually reinforcing conservation strategy.[60]

A mutually reinforcing strategy allows accountable conservation decisions, decreases division in conservation, and reduces potential issues at the social level. An example was done in the Thirunelli-Kudrakote Elephant Corridor in Kerala, India. While this solution was established in Asia, it could serve as an influence to mitigate the impacts of elephant poaching in Africa. To increase habitat connectivity to reverse habitat fragmentation, thus providing more protection against poachers and increasing the population of elephants, local communities were asked to relocate voluntarily to allow for more space to coexist with the animals. Due to the carefully managed intervention, more than just economic benefits became noticeable. For instance, the integrity of the natural environment was maintained there, and the community's livelihood improved. Additionally, this promotion of wildlife-friendly land use contributed to achieving multiple SDGs, including SDG 1 (no poverty), SDG 2 (zero hunger), SDG 3 (good health and well-being), and more.[61]

The illicit trade of elephant ivory leads to a significant threat to the survival of the species and the economies of the African countries that house them. While the economic benefits of the ivory trade are considerable for criminal networks, the

55 Robin Naidoo, et al., "Estimating the economic losses to tourism in Africa from the illegal killing of elephants", *Nature Communications 7*, no. 13379 (November 2016):, https://doi.org/10.1038/ncomms13379
56 "Tanzania: Poaching Threatens Tourism Industry Growth", WildAid, last modified August 12, 2015, http://www.wildaid.org/.
57 WorldWildLife, "Stopping Elephant Ivory Demand"
58 Robin Naidoo, et al., "Estimating the economic losses to tourism in Africa from the illegal killing of elephants"
59 Antoinette van de Water, et al., "The value of elephants: A pluralist approach", Ecosystem Services 58, no. 101488 (October 2022):, https://doi.org/10.1016/j.ecoser.2022.101488
60 van de Water, et al., "The value of elephants: A pluralist approach"
61 Van de Water, et al., "The value of elephants: A pluralist approach"

long-term costs to African economies are far more significant. The international community must address this crisis via a multifaceted approach that involves cooperation, increased investments in conservation efforts, and a shift toward sustainable and equitable solutions. The endangered species can be protected, and the well-being of local communities can be sustained.

Organized Crime and African Elephant Exploitation

Organized crime groups are heavily involved in the illegal wildlife trade, namely in the trafficking of ivory and elephant poaching. Over the last decade, 7,000 rhinos and elephants have died due to trafficking.[62] Through a network of poachers, intermediaries, and dishonest officials, these highly organized networks coordinate poaching, smuggling, and sales across several nations. Ivory, sometimes known as "white gold," is a valuable product that generates billions of dollars annually and powers these criminal operations. For instance, only in 2016 was the illegal wildlife trade worth as much as USD 23 billion.[63] Beyond just being a problem for conservation, this trade also hinders law enforcement initiatives, destabilizes economies, and finances terrorist and extremist organizations. The illicit ivory trade is a worldwide issue that goes far beyond the direct harm to elephant populations. It undermines governance institutions, encourages corruption and political instability, and presents serious security risks.

International wildlife traffickers are the major players in the illegal wildlife trade and may support regional criminal groups, supply weapons or financial aid, and bribe government officials. With robust networks in place, some individuals and wildlife trafficking organizations also take part in cross-over crimes that include poaching animals and plants, falsifying hunting or fishing licenses, human trafficking and trafficking of firearms or ammunition, trafficking drugs, and counterfeit pharmaceuticals, illegal mining; and smuggling undeclared products to avoid taxes.[64] At this level, wildlife traffickers either receive shipments from overseas and smuggle them to target markets, or they buy illegal ivory, rhino horn, animal skins, and other products from local syndicates and smuggle them to key departure points. Shipments may be enclosed in cargo containers containing hundreds or even thousands of kilograms of illegal products or masked as legitimate goods like peanuts or furniture.[65] A great example of wildlife trafficking involved in other illicit trade is the case of the Akashas, two kingpins of Kenya's illegal wildlife trade. Well known among conservationists for their involvement in wildlife, they were not charged with that in court but on charges of conspiring to traffic massive quantities of heroin and methamphetamine into the U.S., as well as bribing officials and possessing heavy weaponry. Akasha's case serves as an example of the connections between criminal organizations engaged in terrorism, illegal weapons, drug trafficking, and the ivory trade. Poaching is a source of funding for several armed groups, as well, operating in Central and Eastern Africa, such as Al Shabaab and the Lord's Resistance Army.[66]

Organized crime and criminal syndicates work in the poaching, processing, and trafficking of ivory through various networks and well-coordinated efforts, which could even involve government officials through bribery. Poachers on the ground often work for syndicates, targeting elephants in national parks and protected areas. Middlemen then facilitate the movement of ivory, using corruption and bribery to bypass law enforcement and customs controls. Later in the process, international traffickers handle the final stages, using methods like encrypted communications to coordinate shipments across borders, ensuring the illegal ivory reaches global markets undetected. They may also use common tactics, including forging documents, hiding illegal goods inside other products, and bribing customs officials and authorities. However, they also use traditional business methods in managing their supply chains and, directly and indirectly, establishing strong business relationships with accomplices, facilitators, and suppliers, with some groups even negotiating guarantees and fees for

62 Billy Perrigo, "China Just Eased a Ban on Rhino and Tiger Parts. Here's How Organized Crime Fuels Illegal Poaching," Time, 2018, https://time.com/5438770/illegal-wildlife-trade-last-animals/.
63 Billy Perrigo, "China Just Eased a Ban on Rhino and Tiger Parts."
64 Poaching Facts, "Wildlife Traffickers ," Poaching Facts, n.d., https://www.poachingfacts.com/faces-of-the-poachers/wildlife-traffickers/.
65 Poaching Facts, "Organized Crime," Poaching Facts, accessed September 5, 2024, https://www.poachingfacts.com/faces-of-the-poachers/organized-crime-criminal-syndicates/.
66 Billy Perrigo, "China Just Eased a Ban on Rhino and Tiger Parts."

each type of wildlife product. An example of this appears in the 2017 report by the Environmental Investigation Agency. A trafficking syndicate operating out of Shuidong in China's Guangdong province informed undercover investigators that Mozambican and Tanzanian suppliers of illegal ivory would reimburse the Shuidong-based syndicate in total for a 3,000 kg shipment of ivory (up to USD 900,000) if authorities seized it along the way. Chinese syndicates can ensure customs officials receive bribes along the entire multi-port route. This end-to-end supply chain management level further lowers the risks for traffickers and provides a more reliable service. In turn, it helps create financial stability for the business.[67]

Because ivory trafficking is incredibly profitable, it incentivizes these groups to invest in advanced technologies, increasing the sophistication and scale of the trade. However, technology has also recently become a potent weapon against poaching. To combat wildlife trafficking, tech firms and conservation groups have launched several low-cost technologies, including drones, satellite tracking, and AI-enhanced camera traps that detect poachers. There are now public applications for reporting suspicious behavior, which opens up new financial options for digital companies looking to improve their green credentials. Although technology can be beneficial to stop illegal trade, there are drawbacks as well. Rangers and conservationists often face increased pressure to achieve quick results, such as more seizures and arrests. It may also take attention away from the crucial task of tackling the fundamental causes of poaching and wildlife trafficking, such as inequality and poverty. Even while poaching is, by definition, unlawful, treating it as a strictly criminal issue misses the reality that individuals are motivated to engage in the trade for a variety of reasons. A strategy that uses technology sensibly without overshadowing attempts to address the underlying causes of the illicit wildlife trade is required to battle this problem effectively.[68]

Local communities are severely impacted by the illegal wildlife trade and poaching, particularly when these activities are connected to organized crime. Because criminal networks make use of vulnerable populations for poaching, these actions deprive communities of tourism earnings, undermine local economies, and promote violence and instability. Organized criminal syndicates frequently recruit locals to work as smugglers or poachers, with minimal compensation and risk

67 Environmental Investigation Agency, "THE SHUIDONG CONNECTION: Exposing the Global Hub of the Illegal Ivory Trade" (London: Environmental Investigation Agency., 2017), https://eia-international.org/wp-content/uploads/EIA-The-Shuidong-Connection-FINAL-1.pdf.

68 Rosaleen Duffy, "How Money and Technology Are Militarising the Fight against the Illegal Wildlife Trade," The Conversation, September 23, 2022, https://theconversation.com/how-money-and-technology-are-militarising-the-fight-against-the-illegal-wildlife-trade-186603.

The Loxodonta Africana in Their Conservation Habitat in the South of Zambia.

Credit: Geoff Gallice

of bodily and legal harm. This exploitation strengthens the power of the criminal community in these areas by sustaining poverty and undermining the rule of law.[69]

Furthermore, there is a severe health danger to the local community as a result of organized crime linked to poaching. By killing animals, these criminal networks frequently create unhygienic circumstances that might lead to the spread of zoonotic illnesses like anthrax and Ebola. Because poaching involves direct contact with diseased animals or polluted settings, communities that participate in or are close to poaching operations may be exposed to these health risks. Furthermore, dangerous working conditions and the existence of armed criminal groups put community health at greater risk by posing physical threats in addition to the already elevated risk of disease transmission.[70]

Moreover, when wildlife trade is strongly linked to other illicit trades, it risks the lives of rangers and wildlife officers. Besides being underpaid and poorly equipped, rangers and wildlife officers regularly risk their lives and health on duty. Since 2009, over 1300 rangers worldwide have died in the line of their duty, which translates to approximately two deaths per week. These figures include ranger mishaps and tragic wildlife events. But for rangers and wildlife officers, murder accounts for about 65 percent of their deaths. For instance, the majority of the 200 or so ranger killings that occurred in the Democratic Republic of the Congo's Virunga National Park are probably connected to the illicit charcoal industry and the poaching of mountain gorillas. In addition, it was recently revealed that over 86 percent of ranger fatalities in Sri Lanka were caused by poaching. In addition to deaths, there have also been reports of bodily harm, such as gunshot wounds, trauma from heavy items and machetes, and hearing loss. Furthermore, it has been noted that rangers had higher incidences of Post-Traumatic Stress Disorder (PTSD).[71]

In addition to endangering wildlife, organized crime-driven wildlife trade and poaching also weaken law enforcement, destabilize economies, and finance other illegal operations, including the trafficking of drugs, weapons, and people. A multifaceted strategy is needed to address this issue, including more use of technology to disrupt these networks, improved anti-corruption measures, and better law enforcement. Governments, the international community, and wildlife groups must collaborate to strengthen transboundary collaboration, fund community-based conservation, and address the socioeconomic factors that contribute to poaching. All stakeholders must unite to dismantle these criminal operations and protect wildlife and vulnerable communities.

Current Status

Role of Technology in Elephant Conservation

Technology is a tool for advancing research and science, especially in addressing the wildlife crisis. It helps to protect wildlife species like the African Elephant in new and innovative ways. From monitoring the African Elephant, gaining public awareness through social media platforms, and tracking the illegal trade paths, Communication Technologies (ICTs) have a massive role in the help of building and sustaining African Elephant habitats to help the species survive and thrive with the concept of conservation technology. This term defines itself as "technology that assists in everyday life and impacts virtually everyone on the planet."[72]

In recent years, the transformative power of technology has become increasingly evident across different aspects of life, explicitly influencing how we address current and future challenges, particularly in fields of science and research. In addition, technology has played a crucial role in addressing global challenges like elephant conservation and habitat restoration. For instance, a team of British scientists collaborated with a Dutch tech start-up, "Hack the Planet," and developed a new camera that helps protect elephants. It is an AI-powered device connecting satellites and sending real-

69 Annika Mozer and Stefan Prost, "An Introduction to Illegal Wildlife Trade and Its Effects on Biodiversity and Society," *Forensic Science International: Animals and Environments* 3, no. 1 (February 2023): 100064, https://doi.org/10.1016/j.fsiae.2023.100064.
70 Rare, "How Does Wildlife Trafficking Impact People and the Environment?," Rare (Rare, July 11, 2024), https://rare.org/stories-articles/how-does-wildlife-trafficking-impact-people-environment/#:~:text=The%20loss%20of%20wildlife%20directly/.
71 Mozer and Prost, "An Introduction to Illegal Wildlife Trade and Its Effects on Biodiversity and Society."
72 Fauna & Flora. n.d. "Explained: How technology can protect the world's wildlife." Fauna & Flora: Saving Nature Together. Accessed July 11, 2024. https://www.fauna-flora.org/explained/what-is-conservation-technology-how-tech-solutions-can-protect-the-worlds-wildlife/.

time information to forest rangers. The first time it was used, the camera took more than 800 photos in 72 days, achieving 82 percent accuracy in recognizing elephants. It does not only detect elephants but humans as well. Therefore, it can monitor any illegal activity, such as poaching.[73]

Moreover, technology has enabled unprecedented advances, and huge innovations have taken place in the last decades, such as artificial intelligence (AI), where big data analytics and advanced computer scientific discoveries have improved the understanding of complex information. An AI software package, Protection Assistant for Wildlife Security (PAWS), is being used in protected areas in more than 60 countries. The software predicts potential poaching hotspots using data to build predictive models based on previous poaching activity.[74] This application has been integrated into the Global Collaborative Spatial Monitoring and Reporting Tool patrol information system. PAWS has been demonstrated to be a highly effective tool for enhancing wildlife preservation initiatives. In Uganda, the application has assisted rangers in optimizing their patrol routes, which has resulted in increased identification of illicit activity and more economical use of resources. In the regions where the application was implemented, poaching activity and incidents were significantly reduced due to this proactive strategy, and the security of endangered animals was enhanced.[75]

By giving conservationists and law enforcement organizations access to real-time data and insights, PAWS has played a significant role in countries like Cambodia to safeguard essential wildlife habitats. The application's predictive tools have made it possible to understand better poaching hotspots and strategic deployment of patrols, which has helped protect and safeguard species like the African elephant.[76]

Despite its successes, PAWS still faces specific difficulties and blind spots. One of the main issues is using past data to inform forecasts since prediction accuracy may be jeopardized in areas with inconsistent data collection that may result in incompleteness. As a result, gaps in coverage and missed opportunities to prevent poaching have been identified.[77] Another challenge is requiring significant resources and expertise to properly install and maintain the system. In regions where financial resources are low or technological structure is down, incorporating PAWS into current wildlife protection structures could pose challenges.

Furthermore, poachers might modify their tactics in reaction to patrol route patterns, requiring model upgrades and adjustments to AI models. Additionally, even if PAWS has shown to be helpful in some areas, there is still a need for improvement in terms of adaptability to other habitats and species. Ensuring the application and its long-term effectiveness depends on its ability to be integrated into local conservation efforts and adapt to diverse ecological contexts.[78] AI technology also interprets animal communication to support conservation and sustainability efforts. EarthRanger is an AI program created by Vulcan Inc. that helps park rangers in Malawi in elephant conservation and poaching prevention. EarthRanger gathers park managers' information and creates a real-time visualization to allow them to see all park assets on one screen. It also sends out alerts about suspicious activities. This program helps with elephant conservation and empowers park rangers by giving them tools to manage patrols effectively.[79]

Similarly, Neurala, an AI company, developed a system that involves drones and cameras to stop poaching problems in Africa. The software uses artificial intelligence to track and predict movement patterns of elephants. It also identifies unknown vehicles and poachers day and night.[80] There are many areas where technology plays a vital role in the conservation of the African elephant species and the protection of the illegal trade

73 "Repeller," Hack the Planet, last accessed October 21, 2024, https://www.hack-the-planet.io/project/repeller/.
74 Kay Firth-Butterfield, "Here's how AI is helping Africa's endangered elephants," World Economic Forum, March 3, 2023, https://www.weforum.org/agenda/2023/03/africa-endangered-forest-elephants-ai/.
75 Marc Ballon, "AI is for Animals: using Artificial Intelligence to prevent poaching," Association of American Universities, July 16, 2019, https://www.aau.edu/research-scholarship/featured-research-topics/ai-animals-using-artificial-intelligence-prevent.
76 Ballon, "AI is for Animals."
77 Ballon, "AI is for Animals."
78 Ballon, "AI is for Animals."
79 "AI technology helping conservationists save Elephant," AIWS, accessed August 28, 2024, https://aiworldschool.com/research/ai-technology-helping-conservationists-save-elephant/.
80 AIWS, "AI technology helping conservationists save Elephant."

of the species and ivory; several of them include monitoring of the species and the illegal black market for wildlife, geographic and migratory movement of the species, acoustic monitoring and social networking movements for species awareness involving the online community worldwide. For example, a non-profit organization named Sheldrick Wildlife Trust uses social media to highlight the extinction of wildlife habitats and promote their rescue and rehabilitation program; daily, they share stories with their followers to create consciousness about the problem of wildlife trade of the African Elephant.[81]

Fighting for conservation is not easy for conservationists; social media has been part of public awareness in these difficult times since they have world coverage, and everyone can be part of the campaigns. Samsung and African are enterprises that have helped with the social media conservation initiative by creating the *Wildlife Watch* in the Balule Nature Reserve, which was made a few years ago, located in South Africa. The initiative consists of an anti-poaching project where virtual rangers can watch live wildlife videos streamed by phones, allowing them to spot suspicious activities and report them to rangers in the field.[82] Technological initiatives have contributed to fighting poachers and minimizing the harm to the African elephant species. They are vital for wildlife management and conservation research, protecting the elephant population from humans and stakeholders, and fostering global cooperation for conservation initiatives.

