

United Nations Environment Programme
Wildlife Sanctuaries



JACKRABBIT MUN VIII

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CO-HEAD CHAIR LETTERS

Hey Yall!

My name is Claire McFarland and I will be your chair in Wildlife Sanctuaries. am a sophomore at Poly High School and this is my first year of Model UN. So far MUN has been a cool and very interesting experience, especially meeting all types of people. My very first conference was UCLA Bruin Mun. My experience was fun but also kinda crazy being thrown into such an intense conference filled with intense delegates who all wanted awards. I will be honest, the first day I said I never wanted to go back but after the second day, I will admit I had a pretty good time.

Other than MUN, I am on the varsity soccer team and lacrosse team. I have played soccer since I was 4 years old and I just started lacrosse in February. I also enjoy hobbies like skiing, swimming, and cooking. I can't decide if I like summer or winter better solely based on getting to ski. I am so excited to chair this room because I love animals, especially my chocolate lab puppy, Duke.

I hope y'all are looking forward to this conference. Trust me it's the best SoCal conference ;). Anyways I hope yall have fun in the room but not too much fun afterall its still Model UN.

Sincerely,

Claire McFarland

UN-Habitat | Co-Head Chair

clairemcf2010@gmail.com



CO-HEAD CHAIR LETTERS

Hey guys!

My name is Zara Birk and I will be one of your chairs in wildlife sanctuaries. I am a sophomore in PACE and have been in Model UN for two years now. I think Model UN is a really great experience and I really enjoy researching and learning about all the cool topics we get to discuss. My first conference was CondorMun last year. I had a lot of fun, although it was definitely overwhelming as I was placed in an advanced committee. But that experience definitely helped me grow a lot as a delegate and pushed me to participate more in MUN.

Outside of MUN, I play soccer for Poly with Claire, and I also love to skate and surf whenever I get the chance. Some of my favorite hobbies are cooking, reading, listening to music, and doing pretty much any kind of craft or art project. I also volunteer a lot with a non-profit organization that helps rescue dogs, which is something I'm super passionate about.

I'm super excited to be co-chairing this committee and can't wait to see all the thoughtful debate and different points of view you guys bring to the room. If you have any questions feel free to reach out and ask!

Sincerely,

Zara Birk

UN-HABITAT | Co-Head Chair

zarabirk@icloud.com



POSITION PAPER GUIDELINES

- Position Papers are due at 11:59 PM on **Sunday, May 17th**.
- Delegates **must** submit position papers to be eligible for **research AND committee awards**.
- Position Papers can be submitted through a Google form:
 - <https://forms.gle/H3ruhahP2SQuEPs38>
- At the top of each paper, include your character/country name, first and last name, school name, and appropriate committee.
 - United States
 - First Last
 - School Name
 - UNEP
- Papers should be emailed as a PDF file
 - Paper content should also be copied and pasted into the body of the email so it can still be graded in the event of any technical difficulties
 - Please name the file and subject line of the email [Committee_Country]
 - Ex. **UNEP_United States**
- Papers should be 1-2 pages in length with an additional Works Cited page in MLA format
- Papers should be single-spaced in Times New Roman 12 pt. font and include no pictures or graphics
- Please include the following sections for each committee topic:
 - Background & UN Involvement
 - Position of your Country
 - Possible Solutions

If you have any questions or concerns, please email one of your chairs.



TOPIC SYNOPSIS

Wildlife sanctuaries are protected areas established to conserve endangered species, preserve habitats, and maintain biodiversity under the threat of growing human urbanization and environmental changes. The United Nations Environmental Programme aims to prevent biodiversity from facing dangers such as poaching, deforestation, illegal wildlife trade, and climate change. Wildlife sanctuaries can include forests, grasslands, and marine areas. They often exist in places where local communities depend on the land for survival.

Much of wildlife is at risk, and the percentage of endangered species grows each year. The largest cause of wildlife extinction is habitat loss and fragmentation, and human activity such as deforestation, urban development, and pollution destroy natural ecosystems and put plants and animals in constant danger. An unbalanced ecosystem can affect food chains, tourism industries, and climate stability. In order to protect the natural environment, the UNEP created wildlife sanctuaries.

