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Which species from the Red Data List will be extinct by 2050?

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Abstract

The plethora of animals, plants and micro-organisms that the Earth witnesses today has been estimated to be an aggregate totality of around 5 to 15 million diverse species. Out of this range, only 1.5 million have been identified and titled. Around 300,000 plant species, 50,000 vertebrate species comprising of lump sum 10,000 birds and 4,000 mammals and 4-8 million insects have been estimated and named. Today, about 23% (1,130 species) of mammals and 12% (1,194 species) of birds are considered as threatened by IUCN.[1]

The global wildlife declines along with biodiversity can be attributed primarily to anthropogenic causes. This depletion rate is rapid than what could have been predicted through natural rate. This can be due to changing land use/cover, demographic processes, cultural traditions, practices and attitudes of local people towards wildlife and their habitats leading to unsustainable use of natural resources, economic factors, governmental institutions and policies on natural resources and environmental protection and management responsibilities, ecological conditions, invasive alien species and their interactions. This depletion rate is also proportionate to increasing population growth which leads to more waste generation. Urbanization demands land conversion by humans, implying deforestation (dominantly present in tropical forests). The process of civilization also invites international conflicts which too leads to compounding depletion rate.

Keywords: diverse species, IUCN, anthropogenic, depletion rate, deforestation.

Introduction

This Research paper discusses about the causes for animal extinction and which animal from the critically endangered and endangered category will be extinct by 2050. Animals and in general species are often eluded as we, humans try to focus on protecting our community or brethren. We often forget that animals or other species are deficit of skills that can protect them and hinder their process of death. A number of species are becoming extinct every day. Scientists have estimated that there are around 8.7 million species of plants and animals in existence. But, a lot of factors are affecting their survival like poaching, loss of habitat, prey scarcity etc. Humans often have this mind-set that since we are surrounded by a myriads of plants and animals and most of them do not help in making a livelihood, hence they are of no use and even if they become extinct nothing would change. It's high time, we need to take charge and realize that everything in nature is intertwined and interdependent on each other. Destruction of one ruler will lead to the fall of the entire dynasty that we have forged over years.[2]

Literature Review

(i) Herbivore Dynamics and Range Contraction in Kajiado County Kenya: Climate and Land Use Changes, Population Pressures, Governance, Policy and Human-wildlife Conflicts *Nuno M. V. Gomes Oliver A. Ryder Marlys L. Houck Suellen J. Charter William Walker Nicholas R. Forsyth Steven N. Austad Chris Venditti Mark Pagel Jerry W. Shay Woodring E. Wright*[3]

The wildlife declines in Africa are attributed primarily to **anthropogenic causes**, but often without compelling quantitative evidence. These include changing (1) land use/cover, (2) demographic processes, (3) cultural traditions, practices and attitudes of local people towards wildlife and their habitats, (4) economic factors, etc.Because our paper was also largely qualitative in nature, this paper really helped is in developing a structure and course for our research.

(ii) Comparative biology of mammalian telomeres: hypotheses on ancestral states and the roles of telomeres in longevity determination

Joseph O. Ogutu, Hans-Peter Piepho , Mohammed Y. Said and Shem C. Kifugo[4]

The demonstration that telomere length inversely correlates with lifespan provides support for the interpretation that replicative aging is one of many factors contributing to lifespan in a large number of species.

This paper helped us understand how to categorize the causes that we studied in our paper. And also to develop different approaches to comprehensively capture the extent to which each factor affects the longevity of the diverse range of species that we studied.