Effectiveness of International Frameworks and Collaborative Initiatives in Elephant Conservation

Addressing the issues of wildlife conservation and protection is not the responsibility of one country. To protect the remaining population, a global approach to elephant conservation must be taken. Many areas of concern regarding migratory species make this issue challenging. These include differing jurisdictions, poaching, illegal trade, and a lack of research, data collection, and sharing. Different countries have different interests at stake but play a vital role nonetheless. All countries must combine their resources and research to conserve endangered African elephants.

Geography plays a significant role in this issue—specifically, borders. Elephants do not recognize national boundaries. Their main priorities are food, water, and shelter, and they often migrate to neighboring countries. Currently, there are an estimated 470,000 and 690,000 elephants in Africa.[83] As more land is converted for human use, the extent and quality of elephant ranges and habitats continue to decline rapidly Furthermore, nearly 80 percent of the remaining range is outside protected area (PA) systems.[84] PA systems are some of the remaining safe havens for elephants as their environment diminishes. Substantial improvements in law enforcement within the PAs and management for broader biodiversity goals will be needed. International collaboration is required to meet these goals.

The recent surge in wildlife crime, poaching, and the illegal ivory trade has drastically dwindled the population of African elephants. Recently, at least 20,000 African elephants have been killed annually due to human-elephant conflict.[85] As a result, conservation efforts have increased to combat illegal wildlife trade (IWT).

Elephant ivory is in demand in many Asian markets-China, Vietnam, and Thailand.[86] Elephant ivory is one of the most in-demand products.[87] The World Wildlife Fund (WWF) is committed to protecting species, their habitats, and environmental degradation. The WWF is a pivotal organization that promotes and transforms sustainable policies,

81 Digital, Illustrate, "Connected Conservation: Here'S How Technology Can Help Protect Natural Habitats." ITU, April 22, 2022, https://www.itu.int/hub/2021/03/connected-conservation-heres-how-technology-can-help-protect-natural-habitats/.
82 Rédaction, La. 2022. "Using Technology Images to Save African Elephants." Africa on Air. April 6, 2022. https://africa-on-air.com/en/environment/2021/10/using-technology-images-to-save-african-elephants/.
83 "Elephant Conservation in Africa," The World Wide Fund For Nature, accessed August 25, 2024, https://wwf.panda.org/?uProjectID=9F0725&uType=large.
84 "Elephant Conservation in Africa," The World Wide Fund For Nature.
85 "African Elephant Facts," "The World Wide Fund For Nature, accessed August 25, 2024, https://www.worldwildlife.org/species/elephant.
86 "What is Ivory and Why Does it Belong on Elephants," The World Wide Fund For Nature, accessed August 25, 2024, https://www.worldwildlife.org/stories/what-is-ivory-and-why-does-it-belong-on-elephants.
87 Rosie Coney, et al, "From Poachers to Protectors: Engaging Local Communities in Solutions to Illegal Wildlife Trade," *Society for Conservation Biology 10,* no. 3 (August 2016): 367-374, https://conbio.onlinelibrary.wiley.com/doi/10.1111/conl.12294.

Anti-Poaching Activism Campaign in Kenya
Credit: Kengitau254

with one of its six main goals being "conservation of wildlife and wild places."[88] This goal was especially met after WWF campaigns and other conservation groups pushed for more significant governmental influence regarding the ivory trade. These campaigns stressed the urgency of countries to take legal action to remove the illegal and unregulated domestic trading that fueled poaching. Due to their flourishing ivory markets, the most notable countries include Hong Kong, Thailand, the US, and the UK.[89]

The WWF supports these nations and assists them in shutting down their elephant ivory markets. There is much emphasis on altering consumer behavior to decrease the purchase of elephant ivory and establish a new social norm that prohibits the use of elephant ivory.[90] WWF works with leading social media sites, online retailers, travel agencies, and creative firms to achieve this goal. There are currently solid agreements with the travel and e-commerce industries, which include a pledge to refrain from marketing, handling, or vending elephant ivory.[91] To alter societal norms surrounding ivory and lower demand, WWF collaborates with a market research firm to conduct yearly consumer surveys. Countries will be able to gain a deeper understanding of consumer attitudes and desires about elephant ivory. With this research, WWF can identify the traits of elephant ivory buyers and sellers, which helps them understand motivations and create practical solutions to influence them.[92] These campaigns also influenced the policies of a significant ivory trade stakeholder- China. In 2018, the domestic trade of elephant ivory was banned. Chinese consumption of these goods has decreased in both public and private markets. To maintain these trends, the WWF has been working to reduce the consumer demand for elephant ivory while ensuring the ban is upheld.[93]

In 2012, the IWT crisis peaked, causing a global shift in how States employed conservation efforts. This prompted high-level governmental policy initiatives, with the US attracting over USD 350 million in donor and government funding.[94] The London and Kasane conferences on IWT have raised much international attention in 2014 and 2015. Further, The African Union's International Conference on Illegal Exploitation and Illicit Trade in Wild Flora and Fauna in

88 "About Us," The World Wide Fund For Nature, accessed August 25, 2024, https://www.worldwildlife.org/about.
89 The World Wide Fund For Nature,"About Us."
90 The World Wide Fund For Nature,"About Us."
91 The World Wide Fund For Nature,"About Us."
92 "About Us," The World Wide Fund For Nature,
93 "About Us," The World Wide Fund For Nature,
94 Rosie Coney, et al, "From Poachers to Protectors: Engaging Local Communities in Solutions to Illegal Wildlife Trade," 367-374, https://conbio.onlinelibrary.wiley.com/doi/10.1111/conl.12294.

Africa recognized the role of crime groups in ivory trade paths and discussed protective measures.[95] The UN also passed General Assembly Resolutions while reviewing its commitment to the Sustainable Development Goals. Much of the recommendations emphasize strengthening state and private law enforcement to reduce IWT and protect the remaining wildlife.

States can more successfully handle the issues of habitat loss, poaching, and conflict between humans and wildlife when they work together. By combining knowledge, technology, and resources, governments can increase anti-poaching measures, implement more sustainable practices, and create more conservation programs. Information collection and sharing are vital to achieving conservation goals. Publicly available databases offer detailed, all-inclusive resources that facilitate conservation tactics and decisions. Access to current and reliable data allows countries to track population trends, evaluate the success of conservation efforts, and spot new dangers across international borders. Information transparency allows for seamless collaboration between nations, institutions, and conservation organizations. Unified efforts make it feasible to respond to issues like poaching and habitat loss in a more organized and effective manner.

The International Union for Conservation of Nature (IUCN) created a "Red List" of threatened species in 1964. Since then, this list has evolved to account for all the species that are becoming endangered.[96] Nations should constantly review this list to monitor the species' population status under their jurisdiction. The IUCN Red List is essential for members of this committee. It provides information about population size, range, trade/ hunting threats, habitat, and ecology. More importantly, the IUCN Red List is a powerful tool to influence, inform, and shape policy for animal conservation and the protection of their habitats.[97] The recent classification of African elephants into forest and savannah species underscores the persistent pressures these animals face.[98] This message stresses the urgent global need to end poaching and ensure sufficient suitable habitats remain in the long term. The establishment of lists, such as the Red List, draws attention to the needs of threatened species and calls for government action.

Initiatives following these assessments have been successful. More supportive legislation promoting human-wildlife cooperation and anti-poaching measures have been passed. This includes effective land use planning, which has been essential to the success of elephant conservation efforts.[99] As a result, few forest elephant populations have been stabilized in conservation areas in Gabon and the Republic of the Congo. Likewise, the number of savanna elephants has remained steady or increasing for many years. The Kavango-Zambezi Transfrontier Conservation Area is a crucial area that spreads across Angola, Botswana, Namibia, Zambia, and Zimbabwe.[100] The frontier is home to the continent's most significant population of these elephants. The information from resources, such as the Red List, helps countries create the most effective and adaptable measures. Knowing specific details about species' range or habitat status allows for the most applicable policies to be made. Significant conservation efforts were only as quickly employed because of the increased pressures the Red List globally provided.

International frameworks and collaborative initiatives have proven effective in reducing the different threats that African Elephants live with. With cooperation, countries and organizations have created strong agreements to protect the species from poaching, human-elephant coexistence, and habitat loss. These collaborative projects and international

95 Commission on Crime Prevention and Criminal Justice. 2023. "Strengthening the International Legal Framework for International Cooperation to Prevent and Combat Illicit Trafficking in Wildlife." Report. Commission on Crime Prevention and Criminal Justice. Vol. 23–23. https://www.unodc.org/documents/commissions/CCPCJ/CCPCJ_Sessions/CCPCJ_32/CRPs/ECN152023_CRP3_e.pdf.
96 The International Union for Conservation of Nature Red List of Threatened Species "What is the IUCN Red List?", accessed August 21, 2024, https://www.iucnredlist.org/.
97 The International Union for Conservation of Nature Red List of Threatened Species "What is the IUCN Red List?".
98 The International Union for Conservation of Nature, "African elephant species now Endangered and Critically Endangered - IUCN Red List," news release, March 21, 2021, https://iucn.org/news/species/202103/african-elephant-species-now-endangered-and-critically-endangered-iucn-red-list.
99 The International Union for Conservation of Nature, "African elephant species now Endangered and Critically Endangered - IUCN Red List,".
100 "The Kavango Zambezi Transfrontier Conservation Area (KAZA TFCA," African Range Wide Cheetah Conservation Initiative, accessed August 21, 2024, https://cheetahconservationinitiative.com/the-kavango-zambezi-transfrontier-conservation-area-kaza-tfca/.

frameworks have made a significant difference. However, there is still a long way towards stopping the extinction of the African elephant. In recent years, nations and groups have shared resources, knowledge, and technology that aim to be useful for everyone in this journey. These partnerships help to ensure that the protection and conservation strategies are effective. More importantly, they ensure that the international community's combined efforts are focused on preserving the elephants and their habitats.

Sustainable Development Goals

The Convention on Migratory Species operates to help meet the Sustainable Development Goals (SDGs). The SDGs are a global collaborative effort to reduce inequalities and injustices worldwide by 2030. One hundred ninety-three countries adopted the SDGs in 2015 and continue to use the goals to influence global actions and alliances. Additionally, the SDGs provide a platform for collaboration between governments, individuals, and civil society to address complex and interconnected issues that plague the world today. Delegates should look at the topic from the SDG framework to address the global and encompassing nature of the debate.[101]

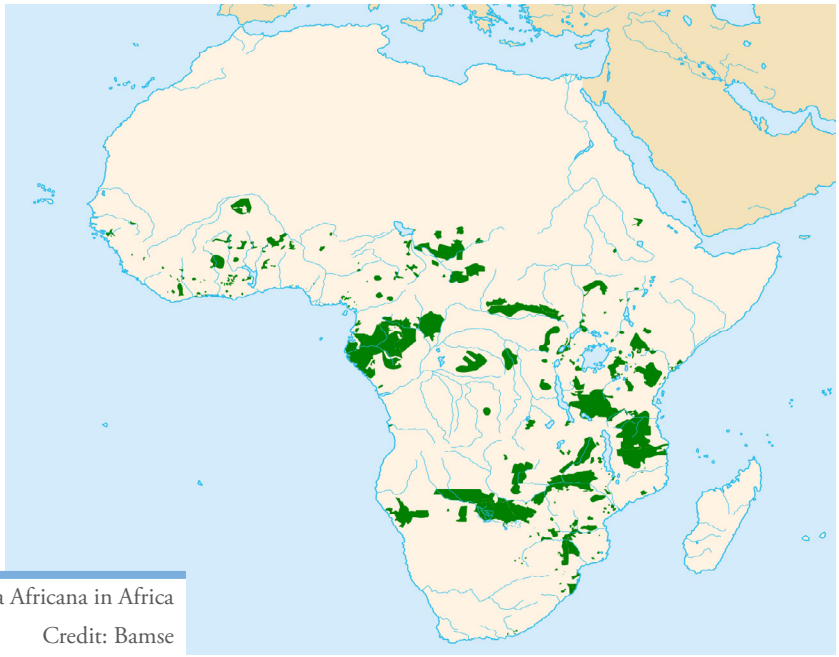
SDG 15: Life on Land focuses on protecting ecosystems on land to prevent biodiversity loss. Specifically, target 15.7 urges to take action to end poaching and trafficking of protected species and address both demand and supply of illegal wildlife products.[102] Protecting biodiversity and ecosystems is essential for protecting humans and the planet's species, even if conflicts threaten their safety and increase crime.[103] Illicit trade in wildlife, a lucrative transcontinental industry particularly with elephants and rhinoceroses, is due to the ivory trade and the demand for this material in some countries due to the use they make of it, which leads to other issues such as corruption and illicit financial flows that threaten global security.

SDG 16: Peace, Justice, and Strong Institutions aims to promote peaceful, just, and inclusive societies to ensure access to adequate and accountable institutions in various fields. In this regard, for the wildlife trade crisis, SDG 16 of the 2030 Agenda aims to reduce exploitation and combat organized crime that profits from species such as the African elephant. Target 16.2 seeks to reduce illicit financial and arms flows, strengthen the recovery and return of stolen assets, and combat organized crime. Specifically, it targets 16.8 times to strengthen national institutions, particularly in developing countries, to prevent violence and combat crime.[104] International cooperation between the different actors in the global system is crucial to generating strategies focused on improving border protection and control, technology exchange, and exchanging information and knowledge.[105]

The effective implementation of SDG 15 and 16 and its objectives depends on international cooperation and robust legal frameworks that aim to combat wildlife trade crimes and protect biodiversity at all costs with solid institutions that decimate the networks behind wildlife trade with the support of national governments and organizations. Through the cooperation of governments, institutions, and organizations, strategies can be developed to enhance border protection, improve technological solutions, and enforce legal measures that decrease the issue. Achieving the SDGs is essential to integrate common conservation goals with a broader sustainable mission and final objectives that ensure that the fight against wildlife crime can be part of the international agenda and that it can help promote peace, justice, and strong institutions.

The disappearance of criminal networks and the international threats behind the illegal wildlife trade have a long road to complete. However, we must always put in the effort and final objective of protecting endangered species like the African Elephant and making contributions to ensure better global security and sustainability.

101 "The 17 Goals," United Nations Department of Economic and Social Affairs, accessed August 28, 2024, https://sdgs.un.org/goals.
102 "SDG 15," The Global Goals, accessed August 24, 2028, https://www.globalgoals.org/goals/15-life-on-land/.
103 UNDP. 2017. "Promote Peaceful and Inclusive Societies for Sustainable Development, Provide Access to Justice for All and Build Effective, Accountable and Inclusive Institutions at All Levels." https://www.undp.org/sites/g/files/zskgke326/files/migration/asia_pacific_rbap/Nature-Counts-SDG-16.pdf.
104 "SDG 16," The Global Goals, accessed August 28, 2024, https://www.globalgoals.org/goals/16-peace-justice-and-strong-institutions/.
105 Transnational Alliance to Combat Illicit Trade and UN Conference on Trade and Development. 2019. "Mapping the Impact of Illicit Trade on the Sustainable Development Goals." Sustainable Development Goals. https://www.tracit.org/uploads/1/0/2/2/102238034/standalone_wildlife.pdf.



Distribution of the Loxodonta Africana in Africa
Credit: Bamse

Bloc Analysis

Points of Division

African elephants are found in more than 37 countries in the Sub-Saharan African region. Various countries have organized different approaches to conservation. In some countries, African elephants are protected by hundreds of organizations and conservationists fighting ivory poaching.[106] African elephants migrate across Africa. Therefore, conservation efforts and legislative frameworks must be coordinated. Protection measures may be classified as strong or weak and are often judged by their ability to maintain African elephant populations. Each country's policies are shaped by its unique economic, cultural, and conservation priorities. While some have implemented strict protection measures to combat the ivory trade and poaching, others argue that the ivory trade is crucial for their economy's revenue. However, many countries are significantly contributing to international conservation efforts, actively protecting vulnerable African elephant populations. This collective effort is a cause for pride and support.

African elephant protection measures may also lead to increased ecotourism, tourism centered around wildlife, such as African elephants. Many countries have developed protective measures to improve economic development around ecotourism. However, policies may also differ based on human impacts, such as violence, war, and deforestation. For example, countries struggling with overpopulation may destroy African elephant habitats to create housing for humans. However, this significantly damages crops and wildlife, including African elephants. Overall, different priorities lead to various levels of African elephant protection and conservation techniques worldwide.

Countries with the Presence of African Elephants and Strong Protection Measures

Around 415,000 African elephants are located across 35 sub-Saharan countries, especially in the southern and eastern parts of Africa. The species can remain in its natural habitat in many of these countries. Anti-poaching measures often include community initiatives and tracking and monitoring technologies. To develop these across Africa, partnerships between governments and private organizations are frequently the most effective and efficient. In many areas across eastern and southern Africa, investment in conversation programs is high, boosting ecotourism and highlighting successful

106 Lemieux, Andrew M., and Ronald V. Clarke. 2009. "The International Ban on Ivory Sales and Its Effects on Elephant Poaching in Africa." The British Journal of Criminology 49 (4): 451–71. https://doi.org/10.1093/bjc/azp030.

species conservation programs.[107] Ecotourism often serves as a financial incentive for countries to protect their African elephant populations and invest in the conservation of the species. Financial support and infrastructure also usually reduce the threat of poaching, corruption, and weak law enforcement. Countries in this bloc include Gabon and Kenya.[108] Additionally, the Kavango-Zambezi Transboundary Conservation Zone is a cross-country conservation zone created between Angola, Botswana, Namibia, Zambia, and Zimbabwe. This zone fuels ecotourism and preserves the wildlife in the region, which largely includes African elephants. The Kavango-Zambezi Transboundary Conservation Zone has positively impacted the protection of African elephants and wildlife.