Unfortunately, many of these sanctuaries struggle to reach success due to lack of funding, weak enforcement, or human development conflict. Protecting wildlife is not just about saving animals, it also means sustaining economies. In this committee, delegates will discuss how UNEP can improve the effectiveness of wildlife sanctuaries around the world, and within their countries. You will debate conservation, prevention, and cooperation efforts, in the face of social and economic challenges.



COMMITTEE DESCRIPTION

The United Nations Environment Programme (UNEP) is the United Nations' leading global authority on the environment, driving transformational change on the triple planetary crisis: the crisis of climate change, the crisis of nature, land, and biodiversity loss, and the crisis of pollution and waste.

Since its founding in 1972, UNEP has served as a neutral convener of Member States, civil society, the private sector and UN agencies to address humanity's most pressing environmental challenges. From protecting species to restoring the ozone layer, UNEP-facilitated international agreements have made global environmental action possible throughout the years. Today, UNEP hosts the United Nations Environmental Assembly, the world's highest-level decision-making body on the environment, with a universal membership of all 193 United Nations' Member States.

Through robust science, global coordination and powerful advocacy, UNEP continues to support all UN Member States – and all of society – to achieve the Sustainable Development Goals and forge a future where people and the planet live in harmony.

With a workforce of nearly 3,000 people across 41 countries and territories, UNEP's mission is to inform, enable, and inspire nations and peoples to improve their quality of life while safeguarding the environment for future generations.



Nature is humanity's lifeline. Human health, food, economies and well-being depend on nature. Yet nature is in crisis. One million of the world's estimated 8 million species of plants and animals are threatened with extinction. Meanwhile, ecosystem degradation is affecting the well-being of 40 per cent of the global population.

The spotlight on nature and biodiversity highlights updates from around the UN System, from partners and others, helping to call attention to the need for a just, prosperous and sustainable future for all.



BACKGROUND

HISTORY OF WILDLIFE SANCTUARIES

Historically, the word sanctuary signified a sacred or protected place of refuge. By the late nineteenth century, however, the term began to be applied to areas specifically set aside to protect wildlife from endangerment from hunting and exploitation. During this period, rapid industrialization—causing increased hunting and habitat destruction—was quickly leading to dramatic declines in wildlife populations. This triggered the early conservation movement, which was led by scientists, naturalists, and policymakers who advocated for the establishment of protected areas for endangered wildlife. Influential thinkers such as John Muir and Gifford Pinchot played major roles in shaping early conservation policy and raising public awareness of environmental protection.

One of the movement's earliest champions was Theodore Roosevelt, who founded the Boone and Crockett Club in 1887, a hunting conservation organization focused on promoting the protection and conservation of wildlife, especially big game and its habitat, in order to preserve and encourage sport hunting. In 1903, U.S. President Theodore Roosevelt established the first federal wildlife refuge. Named Pelican Island National Wildlife Refuge, in an effort to protect brown pelicans in Florida from commercial hunting. The creation of the first federal wildlife refuge laid the foundation for the United States National Wildlife Refuge System and inspired the establishment of protected wildlife areas globally.

In many regions, former royal hunting grounds and colonial hunting reserves began to be transformed into wildlife sanctuaries. One key example of this is the Darrah Wildlife Sanctuary in India; originally a royal hunting reserve belonging to the



Maharaja of Kota, the land was later declared a protected sanctuary in 1955 to protect its dry deciduous forest and wildlife. It was later incorporated into the Mukundra Hills Tiger Reserve, becoming a part of the third dedicated tiger reserve in India.

As time progressed, countries increasingly began to create wildlife sanctuaries to protect endangered species and habitats. Some of these sanctuaries gained global protection through organizations such as the United Nations Educational, Scientific, and Cultural Organization (UNESCO) and others, including the International Union for Conservation of Nature (IUCN) and the United Nations Environmental Programme (UNEP). These organizations supported the creation and management of protected areas worldwide, as they continued to recognize wildlife sanctuaries as essential tools for preventing the species extinction and preserving vital ecosystems. International agreements such as the Convention on Biological Diversity further encourage countries to establish and effectively manage protected areas, including wildlife sanctuaries, as part of global efforts to conserve biodiversity.

