

Are Humans an Invasive Species?**How the Development of Our World Has Continuously Encroached on Wildlife****Madeline Graf****Introduction:**

When God created man, did he not create animals first?

Through the development of our society mankind has adversely impacted the species that existed long before humans emerged. Humans have effectively become an invasive species, taking over the homes of animals across the world. There are many answers to how human desires negatively effects wildlife such as pollution, deforestation, fossil fuels, excessive waste, and countless others. Another important answer— captive animals. By removing an animal from its habitat to live in an enclosed space for the sole purpose of human entertainment; zoos, aquariums, theme parks, and circuses essentially hold animals prisoner against their own will. What is less obvious to the naked eye however, are the unintentional effects humans have by ‘progressing’ as a society. Through urbanization, industrial globalization, and tourism, people are leaving a bigger impact than many may even be aware of. These animals, despite living in the wild, are continuously encroached on by humans through our global development and for our own entertainment.

Urbanization:

The persistent urbanization of our world has led to significant environmental impacts, especially when it comes to wildlife. Humans have taken over the homes and resources that animals need to survive. The urban sprawl has both short-term and long-term consequences for countless species of animals, some of whom are currently facing extinction. People continue to expand into new lands and territories to compensate for an ever-growing human population. As a result, animals have either been displaced from their natural habitat or forced to adapt to the invaders in their environment. For almost all species of animals currently facing extinction, the “loss or degradation of habitats is the principal threat to their continued existence” (Ewing & Kostyack, 2005). The conversion of natural land that is home to various animals into cities, with homes, offices, shopping centers, and more, has become one of the most serious threats to the survival

of these species. In the US, “rapid consumption of land could threaten the survival of nearly one out of every three imperiled species” (Ewing & Kostyack, 2005). However, worldwide the everexpanding urban sprawl will “put additional pressure on diminishing wildlife resources and their habitats, and has the potential to drive more animals towards extinction” (Ewing & Kostyack, 2005). The rapidly rising global population only increases the rate of urban development encroaching farther into natural land.

This is a problem many countries are facing, including those clustered in East Africa. While many people think the major threat to wildlife in Africa is poaching, in reality the “biggest problem is the population explosion that is happening” (Hardy, 2019). Photographer, Nick Brandt, captured a photographic series intending to visualize this problem and to show that with it comes “an invasion of humanity and development into what was not so long ago wildlife habitat” (Hardy, 2019). To highlight this threat, Brandt shows various wild animals such as elephants, rhinos, and zebras strolling through areas of human development or habitation (Hardy, 2019). The urbanization of these areas in order to compensate for the increasing number of inhabitants is what’s pushing many of these animals to extinction (Hardy, 2019). Through this series, the photographer was able to illustrate the feelings of helplessness that these animals are feeling in the midst of the destruction of their homes.



Hardy, M. (2019, February 5). Photos Show How Wildlife and Humans Collide on a Grand Scale. *Wired*, Conde Nast. www.wired.com/story/wildlife-human-habitats-collide-photo-gallery/.

This photograph depicts two elephants, what appear to be a parent and a child, roaming through an active construction site where they once called home. The child seems to be nuzzling itself into its parent, as if its looking for safety and protection from this new, strange world. The construction workers continue on working, un-phased by the enormous creatures, almost like they aren't even there. One would assume the men on the ground would be fearful, as the giant animals could crush them in just one step. Yet the men forge on, making the viewer question why they would work in such circumstances. It seems as though these workers are victims themselves, much like the elephants. They could be stuck in this job with no way of improving their economic status and may not morally agree with what they are doing. The worker in the trench specifically, invokes the idea that these men are of a lower social standing than even the elephants; a demoralizing feeling that may be why they carry on with their jobs- as if they are aware of their place in the world. Brandt also labels these men as victims, as the Maasai people and other ordinary Kenyans are not responsible for this large-scale destruction. The aggressors are not featured in the photographs because they are the “developers and politicians who are only interested in short-term economic gain, at the expense of the long-term economic benefit of the community” (Hardy, 2019). The lack of visibility of the construction workers faces reinforces this idea, as if they are the nameless soldiers carrying out the orders of those in charge.