Countries with the Presence of African Elephants and Weak Protection Measures

Countries with African elephants and weak protection measures face significant challenges in conserving their African elephant populations. This is often due to poaching, habitat loss, and poor enforcement of elephant protection laws. Due to the elephant population decline from poaching for the ivory trade, African elephants were placed on the IUCN Red List, which means that this species is now critically endangered.[109] African elephants may be targeted for ivory, bushmeat, or trade in these countries. Countries in this bloc often struggle with government instability, poor enforcement mechanisms, corruption, and violent conflicts.[110] When these factors are present, animal traffickers usually take advantage of poor wildlife protection. Following rapid population declines due to poaching for ivory and habitat loss, the African forest elephant and savannah elephant are critically endangered and have been placed on the IUCN Red List. The African forest elephant population declined by more than 86 percent in 31 years, and the African savannah elephant population declined by at least 60 percent in 50 years, largely due to poaching, which has been increasing since 2011.[111]

Some Asian countries have a high demand for ivory, which furthers the risk of elephant exploitation. This results in the killing of up to 12,000 African elephants annually.[112] Not all countries have made the sale of ivory illegal, which also complicates the enforcement of international regulations.[113] Some of these countries' economic state depends on the ivory trade. If ivory trading were banned for some members of this bloc, their financial structures would be largely damaged. Some countries in this bloc may also face declining African elephant populations due to habitat loss. Deforestation in countries such as Côte d'Ivoire and Nigeria has led to the significant loss of habitats for African elephants. This also makes populations increasingly vulnerable to poaching and human harm. This bloc includes countries such as Tanzania, the Democratic Republic of Congo (DRC), and the Central African Republic (CAR).[114] Additionally, countries such as China do not have the presence of African elephants but do engage in the ivory trade at alarming rates.

Countries Without the Presence of African Elephants

Certain regions of the world have not or no longer have the presence of African elephants. Most of these countries are located outside of Africa and, therefore, are not directly involved with the conservation of the species. The two most endangered species are the forest elephant, which has declined

107 Correa, Roberto J., Peter A. Lindsey, Rob Critchlow, Colin M. Beale, Jonas Geldmann, and Andrew J. Plumptre. 2024. "Performance of Protected Areas in Conserving African Elephants." Conservation Letters, July. https://doi.org/10.1111/conl.13041.
108 Cimadori, Ilaria. 2019. "Biodiversity, Wilderness and the Protection of the African Elephant Population in International Law." Thesis. http://dspace.unive.it/bitstream/handle/10579/16568/868789-1231010.pdf?sequence=2.
109 WWF. 2016. "African Elephant: Strong, Smart, but Vulnerable." WWF, August 31, 2016. https://www.wwf.org.uk/learn/wildlife/african-elephants.
110 Van De Water, Antoinette, Enrico Di Minin, and Rob Slotow. 2022. "Human-elephant Coexistence Through Aligning Conservation With Societal Aspirations." Global Ecology and Conservation 37 (September): e02165. https://doi.org/10.1016/j.gecco.2022.e02165.
111 Stiekema, Tshidi, and Tshidi Stiekema. 2024. "The Majestic African Elephant, Facts and Conservation." Khwai Expeditions Camp - No.1 Luxury Camp In Khwai (blog). June 20, 2024. https://khwaiexpeditionscamp.com/the-african-elephant/.
112 "Decline in African Elephant Populations | Open Case Studies." n.d. https://cases.open.ubc.ca/decline-in-african-elephant-populations/.
113 Chwalibog, André, Jabulani Nkululeko Ngcobo, Tshimangadzo Lucky Nedambale, Khathutshelo Agree Nephawe, and Ewa Sawosz. 2018. "The Future Survival of African Elephants: Implications for Conservation." International Journal of Avian & Wildlife Biology 3 (5). https://doi.org/10.15406/ijawb.2018.03.00123.
114 Lemieux, Andrew M., and Ronald V. Clarke. 2009. "The International Ban on Ivory Sales and Its Effects on Elephant Poaching in Africa." The British Journal of Criminology 49 (4): 451–71. https://doi.org/10.1093/bjc/azp030.

due to problems such as deforestation, and the savannah elephants, which have dropped considerably over time due to the ivory trade.[115] Aid efforts have exponentially increased in areas where African elephants are no longer present due to environmental or human factors.[116] Threats such as climate change, lack of conservation programs, human conflicts and violence, and deforestation may be contributing factors.[117] Countries in this group may include Gambia and Burundi. African countries where elephants have gone extinct often lacked enforcement mechanisms for protection laws, and therefore, elephants were targeted for ivory poaching. International treaties and agreements play a crucial role in protecting wildlife. Countries without African elephants, such as the United States, Canada, and the European Union, often sign these agreements. For instance, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) sets regulations on trading endangered species and their products, including elephants.

Committee Mission

The Convention on the Conservation of Migratory Species of Wild Animals (CMS) plays a significant role in protecting and conserving African elephants. This treaty outlines methods for nations to adopt to protect their endangered species. In 2015, Burkina Faso and Mali community representatives met with wildlife officials. During this meeting, members decided on critical conservation measures for the West African Elephants. These measures helped to carry out the CMS West African Elephant Memorandum Of Understanding (MOU).[118] The passage of solid conservation measures influences other countries and organizations to spread awareness and engage in local community efforts. Similarly, in 2021, the International Union for Conservation of Nature (IUCN) recognized the two distinct species of African elephants. They also reviewed their endangerment status and downgraded them from their classification as vulnerable.[119] Signatories of the MOU concerning the African elephant populations met in 2021 to discuss the IUCN's recent assessments.[120] The report showed that over 31 years, the number of *L. cyclotis* dropped by more than 86 percent, while over the previous 50 years, the number of L. africana reduced by at least 60 percent.[121] Research has shown that increased land conversion for agricultural purposes is a significant threat to elephants' habitats and their population. As a result, there is a growing need for countries to adopt a stricter conservation approach. At a meeting, signatories discussed the possibility of increasing their funding from states and organizations, with a greater focus on monitoring these animals.[122]

CMS, as an environmental treaty to the United Nations, serves as a global model for protecting endangered migratory species. This framework brings together Range States and states with and without migratory animals. CMS collaborates with numerous global and corporate organizations, NGOs, and media partners. It is the only global convention that prioritizes the needs of migratory species, their habitats, and migration routes.[123] CMS Parties work to carefully preserve or restore habitats, reduce barriers to migration, and manage other factors that could put them at risk. The appendix of this treaty is useful for nations as it classifies species depending on

115 International Fund for Animal Welfare. n.d. "African Forest Elephant: Threats and Conservation | IFAW." IFAW. https://www.ifaw.org/animals/african-forest-elephants
116 "New Endangered and Critically Endangered Status for African Elephants." n.d. WWF. https://wwf.panda.org/wwf_news/?1833966/New-Endangered-and-Critically-Endangered-status-for-African-elephants
117 "How African Elephants Fight Climate Change – IMF F&D." 2020. IMF. September 1, 2020. https://www.imf.org/en/Publications/fandd/issues/2020/09/how-african-elephants-fight-climate-change-ralph-chami.
118 The Convention on Migratory Species, *Convention On The Conservation Of Migratory Species* (Bonn: United Nations Environment Programme, 2020), https://www.cms.int/en/species/loxodonta-africana.
119 The Convention on Migratory Species, *Convention On The Conservation Of Migratory Species*.
120 The Convention on Migratory Species, *Third Meeting Of The Signatories To The Memorandum Of Understanding Concrening Conservation Measures for the West African Populations Of The African Elephant (Loxondonta Africana)* (Bonn: United Nations Environment Programme, November 2021), https://www.cms.int/west-african-elephants/en/meeting/third-meeting-signatories-memorandum-understanding-concerning-conservation-measures-west.
121 The Convention on Migratory Species, *Future Of The Memorandum Of Understanding Concerning Conservation Measures For The West African Populations Of The African Elephant (Loxondonta Africana)*, (Bonn: United Nations Environment Programme, November-December 2021), https://www.cms.int/west-african-elephants/sites/default/files/document/unep-cms_wae_mos3_doc5_%20future-of-the-mou_e.pdf.
122 The Convention on Migratory Species, *Future Of The Memorandum Of Understanding Concerning Conservation Measures For The West African Populations Of The African Elephant (Loxondonta Africana).*
123 The Convention on Migratory Species, *Convention On The Conservation Of Migratory Species.*

their level of endangerment. Those that are threatened or near extinction are listed under Appendix 1. Animals that require external support are listed in Appendix 2.[124] The provisions may range from legally binding treaties and agreements to less formal instruments like MOUs. CMS serves as a framework Convention in this way. This committee emphasizes coordinated action and provides requirements for newly joining States. Particular emphasis is placed on range states under these provisions.[125] Measures can be tailored to the needs of specific species and vary on the level of enforcement. The measures offered by this committee are designed to meet conservation needs across the migratory range.

124 The Convention on Migratory Species, *Convention On The Conservation Of Migratory Species.*
125 The Convention on Migratory Species, *Convention On The Conservation Of Migratory Species.*

CMS

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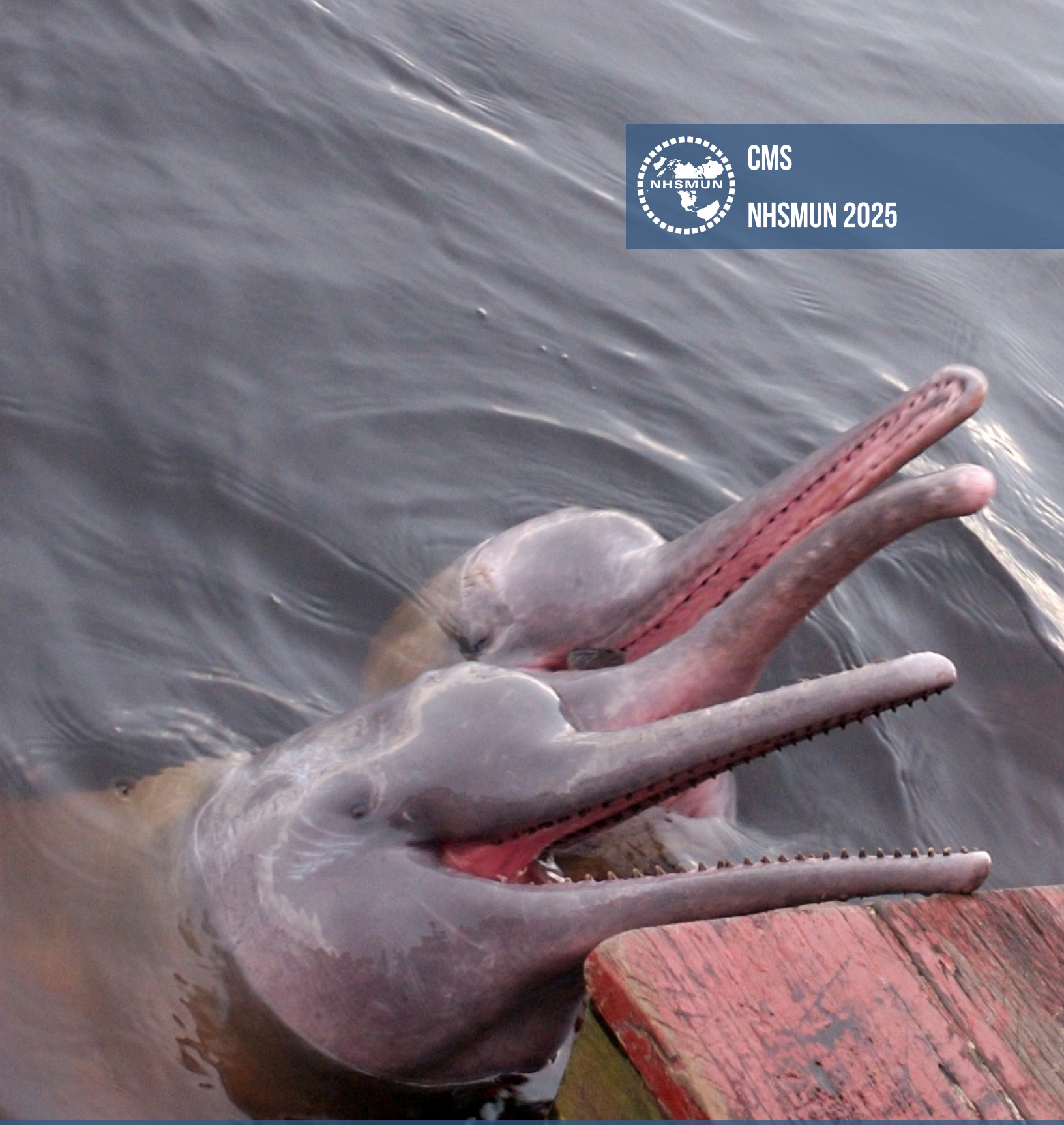

TOPIC B: THE CONSERVATION OF RIVER DOLPHIN HABITATS IN THE AMAZON RIVER

Photo Credit: Auch

Introduction

The Amazon river dolphin (*Inia Geoffrensis*) inhabits the freshwater river systems of South America in Brazil, Peru, Bolivia, Colombia, and Venezuela.[1] It is famous for its unique pink color and long beak, unique to other dolphins, adapted for hunting in Amazon forests. As a key predator in the Amazon River, its diet includes fish, crustaceans, and small turtles, mainly feeding on small creatures that inhabit the Amazon River.[2] In Indigenous Amazonian communities, the dolphin is linked to ancient myths and legends that tell of its ability to shape-shift into a human at night.[3] The decline of the species is caused by the exploitation of the Amazon's natural resources, such as copper, iron, and gold.[4] The continued push for infrastructure projects has endangered the ability of the Amazon River Dolphins to thrive and reproduce in their habitat. The lack of money, urgency, and power to act on the part of local communities has inhibited any key change to conserve the unique animal.[5]

The primary threats to the species include human-led habitat destruction, climate change, and pollution. Human development requires extensive amounts of land for logging, agriculture, and cattle ranching, all prominent activities requiring vast amounts of land and destroying its biodiversity. Losing forest cover reduces the available habitat for countless species and isolates populations of species that mate, feed, and depend on each other.[6] In addition, rising temperatures and changing climate patterns disrupt habitats, food availability, and vulnerability to diseases. Many species are vulnerable to the most minute changes. Disrupted climate patterns also affect key lakes and rivers within the Amazon forest. The Amazon's waterways are increasingly contaminated with pollutants from mining, agriculture, and industrial waste from factories. Many aquatic species suffer from the contamination, and consequently, so do animals who feed on them, affecting the whole food chain.[7] Lastly, many species in the Amazon are targeted for illegal hunting and trading. Numerous communities in the Amazon depend on trading endangered species. However, this practice is unsustainable for future generations needing these species to survive.

The Convention on the Conservation of Migratory Species Committee (CMS) has limited and indirect power in the global effort to conserve river dolphins. Local communities in the Amazon are fundamental in protecting the Amazon River Dolphin. The CMS provides a platform for countries to collaborate on conservation strategies, focusing on habitat protection, pollution control, and sustainable development. By creating international agreements and action plans, the CMS can reduce the negative impacts on the habitats of migratory species like the Amazon River Dolphin.[8] In addition to international efforts, regional and national initiatives are essential for unique and cultural species' long-term survival and well-being.

Conserving the Amazon rainforest is crucial not only for the survival of the Amazon river dolphin but also for the survival of our planet. The Amazon regulates the global climate by

1 World Wildlife Forum, "About the Amazon River Dolphin," accessed September 8, 2024, https://www.worldwildlife.org/species/amazon-river-dolphin.
2 "A New Categorization for River Dolphins in IUCN's Red List," World Wildlife Fund, 11 Jan. 2019, www.wwf.org.mx/?341231%2FA-New-Categorization-for-River-Dolphins-in-IUCNs-Red-List.
3 Sushma Subramanian,"THE DOLPHIN MYTH THAT REFUSES TO DIE." The Atlantic, November 12, 2020. https://www.theatlantic.com/science/archive/2020/11/pink-dolphin-botos-brazil-amazon/617080/.
4 Amazon Conservation Association, "Threats to the Amazon." Amazon Conservation, Accessed August 12, 2024, https://www.amazonconservation.org/the-challenge/threats/.
5 "Conserving World's Endangered River Dolphins Takes Cutting Edge Science and Community Rescues," WWF, World Wildlife Fund, 24 Oct. 2019, www.wwf.mg/?354832%2FConserving-the-worlds-endangered-river-dolphins-takes-cutting-edge-science-and-community-rescues.
6 Brandon Wegrowski, "Deforestation in the Amazon Rainforest," Ballard Brief, December 16, 2023, https://ballardbrief.byu.edu/issue-briefs/deforestation-in-the-amazon-rainforest.
7 Edson Kenak Naknanuk, "The Amazon is Dirty, Our Rivers and Fish are Contaminated, Everyone is Sick," Cultural Survival, June 21, 2021, https://www.culturalsurvival.org/news/amazon-dirty-our-rivers-and-fish-are-contaminated-everyone-sick.
8 Aydin Bahramlouian, "Major New Global Initiative to Protect and Connect Natural Areas Launched at UN Wildlife Meeting," CMS, Convention on the Conservation of Migratory Species of Wild Animals, February 14, 2024, www.cms.int/en/news/major-new-global-initiative-protect-and-connect-natural-areas-launched-un-wildlife-meeting

absorbing one-fourth of the carbon dioxide from land on Earth.[9] Its forests and rivers support an immense variety of life, providing ecosystem services that benefit local communities and the world. Humans from all over the world depend on the natural resources of the Amazon, including its fresh water, food, and transportation–essential for the well-being of global society. Nonetheless, the Amazon plays a key role for indigenous cultures inhabiting the Amazon for thousands of years. For indigenous communities, the Amazon holds both a cultural and spiritual significance that must be preserved with the generations to come.[10]

History and Description of the Issue

Habitat Preservation in the Amazon

The Amazon Basin, known for its extensive biodiversity, is a vital region for the global environment. Spanning eight countries and covering approximately 2.7 million square miles, the Amazon rainforest is home to an estimated 400 billion individual trees and about 16,000 different species.[11] Habitat preservation in the Amazon is essential for maintaining a myriad of species and supporting unique species like the Amazon river dolphin.[12] The conservation of such ecosystems plays a critical role in sustaining global biodiversity, mitigating climate change, and supporting the indigenous communities that have lived in these lands for centuries.