As conservation strategies developed, efforts increasingly focused not only on the recovery of environments and ecosystems, but on protecting and recovering specific endangered species—often keystones in their environment—whose populations had declined dramatically. In order to more effectively help these certain critically endangered species, conservation efforts began to create sanctuaries focused on the recovery of a singular endangered species within a region, pinpointing their efforts in order to provide more effectual aid to the species. These initiatives aim to improve breeding success, habitat protection, and long-term population recovery.

Today, wildlife sanctuaries serve a multitude of purposes, including the protection of endangered species, habitat conservation and biodiversity preservation, scientific research and monitoring, and wildlife rehabilitation and rescue. Modern



sanctuaries are also implementing an increasing amount of technology to their conservation methods, with the addition of improved trackers that allow them to keep an eye on large populations and migrating herds without interfering. Additionally, increased community engagement through social media platforms continues to spread awareness of these pressing issues to people all over the world.

CLIMATE CHANGE

Climate change, or long-term shifts in temperature and weather patterns largely driven by human activities since the industrial revolution, is a detrimental change which affects ecosystems around the world, leading to the endangerment and extinction of thousands of species and the destruction of many key ecosystems. This is often linked with the Greenhouse Effect, the natural atmospheric process that warms a planet's surface by trapping heat from the Sun. On earth, this is the cause of global warming, as more and more greenhouse gases like carbon dioxide, methane, nitrous oxide, and ozone are released into the earth's atmosphere due to industrialization. These gases then contribute to the re-radiation of infrared energy back toward Earth's surface, leading it to build and heat global temperatures instead of being released harmlessly into space.

While natural greenhouse gases stabilize the planet's temperature and enable liquid water to exist on earth, these increases lead to higher global mean temperatures, rising sea levels, and shifts in extreme weather. This has resulted in the increase of global average temperatures by about 1.1-1.2 °C since pre-industrial times with the last decade being the warmest on record regarding global temperatures.

Scientific consensus shows human activities are the primary driver of climate change, as burning fossil fuels for energy, industrial production and manufacturing,



deforestation, waste management and landfills, and agricultural production are affecting the earth's climate. As the burning of fossil fuels for electricity generation, heating, and industrial processes releases large amounts of carbon dioxide, which is the largest contributor to greenhouse gas emissions globally. Additionally, the expansion of global food demand due to rising populations has increased the scale in which agricultural practices contribute to climate change, primarily through the release of methane and nitrous oxide. While most Methane is produced during the digestion process of livestock such as cattle and sheep and released into the air directly from their bodies, another major contributor of methane into the atmosphere is rice cultivation, as large fields are flooded in order to grow the highly sought after commodity. This blocks oxygen from penetrating the soil, creating ideal conditions for bacteria to grow and reproduce, which releases methane. Meanwhile, the use of synthetic fertilizers and manure releases Nitrous Oxide due mainly to run off from fields into waterways, leading the nitrogen to break up and enter the atmosphere. This climate change is linked to a multitude of environmental effects, including the melting of glaciers and polar ice sheets and bleaching of coral reefs.

POACHING

The threat of poaching is a major threat in the management and protection of wildlife and the functionality of wildlife sanctuaries on a global level. Poaching, the illegal capture and killing of wild animals, typically targets animals whose body parts are highly prized and valuable, such as ivory, horns, skins, and scales. The unlawful trade of wildlife products has gotten poachers up to billions of dollars every year and has become a leading global criminal industry. Due to this profitability, the lack of effective legislation and the limited capacity and resources of wildlife protection



agencies encourages poaching within protected areas and wildlife sanctuaries and can have very few repercussions.