Throughout the cloudy sky, slates of concrete, elephants skin, dirty ground, and construction workers clothing and equipment, the same color is mimicked in every aspect of this photograph. What is typically considered a dull, moody, and sad color, the color gray in this image assigns a different meaning to each feature it inhabits. Elephants cannot change the fact that they have gray skin or the fact that the color gray is associated with feelings of isolation and loneliness. Instead these magnificent, larger-than-life creatures embody the color in another way, representing neutrality, balance, and strength. An animal that is widely seen as symbolizing majesty, wisdom, and nobility, the gray of the elephants skin does not reflect the same emotions as they gray of its current environment. The color of the elephants surroundings, rather than the color of its skin, provokes the feelings of gloominess, loneliness, and isolation. The monochromatic color palette within this image allows its viewers to share the emotions of the

animals. It shows how quickly the gray of our natural world can turn into the gray of our infrastructure in a world of never-ending urbanization. The gray elephant does not need a gray overpass and it does not find a natural home in the gray, emerging, concrete 'jungle' that is developing around it.

As humans continue expanding their reach, many animals are forced to become accustomed to human life in their natural environments. Zoologists and ecologists have coined a new term for this idea, "synurbization," which "denotes adjustment of wild animal populations to specific conditions of urban environment, in connection with regular existence there in the wild state" (Luniak, 2004). This term is a combination of two other terms used in this field; synanthropization, the idea of animals adapting to human-created conditions; and urbanization, referring to the changes in environment as a result of urban development. While this term is not recognized in the Oxford Dictionary or highly used in daily discourse by lay people, it encapsulates the root of this argument; the process of animals being forced to adapt to human created environments as a result of the urban sprawl. While to humans this may seem like a process that has been occurring slowly overtime, in reality the development of our New World is just a small blip on the timeline of Earth's history. The majority of animal species today have evolved and been shaped into their current state "during the last 1 to 500 million years, while urbanization... has occurred only during the last 100-200 years" (Luniak, 2004). City expansion has accelerated to new heights in recent decades, so much that "by 2050, we could be creating a city the size of London every seven weeks if current trends continue" (Randall, 2018). At this rate, wild animals are going to have no other choice than to adapt to human environment.

Many species that are already adapting to their new surroundings have seen small evolutionary changes, such as the crested anole lizard, native to the forests in Puerto Rico (Miller, 2018). Historically known for their expertise at climbing trees, "these reptiles have evolved to handle smoother surfaces, such as glass windows and painted concrete... [and] their toe pads... are the key to their strong grip" (Miller, 2018). Researchers have found that the "urban anole populations are equipped with bigger toe pads that feature surplus scales" (Miller, 2018). Making small, but

crucial, changes has allowed many species to survive in a new urban environment, however the urban sprawl has not only led to small adaptations but also the evolution of new species. For the blackbird, who “started colonizing cities about two hundred years ago” (Worrall, 2021), urbanization has led to the adaptation to a “new ecological niche” (Worrall, 2021). The urban blackbirds “have shorter beaks; don’t migrate anymore; have different stress responses; start breeding much earlier in the year; and sing at a different pitch” (Worrall, 2021). All of these evolutionary changes have prevented the urban blackbird from crossbreeding with forest blackbirds, creating a new species entirely.

Not all species that have been forced to adapt to the urban sprawl are flourishing in their new surroundings. As with the majority of wild animals who’s natural habitats have been encroached in on by humans, the mountain lions indigenous to Los Angeles, California, are facing numerous threats to their survival as a result of urban development. Los Angeles is “one of only two megacities in the world that have big cats living within the city limits” (“Lions”). However, the “long-term survival of mountain lions in this region... is threatened by a number of factors, none more significant than the loss and fragmentation of habitat by roads and development” (“Lions”). There are two major consequences of urbanization that could lead to the extinction of LA mountain lions: population isolation and car accidents (“Lions”). These go hand-in-hand, as a cycle that can’t seemed to be escaped. With a habitat enclosed by freeways and city-life, vehicle strikes constitute the majority of deaths for these animals, making the species unable to venture to-and-from the area (“Lions”). This results in “first-order inbreeding” becoming increasingly common in the region, with extremely low-levels of genetic diversity being an indicator of possible extinction (“Lions”). For one of these mountain lions roaming Los Angeles, life is more lonely than anything else.