The Amazon river dolphin, or *Inia geoffrensis*, is one of the most unique endangered species in the Amazon basin. Unlike other aquatic animals, this dolphin possesses a distinctive pink color believed to be a result of the combination of age and the reddish-brown waters of the Amazon. Its coloration and the dolphin's incredible intelligence underscores its uniqueness among other species. With a brain capacity 40 percent greater than that of humans, the Amazon river dolphin is recognized for having exceptional cognitive abilities.[13] They are incredibly agile, able to turn their necks at a 90-degree angle, allowing them to maneuver through the extensive Amazonian trees and plants.

Amazon river dolphins are distributed across extensive river systems of the Amazon, Orinoco, and Tocantins-Araguaia River Basins. They have been found to exist in Bolivia, Brazil, Colombia, Ecuador, Peru, Venezuela, and more recently in Guyana.[14] These dolphins inhabit diverse freshwater environments, including deltas and streams in the center of South America and the Amazon forest. Estimating the population size of the Amazon river dolphin across their entire range is incredibly difficult due to their habitat's vast and inaccessible nature. Consequently, researchers focus on strategic areas to monitor population size trends and assess the dolphins' conservation status in regions where long-term studies have been conducted. In areas such as in the Amazon River in Colombia and the Mamirauá Reserve in the Brazilian Amazon, there is strong evidence of declining populations.

This decline is primarily caused by illegal fisheries targeting the Piracatinga, a valuable species of catfish that often uses dolphin carcasses as bait.[15] These findings prove the critical need for targeted conservation efforts to protect this unique and vulnerable species. Habitat destruction due to deforestation, pollution from mining and agricultural runoff, and direct harm from fishing practices all contribute to the decline of this species. According to the International Union for Conservation of Nature, the Amazon river dolphin is

9 Damian Carrington, "Amazon rainforest now emitting more CO2 than it absorbs," The Guardian, July 14, 2021, https://www.theguardian.com/environment/2021/jul/14/amazon-rainforest-now-emitting-more-co2-than-it-absorbs.
10 David Imolore, "Indigenous People and the Amazon: An Ancient Connection - Fund the Planet," *Rescue Rainforest with Fund the Planet*, May 3, 2024, https://fundtheplanet.net/amazon-rainforest/indigenous-people-and-the-amazon-an-ancient-connection/.
11 Helen Pilcher, "The Amazon rainforest: The wonders of Earth's most unexplored wilderness, explained," BBC Science Focus Magazine, July 21, 2023, https://www.sciencefocus.com/planet-earth/the-amazon-rainforest.
12 Jocelyn L. Aycrigg, et al, "Completing the System: Opportunities and Challenges for a National Habitat Conservation System," BioScience 66, no. 9 (2016). https://www.jstor.org/stable/90007659.
13 Mona Gonzalez, "Love for Living Animals: Pink Dolphin Brains are 40% Larger Than Human Brains," *Pressenza International Press Agency*, February 2, 2022, https://www.pressenza.com/2022/02/love-for-living-animals-pink-dolphin-brains-are-40-larger-than-human-brains/.
14 Assaf Levy, "Cracking the Code: Understanding Biodiversity Loss and Its Impact on Amazon River Dolphin," *RiverDolphins.org*, November 23, 2023, https://www.riverdolphins.org/latest-updates/cracking-the-code-understanding-biodiversity-loss-and-its-impact-on-amazon-river-dolphin/.
15 "Breathing Space for Amazon river dolphins," World Wildlife Fund, last modified June 24, 2020, https://www.wwfmmi.org/?364515/Breathing-space-for-Amazon-river-dolphins/.

Doctor Pedro Trebbau studying an Amazon River dolphin in the Orinoco River

Credit: Pedro Trebbau Family

currently classified as "endangered," with population numbers decreasing. This decline threatens the species itself and signals broader environmental challenges in the Amazon Basin.[16]

To protect these animals, the United Nations Environmental Programme has encouraged an approach that integrates forest conservation with sustainable community development. Forest conservation refers to managing and protecting forest ecosystems to maintain their biodiversity. They aim to provide and conserve natural resources for people and the planet. This involves various activities and strategies to prevent deforestation, such as restoring degraded forests and ensuring that forest resources are conserved. Moreover, sustainable community development refers to the process of improving the quality of life within a community in ways that are feasible economically and environmentally for all, ensuring that the needs of the community are met. According to UNEP, this approach, accompanied by forest restoration, creates a balanced and resilient plan to protect endangered species.[17]

A journal article by the *Journal of Biogeography* highlights the importance of establishing forest conservation within an ecosystem to mitigate deforestation. They call on initiating forest conservation with protected areas–specific regions of land or water designated to conserve the natural environment and its wildlife. These areas are protected to preserve biodiversity, such as endangered species, and provide opportunities for scientific research. The research in the study determined that habitat preservation through protected areas can reduce deforestation rates and conserve wildlife habitats by conserving key ecological locations.[18] Protecting key ecological locations is vital for preserving biodiversity, maintaining essential ecosystem services like clean water, air, and climate regulation, and safeguarding the habitats of endangered species. These areas also support the strength of ecosystems in response to environmental changes and hold cultural and economic significance for indigenous and local communities. For example, determining strategic locations that are home to unique animals, like the Amazon river dolphin, that then must be protected. However, for conservation efforts to be effective, there must be a balance between local populations' socio-economic needs and species' conservation. It is incredibly important that conservation efforts don't negatively affect the

16 "Amazon river dolphins now listed as 'Endangered' by IUCN", Down to Earth, last modified December 9th, 2018, https://www.downtoearth.org.in/wildlife-biodiversity/amazon-river-dolphins-now-listed-as-endangered-by-iucn-62425
17 United Nations Environmental Programme, "Protecting What Protects US: A Network of Conservation Areas in the Amazon," UNEP, October 21, 2016, https://www.unep.org/news-and-stories/story/protecting-what-protects-us-network-conservation-areas-amazon.
18 William F. Laurance, et al, "Predictors of Deforestation in the Brazilian Amazon," Journal of Biogeography 29, no. 5/6 (2002), http://www.jstor.org/stable/827480.

local communities around them.[19]

The United Nations Department of Economic and Social Affairs emphasizes combining forest conservation with community development to protect these species. The Munduruku, Yekuna, Waipai, and Yagua tribes are among the many indigenous groups that inhabit the Amazon forest, each with their traditional knowledge about its species. These tribes have lived in the Amazon for centuries, developing an advanced understanding of sustainable practices to protect the forest's resources without depleting them. Their knowledge extends to medicinal plants and animal behaviors, making their involvement in forest conservation essential.

Yet, indigenous rights to their native land aren't always protected–nor are the species within it. From 2012 to 2018, the Brazilian Amazon's destruction rate increased from 2,860 square miles to more than 4,660 square miles per year.[20] The reversal of protectionist policies enacted under President Bolsonaro in Brazil has estimated that the percentage of protected areas in the Brazilian Amazon will drop from 52 percent to 22 percent, cutting down protection for 39,768 square miles of indigenous land.[21] This alarming trend not only endangers the livelihoods of indigenous communities but impedes global efforts to preserve the Amazon's biodiversity. Protecting these tribes and their forests is a matter of human rights and is crucial for protecting the Amazon's ecosystems.

Despite the efforts to protect these unique animals, challenges persist. Reports from the non-profit organization Sea Shepherd note ongoing threats to river dolphins, including direct human interference such as harpooning.[22] Harpooning is a traditional method of fishing large animals, where a fisherman shoots a long aluminum or wooden stick to capture the animal. This common method is still widely used by fishermen in the Amazon, as 96 percent of caught river dolphins were found with marks and scars from the harpoons. However, this technique is hazardous for endangered species, reducing its already small population. Global initiatives like the CMS support the end of threatening techniques like harpooning, aiming to protect the Amazon's biodiversity. However, to end unsustainable practices, there must be global commitment.[23] It is imminent that the international community promotes international agreements and action plans that mitigate the impacts of human activities on migratory species like the Amazon river dolphin.

Local Community Engagement

Community engagement is essential to building sustainable infrastructure in the Amazon. It is cooperating with individuals, groups, or organizations within a community to address specific issues, like habitat preservation. It actively involves community members in decision-making, planning, and implementing initiatives that affect them. This method ensures that their voices are heard and their needs are met.

Local communities play a crucial role in preserving biodiversity, as local involvement in infrastructure projects will ensure the protection of local species while aiding the social and economic needs of the community.[24] Their involvement creates a sense of ownership and empowerment in protecting their territory, ensuring the initiatives align with their communities' needs. This leads to greater community support and long-term commitment to projects. By actively participating, local communities ensure that sustainable projects are effective and resilient to change, as they are likely to be maintained and adapted over time. This is crucial in the Amazon forest, where the involvement of local communities is key to ensuring the survival of millions of species.

19 Claudia Azevedo-Ramos, et al, "Integrating Ecosystem Management, Protected Areas, and Mammal Conservation in the Brazilian Amazon," Ecology and Society 11, no. 2 (2006), http://www.jstor.org/stable/26266008.
20 Ella Adams, et al.,"Deforestation Hits Home: Indigenous Communities Fight for the Future of Their Amazon," CSIS, last modified December 19, 2020, https://journalism.csis.org/deforestation-hits-home-indigenous-communities-fight-for-the-future-of-their-amazon/#:~:text=The%20rate%20of%20destruction%20of,leadership%20of%20President%20Jair%20Bolsonaro/.
21 Adams, et al.,"Deforestation Hits Home: Indigenous Communities Fight for the Future of Their Amazon."
22 Sea Shepherd, "Endangered Dolphins Discovered Dead with Possible Harpoon Injuries during Scientific Expedition in the Amazon," Sea Shepherd Global, December 14, 2021, https://www.seashepherdglobal.org/latest-news/dolphins-dead-amazon/.
23 N. C. Larter, et al, "Biodiversity and the Need for Habitat Renewal," Ecological Applications 5, no. 3 (1995): 579–87. https://doi.org/10.2307/1941968.
24 Romina Bandura, Shannon McKeown, and Fenanda Mazzilli Silveira, "Developing Sustainable Infrastructure in the Amazon," Sustainable Infrastructure in the Amazon: Connecting Environmental Preservation with Governance, Security, and Economic Development, Center for Strategic and International Studies (CSIS), 2020, http://www.jstor.org/stable/resrep27031.7.

According to a study by the Journal of *Ecology and Society,* indigenous communities are often the frontline defenders of biodiversity in the Amazon. These communities possess traditional knowledge and practices that are valuable for sustainable land management and are incredibly informative on how to protect local species. In the Brazilian Amazon forest, the Xikrin and Parakanã tribes protect wildlife and sustain their forests. The Xikrin and Parakanã are indigenous tribes of Brazil, primarily residing in the Amazon rainforest. Both groups are part of the larger Kayapó ethnic group, known for their deep connection to the forest and rich cultural traditions. The Xikrin, inhabiting the southeastern part of the Amazon in Pará, are renowned for their detailed art, which reflects their strong ties to the natural world. The Parakanã, also located in Pará, live between the Xingu and Tocantins rivers. They maintain a traditional lifestyle, relying on hunting, fishing, and small-scale agriculture. The Nature Conservancy found that a majority of the best-preserved areas of the Brazilian Amazon were indigenous land occupied by the Xikrin and Parakanã tribes. Their generational knowledge of the land, the species within it, and the plants that inhabit it have immensely saved many endangered forests.[25] For example, these tribes inhabit land known for its rich coconuts, known locally as babaçu, known nationally to produce high-quality coconut oil. Over the last centuries, large corporations have profited from the industry, manufacturing large amounts of coconut oil and destroying the land from excessive production. This has come at a significant cost, as the land has been severely degraded due to excessive production. It has threatened the livelihood of indigenous communities like the Xikrin and Parakanã and disrupted the balance of the ecosystem they depend on.

However, recent local initiatives led by women in the Xikrin and Parakanã tribes have begun to reclaim their land and the resources it provides. One successful project that has expanded across several Xikrin villages is the production of babaçu oil, a type of coconut oil. This initiative focuses on empowering the Menire, the Xikrin women, by enhancing their ability to manage the production and commercialization of babaçu oil, both for local use and external sales.[26] The project eliminates middlemen by selling the oil at fair prices directly to consumers or stores in urban centers, significantly increasing the economic value of this culturally and environmentally important activity. As part of the project, a new babaçu oil processing house and a small oil extraction machine have been established, allowing the women to continue their traditional role of processing babaçu oil for cooking and cosmetics. This role passed down through generations, now provides opportunities for greater leadership, income, and recognition for Xikrin women and their communities. The project recently received recognition from the United Nations Food and Agriculture Organization (FAO) for advancing women's empowerment and autonomy in rural activities that promote healthy, traditional, and sustainable foods.[27] Indigenous women are pivotal to the promise of future generations, with their deep understanding and responsibility for forest conservation, which are crucial for food security and the sustainable management of community resources.[28]

In the Colombian Amazon, 373 families from the Caquetá and Guaviare regions have aimed to introduce sustainable conservation practices to protect the wildlife around them. A majority of the land they inhabited had faced severe deforestation, representing over 30 percent of Colombia's deforestation.[29] Continuous road infrastructure, extensive cattle ranching, and urban development threatened the region's biodiversity and the livelihoods of the local communities that depend on the natural resources of the Amazon. As part of the Heart of the Amazon Project, these families agreed to conserve land in their region and protect the species within it, develop sustainable farming practices that maintain the land's fertile environment, and restore degraded areas.[30]

25 Luciana Lima, "Indigenous Women: Keepers of the Amazon Rainforest," The Nature Consorvency Brazil, August 3, 2019, https://www.nature.org/en-us/what-we-do/our-insights/perspectives/indigenous-women-xikrin-amazon-rainforest/.
26 Luciana Lima, "Indigenous Women: Keepers of the Amazon Rainforest."
27 Luciana Lima, "Indigenous Women: Keepers of the Amazon Rainforest."
28 Luciana Lima, "Indigenous Women: Keepers of the Amazon Rainforest."
29 Astrid Aurellano,"Campesinos bring life back to a deforestation hotspot in the Colombian Amazon," Mongabay, May 30, 2024, https://news.mongabay.com/2024/05/campesinos-bring-life-back-to-a-deforestation-hotspot-in-the-colombian-amazon
30 World Bank, "Community engagement and conservation agreements in the heart of the Colombian Amazon," World Bank Group, December 22, 2020, https://www.worldbank.org/en/news/feature/2020/12/22/compromiso-comunitario-y-acuerdos-de-conservacion-en-el-corazon-de-la-amazonia-colombiana.

Furthermore, conservation agreements among the families also reached a political scale. The families voluntarily agreed to participate in national committees to discuss and address deforestation issues within the Colombian Amazon, directly communicating with policymakers to establish the role of the government in protecting the Amazon. Continued talks among local communities and national officials have nationalized the campaign to protect the Amazon while reinforcing the necessary resources and materials to conserve endangered species. Moreover, indigenous populations within the Amazon know how to benefit from natural resources while sustaining them, saving the future of the forests and the life within them. Engaging with indigenous populations preserves biodiversity and minimizes environmental harm.

The recent Amazon Dialogues and Summit emphasized the critical role of local communities unsustainable forest management and the broader conservation efforts in the Amazon. The summit participants highlighted the importance of integrating local communities into forest management policies, recognizing that forests are more than just sources of resources. Forests are vital to indigenous and rural populations' livelihoods, culture, and well-being.[31] The Belém Declaration, signed during the summit, underlines these communities' essential role in protecting the forest through community-based management systems. This approach serves as a conservation tool and promotes social and economic empowerment for the most vulnerable populations.

The discussions also stressed that sustainable development in the Amazon cannot be achieved without the active engagement of local communities. The declaration emphasizes the need to support sustainable agricultural practices that benefit the Amazon's inhabitants while preserving the environment. This includes promoting innovations that consider ecological goals with the socio-economic needs of local populations. This ensures that development does not come at the expense of the forest. Territorial approaches were also highlighted when addressing sustainability challenges, with the involvement of local communities seen as vital to the success of these initiatives.