A number of species are more prone to poaching activities due to the demand for certain parts of their bodies. For example, elephants are often hunted because of the ivory found in their tusks, while rhinos are hunted because of the horns they carry, which are used in the production of medicine and luxury items. Similarly, tigers, pangolins, and sea turtles are also commonly hunted because of the skins, scales, and meat they carry. Poaching of such animals affects the ecological balance of the ecosystem because the elimination of a particular species affects the biodiversity of the wildlife sanctuary. The elimination of a particular herbivore or a predator affects the vegetation of the area, thereby affecting the biodiversity of the wildlife sanctuary. In some instances, animals are on the verge of extinction because of excessive hunting that affects the ecological balance of the ecosystem.

Socioeconomic factors are also some of the factors that contribute to the continuation of poaching activities in various parts of the world. In particular, some of the communities living near the wildlife sanctuary might be relying on the resources of the sanctuary, which might force them to engage in illegal hunting activities because of the poor economic status of the area, as well as the lack of jobs in the area. In addition, some of the animals might be a threat to the crops of the people, which might force the people of the area to engage in poaching activities as a way of protecting their resources.



URBANIZATION AND DEFORESTATION (CLAIRE)

The simple definition of urbanization is the process of making an area more urban—big cities, growing populations, and endless opportunities. That all sounds great, but what impact does urbanization have on wildlife? Urbanization disrupts habitats, causes pollution, causes habitat fragmentation, and overall puts species in new and unnatural danger. Centuries of untouched ecosystems can be forever ruined by construction.

According to a study by Science Direct, urbanization has led to an almost 2% decline in habitat between 2000 and 2020. That number represents over 800 species that are directly at risk of extinction and the US alone has lost over 50 species in the last century. The creation of new neighborhoods and buildings for humans comes with the destruction of 100,000 miles of wildlife habitats. When roads are built through forests or mountains, it causes fragmentation, splitting up and isolating ecosystems. “Wildlife crossing” signs are everywhere when driving through nature highways, as those highways divide the land where animals such as deer or meese used to roam freely.

Another huge threat to biodiversity that is often linked with urbanization is deforestation, the permanent clearing of forested land. This act is driven by human activity, as the land is turned into places of livestock ranching, mining, or urban development. These processes directly disrupt, ruin, and in some cases, completely remove wildlife habitats.



POLLUTION

Pollution is widespread globally and poses a significant risk to wildlife. Habitat destruction, reproductive failure, and decreased biodiversity are among the several consequences of pollution that impact aquatic and terrestrial ecosystems. These effects are likely to increase without the efforts of nations and are often driven by human development.

Aquatic and Marine sanctuaries are home to a variety of species whales, seals, sea turtles, fish, frogs, phytoplankton, and more. Their habitats are put at risk by fertilizers and sewage from nearby urban settlements. They contain nitrogen, phosphorus, and organic compounds that facilitate algae growth. When algae die, nearby bacteria decompose their organic matter, depleting the oxygen level in water (hypoxia). Nearby aquatic organisms are unable to access oxygen in these areas and are deemed dead zones where they cannot survive. Another effect of urban environments is plastics that are blown in by the wind or washed by rain into the water. Animals can digest the plastic, causing ingestion and choking, leading to their death. Chemicals from oil or washed-up medications can also intoxicate these animals and bioaccumulate in environments. Endocrine disruptors also derive from chemicals (BPA and PCBs) and can interfere with reproductive systems, reducing fertility and decreasing the population.

Terrestrial sanctuaries include animals such as birds, elephants, and bears. Their habitats are put at risk by deforestation. The process by which trees are cut down in forests and used as resources for building infrastructure. This leaves animals without the resources needed for their survival. For example, plants, fruits, shelters, and prey. Leading to their starvation and makes them widely visible to predators. Air pollutants emit nitrogen and sulfur into the atmosphere and fall back to the



environment through rain. This acid rain has higher PH levels than plants can absorb, leading to more vegetation dying out. Increased levels of nitrogen can also lead to the excessive growth of plants that absorb it, reducing biodiversity and leaving animals without the essential plants they need for food. Improper waste disposal of chemicals can also degrade soil, making it infertile. Runoff from nearby pesticides used for protected crops grown by farmers leaches into the soil and nearby groundwater, poisoning the animals that drink water and eat vegetation from those sources.