Finding home in Griffith Park, P-22 (“P” standing for “puma”) has become the resident mountain lion of LA (Stephenson, 2020). The famous cat reigns over every inch of the “eightsquare-mile urban wilderness of hills and canyons” (Stephenson, 2020). At the highest point in Griffith Park, Cahuenga Peak, he “can look down over the Hollywood sign to the lights of Los Angeles and out

to the pacific ocean; turn to the east and there is Burbank and the Disney campus, birthplace of that other young lion who came to rule a kingdom” (Stephenson, 2020). While having your own kingdom sounds nice in theory, P-22s’ is “an island nation, hemmed in on three sides by freeways and on the fourth by the city itself” (Stephenson, 2020). Considering the lonely hunters’ social-status provokes the question of how he ended up this way. New technologies allowed humans to be able to track these animals, which is how we know that P-22’s parents called the rural Santa Monica Mountains home (Stephenson, 2020). To get to Griffith Park, he miraculously crossed both the Hollywood and San Diego Freeways which explains his unwillingness to make the journey home again (Stephenson, 2020).



Stephenson, S. (2020, November 04). LA's Resident Mountain Lion is a Lonely Hunter. Retrieved from <https://lithub.com/las-resident-mountain-lion-is-a-lonely-hunter/>

This photograph of P-22 allows its’ viewers to emote with the beloved animal and share its feeling of isolation. With the majority of the image clouded by the dark of the night, two main features are well-lit drawing the focus of the viewer: P-22 himself and the famous Hollywood sign. P-22, in the foreground of the photo, seems to have a spotlight on him like if he’s the star of the show. The collar on his neck, like shackles handcuffing a prisoner, shows that he is not truly free in his kingdom. Human technologies allowed for scientists to anesthetize this animal and ‘brand’ him with a tracking collar for the purpose of surveillance. His body language suggests fatigue; sulking down the mountain as if he’s exhausted by his lonely existence. There is an “evolutionary continuity between the ways in which humans and animals express emotions”

(Creed, 2015), which means that “animals also experience a range of emotions similar to those experienced by a human animal” (Creed, 2015). For humans, there are specific indicators in body language that express our emotions, such as our posture when moping around. Animals, like P-22, communicate their emotions through body language the same way humans do; which is the only way people can learn to understand their feelings in the absence of verbal communication. Through his sullen posture and brooding eyes, the viewer can feel P-22 conveying his emotions of isolation and loneliness.

Behind him, is the iconic Hollywood sign symbolizing many peoples’ dream of fame and stardom, illuminated in the night sky. What most people don’t typically associate with the Hollywood sign however, are mountain lions. A city of glamour and fortune, Hollywood is a place for the elite and many have been left with broken dreams in the hopes of ‘making it big.’ Its fitting that in LA, “the true stars have single name recognition and are skilled at evading the limelight” (Stephenson, 2020), and P-22, “the biggest star in town, should be known merely by a designation and be so reclusive that few civilians will ever manage to catch a glimpse of him” (Stephenson, 2020). P-22, sulking and shackled by technology, juxtaposed with the renowned Hollywood sign in the background of this image, is a reminder that the never-ending human quest for new and profitable ventures has consequences.

Industrial Globalization:

Intertwined with the issue of urbanization is the process of globalization. As our world developed and grew, so did our economies, industries, and technologies. At one time, goods were only able to be purchased locally, and economies were small, localized bubbles. However, throughout history people designed new ideas in response to old problems and industrialized our world, creating a global economy and trade market. Humans are now able to ship millions of products from one country to another, and do it every day. What mankind has turned a blind-eye to throughout this industrial globalization however, is that humans are co-inhabitants on this earth and the disproportionate effect our actions have on marine life.

A significant majority of the purchases people make are on products that have been created and shipped from other countries. Today, “an estimated 90% of the worlds goods are transported by sea” (Nagurney, 2021). Without the standardized container, “the global supply chain that society depends on would not exist” (Nagurney, 2021). Maritime shipping has become necessary to the operation of global supply chains and trade, meaning there are no plans of stopping it. As with wildlife and urban development, “marine habitats and species are also threatened by new and existing trade routes” (Schoeman et. al, 2020). At least 75 different marine species are effected by maritime vessel collisions (Schoeman et. al, 2020), however marine giants such as the great whales and larger sharks are the most vulnerable to shipping hazards (Pirodda et. al, 2018). These marine giants play crucial “ecological roles in a variety of marine ecosystems” (Pirodda et. al, 2018), and for some species global shipping practices are a major limiting factor to their survival.