Furthermore, the summit and dialogues reinforced the importance of involving local communities in designing and implementing policies and projects. For example, the TerrAmaz project, which operates in multiple Amazon countries, emphasizes consultation and participation of all stakeholders. TerrAmaz is a strategic initiative to address deforestation in the Amazon by promoting social progress, environmentally friendly economic growth, and biodiversity conservation.[32] From September 2020 to September 2024, with a budget of €9.5 million funded by the Agence Française de Développement (AFD), the project is active in five pilot territories across Brazil, Colombia, Ecuador, and Peru. These territories were chosen based on their representation of Amazonian issues, their potential to drive change through innovative tools like territorial certification, and their capacity to integrate local governance with rural socio-technical networks.

TerrAmaz's approach supports collaborative planning involving local farms, communities, and institutions to ensure sustainable practices are adopted and implemented. It considers the importance of generational knowledge and the distribution of scientific knowledge among states, allowing them to develop policy plans for habitat preservation together.[33] This practice is crucial for guiding the transition of these territories toward deforestation-free development, as TerrAmaz states that proper conservation can only be accomplished with the support of local, national, and international governments. The expected impacts of TerrAmaz include enhanced production of ecosystem services, increased forest conservation and restoration, and the adoption of low-carbon agricultural practices by Amazonian farmers. These outcomes aim to create sustainable development projects within the Amazon, aligning local practices with environmental goals[34].

In conclusion, community engagement bridges the gap

31 "Amazon Dialogues and Amazon Summit to strengthen Amazon Governance," ACTO, last modified July 28, 2023,https://otca.org/en/amazon-dialogues-and-amazon-summit-to-strengthen-amazon-governance/.
32 "The Amazon: putting local communities back at the heart of considerations," CIRAD, last modified September 4, 2024, https://www.cirad.fr/en/cirad-news/news/2023/recap-on-amazon-summit/.
33 CIRAD, "The Amazon: putting local communities back at the heart of considerations."
34 CIRAD, "The Amazon: putting local communities back at the heart of considerations."

between environmental preservation and socio-economic development, ensuring that future projects are sustainable and equitable.[35] By involving local communities and respecting Indigenous knowledge, international organizations like the CMS can create sustainable and inclusive global policies that benefit the environment and the people who depend on it.[36]

Scientific Research and Management

Beyond local help, scientific research and monitoring play an imminent role in protecting biodiversity conservation in the Amazon River. Scientific environmental research involves a comprehensive investigation into the natural world to understand how ecosystems function and human activities impact them. This field includes ecological studies that examine the relationships between organisms and their habitats. Research in sustainable development seeks ways to balance current needs with future sustainability, and pollution and waste management studies address methods to reduce and control environmental contamination.

The immense and often inaccessible expenses in the Amazon rainforest are challenges for monitoring and protecting ecosystems. However, advances in real-time technology have significantly enhanced the ability to solve deforestation. The most common technology employed to monitor species is satellite imagery. Satellite imagery is a monitoring system that uses drones and Geographic Information Systems (GIS) to detect and report deforestation.[37] By taking images and videos of the rainforest, scientists can broadly analyze habitat health, looking at wildlife's presence and freshwater quality. This technology is effective and accessible to various states, as it can uncover over 2.5 million acres of deforestation, allowing for rapid interventions by local and national populations.[38] Not only does satellite monitoring collect data, but it also directly links information to action. Collaboration with government officials, national park guards, police, and judges is central to this effort. With satellite monitoring, officials can use satellite and drone imagery as legal evidence when prosecuting deforestation offenders. Such efforts minimize people or groups who benefit from illegal logging and gold mining activities, eliminating one out of the many already existing threats.

Moreover, satellite monitoring addresses the needs of local communities through innovative technological solutions that enhance their livelihoods. In Santa Rosa del Abuná, Bolivia, local communities previously faced significant difficulties locating mature Brazil nut trees, often spending an entire day traversing difficult terrain due to the absence of a forest inventory identifying all the species of the area. To overcome this challenge, local governments pioneered a system to detect, analyze, and classify Brazil nut trees using remote sensing, drones, and satellite imagery. This technology allowed them to identify and map over 53,000 Brazil nut trees, providing valuable data on the number of species in their local area and the potential production of future species.[39] This detailed information system is vital for municipal and community leaders in making informed environmental decisions. Nonetheless, tracking species in the Amazon forest is essential when managing and protecting natural resources, as it considers the area's ecological and economic needs. The project has aided the community's economic development by providing precise data on the distribution and health of critical species. Knowing the exact amounts of natural resources allows local businesses to function effectively and prosper while also considering forest health, thus creating sustainable forest and community management.

Geographic Information Systems have also enabled researchers to capture and analyze vast amounts of data with remarkable precision. Recent findings from the Monitoring of the Amazon Project (MAAP), utilizing new data sets from the Spatial Production Allocation Model (SPAM) and the Atlas of Pastures, reveal critical land use patterns across the Amazon biome. These technologies have allowed for detailed mapping

35 Runde, Daniel F, Romina Bandura, and Shannon McKeown, "Infrastructure Development In the Amazon,"
36 World Wildlife Fund, "Why a Global Declaration for River Dolphins Is so Critical," WWF, October 10, 2023, https://wwf.panda.org/wwf_news/?9843416%2FWhy-we-need-a-Global-Declaration-on-River-Dolphins.
37 "Put Science and Technology to Work," Amazon Conservation, accessed September 24, 2024, https://www.amazonconservation.org/what-we-do/put-science-and-tech-to-work/.
38 Amazon Conservation, "Put Science and Technology to Work."
39 Amazon Conservation, "Put Science and Technology to Work."

of agricultural activities, showing that crops and pastures cover 115.8 million hectares–approximately 19 percent of the Amazon.[40] Soybean cultivation dominates the land, covering over 67.5 million hectares in southern Brazil and Bolivia, while maize covers 70 million hectares as a secondary crop.[41] Oil palm and other major crops such as cocoa and coffee contribute significantly to land use changes. Additionally, cattle pastures occupy 76.3 million hectares, mainly in Brazil.[42] This extensive data highlights the significant role of agriculture in deforestation compared to other activities like gold mining, emphasizing the need for effective conservation measures.

A *Biodiversity and Conservation Journal* study suggested using long-term acoustic monitoring to study river dolphins in the Brazilian Amazon floodplains. Acoustic monitoring is a recent innovation introduced by ecologists and researchers to survey wildlife populations and animal behavior. Acoustic sensors record the thousands of sounds animals make, allowing ecologists to study the species' behavioral, migratory, and mating patterns. Long-term acoustic monitoring can provide data on the presence, behavior, and population dynamics of these dolphins, which is essential for developing effective conservation strategies.[43] This technology allows researchers to track dolphin movements and habitat use without intrusive tagging, minimizing animal stress and providing continuous data over extensive periods. In addition to acoustic monitoring, satellite technology is playing a vital role in tracking and studying Amazon river dolphins.[44] For example, the first-ever tagging of these dolphins using satellite technology has provided valuable insights into their migration patterns and habitat use, which are critical for informing conservation efforts and mitigating the impacts of human activities such as dam construction and deforestation.[45] For the Amazon river dolphin, this technology allows researchers to gather data on dolphin behaviors without invading the animal's habitat and disrupting the species daily patterns.[46]

Furthermore, one of the major threats to the Amazon river dolphin is mercury pollution caused by local and gold mining activities in the Amazon region. Mercury in these mining processes leaches into waterways and accumulates in the water and within small animals, ultimately affecting top predators who feed on fish, like the river dolphin. Gold mining is an essential industry among various Amazon communities; however, as the industry continues to grow, so does mercury pollution. Nonetheless, more than 47 million people depend on the Amazon River for freshwater daily, home to millions of unique species. Though the gold mining industry is profitable, continued contamination of the Amazon River puts millions of people's lives at stake. For example, research has found high levels of mercury in the Amazon river dolphins, posing a direct risk to the species and to human populations drinking and feeding from the Amazon's waters.[47]

The Minamata Convention on Mercury, established on January 19, 2013, aims to safeguard human health and the environment from pollution by phasing out and reducing mercury use in various industries. As of 2021, 133 countries, including nearly all Amazon countries except Venezuela, have ratified the treaty. It mandates that countries with significant artisanal and small-scale gold mining develop National Action Plans (NAPs) to minimize or eliminate mercury use. These plans typically involve training in mercury-free mining techniques and efforts to formalize mining operations and enhance mercury trade regulations to protect public health. Countries must employ international legal frameworks that

40 "MAAP 214: Agriculture in the Amazon: New data reveals key patterns of crops & cattle pasture," Monitoring of the Andean Amazon Project, accessed September 24, 2024, https://www.maaproject.org/2024/amazon-agriculture/.
41 "MAAP 214: Agriculture in the Amazon: New data reveals key patterns of crops & cattle pasture," Monitoring of the Andean Amazon Project,
42 "MAAP 214: Agriculture in the Amazon: New data reveals key patterns of crops & cattle pasture," Monitoring of the Andean Amazon Project,
43 Bryan Harris, Andres Schipani, and Anna Gross, "Brazil: Can Technology Help Save the Amazon?" Financial Times, September 11, 2019, https://spacetimelabs.ai/media-and-publications/brazil-can-technology-help-save-the-amazon.
44 Elliott Smith, "AI May Hold a Key to the Preservation of the Amazon Rainforest," Microsoft, September 6, 2023, https://news.microsoft.com/source/latam/features/ai/amazon-ai-rainforest-deforestation/?lang=en.
45 Adena R. Rissman, "Public Access to Spatial Data on Private-Land Conservation," Ecology and Society 22, no. 2 (2017), http://www.jstor.org/stable/26270141.
46 Erbs Florence et al, "Towards Automated Long- Term Acoustic Monitoring of Endangered River Dolphins: A case study in the Brazilian amazon Floodplains," *Science Report,* no. 10801 (July 2023): X-Y.https://doi.org/10.1038/s41598-023-36518-1.
47 "Amazon River Dolphins Threatened by Mercury Pollution," Phys.org. October 24, 2019, https://phys.org/news/2019-10-amazon-river-dolphins-threatened-mercury.html.

address water contamination despite the possible challenges. Mercury emissions remain a serious concern, requiring urgent action from governments, organizations, and NGOs. The goal must be to promote safer, mercury-free mining practices and protect affected communities and ecosystems from mercury poisoning.

Scientific research and advanced monitoring technologies are essential to conserving the Amazon river dolphin. Integrating technological advancements with indigenous knowledge offers a dynamic approach to the conservation of the Amazon River and its species.[48] It is imminent that future generations consider the effectiveness of traditional knowledge with scientific research to enhance conservation strategies, ensuring they are culturally and environmentally sustainable.[49]

Role of Indigenous Knowledge in River Dolphin Conservation

Indigenous communities have long inhabited the Amazon rainforest, maintaining a cultural connection with its environment and biodiversity through traditional practices. According to a study by the Food and Agriculture Organization (FAO), native tribes of the Amazon use over 300 species of plants and animals daily, including an estimated 1,300 medicinal plants that have nurtured the tribes for generations. These include plants such as wasai, lapacho, and cordoncillo, which are used to fight infections and alleviate symptoms of common illnesses.[50] Furthermore, indigenous tribes rely on the Amazon's raw materials to build shelter and tools. Almost 90 percent of Indigenous Amazon communities build their homes and structures strictly from the raw materials of their region, inheriting traditional methods from past generations.[51] Beyond the physical necessity of the Amazon, indigenous tribes consider the area sacred and vital to their spirituality. Many sacred natural sites, such as rock formations, waterfalls, and trees, serve as places of worship, representing the importance of the region's nature to its people. The animals of the rainforest hold the same role. In ancient Indigenous architecture in the Amazon, drawings of anacondas, owls, squirrel monkeys, and frogs play a spiritual role in the lives of Amazon tribes.[52] To this day, these tribes continue to worship these animals, protecting them from poaching and contamination. In addition, indigenous communities have been feeding on the Amazon's fauna for generations sustainably. When an animal is caught as prey, the entire animal is used without letting anything go to waste. For example, manatee fat is used for ointments, the poison of the kambô frog is used to cure various diseases, and tribes practice treatments with Amazon river dolphins to increase mobility and strength.[53] These practices, which have existed for generations, play an integral role in the conservation of Amazon species and the region's culture.

Moreover, the Matsigenka people of Peru's southeast Amazon demonstrated that their intricate knowledge of soil types–such as potsitapatsari for maize cultivation–was crucial for determining suitable farming sites. This activity is inaccessible with remote sensing alone.[54] This revelation highlighted the contrast between indigenous oil classification systems and modern remote sensing techniques, underscoring the need to bridge modern approaches with indigenous knowledge. While challenges remain in reconciling indigenous knowledge with modern technology, there is an increasing recognition of the value of traditional knowledge in conservation efforts. The Belem Declaration from the recent Amazon Summit reflects this shift, emphasizing the importance of integrating indigenous knowledge into climate financing projects and conservation strategies. The Green Climate Fund's commitment to investing in indigenous-led initiatives further supports this project, aiming to blend traditional knowledge with

48 Marcela Maria Martins de Souza, 2021, "Technology and Indigenous Knowledge Combine to Protect the Amazon," One Earth, October 25, 2021, https://www.oneearth.org/technology-and-indigenous-knowledge-combine-to-protect-the-amazon/.
49 Marcelo Fragomeni Simon, and Fernando Luis Garagorry, "The Expansion of Agriculture in the Brazilian Amazon," Environmental Conservation 32, no. 3 (2005): 203–12. http://www.jstor.org/stable/44521868.
50 Ryan Lewis, "Top 10 Medicinal Plants of the Amazon," Rainforest Cruises, December 8, 2022. https://www.rainforestcruises.com/guides/top-10-medicinal-plants-of-the-amazon
51 Imolore, David, "Indigenous People and the Amazon: An Ancient Connection - Fund the Planet," Rescue Rainforest with Fund the Planet, May 3, 2024, https://fundtheplanet.net/amazon-rainforest/indigenous-people-and-the-amazon-an-ancient-connection/.
52 Alexandre Guida Navarro, "Ecology as Cosmology: Animal Myths of Amazonia," Ecosystem and Biodiversity of Amazonia, IntechOpen, 2021, https://cdn.intechopen.com/pdfs/73583.pdf.
53 "Fauna and Flora of the Amazon - ISPN - Instituto Sociedade, População e Natureza," ISPN, July 15, 2021, https://ispn.org.br/en/biomes/amazon/fauna-and-flora-of-the-amazon/.
54 ISPN, "Fauna and Flora of the Amazon - ISPN - Instituto Sociedade, População e Natureza"

emerging technologies like artificial intelligence. This evolving relationship between indigenous practices and modern tools is crucial for effectively addressing the environmental challenges facing the Amazon and its inhabitants.

Indigenous territories have been shown to experience significantly lower deforestation rates, indicating that only five percent of forest loss in the Brazilian Amazon occurs in indigenous territories, despite these areas occupying over half of the region's forest. This low deforestation rate is caused by the strict environmental protections and sustainable practices enforced by indigenous communities, which help the survival of the Amazon river dolphin.[55] For instance, Omacha, created by fishermen's wives in the Amazon, began introducing dolphin-watching schemes and dolphin-friendly fishing, encouraging economic alternatives to protect the species. A majority of Amazon fishermen depend on the catfish fishing market–an incredible hazard for Amazon river dolphins–who are caught and killed as bait for the catfish.[56] However, under Omacha, fishermen avoid preying on the Amazon river dolphin and employ other, more sustainable strategies. Recently, Omacha opened the Omacha Amazon Conservation Center in Puerto Nariño, Colombia. This conservation center plans to develop research and monitoring schemes, strengthen strategic location protections, advance economic alternatives to unsustainable fishing, and increase environmental education in the region for the protection of the Amazon river dolphin.[57] As stated by Fabio Arjona, the executive director of Conservation International Colombia, the center serves as a space for Indigenous communities to inform and educate future generations on how to protect natural resources while protecting the cultural integrity of the land.

Indigenous knowledge also includes a deep understanding of local biodiversity and ecological interactions, which is crucial for effective conservation strategies. Indigenous communities often possess detailed knowledge about the behaviors and habitats of local wildlife, including river dolphins.[58] This knowledge is invaluable for monitoring dolphin populations and identifying habitat destruction and pollution threats. Integrating indigenous knowledge with scientific research can make conservation efforts more targeted and effective . Additionally, recognizing and securing indigenous land rights is essential for empowering these communities to

55 Savanna L. Carson, et al, "Indigenous Peoples' Concerns About Loss of Forest Knowledge: Implications for Forest Management," Conservation and Society 16, no. 4 (2018): 431–40. http://www.jstor.org/stable/26500657.
56 Maxine Chen, "The dolphin who became man": will the boto survive the catfish trade?" Mongabay, July 31, 2017, https://news.mongabay.com/2017/07/the-dolphin-who-became-man-will-the-boto-survive-the-catfish-trade/.
57 "Quienes Somos." Fundación Omacha, March 26, 2024. https://omacha.org/quienes-somos/.
58 Pablo Uchoa and Laura Beltran,"Lessons from Indigenous Leaders to Protect the Amazon Rainforest," World Economic Forum, January 30, 2024, https://www.weforum.org/agenda/2024/01/lessons-from-indigenous-leaders-to-protect-the-amazon-rainforest/.