Other forms of pollutants that disrupt wildlife are noise and light. Light pollution is caused by the lights used to light up cities, towns, buildings, and homes. These lights can disrupt nocturnal animal activity by making them visible to predators and can cause migratory birds to follow them and collide with infrastructure. Noise pollution is caused by urban activity such as vehicles, buses, aircraft, and construction sites. These noises can disrupt mating calls between birds, disrupt sound cues for animals hunting prey, and make animals afraid of taking food from urban areas.

INVASIVE SPECIES

Invasive species are a major and recurring problem in ecosystems around the world, and they can significantly damage wildlife sanctuaries. Invasive species are defined as non-native species plants, animals, or other organisms that cause harm to the environment, the economy, or local ecosystems. These species are not originally part of the habitats they invade, and once introduced they often spread quickly because they lack natural predators or controls. As a result, they can outcompete native species for food, water, and space, which can lead to long-term ecological imbalance. In wildlife sanctuaries, where the goal is to preserve biodiversity and



protect vulnerable species, the presence of invasive species can undermine conservation efforts and threaten already fragile ecosystems.

Invasive species are often introduced through human activity. Some are spread accidentally through global trade, travel, and transportation, while others are introduced intentionally for agricultural, landscaping, or scientific purposes. Once established, these species can spread rapidly beyond their original introduction point. Although invasive species can be found almost everywhere in the world, they are especially common in island ecosystems. Islands often have unique species that evolved in isolation, which makes them particularly vulnerable to these outside organisms. Areas with heavy human development, major trade hubs, and tropical or warm climates also tend to experience higher rates of invasive species because they provide many opportunities for species to be transported and survive new environments.

In the United States, certain regions face especially high levels of invasive species. States such as Hawaii, Florida, and California report some of the highest numbers of invasive organisms. These locations combine several of the conditions that allow invasive species to thrive, including busy ports, warm climates, and large human populations. California in particular is known for its rich biodiversity, but the diversity is increasingly under threat from a range of environmental pressures.

Several invasive species have already caused serious ecological and economic damage in California. The golden mussel, for example, has the potential to cause millions of dollars in damage by clogging water infrastructure and increasing maintenance costs. Brazilian egeria, an aquatic plant, forms dense underwater mats that block sunlight, clog irrigation systems, and reduce overall water quality. On land, the yellow starthistle is a highly aggressive weed that spreads rapidly and crowds out



native grasses, reducing the biodiversity of grassland ecosystems. Another plant, the giant reed, grows in thick stands that displace native vegetation and increase wildfire risk because the dry plant material is very flammable. Invasive species can threaten both natural habitats and the stability of wildlife sanctuaries.



UNITED NATIONS INVOLVEMENT

United Nations Framework Convention on Climate Change

In 1992, the United Nations Framework Convention on Climate Change was adopted at the Earth Summit in Rio de Janeiro. As the first intergovernmental treaty to address climate change, the UNFCCC facilitates the annual Conference of the Parties (COP) meetings with 198 members, making it the largest global climate summit. At the COP meetings, nearly every country comes together to discuss methods of how to reduce greenhouse gas emissions, uphold the goals of previous frameworks, and ways to fund regions impacted by climate disasters.

Kyoto Protocol

The Kyoto protocol was adopted on December 11, 1997 to reduce greenhouse gasses for the global effort to combat climate change. This was the first international treaty requiring binding emission reduction targets for developed countries. It introduced mechanisms such as carbon trading and clean development projects. This reduced total emissions on average by 5% below the 1990 levels. The Clean Development Mechanism (CDM) invested in cleaner technology and international reporting standards. This helped with countries' accountability and transparency about their emission rates.

Paris Agreement

The Paris Agreement was created on December 12, 2015 at the COP21 UN Climate Change conference in Paris. This agreement aimed to limit global temperature rise to well below 2°C, ideally 1.5°C. Switzerland was first to submit Nationally Determined



Contributions (NDCs) outlining emission reduction plans. These plans emphasized global cooperation and climate finance. The agreement was legally binding and required 195 countries to submit climate goals every five years. Each year the goals get increasingly more ambitious . One specific goal is net zero which hopes to achieve a balance between the amount of greenhouse gas emissions and the amount removed from the atmosphere.