For one marine giant specifically, ship collisions have been responsible for more than half of the species mortalities in recent decades (Pirodda et. al, 2018). The population of the North Atlantic right whale has diminished to the point that “there are only around 360 right whales left because [of] human threats” (Massive Cargo Ships). The right whale was the “first large whale to be hunted commercially, the first to be protected internationally, and it will be the first to go extinct unless we prevent it” (Haggert, 2020). While the species is now governmentally protected, and “humans aren’t killing right whales deliberately anymore, we are killing them inadvertently when they... are struck by ships” (Haggert, 2020). This is the grim fate many of these whales face, one of whom being Punctuation, a right whale mother of eight calves and grandmother of two more (Haggert, 2020). When a fatality of this nature occurs, scientists want the body to perform the animal equivalent of an autopsy (Haggert, 2020). This is what tells them not only how the whale died and how to prevent similar deaths, but it also “tells a story about what the animal went through to survive” (Haggert, 2020). Up close, Punctuation’s “inky skin was a roadmap of white scars from her many interactions with sharp blades... [and] there were multiple old propeller scars on her left side, mottled scarring on her left lip, her tail, both flippers and her right side” (Haggert, 2020). The extensive list of Punctuation’s injuries is evidence of the human impact on these animals.

This photograph depicts just one step in the process of removing Punctuation's massive, lifeless body from the Atlantic Ocean in order to learn about her journey through life. Five days prior to this image Punctuation's body was found floating with a "vast slash across her black abdomen, the result of a ship strike" (Haggert, 2020). A coast guard vessel towed her body to Grand Étang, where it was maneuvered onto the shore (Haggert, 2020). This operation required a team, with this image capturing just a few of the "several dozen people that had gathered" (Haggert, 2020). The photo shows the rocky shores of Nova Scotia, with an excavator lifting the carcass of Punctuation out of the water. There are three people visible, one of whom wearing a uniform with a linguistic message on the back of his vest, reading "Fishery Officer," with the French translation below. This linguistic message is denotational, helping us "to identify purely and simply the elements of the scene and the scene itself" (Barthes, 1977, p. 274). This message in combination with the man's uniform, tells the viewer he is an officer of the law and is there to help oversee the safe and successful removal process.



Haggert. (2020, October 19). Punctuation's mark: Can we save the critically endangered North Atlantic right whale? Retrieved from <https://www.canadiangeographic.ca/article/punctuations-mark-can-we->

The gloomy skies provide a backdrop to the unfortunate sight, with the entirety of the image mirroring its cool color tones. The exception to this however, is the faint light of the excavator illuminating the mangled tail of the animal. As a result of prior cultural knowledge, most viewers would be able to tell this enormous, lifeless mass is a whale. However, the well-lit, eye-catching whale tail in the center of the image acts as a non-coded iconic message instantly indicating to viewers what they are looking at (Barthes, 1977). The lighting in this image both, literally and figuratively, illuminates the gruesome reality for countless right whales (and many other marine species) as a result of global shipping practices. Her death has become a “devastating symbol of just how badly humanity has failed... to protect the North Atlantic right whale from human assaults” (Haggert, 2020). The fatal consequences of the industrial globalization of our world can be seen across the world, yet the practices continue. Unless there are substantial changes made within the core operations of our global supply chain, human development will push not only the right whale but many other marine species to the point of extinction.