Amazon River Dolphin Playing
Credit: lubasi

continue their conservation efforts. Studies have shown that Indigenous land rights not only reduce deforestation but also lead to higher rates of secondary forest growth on previously deforested lands.[59] Ensuring that Indigenous communities have legal control over their territories allows them to implement their traditional conservation practices without external interference, thereby protecting vital habitats for species like the Amazon river dolphin. Indigenous knowledge is imminent for the conservation of the Amazon rainforest and its biodiversity, including the Amazon river dolphin.[60]

The combination of traditional indigenous knowledge and modern technology is proving to be a powerful approach to protecting and managing the Amazon rainforest. Juvêncio Baniwa, a member of the Baniwa indigenous group, exemplifies this integration by combining age-old observation techniques with contemporary technology.[61] Each day, Baniwa works to meticulously record observations of forest conditions, such as fruit size, tree trunk appearance, and water levels. This traditional practice is complemented by the Open Data Kit app, which was created to document and organize findings digitally. The app has allowed Baniwa to involve his findings and conventional practices in technology, aiding him in his community goals to protect the Amazon forests' biodiversity. The fusion of these methods preserves valuable indigenous knowledge while enhancing its application through modern technology. Another example of this integration is the Ictio mobile application, which gathers crowdsourced data on fish populations from communities affected by hydropower dams in the Amazon.[62] Inspired by similar initiatives, this app allows local fishermen to record changes in fish stocks, allowing them to collect valuable data that becomes a part of scientific research. This enhances a community's autonomy in advocating for environmental protection and proves the essence of partnerships between indigenous communities and researchers. By combining traditional practices with modern scientific research and securing indigenous land rights, we can create a more sustainable and practical approach to conservation.

Despite these technological advances among Indigenous communities, it is essential to note that Indigenous tribes still face challenges. For instance, unexpected weather patterns and environmental disruptions alter traditional cycles and practices. At the COP26 conference, the Science Panel for the Amazon emphasized the essential role of protecting the indigenous in the Amazon, considering their key role in environmental conservation. During the conference, Indigenous Local Knowledge (ILK) was supposed to be an essential conservation strategy and policy recommendation. For thousands of years, Indigenous people in the Amazon have utilized ancestral knowledge to manage their environment. They continue to employ these same practices to address climate change and environmental degradation. Indigenous leader Maria Leonice Tupari highlighted the increasing recognition of ILK within the scientific community, noting that many Indigenous youths are now contributing to academic research and demonstrating the value of traditional knowledge. Challenges persist, including prejudice and threats to Indigenous lands from illegal activities. Indigenous communities continue to play a crucial role in conserving the Amazon and maintaining its biodiversity. However, their impact can only be successful with national and international support.

Ecotourism and Economic Incentives for Conservation

Ecotourism is a form of sustainable tourism that respects, conserves, and protects natural reserves and areas. One of the key benefits of promoting ecotourism is its potential to reduce deforestation. Ecotourism could provide alternatives to unsustainable tourism that causes deforestation, such as logging and agricultural expansion, by encouraging activities that protect biodiversity. In 2024, the ecotourism market experienced significant growth, with a projected increase of

59 Marcus Vinícius C. Scmidt, et al, "Indigenous Knowledge and Forest Succession Management in the Brazilian Amazon: Contributions to Reforestation of Degraded Areas," Frontiers in Forest and Global Change, Volume 4, April 26, 2021, https://doi.org/10.3389/ffgc.2021.605925.
60 Jena Webb, "Indigenous-Led Conservation in the Amazon: A Win-Win-Win Solution," Amazon Frontlines, February 20, 2019, https://amazonfrontlines.org/chronicles/indigenous-conservation-amazon/.
61 Marcela de Souza, "Technology and Indigenous knowledge combine to protect the Amazon," One Earth, last modified October 25, 2021, https://www.oneearth.org/technology-and-indigenous-knowledge-combine-to-protect-the-amazon/
62 de Souza, "Technology and Indigenous knowledge combine to protect the Amazon."

13.5 percent to reach USD 249.16 billion, up from USD 219.53 billion in 2023. This upward trend is expected to continue, with the market anticipated to reach USD 428.97 billion by 2028.[63] Sustainable accommodations are proving more affordable than traditional options, with an average nightly cost reduction of 151 USD, making them 39 percent cheaper. This economic advantage to sustainable tourism is building awareness of the need for environmental protection and conservation. Indeed, 80 percent of travelers now prioritize sustainability, an increase from 71 percent from the previous year.

The WWF highlights how ecotourism initiatives, such as hosting guided travel by locals in the Amazon, have conserved forests by creating jobs and generating income for local communities. The community of Xixuaú in Brazil began offering local tours traveling by boat from Manaus, along the Rio Negro, to the Rio Jauaperi, highlighting the unique species of animals and plants that inhabit the region. These tours, led and organized by locals, offer opportunities for inhabitants of the Amazon to benefit from tourism.[64] Moreover, the tours are organized to immerse visitors into the daily lives of the indigenous tribes. Such as providing accommodation in wooden bungalows built with traditional indigenous techniques and natural resources of the region. This project acts as an economic and cultural incentive for indigenous tribes while simultaneously banning large firms and corporations from exploiting the region's natural resources.[65]

Moreover, ecotourism motivates environmental awareness and education among tourists and local populations. Involving local communities in ecotourism projects can lead to a more significant environmental impact as they learn the value of conserving their natural resources. According to the World Economic Forum, indigenous and local communities play a vital role in managing ecotourism projects, utilizing their traditional knowledge to ensure sustainable practices that protect the ecosystem. As mentioned above, indigenous tribes are the experts in the Amazon, as they've occupied and inhabited the land for generations, knowing how to use and protect various unique and endangered species.[66] A study showed that 53 percent of travelers actively seek accommodations that combine comfort with innovative sustainability features–such as reusable and washable items, consuming local produce, and learning local practices for wildlife protection. Travelers are also increasingly conscious of their carbon footprint, with one-third planning trips closer to home to reduce emissions. This feeling is reflected in the preference for more sustainable transport options, with 22 percent of people researching public transportation alternatives. Beyond transportation, eco-tourism has proven to be successful in enhancing sustainable travel behaviors. As of 2024, 77 percent of travelers make an effort to turn off lights and appliances in their accommodations, and 75 percent attempt to reuse and recycle complementary products that were given in their accommodations. There is also a solid interest in connecting with local cultures, with 66 percent of travelers seeking authentic experiences and 27 percent researching local cultural aspects before their trips. This growing focus on sustainable and culturally immersive travel highlights a shift towards more responsible tourism practices.

Ecotourism is often promoted as a means to protect biodiversity and provide economic incentives for conservation. A notable example is the 'Casa Matsiguenka' lodge, a community-based ecotourism project owned by the Matsigenka people in Manu National Park, Peru. Established with the help of national aid, the lodge was designed to generate revenue for the Matsigenka people while promoting conservation. Since its opening, the project has facilitated social and political organization within the Matsigenka communities and fostered dialogue with the Peruvian government. The project has also encouraged engagement between national park administrations and the Matsigenka, potentially paving the way for future co-management agreements to resolve conflicts between

63 "Ecotourism Global Market Report 2024", The Business Research Company, last accessed October 22, 2024, https://www.thebusinessresearchcompany.com/report/ecotourism-global-market-report
64 Amazon Charitable Trust, "Xixuau Community | The Rainforest," Amazon Charitable Trust, accessed July 24, 2024, https://www.amazoncharitabletrust.org/en/xixuau-community/rainforest.
65 "Amazon Forest Ecotourism Xixuau Brazil," Amazon Trip, February 11, 2023, https://www.amazontrip.info/web/en/amazon-ecotourism/.
66 Pablo Uchoa, Laura Beltran,"Lessons from Indigenous Leaders to Protect the Amazon Rainforest," World Economic Forum, January 30, 2024, https://www.weforum.org/agenda/2024/01/lessons-from-indigenous-leaders-to-protect-the-amazon-rainforest/.

indigenous tribes and the Manu National Park. Its impact on social cohesion has been persistent, and talks with community organizations, dialogues with national authorities, and highlighted the benefits of ecotourism projects have begun.

Economic incentives beyond ecotourism also contribute to conservation efforts. Payment for ecosystem services (PES) schemes offer financial compensation to landowners and local communities for maintaining forest cover and other ecosystem services.[67] These schemes help align economic benefits with conservation goals, making protecting rather than exploiting natural resources financially advantageous. The Noel Kempff Mercado Climate Action Project in Bolivia and the Bolsa Floresta Program in Brazil have investigated the effectiveness of PES in the Amazon and whether it could be considered a long-term solution. Their study showed that offering PES to landowners in the Amazon can only act as a short-term solution. Instead, PES funds should be invested in sustainable technology and systems that protect the Amazon's biodiversity. The study argues that by implementing PES funds into conservation efforts, Indigenous tribes, and farmers can mold a long-running conservation system that will benefit them economically and socially. Investing money into sustainable enterprises will offer jobs for the local population while including them in efforts to protect the natural resources of their region.[68] Furthermore, PES funds can be invested in education schemes to teach the next generation about protecting the Amazon's unique biodiversity. However, the study argues that establishing a successful system requires accountability measures when distributing funds. Considering that Amazon spans eight countries, the initiative to enforce PES funds must be global and collective.[69]

Ecotourism, which emphasizes conservation and community support, holds promise as a strategy for protecting the Amazon rainforest–a crucial and biodiverse ecosystem. By offering an alternative source of income for local communities, ecotourism can reduce reliance on activities that harm the forest, such as logging and unsustainable agriculture. Supporting local businesses and guides through ecotourism fosters cultural exchange and understanding, potentially easing conflicts between indigenous communities and outsiders. Additionally, ecotourism raises awareness about Amazon's importance and the threats it faces by educating visitors through immersive experiences and educational materials. For ecotourism to effectively contribute to conservation, however, it must be meticulously managed to minimize environmental impact. This includes using low-impact conservation, minimizing waste, and ensuring that tourism revenue is reinvested in conservation and community development.

Despite its potential benefits, ecotourism is not a direct cure for the complex issues facing the Amazon. It is part of a broader strategy that includes policy changes, law enforcement, and efforts to reduce greenhouse gas emissions. Unmanaged or poorly planned ecotourism can lead to overcrowding, pollution, and conflicts with local communities. In some cases, it can also be misused as a cover for harmful activities like logging or mining.

To maximize the positive impact of ecotourism, it is crucial to follow practices that involve local communities in planning, ensuring equitable distribution of tourism benefits, and using sustainable practices. Collaborating with local organizations, such as the Amazon Environmental Research Institute (IPAM), can help align ecotourism efforts with broad conservation goals. Responsible tourism companies that partner with local communities and can support sustainable development can also influence efforts to protect the Amazon while providing economic benefits. In summary, while ecotourism has the potential to contribute to the protection of the Amazon rainforest, its success depends on careful planning, management, and integration into comprehensive conservation strategies. By adhering to best practices and fostering strong partnerships, ecotourism can support environmental preservation and the well-being of the rainforest's diverse species.

67 Beatriz Garcia Byu, José Gasques, Eliana Bastos, "Ecotourism in the Amazon," International Congress on Environmental Modeling Software, July 1, 2004, https://scholarsarchive.byu.edu/cgi/viewcontent.cgi?article=3335&context=iemssconference.
68 Simone Novotny Couto Pereira, "Payment for Environmental Services in the Amazon Forest," The Journal of Environment & Development 19, no. 2 (2010): 171–90, http://www.jstor.org/stable/26199354.
69 Pereira, "Payment for Environmental Services in the Amazon Forest."

Current Status

Case Study: Political Violence in Colombia and its Effect on Amazon Rainforest Species

Wars and political conflicts significantly cause deforestation in the Amazon forest. Violence causes heavy damage to the environment, biodiversity, and ecosystems.[70] Violent conflict proves to be extremely harmful to wildlife. Poisonous chemicals are emitted onto land, habitats are destroyed for military bases, and there are massive losses of animals and humans in violent military face-offs. Over 10,000 species are at risk of extinction due to continued political violence among South American nations. One prominent example of habitat loss from political conflict is in Colombia. Tensions between the Colombian government and the Revolutionary Armed Forces of Columbia (FARC) have claimed the lives of over 450,000 people and increased deforestation of the Amazon by 44 percent.[71]

A majority of deforestation found in Colombia is located in the area formerly controlled by FARC, a guerilla group that has led numerous armed assaults within the Colombian jungle.[72] FARC controlled a 500-kilometer strip of land between the Amazon lowlands and the Amazon mountains, a territory abundant with populations of thousands of species.[73] The Andes-Amazon Transition Belt is vital for Amazon species, acting as a highway for animals to cross and migrate throughout the seasons. A journal published in *Global Ecology and Conservation* in 2022 identified that the habitat loss in Colombia coincided with the armed conflicts. As conflicts emerged, habitat loss and deforestation increased. This illustrated a direct pattern between political violence and the environment.[74] Some species, such as the woolly monkey, survive on migration through the Andes-Amazon Transition Belt by feeding on the diverse plants across ecosystems. The woolly monkeys are forced to adapt to different climates and habitats by inhibiting their ability to migrate. This detrimentally affects the stability of their species. Similarly, the famous guácharo birds of the Amazon will suffer from deforestation in the Andes-Amazon Transition Belt. Each night, these unique birds fly through caves of the Andes and Amazon forest in search of fruits. Yet, with political war and violence plaguing the area, the guácharo are forced to travel hundreds of kilometers in search of food.[75]

Colombia's peace and environmental stability intersect. The natural resources of their region serve as the backbone of their economy. However, recent conflicts with guerilla groups have begun to exploit the land's natural resources and introduced black markets. For example, armed groups take advantage of the nation's fragile political state and carry out illegal businesses. This includes cattle ranching, oil drilling, gold mining, and growing cocoa. The lack of regulation for illicit markets has caused extreme environmental deterioration, inherently causing thousands of species of plants and animals to go extinct. One of the most violent areas of Colombia is known as Putumayo, situated in the foothill of the Andean mountains bordering Ecuador and Peru.[76] Since 2020, there have been three massacres in the region caused by illegal cocoa cultivation and cocaine trafficking. The competition of these natural products, accompanied by war, has inflicted environmental harm on the land. For cocoa farmers, crude oil from pipelines is necessary, an ingredient needed for cocoa production. However, accessing crude oil causes spills, contaminating water sources regionally. In addition, for competing cocaine traffickers, it is necessary to constantly

70 Adrian Tejador, "Effects of Deforestation in the Amazon," Amazon Aid, accessed August 12, 2024, https://amazonaid.org/resources/about-the-amazon/effects-of-deforestation-on-the-amazon/.
71 Pablo Correra, "Losing the connection between the Andes and the Amazon: A price of peace in Colombia," Knowable Magazine, February 22, 2024. https://knowablemagazine.org/content/article/food-environment/2024/deforestation-threatens-andes-amazon-connection-colombia.
72 International Crisis Group, "A Broken Canopy: Deforestation and Conflict in Colombia," International Crisis Group, Latin America Report No. 91, November 4, 2021, https://www.crisisgroup.org/latin-america-caribbean/andes/colombia/091-broken-canopy-deforestation-and-conflict-colombia.
73 O.V. Bautista-Cespedes, et al, "The effects of armed conflict on forest cover changes across temporal and spatial scales in the Colombian Amazon," Springer Link, 70 (2021), https://doi.org/10.1007/s10113-021-01770-6.
74 Paulo J. Murillo-Sandoval, Nicola Clerici, Camilo Correa-Ayram, "Rapid loss in landscape connectivity after the peace agreement in the Andes-Amazon region," *Global Ecology and Conservation,* Volume 38, October 2022, https://doi.org/10.1016/j.gecco.2022.e02205.
75 Bustamante Nicolas Hernandez, "In Colombia, end of war meant start of runaway deforestation, study finds," Mongabay, June 25, 2021. https://news.mongabay.com/2021/06/in-colombia-end-of-war-meant-start-of-runaway-deforestation-study-finds/
76 Amazon Frontliners, "War Returns to Colombia's Putumayo, Threatening Indigenous Survival," Chronicles of the Amazon Frontliners, October, 2023, https://amazonfrontlines.org/chronicles/war-returns-to-colombias-putumayo-threatening-indigenous-survival/.