BLOC POSITIONS

African Bloc:

Africa holds much of the world's biodiversity, but lacks funding. The African Bloc would strongly support wildlife protection and anti-poaching measures. With heavy emphasis on international funding and technical assistance, countries would promote community-based conservation and demand assistance for human and wildlife conflicts. Using financial support from developed countries, ranger training programs, and anti-trafficking enforcement, African countries can keep their wildlife safe.

Asia-Pacific Bloc:

In these Asian-pacific countries, biodiversity loss is linked to urbanization and poverty. Due to this, this bloc would advocate for balance between economic development and conservation. Countries like China and Japan, being most developed and advanced, would emphasize sovereignty in their suggested solutions. Overall, solutions would generally be strong on conservation funding, concerned with trafficking routes, and respectful to domestic policies.

Western European and Developed Bloc:

The Western European bloc, consisting of the US, Russia, France, UK, Australia, Canada and Iceland support strict conservation standards. This bloc pushes for binding agreements, monitoring mechanisms, and climate-biodiversity links. These countries want transparency in their reporting. They also want illegal wildlife trade to be criminalized. Russia would be most focused on sovereignty and the US would be most cautious about binding commitments.



Middle Eastern Bloc:

The Middle Eastern bloc, including countries like Jordan and Saudi Arabia, would support sustainable conservation strategies that work in arid and desert ecosystems. They would likely promote water conservation and wetland protection programs, since many regional ecosystems are threatened by drought and water scarcity. Lastly, they encourage technology-based conservation, such as satellite monitoring, drones, and AI systems to track wildlife populations.

Latin American and Caribbean Bloc:

Mexico, Brazil, Colombia, and other countries in the Latin American and Caribbean bloc would suggest large protected areas and wildlife corridors to maintain biodiversity in tropical forests and ecosystems. They would advocate for cross-border conservation agreements for ecosystems that span multiple countries and support international funding and climate finance for rainforests and other biodiversity hotspots.



QUESTIONS TO CONSIDER

1. To what extent is pollution correlated with your nation's infrastructure? Would limiting pollution also affect national development?
2. How can your nation continue with urbanization or start more development, while maintaining wildlife ecosystems?
3. What are ways your nation can minimize invasive species and stop them at the root before they disrupt ecosystems?



WORKS CITED

Invasive species links:

- Invasive Species. US Fish & Wildlife Service. <https://www.fws.gov/initiative/invasive-species/invasive-species-refuges>
- California Invasive Species: A Growing Challenge for the Golden State. Naisma. Published November 1, 2026 <https://naisma.org/2025/11/01/california-invasive-species-a-growing-challenge-forthe-golden-state/>
- Invasive Species. National Wildlife Federation.
 - National Wildlife Federation. “Invasive Species.” The National Wildlife Federation, National Wildlife Federation, 2018, www.nwf.org/Educational-Resources/Wildlife-Guide/Threats-to-Wildlife/Invasive-Species.

Urbanization links:

- “The Urbanization of Wildlife.” Www.crittercarewildlife.org, 5 Jan. 2024, www.crittercarewildlife.org/wildlife-urbanization
- Wan, Mingxuan, et al. “Estimating and Projecting the Effects of Urbanization on the Forest Habitat Quality in a Highly Urbanized Area.” Urban Forestry & Urban Greening, <https://doi.org/10.1016/j.ufug.2024.128270>

Poaching Links:

- J. Marcus Rowcliffe, et al. “Do Wildlife Laws Work? Species Protection and the Application of a Prey Choice Model to Poaching Decisions.” Proceedings of the Royal Society B: Biological Sciences, <https://pmc.ncbi.nlm.nih.gov/articles/PMC1691897/>
- “Illegal Wildlife Trade and Poaching Explained.” World Wildlife Fund, 2019, www.worldwildlife.org/our-work/wildlife/wildlife-crime/
- Farquhar, Brodie. “Wolf Reintroduction Changes Ecosystem in Yellowstone.” Yellowstone National Park, 30 June 2021,



www.yellowstonepark.com/things-to-do/wildlife/wolf-reintroduction-changes-ecosystem/?scope=anon.