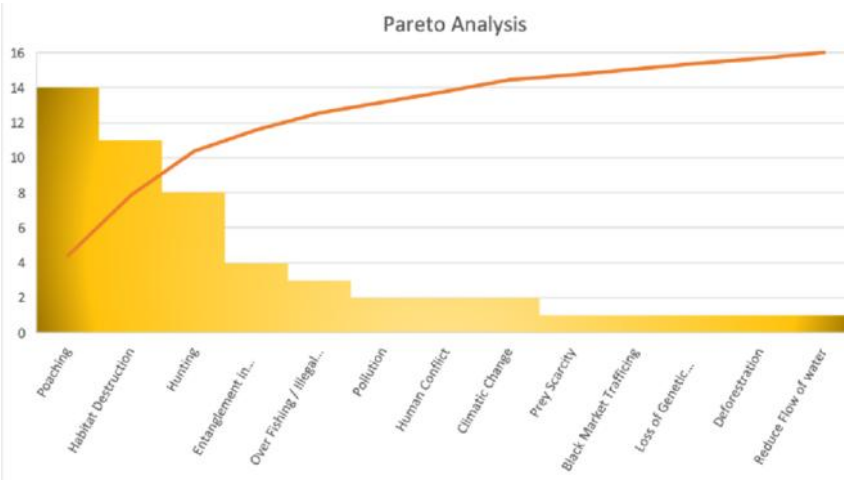
Both of these papers were important to our study because they were from different points of view, we did get to understand how we should be analyzing different factors in terms of how they affect the survival. So some maybe geographically specific because we're studying a group of animals that reside in different places on the planet and they are critically endangered due to some common causes and some that are specific to the environment they live in.

Methodology

We, as a team are set to answer the following question. From the Red Data List 2020 which endangered animal is most likely to be extinct by 2050 and what are the major factors contributing to their extinction. This qualitative analysis will be done by charts such as bar chart, pie chart, Pareto analysis is (statistical technique in decision-making used for the selection of a limited number of tasks that produce significant overall effect. It uses the Pareto Principle (also known as the 80/20 rule) the idea that by doing 20% of the work you can generate 80% of the benefit of doing the entire job.) and swot analysis which is (a strategic planning technique used to help a person or organization identify strengths, weaknesses, opportunities, and threats related to business competition or project planning.)[5]

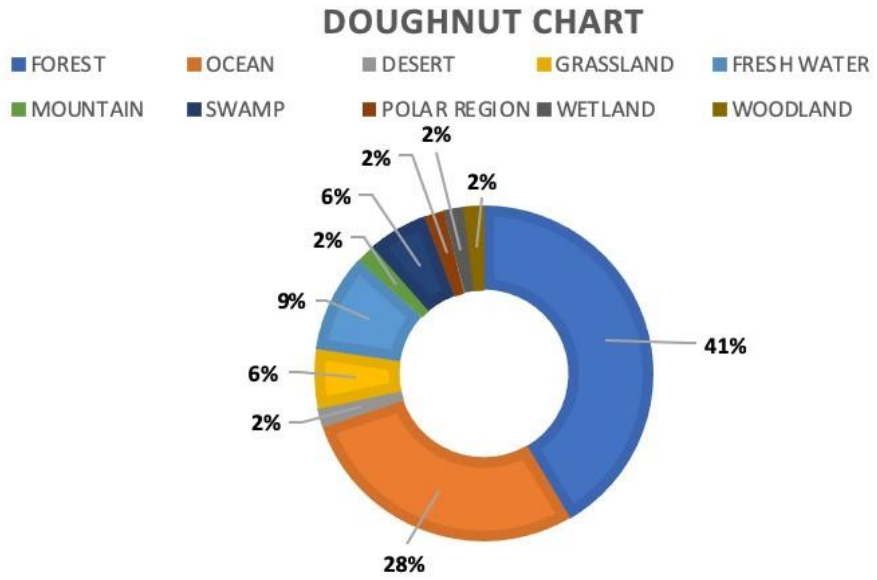
We extracted the data set from the Red DataList 2020[6]