Cocaine Laboratory in the Amazon Forest
Credit: Valter Campanato/ABr

be plotting new land for crops, causing them to destroy the jungle to start new plantations.[77] The toxic chemicals used in cocaine laboratories are then released into nearby streams and soil. This poisons the water that millions of people and animals drink daily. A farmer in Putumayo left a statement claiming that the drive of violence in Colombia is the illegal markets–drug trafficking causing the highest numbers of massacres. From 1985 to 2011, there have been over 8,000 deaths and 2,000 disappearances caused by drug trafficking and the ongoing political conflicts it has caused.[78]

To this day, Putumayo continues to expand. In 2022, cocoa plantations grew by 70 percent, causing more significant threats of violence. Indigenous groups in Putumayo are constantly targeted for vocalizing the need for environmental defense. In one of Colombia's Constitutional Courts, it was later identified that the indigenous tribe of Siona was going extinct. This was caused by the continuous attack of the group for its resistance to protecting their territory.[79] In 2018, the Inter-American Commission on Human Rights declared the extinction of indigenous groups a national issue, calling on the Colombian state to make efforts to protect indigenous lives and their territories. In 2021 and 2022, at least 95 Indigenous leaders were killed, five from the region of Putumayo. Clashes among guerilla groups displaced over 500 indigenous people, moving families through villages and to safety.[80]

Lastly, criminal groups within Putumayo also prey on the exclusive oil industry. With continued instability in Colombia, from the economy to education to healthcare, it becomes increasingly easy to target and workers to exploit natural resources. Guerilla leaders use operators to access oil drilling and then depend on the industry to build political power. Due to the corrupt practice of exploiting natural resources, Putumayo becomes a focal point for criminal groups. It often acts as a key drug export location. Not only that, it is becoming the center for drug trafficking between Brazil and Colombia, interconnecting the South American drug trade even further. Rivers are transformed into highways to transport drugs. This inherently kills and contaminates the species below them.[81]

77 Dahl, Mie Hoejris, "As Colombia's coca economy crashes, new opportunities — and threats — arise," Mongabay, November 15, 2023, https://news.mongabay.com/2023/11/as-colombias-coca-economy-crashes-new-opportunities-and-threats-arise/.
78 Urlich Eberle and Ebus Bram, "Crimes against the Climate: Violence and Deforestation in the Amazon," International Crisis Group, December 8, 2023, https://www.crisisgroup.org/latin-america-caribbean/brazil-colombia/crimes-against-climate-violence-and-deforestation-amazon.
79 United Nations Information Service Vienna, "UNODC World Drug Report 2023 warns of converging crises as illicit drug markets continue to expand," UNODC, June 15, 2023, https://unis.unvienna.org/unis/en/pressrels/2023/unisnar1474.html.
80 Amazon Frontliners, "War Returns to Colombia's Putumayo, Threatening Indigenous Survival," Chronicles of the Amazon Frontliners, October, 2023, https://amazonfrontlines.org/chronicles/war-returns-to-colombias-putumayo-threatening-indigenous-survival/.
81 Urlich Eberle and Ebus Bram, "Crimes against the Climate: Violence and Deforestation in the Amazon," International Crisis Group,

Port Crisis Management Drill in Argentina, Scenario of an Oil Spill Incident

Credit: Karine Langlois

Case Study: Environmental Consequence of the Oil Industry in South America

Oil has long been a key contributor to the global economy, powering industries, transportation, and even entire nations. As the most widely traded commodity in the world, oil's significance in modern life is unique to global human society. Every day, billions of people worldwide rely on oil to fuel automobiles, ships, and aircraft, making up every aspect of daily life and global commerce. In Central and South America, the oil industry is the foundation of economic development, with more than 7.5 million barrels of oil produced per day. Venezuela and Brazil, the two largest oil producers in the region, contribute to this output.[82] They hold reserves that constitute 18 percent of the world's total oil supply.[83] The profit from oil exports is a cornerstone to the economic stability of numerous countries, funding state budgets and driving national growth.

Understanding the different types of oil is crucial to grasp the magnitude of this industry. Crude oil is a naturally extracted fossil fuel from the earth refined into various products, such as gasoline, diesel, jet fuel, and other chemicals. Crude oil can range from light to heavy grades, which determine its viability, price, and usability. The most common types of crude oil are ones that contain higher amounts of sulfur, thus better to produce gasoline.[84] Additionally, refined oil products are the results of processing crude oil and are what power vehicles, heat homes, and are used to fuel other industries.

Yet, the environmental toll of oil production is severe, particularly in regions like South America, where the extraction and refining process of oil have led to significant environmental degradation. According to a study by the World Bank, oil production is a substantial contributor to greenhouse gas emissions, with the industry accounting for approximately 15 percent of global carbon dioxide emissions.[85] This is equivalent to 5.1 billion tonnes of greenhouse gas emissions each year.[86] Greenhouse gases are expelled not only by oil extraction

December 8, 2023, https://www.crisisgroup.org/latin-america-caribbean/brazil-colombia/crimes-against-climate-violence-and-deforestation-amazon.

82 Pablo Ferragut, "Oil & gas production in Central & South America: Investment needed to meet rising regional demand," International Association of Oil and Gas Producers, March 2018, https://www.iogp.org/bookstore/product/global-energy-brief-latin-america/.

83 OPEC, "Annual Statistical Bulletin," Organization of the Petroleum Exporting Countries, 2023. https://www.opec.org/opec_web/en/data_graphs/330.htm.

84 U.S. Energy Information Administration, "Oil and petroleum products explained," Independent Statistics and Analysis, August 1, 2022, https://www.eia.gov/energyexplained/oil-and-petroleum-products/oil-and-the-environment.php.

85 World Bank, "Global Gas Flaring Tracker Report," The World Bank Group, June 2024, https://thedocs.worldbank.org/en/doc/d01b4aebd8a10513c0e341de5e1f652e-0400072024/original/Global-Gas-Flaring-Tracker-Report-June-20-2024.pdf.

86 Tomás Oliveira Bredariol, Christophe McGlade, "Tracking Oil and Natural Gas Supply," International Energy Agency, July 11, 2023, https://www.iea.org/energy-system/fossil-fuels.

but also by exploring, drilling, refining, and transporting oil worldwide. The refining process is a significant source of greenhouse gasses, as refineries release large amounts of carbon dioxide, methane, and other pollutants into the atmosphere. These toxic pollutants seep into all living organisms, causing numerous health challenges. Worsening air quality has proven to lead to respiratory and cardiovascular problems among people and animals, proving its inherent damage to local populations.

Moreover, oil spills amplify the environmental impact of the oil industry, resulting in long-lasting, long-term damage to ecosystems and communities. These spills are among the most devastating environmental disasters, with consequences that persist for decades among numerous generations. When an oil spill occurs, it contaminates marine and terrestrial habitats and water sources and causes land to be unusable for agriculture. The toxicity of spilled oil can kill or harm wildlife, destroy vegetation, and disrupt ecosystems. This leads to the decay of biodiversity and the environment's overall health. The cleanup process for oil spills is incredibly slow and expensive. According to the International Tanker Owners Pollution and Federation, the average cost of cleaning up an oil spill is around USD 16,000 per ton of oil spilled.[87] Nonetheless, studies have shown that despite extensive clean-up efforts after oil spills, oil residues can still be found in the environment more than 30 years later, continuously affecting the ecosystems that inhabit the area.[88]

The impact on marine environments is even more severe. When oil is released into the ocean or rivers, it spreads rapidly, forming a thick layer of toxic oil on the water's surface. This layer is dense enough to block sunlight, inhibiting marine plants' survival. Plants and phytoplankton make up the base of the ocean food chain, and if disrupted, they severely damage the food intake of millions of aquatic species. Moreover, oil also coats birds' feathers that catch prey in the ocean. The oil on their feathers reduces their ability to protect themselves from cold, causes them to drown, and poisons them when they ingest the oil as they clean themselves. Fish also absorb oil toxins, threatening humans who eat the fish. On land, oil spills can cause soil to be toxic and infertile. Soil contaminated by oil can no longer support agriculture, leading to the erosion of biodiversity and life in affected areas. The harmful chemicals in oil can also seep into groundwater, contaminating drinking water supplies globally. In regions where agriculture is the primary livelihood, contamination can ruin food production and the stability of the community, leading to poverty and displacement.The impact of oil spills in South America is particularly critical, given the region's forests are rich with biodiversity and natural resources. One of the most detrimental cases of oil contamination occurred on the coast of Peru, near the capital of Lima. In 2022, a tanker operated by the company Repsol spilled over 12,000 barrels of crude oil into the Pacific Ocean.[89] The oil spread across more than 39 square miles of sea, contaminating beaches and nature reserves across the coast.[90] The incident alarmed experts on the spill's consequences on marine life and local fishing communities, who depend on local marine prey to operate fishing markets and feed their populations. Nonetheless, the spill threatened the survival of 180,000 birds, many of which included endangered species, and estimated that over 5,000 families were directly impacted by the contamination. President Pedro Castillo referred to the incident as Peru's "worst ecological disaster" in recent history and has marked the largest oil spill in Peru's history.[91]

After the disaster, there was widespread outrage as hundreds of demonstrators accused the company of downplaying the severity of the incident. The oversight of the impact of biodiversity, the displaced communities, and the destruction of natural resources led people to accuse the government of endorsing industries like these. Yet, this catastrophe has

87 Erik Vanem, Øyvind Endresen, Skjong Rolf, "Cost-effectiveness criteria for marine oil spill preventive measures," Reliability Engineering & System Safety, Volume 93, Issue 9, September 2008, https://doi.org/10.1016/j.ress.2007.07.008.
88 Mace G Barron, et al, "Long-Term Ecological Impacts from Oil Spills: Comparison of Exxon Valdez, Hebei Spirit, and Deepwater Horizon," Environ Sci Technol, June 2020, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7397809/.
89 Eugenia Sánchez, "Peru's Oil Spill and the Future of Extractive Industries in Latin America," Wilson Center: Latin America Program, April 8, 2022, https://www.wilsoncenter.org/blog-post/perus-oil-spill-and-future-extractive-industries-latin-america.
90 Dan Collyns, "Oil spill at sea: who will pay for Peru's worst environmental disaster?" The Guardian, March 7, 2022, https://www.theguardian.com/environment/2022/mar/07/oil-spill-at-sea-who-will-pay-peru-worst-environmental-disaster.
91 Marco Aquino, "Repsol faces second lawsuit in Peru over oil spill," Reuters, January 16, 2024, https://www.reuters.com/markets/commodities/repsol-faces-second-lawsuit-peru-over-oil-spill-2024-01-15/.

broader implications for Latin America, where a growing anti-extractivist movement has gained support. As people realize the imminent consequences of oil extraction on the environment, they re-consider the industry's prioritization.

In Argentina, thousands of protestors gathered in January 2022 to protest offshore oil exploration in Mar del Plata. The project was authorized to begin a new wave of oil drilling in deep waters, posing possible extreme ecological risks. Not only that, but the project would also dent many international and local efforts to protect the natural resources of the region.[92] Beyond the fear of facing possible oil spills, many environmental activists expressed concerns for the biodiversity that would be impacted by the project–including whales, dolphins, penguins, and other marine species. The impact could be irreversible and destroy several local fishing industries that rely heavily on marine resources for their livelihood.[93]

These developments among South American regions indicate a broader awakening for environmental issues. The intensifying impacts of climate change–from severe droughts to increased wildfires–have prompted a shift in people's priorities, pushing communities to take stronger stances on environmental protection. Regardless, change is only possible if governments actively support these efforts. By collaborating with local communities to prioritize local sustainable practices, it can be possible to protect natural resources and the vital species of Latin America.

Sustainable Development Goals

In 2015, the United Nations created the 17 Sustainable Development Goals (SDGs) meant to target various social, political, and economic issues worldwide. These goals were created to achieve a more equitable, peaceful, sustainable world, aiming to better the lives of all.[94] The SDGs tackle climate change, poverty, social inequality, and conflict. However, it is essential to recognize that these inequalities are all connected. Thus, they must be resolved simultaneously to prevent them from worsening. Working to conserve Amazon river dolphin habitats is necessary to help achieve SDG 12: Responsible Consumption and Protection and SDG 14: Life Below Water.

SDG 12 aims to ensure sustainable consumption and production patterns.[95] Globally, developed countries have a larger environmental footprint than developing nations due to more significant pollution and contamination. As global resource consumption continues to rise dramatically, the effects of climate change, environmental degradation, and biodiversity loss also escalate, severely affecting global species.[96] To practice wildlife conservation, measures must be taken to sustainably consume products and avoid wasting resources that are harmful to the environment, helping to achieve Targets 12.4 and 12.5. While countries continue to meet obligations related to the production and use of ozone-depleting substances according to the Montreal Protocol, e-waste generation has increased by 1.6 kg per capita in the past seven years.[97] This highlights the necessity of working to minimize water contamination as part of larger protocols to preserve the habitats of endangered species. As mercury pollution negatively impacts dolphins, sustainable resource management involving recycling and cleaner production techniques is necessary to promote healthy breeding.

SDG 14 has the largest connection to river dolphin habitats as it aims to conserve and sustainably use marine resources for sustainable development.[98] Target 14.1 aims to reduce marine pollution of all kinds significantly. It will be measured by plastic debris density through Indicator 14.1.1.[99] Target 14.3 works to minimize the impacts of ocean acidification through scientific cooperation. Increased acidity impacts how sound travels through the water. Since dolphins rely on echolocation

92 Natalie Alcoaba, "Argentinian activists fight against offshore drilling plans," Aljazeera, March 11, 2022, https://www.aljazeera.com/news/2022/3/11/argentine-activists-fight-against-offshore-drilling-plans.
93 Patricia Rodríguez, "Argentina's Vaca Muerta: 10 Years of Fracking and Local Resistance," The North American Congress on Latin America, January 15, 2024, https://nacla.org/argentina-vaca-muerta-fracking-resistance.
94 United Nations Department of Economic and Social Affairs, "THE 17 GOALS," Sustainable Development,https://sdgs.un.org/goals.
95 United Nations Department of Economic and Social Affairs, "THE 17 GOALS."
96 United Nations Department of Economic and Social Affairs, "Goal 12 |Ensure sustainable consumption and production patterns," Sustainable Development, https://sdgs.un.org/goals/goal12.
97 United Nations Department of Economic and Social Affairs, "Goal 12 |Ensure sustainable consumption and production patterns."
98 United Nation, "Goal 14 Indicators" accessed September 9, 2024, https://sdgs.un.org/goals/goal14#targets_and_indicators.
99 United Nation, "Goal 14 Indicators."

to hunt, travel, and locate each other, increased noise in the ocean impacts their communication.[100] Thus, it is necessary to collaborate with organizations and other countries to prevent the increased acidification of marine environments due to climate change, measured by Indicator 14.3.1.[101] Last, Target 14.a highlights the need for increased scientific knowledge and research capacity to improve ocean health and marine biodiversity. Although the ocean contributes to 2.5 percent of the world's gross value added, only 1.1 percent of national research budgets were allocated for ocean science.[102] Thus, investing in research and technology is necessary to understand river dolphin ecology, threats, and conservation strategies better.

Protecting Amazon river dolphins is crucial for the survival of this endangered species and for achieving the 2030 SDGs. To address SDGs 12 and 14, countries must enhance scientific research and reduce pollution to ensure a healthy planet for future generations. The interconnected nature of the SDGs also underscores the need for a coordinated effort between countries to protect the environment and the species that depend on it.

Bloc Analysis

Points of Division

The central points of division among nations in their approach to protecting endangered species revolve around the effectiveness and commitment of conservation efforts. Conservation efforts are shaped by various factors, including economic priorities, legal frameworks, and international cooperation that prioritize the survival of national wildlife. To differentiate these blocs, looking at the effectiveness of legal policies that determine protected areas and enforcing anti-poaching laws to minimize wildlife trade is vital. These policies are crucial as they directly impact the survival of endangered species and the overall health of their ecosystems. Policies that protect endangered species are significantly influenced by a state's level of access to resources and technology. These factors determine a state's ability to protect endangered species because higher levels of resources often provide the funds necessary to finance conservation programs and invest in anti-poaching technologies.[103] Additionally, states with more funds to invest in wildlife protection typically have more stable governance structures that allow them to implement legal frameworks that protect wildlife. Access to education and public awareness is also key, as states that prioritize education on endangered species tend to foster a culture of anti-poaching enforcement for endangered species.[104] In contrast, states with lower levels of resources may lack the money and technological infrastructure necessary to enforce conservation laws effectively. These countries might struggle to combat illegal wildlife trade as well, as they may depend on illicit markets to sustain their economy.[105]

However, the effectiveness of a state's policies to protect endangered species is determined by the availability of resources and the priority given to conservation efforts. For example, the first bloc describes states demonstrating strong efforts to protect endangered species. These countries typically have higher levels of biodiversity, prioritizing conservation as a key component of their national agenda. The second bloc describes states that are making efforts to protect endangered species. These countries are typically W.E.I.R.D. (Western, Educated, Industrialized, Rich, and Democratic) countries that have the resources for conservation but may lack the urgency to act.[106] This can be due to lower levels of biodiversity or a cultural emphasis that does not intensely focus on wildlife

100 IFAW, "The impact of climate change on dolphins," published March 7, 2024, https://www.ifaw.org/journal/impact-climate-change-dolphins.
101 United Nation, "Goal 14 Indicators."
102 United Nation, "Goal 14 Indicators."
103 United Nations Office on Drugs and Crime, "Module 5: Sustainable livelihoods and community engagement," In E4J University Module Series: Wildlife Crime, *UNODC*, January 2022, https://www.unodc.org/e4j/en/wildlife-crime/module-5/key-issues/mechanisms-for-incentivizing-community-conservation-and-reducing-wildlife-trafficking.html.
104 Daniel W.S. Challender, Stuart R. Harrop, Douglas C. MacMillan, "Towards informed and multi-faceted wildlife trade interventions," *Global Ecology and Conservation*, Volume 3, January 2015, https://doi.org/10.1016/j.gecco.2014.11.010.
105 Annika Mozer, Stefan Prost, "An introduction to illegal wildlife trade and its effects on biodiversity and society," *Forensic Science International: Animals and Environments*, Volume 3, December 2023, https://doi.org/10.1016/j.fsiae.2023.100064.
106 Andrew Sullivan, "Western, Educated, Industrialized, Rich, And Democratic," *The Atlantic: The Daily Dish,* October 4, 2010, https://www.theatlantic.com/daily-dish/archive/2010/10/western-educated-industrialized-rich-and-democratic/181667

protection. The last bloc comprises states that have not tried to protect endangered species. These countries often rely on illegal industries involving animal products, prioritizing endangered species' exploitation to sustain key illicit markets. Whether they have high or low resources, these nations typically lack a cultural commitment to biodiversity conservation and do not have the necessary legal frameworks to protect these species.