-Duffy, Rosaleen, “Toward a New Understanding of the Links between Poverty and Illegal Wildlife Hunting.” Conservation Biology,

www.ncbi.nlm.nih.gov/pmc/articles/PMC5006885/

Bloc positions:

- “Saving Wildlife” <https://www.africanparks.org/our-work/saving-wildlife>

-”Asia-Pacific Project | Sustainable Wildlife Management (SWM) | Food and Agriculture Organization of the United Nations” 2025

<https://www.fao.org/in-action/swm-programme/where-we-work/asia-pacific-project/en#:~:text=Our%20work,with%20national%20authorities%20and%20universities>

-”Wildlife Corridors | U.S. Fish & Wildlife Service”

<https://www.fws.gov/story/wildlife-corridors>

-Brown, Kimberly, ”Road to Recovery: Saving Jaguars in Latin America | World Wildlife Fund” World Wildlife magazine, 2021,

<https://www.worldwildlife.org/news/magazine/fall-2021/road-to-recovery-in-latin-america/>

Pollutants and how they affect wildlife links

-“Light Pollution Harms Wildlife and Ecosystems | Darksky International.” Darksky International,

darksky.org/resources/what-is-light-pollution/effects/wildlife-ecosystems/

-Shanker, Kartik. “Sensing Change: How Sound, Light and Smell Can Affect Plants and Animals.” The Wire Science, 11 Feb. 2019,

science.thewire.in/environment/sensing-change-how-sound-light-and-smell-can-affect-plants-and-animals/#:~:text=Anthropogenic%20sound%20or%20noise%20has%20been%20known,result%20it%20indirectly%20affects%20reproduction%20and%20survival

-Deforestation and Forest Degradation | World Wildlife Fund,

www.worldwildlife.org/our-work/forests/deforestation-and-forest-degradation/



- “Endocrine Disrupting Chemicals, Wildlife and the Environment.” CHEM Trust, [chemtrust.org/edcs-wildlife/#:~:text=Endocrine%20disruptors%20\(EDCs\)%20are%20chemicals%20that%20can,Improper%20disposal%20of%20medicines%20*%20Leaking%20landfills](https://chemtrust.org/edcs-wildlife/#:~:text=Endocrine%20disruptors%20(EDCs)%20are%20chemicals%20that%20can,Improper%20disposal%20of%20medicines%20*%20Leaking%20landfills)
- “How Does Pollution Affect Wildlife? » Question.” Pollution, 26 Nov. 2025, pollution.sustainability-directory.com/question/how-does-pollution-affect-wildlife/
- Impact Effects of Transport Structure Changes on Urban Traffic Congestion: A Case Study of Core Cities in China - Sciencedirect, www.sciencedirect.com/science/article/pii/S1366554526000165
- “Impacts of Pesticides on Wildlife.” Beyond Pesticides, www.beyondpesticides.org/programs/wildlife#:~:text=The%20results%20included%20a%20reduced,S2666027X24000227?via%253Dihub.%20%5D
- McGlashen, Andy. “Pesticide Spraying on National Wildlife Refuges Needs to Stop, Advocates Say.” Audubon, 9 July 2025, www.audubon.org/magazine/pesticide-spraying-national-wildlife-refuges-needs-stop-advocates-say#:~:text=%E2%80%9CThe%20use%20of%20harmful%20agricultural,absorbed%20into%20the%20refuge%20system
- “Nitrogen and Sulfur Pollution in Parks.” National Parks Service, U.S. Department of the Interior, www.nps.gov/subjects/air/nature-nitrogensulfur.htm#:~:text=Air%20pollution%20travels%20to%20parks,industrial%20facilities%2C%20and%20agriculture

HISTORY OF WILDLIFE SANCTUARIES LINKS

- “Our Organization | U.S. Fish & Wildlife Service” <https://www.fws.gov/carp/carp/>
- Dickson James G. “Natural Resources- Into the 20th Century” https://www.srs.fs.usda.gov/pubs/ja/ja_dickson009.pdf

