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Ecology, Environment, and the Anthropocene
Project Summary
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Withered Forms and Systems

Vultures in South Asia have been deemed an extremely vulnerable species, as their population decreased to 0.1% of their original population (specifically the White-rumped vultures). With the alarming decrease, studies showed that there was a correlation between the use of Diclofenac and the vultures dying. Diclofenac is a non-steroidal anti-inflammatory drug that treats pain and inflammation in cattle. This veterinary drug, used in treating livestock, has proven to be toxic to vultures. Upon scavenging the carcasses of animals treated with Diclofenac, the vultures suffered kidney failure, resulting in death. A healing drug for livestock led to the demise of these vultures.

We know about this correlation due to research: “vultures that consume sufficient tissue from such carcasses die from the effects of Diclofenac-induced kidney failure,” (Prakash). Although there was not an abnormal amount of carcasses, Kimsing states, “They collected 1,848 liver samples from carcasses of dead livestock sampled at 67 sites in 12 states within India, where they detected Diclofenac residues in the sampled carcasses from all states except Odisha. The overall prevalence of detectable Diclofenac across all states was found to be 10.1% and varied significantly among states, with up to 22.3% prevalence determined in Bihar.” Now, with this information on the affected cattle carcasses in the areas where the vultures were impacted, further research concluded that only a small percentage of the carcasses that vultures were feeding on would have had to contain a lethal dose of Diclofenac to produce the observed population decline (Prakash). This percentage difference explains why we observed such a decline in vulture populations. The impacts of Diclofenac, along with deforestation, were the basis of my first scientific concept. The dramatic decrease in the Indian vulture population was due to anthropogenic causes.

My second scientific concept was that, when we disregard flora and fauna, especially beneficial ones, ecosystems are impacted in ways that might be irreversible and detrimental to both humans and wildlife. Vultures, as scavengers, are recognized as a valuable pillar within the ecosystem. Humans especially value them as they typically don't interact or interfere with our day-to-day life. Meanwhile, rats and wild dogs, other scavengers, often come into both direct and indirect contact with humans. They found it easier to scavenge off cattle carcasses without the vultures' presence, with specifically dog population numbers as high as 29 million in 1997 (Kimsing). The direct impact of disregarding the vulture population decrease led to the spread of diseases among humans. Carcasses also pollute the environment, and since rats and wild dogs couldn't clean them as effectively, anthrax and waterborne diseases increased (Kimsing). Fecal bacteria in the water also multiplied twofold. Wild dogs and rats also often spread bacteria and pathogens. They were spread through both runoff and poor disposal methods, which caused an “additional 100,000 human deaths annually between 2000-2005” (Biswas). These impacts on human welfare and the way that the ecosystem functions are the direct result of disregarding valuable fauna.

Lastly, in response to anthropogenic causes, we should take accountability and action to reverse, reduce, and/or prevent them. This is important because without our environment, even a small part of it, we reap the consequences, both short-term and long-term. In response to the Indian vulture decline, there were policies in place to ban the toxic drug Diclofenac. “Similar bans on the veterinary use of Diclofenac were also introduced in Nepal and Pakistan in 2006 and in Bangladesh in 2010. The toxicity of Diclofenac to vultures and the evidence of its effect on their populations were the reasons for withdrawal,” (Prakash). This, in turn, led to a small increase in the population. Advocacy for policy reforms is integral to the conservation of our Earth. With it, and the accountability to seek out, share, and enact these efforts, we can reduce and prevent future incidents that could lead to a general decline in health in our local and global ecosystems.

To display these concepts in an art form, I choose to create an abstract multimedia piece. The base of the piece consists of statistics and fabrics. The statistics reflect the population decrease, along with the increase seen after the bans were passed and the action taken, which demonstrates the accountability and action concept. I used an abstraction of human forms and bodies in a sickly tone, with reds and blues, to represent death and disease. I then used syringes filled with both clear and red liquids, showing the drug and the death that came from it, which impacted the vultures. They go into paintings of the cattle and the human forms to further illustrate the direct impact and how humans, in turn, inflicted these diseases and deaths onto themselves. I painted a vulture with a gaping mass around its body to depict the effect of the drug. The last concept to be represented is the impact and decline in ecosystem health resulting from the absence of vultures. This will be displayed by painting dog teeth to represent the increasing population and rabies cases, thus further developing the human forms. These forms tie together the piece, connecting and weaving them like a withering veil, which stands to represent the ecosystem as a whole as well. To display the vultures in a removed representation, I used scavenged and found items, arranged in their withered forms. Along with the statistics, the background will also comprise different fabrics, offering textures and an interesting visual aspect. It also, alongside the connected sickly bodies, represents the withering of overall quality (of health). I have bones and feathers also included as the representation of these vulture, cattle, and human bodies. Having the real forms will add to the multimedia, where the bones offer depth, and the feathers offer movement. The bones and syringes are adhered with clay, allowing the human forms to extend past the canvas and reach out into the third-dimensional axis.

I aim to create a beautiful and captivating piece that will captivate whoever views it. Having them wonder why it's composed the way it is and the underlying meaning will bring more interaction. This is why I mainly chose to make an abstracted piece. Abstract art forces its viewers to sit there and ponder its meaning and reasoning. To help people understand the concepts and devastation of this incident is to encourage them to seek out and read more on the subject. This is only possible through captivation, to make them want to understand, want to learn more, and grasp the meaning of the piece. For education and the spreading of it is true advocacy, this will be my form of advocating and speaking on the subject to hopefully make people aware, and want to reduce the possibility of this happening both globally and locally again.

Bibliography

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