States that have strong efforts to protect endangered species

African states were found to be the top-performing states in wildlife conservation. Botswana, Namibia, Tanzania, and Zimbabwe have been found to prioritize wildlife conservation more than any other states in the world.[107] The African continent holds over 1,100 different mammal species, 60 carnivore species, 100,000 insect species, 3,000 freshwater fish species, and over 2,600 bird species, making up a significant part of global biodiversity.[108] African countries are at the forefront of protecting and conserving their species, including implementing environmental laws prohibiting poaching and hunting. In 1992, the Wildlife Conservation and National Parks Act enacted further provisions for conserving and protecting Botswana's wildlife. This legal framework prioritizes and understands the need to protect the nation's biodiversity, acting as an effective measure to sustain conservation efforts in the future. It criminalizes activities that negatively affect endangered species in the hope of regulating hunting, trade of wildlife, and their products.[109] Beyond protecting animals, the Wildlife Act considers any damage or harm done to a national park to affect a species's habitat negatively, thus endangering the species itself.[110] There must be specific permits to hunt–but most importantly, a limited list of animals can be hunted. With these strict regulations, Botswana keeps preserving the legacy of its diverse biodiversity for future generations. In addition, Namibia's efforts to protect wildlife have been considered a conservation success story. Given the country's economic reliance on natural resources, wildlife has been vigorously protected through legal frameworks and policies. For example, conservation efforts have insisted on safeguarding strategic locations outside national parks to allow free-roaming animals in their habitats. Due to the effectiveness of preserving animal's natural habitats, Namibia has increased elephant populations from 7,500 animals in 1995 to 22,000 in 2024.

On the other hand, Namibia has translocated over 10,000 animals of different species out of national parks and into communal areas restricted to animals.[111] These freehold areas have allowed endangered species to boost populations without the threat of human activity and contamination. With rapid urbanization, these states have prioritized isolating endangered species from human activity, allowing the animals to reproduce without the stress of danger.

States that are developing efforts to protect endangered species

Developed countries represent states that have shown to develop efforts to protect endangered species. An expanded state can be considered one that is equipped with functioning infrastructure, technology, and education while promoting individual's civil liberties.[112] To measure a state's level of development, the United Nations considers its political stability, industrialization, and level of freedom while using the Human Development Index (HDI) to consider a state's human development. HDI is the average measure of dimensions of human life, such as health, mortality, life expectancy, decent standard of living, average family income, etc. Human development, politics, education, and industrialization make up the critical dimensions of a state's development.[113]

107 "Affluent countries give less to wildlife conservation than rest of the world," *University of Oxford*, May 4, 2017,https://www.ox.ac.uk/news/2017-05-04-affluent-countries-give-less-wildlife-conservation-rest-world.
108 Abby Parks, "Wildlife in Africa," AZ Animals, February 3, 2023, https://a-z-animals.com/animals/location/africa/.
109 Food and Agriculture Organization of the United Nations, "Wildlife Conservation and National Parks Act." Botswana, Chapter 38:01, December 31, 2008, https://www.fao.org/faolex/results/details/en/c/LEX-FAOC004728/.
110 Wamukoya, Didi, "Robust legal safeguards secure Botswana's wildlife," African Wildlife Foundation, June 5, 2018, https://www.awf.org/blog/robust-legal-safeguards-secure-botswanas-wildlife.
111 NASCO, "Keep Namibia's Wildlife on the Land," Conservation Namibia, accessed July 24, 2024, https://conservationnamibia.com/other/wildlife-on-land-2019.php.
112 Klugman J, Rodríguez F, Choi HJ, "The HDI 2010: new controversies, old critiques," Human Development Research Paper, January 2011, http://hdr.undp.org/en/content/hdi-2010-new-controversies-old-critiques.
113 World Health Organization, "Human development index," United Nations Development Programme, accessed July 27, 2024, https://www.who.int/data/nutrition/nlis/info/human-development-index.

In efforts to protect wildlife, developed countries have proven to enforce strong legislation for environmental protection. For example, Iceland has committed to strategically restricting 25 percent of their country to protect under national parks and reserves. They intend to protect the habitats of the species that inhabit their island, preserving them from threats of human activity and urbanization.[114] Moreover, Iceland has integrated the Icelandic Ministry for the Environment and Natural Resources, which has governmental power to enforce policies and legislation prohibiting hunting endangered species and conserving natural resources. Australia is another developed state that is developing efforts to protect endangered species. Currently, Australia faces severe threats to its natural habitats–from land degradation, increased wildfires, and the spreading of invasive species. However, the government has taken action to implement the EPBC Act Conservation Agreements, uniting the Australian Government Environment Minister and any other organization to protect biodiversity.[115] Over the next ten years, the EPBC Act Conservation Agreements will prioritize funding national parks to increase security measures, prohibit poaching and hunting of wildlife, and breed the various species of plants and animals that are going extinct. Moreover, the plan will isolate regions of Australia with the most abundant wildlife and preserve their environment, hoping to rebreed the populations of endangered animals naturally. Lastly, Hong Kong has worked to establish an effective wildlife and biodiversity conservation system. In 1976, Hong Kong became a part of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).[116] This convention established mandates prohibiting killing, selling, importing, or exporting endangered animals. Furthermore, they have established an award system for people who inform and catch the illegal trade of endangered animals, incentivizing communities to take part in this initiative.

Similar projects outlining similar objectives have been employed by other developed countries. The trend that proves a state is developing efforts to protect endangered species can be spotted in the type of legislation and policies they enact and whether they prioritize conserving natural habitats and protecting biodiversity.

States that have ineffective efforts to protect endangered species

Ineffective efforts to protect endangered species occur when a state depends on the illegal trade of endangered species and on the destruction of their natural habitat. These trends are most apparent among industrializing countries, which promote and expand manufacturing at the cost of destroying the natural environment and its wildlife.

Among the worst performing in protecting endangered species is Viet Nam, having the highest rate of poaching for rhinos and tigers.[117] In 2011, 448 South African rhinos were killed to sell and trade their horns in Viet Nam illegally. According to a report by the World Wildlife Fund, a majority of poachers arrested in South Africa for acquiring rhino horns illegally were Vietnamese, reinforcing the strength of the illegal trade.[118] This trade has brought about a poaching crisis in South Africa, where the number of South African rhinos is already scarce and has already diminished by 262 rhinos this year. In addition, inadequate surveillance of illegal species trade in China has made the African elephant susceptible to illegal markets. The state has failed to effectively patrol illegal ivory markets that have killed various African elephants, provoking the endangerment of the species.[119] As poachers hunt and kill elephants in South Africa, their valuable tusks are transported to Thailand, Vietnam, and Egypt, where they are illegally trafficked. The World Wildlife Fund has notified China's lack

114 Saluja, Raslin, "Steps taken by developed nations to protect the wildlife," Pleaders, June 21, 2021, https://blog.ipleaders.in/steps-taken-developed-nations-protect-wildlife/#Efforts_by_some_developed_countries.
115 Department of Climate Change, Energy, and Environment and Water, "Conservation agreements under the EPBC Act in Australia," Australian Government, 1999, https://www.dcceew.gov.au/environment/epbc/permits-and-regulation conservation-agreements.
116 National Oceanic and Atmospheric Administration, "Convention on International Trade in Endangered Species of Wild Fauna and Flora," U.S. Department of Commerce, February 28, 2023, https://www.fisheries.noaa.gov/national/international-affairs/convention-international-trade-endangered-species-wild-fauna-and.
117 WWF, "Countries fail to protect endangered species from illegal trade." *World Wildlife Fund*, July 23, 2012. https://wwf.panda.org/wwf_news/?205727/Countries-fail-to-protect-endangered-species-from-illegal-trade
118 WWF. *World Wildlife Fund*, July 23, 2012.
119 United Nations Environmental Programme. "UN Environment welcomes first moves to enforce ban on the ivory trade in China." Illegal Trade in Wildlife, March 31, 2017. https://www.unep.org/news-and-stories/story/un-environment-welcomes-first-moves-enforce-ban-ivory-trade-china

of policing illegal ivory and their attempt to make the trade legal. In fact, other states have attempted to protect against the illegal trade of endangered species of animals, considering the quantity of money the people receive from the illegal trade.[120] This trend has been highlighted in various developing states that depend on illegal trade to sustain their economies. For example, Thailand continues to support the illegal trade of ivory through a legal loophole that allows the trade of ivory to continue. Yet, tens of thousands of endangered African elephants are killed daily, eliminating them from existence.[121] Ongoing illegal trades will eventually come to an end when a species goes extinct, though reestablishing once again with a new animal and a new market. This trend of unsustainable trade poses a threat to all species, which, with time, could become targets of illegal trading. Lastly, Central Africa has reached crisis levels of poaching. High levels of poaching in Central Africa have now been considered wildlife crimes, where animals and people face the risk of losing territory, stability, and the rule of law of the regions they inhabit.[122] To eliminate the threat of illegal trade of endangered animals in Central Africa, there must be regional cooperation that counters the flow of illegal products, such as ivory and illegal arms.[123]

Committee Mission

The Convention on the Conservation of Migratory Species of Wild Animals (CMS) is an environmental treaty of the United Nations Environmental Programme (UNEP). Its primary purpose is to bring together the states through which migratory animals pass and other range states to lay the legal foundation for internationally coordinated conservation measures.[124] To do so, it cooperates with other international organizations, non-governmental organizations, media partners, and the corporate sector. Specifically, it aims to determine which migratory animals are threatened and to return them to stable population numbers.

In its convention text, the CMS outlines two lists of animals. Those that are threatened with extinction are listed within Appendix I of the Convention.[125] The CMS aims to protect these animals by conserving their habitats, mitigating obstacles to migration, and controlling other factors that might endanger them. Appendix II lists migratory species that need or would significantly benefit from international cooperation.[126] For these species, range states are encouraged to reach global or regional agreements. Through agreements, the convention performs a variety of actions while collaborating with party states, such as research and designating new protected areas.[127]

Since 1991, the Amazon river dolphin (*Inia geoffrensis*) has been listed in Appendix II.[128] However, an agreement to prevent habitat encroachment and destruction has not yet been created. Thus, CMS delegates must collaborate with experts and other party states to build new conservation programs and strengthen existing ones. Without urgent intervention, this species risks extinction in the coming years.

120 Gabriel, Grace Ge. "Will China Say No to Wildlife Trade?" *United Nations | UN Chronicle*, No. 2 Vol.LI, Illegal Wildlife Trade, September 2014. https://www.un.org/en/chronicle/article/will-china-say-no-wildlife-trade
121 International Union for Conservation of Nature and Natural Resources. "African elephant species now Endangered and Critically Endangered." IUCN Red List, March 25, 2021. https://iucn.org/news/species/202103/african-elephant-species-now-endangered-and-critically-endangered-iucn-red-list
122 Nowell, Kristen. "Wildlife crime scorecard: Assessing compliance with and enforcement of CITES commitments for tigers, rhinos and elephants." *World Wildlife Fund*, 2012. https://wwfint.awsassets.panda.org/downloads/wwf_wildlife_crime_scorecard_report.pdf
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124 "About CMS," Convention on the Conservation of Migratory Species of Wild Animals, accessed September 24, 2024, https://www.cms.int/en/legalinstrument/cms.
125 "Appendix CMS," Convention on the Conservation of Migratory Species of Wild Animals, accessed September 24, 2024, https://www.cms.int/en/legalinstrument/cms.
126 "Appendix CMS," Convention on the Conservation of Migratory Species of Wild Animals.
127 "About CMS," Convention on the Conservation of Migratory Species of Wild Animals,
128 "Amazon River Dolphin - Inia geoffrensis," Convention on the Conservation of Migratory Species of Wild Animals, accessed September 24, 2024, https://www.cms.int/en/document/amazon-river-dolphin-inia-geoffrensis.

Research and Preparation Questions

Your dais has prepared the following research and preparation questions as a means of providing guidance for your research process. These questions should be carefully considered, as they embody some of the main critical thought and learning objectives surrounding your topic.

Topic A

1. If your country has been involved in the ivory trade, what economic issues are they facing in their communities with the implementation of restrictions on elephant poaching?
2. Has your country utilized new technologies, such as Artificial Intelligence, to mitigate an issue related to wildlife preservation? Is it worth pursuing? If so, how could they improve it?
3. How have your country's national and community governments cooperated in wildlife preservation in the past? How can those methods be improved today?
4. Is the illegal exploitation of elephants related to other forms of environmental degradation? How does it directly and indirectly affect the environment?
5. What are the social, economic, and cultural impacts of poaching on African communities? How does the international community position itself and act in this regard?
6. What are the motivating causes of the illegal poaching of African elephants, and who stands to benefit from this illicit trade?
7. In what ways does the illegal exploitation reflect broader patterns of exploitation of various resources in developing countries?

Topic B

1. Has your country participated in efforts to mitigate the progress and effects of climate change? How can these tactics be applied to the Amazon to promote marine conservation and biodiversity?
2. Local communities are a valuable resource due to their hands-on experience and knowledge of the animals and their habitats. What actions can your delegation take to incorporate local communities into solutions for issues concerning the preservation of migratory animals?
3. Has your country previously taken a stance on or invested in scientific research for the protection of marine animals and their habitats?
4. How can your delegation ensure that they do not rely on ecotourism to preserve river dolphins? How will states manage ecotourism to maintain it as equitable and noninvasive as possible?
5. Has the possibility of implementing monitoring measures in the targeted regions been discussed? Are there any resolutions or legislative measures currently in place?
6. How can your country guarantee the protection of these animals in the face of the global climate change scenario? Is there a possibility of reversing the negative effects on these animals?
7. What are the economic activities behind this issue and how do they continue to motivate this illegal practice by criminal groups?

Important Documents

Topic A

"Combating the Illegal Trade in African Elephant Ivory With DNA Forensics." Conservation Biology 22 (4): 1065–71. https://doi.org/10.1111/j.1523-1739.2008.01012.x.

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Topic B

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Topic A

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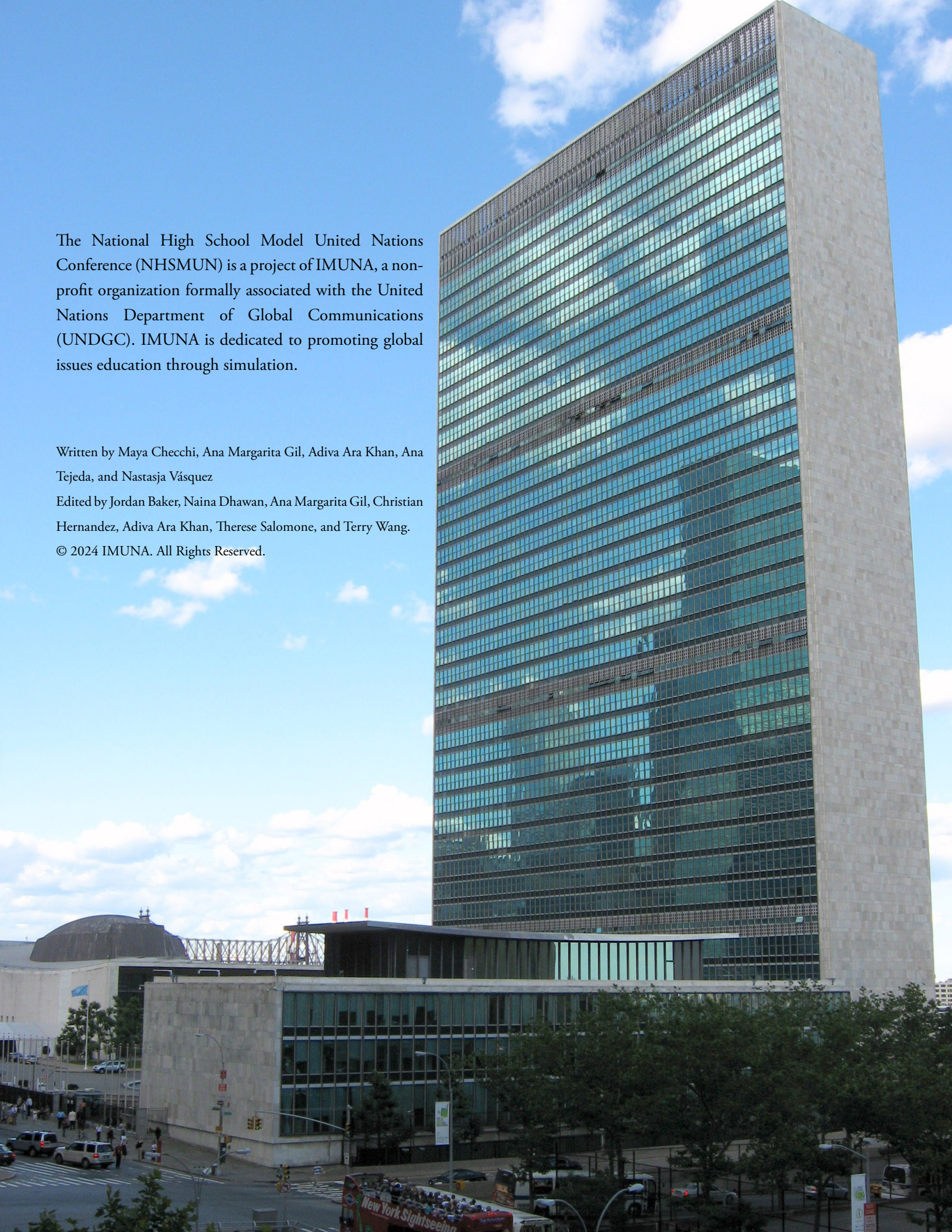

The National High School Model United Nations Conference (NHSMUN) is a project of IMUNA, a non-profit organization formally associated with the United Nations Department of Global Communications (UNDGC). IMUNA is dedicated to promoting global issues education through simulation.

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