Tourism:

People can argue that despite the adverse impact on wildlife, both urbanization and industrial globalization have positively advanced our world. However, wildlife tourism is one practice that is purely for human entertainment and cannot be justified by the terms of human development. While there is economic benefit in the tourism industry, few people would consider its services necessary to the growth of our society. Amplified through social media, the desire to photograph, observe, and interact with wild animals has resulted in animals being encroached on in their own habitat. Humans are drawn to the beauty of wildlife through photography and consequently want to catch a glimpse of it with our own eyes. What people don't see however, are the negative effects our search for the "best picture" have on the subjects, the wild animals. This is not to say that wildlife photography is a negative thing entirely. When done right it has the power to inspire people with the wonders of nature and hopefully in turn create a desire to protect wildlife and produce real change. Especially with the prevalence of social media, photos can go viral in just minutes bringing attention to wildlife crises around the globe. Unfortunately, this is a type of double-edged sword. Just as images can go viral and produce positive change, their virality can perpetuate the invasive tourism practices. In recent decades, "wildlife tourism has rapidly expanded and is one of the fastest growing sectors of the tourism industry" (Wildlife Tourism). While many people would think going on a safari has no effect on the animals because it's observing the animal rather than interacting with it, in reality wildlife tourism can "have adverse effects on wildlife: by causing changes in their behavior, changing their physiology, or damaging their habitats" (Impact of Tourism). It has become a "serious threat to population maintenance and survival" (Impact of Tourism), which begs the question of why these practices are still allowed? Nevertheless, the wildlife tours continue on, with travelers, bloggers, and influencers sharing photos of their experiences (Janieks, 2020). These images can "influence millions of people around the world" (Janieks, 2020) and a single post has the power "to encourage other travelers to seek out similar experiences, starting a dangerous cycle" (Janieks, 2020). The continuation of this cycle is legitimizing its actions; monetizing wild animals as photo opportunities and selfie props rather than condemning these actions that are negatively effecting numerous species of animals.

Photographer, Karine Aigner, prides herself on following a strict code of ethics when it comes to wildlife photography. However, this photograph she captured calls her reliability into question. Taken on an excursion in Ranthambore National Park, India, Aigner explains the event of this photograph as the “scene on any given day” there, while drivers “aggressively race along the roads, jockeying for space while chasing tigers” (Ranthambore Tiger). While in this image we can only see one direction, with at least four trucks carrying dozens of people, behind Aigner were another ten trucks (Ranthambore Tiger). She makes the argument that people have to start respecting wildlife in its natural home by creating a tourism system does the same; yet the process of capturing this image and subsequently posting it on as large of a platform as the National Geographic, contradicts the points she made. While her defense is the ethical guidelines she follows, what is the line between ethical wildlife photography and wildlife tourism images, if there is one? At some point the ethics of it erodes to the point where they are one and the same, humans encroaching on wild animals habitat.



Ranthambore Tiger [@natgeo]. (2021, September 24). The scene on any given day in Ranthambore National Park, in India [Instagram photograph]. Retrieved from

<https://www.instagram.com/p/CUM3qVcMWQ/>.

Front and center in this photograph, is the dangerous, yet graceful, predatory tiger. Restricted between two lines of trucks, the animal runs through the path as if he is putting on the show the

tourists came for. The tiger, a natural predator in the wild, is a magnificent and vicious creature that no (sane) human would approach on their own. However in this photograph, due to the positioning and point of view of the photographer, it seems as though the tiger is smaller and more fragile than it is in reality. It appears that what is usually the predator has become the prey. He has become a prey to human desires, the longing for an up-close and personal view of the wild. The positioning of this image reiterates the tiger's feeling of entrapment, as if the walls are closing in on both sides. This photo, and ones like it, turn the wild animal into a spectacle- a commodity for more "likes" or "followers" on social media. In the process of doing so, these "photographs cut sympathy [and] distance the emotions" (Sontag, 1977). The animals become nothing more than content for influencers and bloggers, and people lose sight of the fact that they are living-beings and are not purely for our entertainment. At the rate mankind is going, the negative effects wildlife tourism has on the wild animals will become increasingly detrimental. Through humans encroachment of wildlife habitats, even just as spectators, the animals we so desperately want to see are being adversely impacted.

Conclusion:

In comparison to a captive animal, such as those living in a zoo or aquarium, the animals living in the wild seem to have it easy. However despite being "wild," many different species still feel the impact of humanity. Whether it be for our enjoyment and social status or for the development and evolution of our ever-changing society, our actions as humans are negatively affecting animals across the globe. The consequences are evident, with more and more animals becoming endangered species. Urbanization, industrial globalization, and tourism are all responsible for the tragic fate awaiting these animals. Through the progression of society humans have continuously encroached on the homes of wild and marine life, claiming it as our own, without regard for its original occupants.

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