Pareto Analysis



Donut chart

NAME	STATUS	POPULATION SIZE	WEIGHT (in pounds)	HABITAT	LOCATION	LIFESPAN	WHY IMPORTANT	REASONS
AMUR LEOPARD	CRITICALLY ENDANGERED	84	70-105	TEMPERATE,BROADLEAF,MIXED FORESTS	AFRICA	10-15	top predators - keep the right balance of species in their area	poaching, prey scarcity
BLACK RHINO	CRITICALLY ENDANGERED	5600	1760-3080	Semi-Desert Savannah, Woodlands, Forests, Wetlands	EAST AFRICA	30 - 50	grazers, shape African landscape	oaching and black-market trafficking o horn
BORNEAN ORANGUTAN	CRITICALLY ENDANGERED	104700	66-220	Lowland rainforests and tropical, swamp and mountain forests	BORNEO	35 - 45	seed dispersal and in maintaining the health of the forest ecosystem	habitat destruction for palm oil plants,
CROSS RIVER GORILLA	CRITICALLY ENDANGERED	200-300	440	FOREST	CONGO BASIN	35 - 50	they help disperse seeds throughout the forests and create places where seedlings can grow and replenish	poaching, habitat destruction, and a genetic diversity through inbreed
STERN LOWLAND GORILLA	CRITICALLY ENDANGERED	8000	440	Forest	CONGO BASIN	35	**protect** biodiversity	Poaching
HAWKSBILL TURTLE	CRITICALLY ENDANGERED	8000	90-150 pounds	Oceans	Mesoamerican Reef, Coastal East Africa, Coral Triangle	30 - 50	maintain the health of coral reefs, remove prey such as sponges from the reef's surface,provide better access for reef fish to feed,cultural significance and	hunted for shell
JAVAN RHINO	CRITICALLY ENDANGERED	Around 60	1,984 - 5,071	Tropical forests	Indonesia	30 - 40	**protect** biodiversity, grazing	poaching, primarily for their horns,
ORANGUTAN	CRITICALLY ENDANGERED	about 104,700 (Bornean), 13,846 (Sumatran), 800 (Tapanuli)	200	Forest	islands of Borneo and Sumatra.	35 - 45	seed dispersal and in maintaining the health of the forest ecosystem	habitat destruction for palm oil plants, p
SAOLA	CRITICALLY ENDANGERED		176-220 lbs	Evergreen forests with little or no dry season	Greater Mekong, Vietnam, Laos	8 - 11	prey to predators, meat for people	hunting
SUMATRAN ELEPHANT	CRITICALLY ENDANGERED	2,400 – 2,800	5 tons	Broadleaf moist tropical forests	Borneo and Sumatra	10 - 15	feed on a variety of plants and deposit the seeds as they travel.	Habitat loss
SUMATRAN ORANGUTAN	CRITICALLY ENDANGERED	14613	66 – 198 pounds	ropical and Subtropical Moist Broadleaf Forests	Borneo and Sumatra	35 - 45	seed dispersal and in maintaining the health of the forest ecosystem	habitat destruction for palm oil plants, p
SUMATARAN RHINO	CRITICALLY ENDANGERED	Fewer than 80	1,320 -2,090 pounds	Dense highland and lowland tropical and sub-tropical forests	Borneo and Sumatra	30 - 40	**protect** biodiversity, grazing	poaching, primarily for their horns,
SUNDA TIGER	CRITICALLY ENDANGERED	Less than 400	165–308 pounds	Tropical broadleaf evergreen forests, freshwater swamp forests and peat swamps	Forest Habitat, Grasslands, Wetlands	15 - 20	indicator of a forest's health and biodiversity.	deforestation, poaching
VAQUITA	CRITICALLY ENDANGERED	About 10 individuals	Up to 120 pounds	Oceans	Gulf of California	21	important food sources for top predators. Conversely, they feed on species below them on the food chain—like small fish, squid, and crustaceans—and help keep those populations	Unsustainable and illegal fishing practi
WESTERN LOWLAND GORILLA	CRITICALLY ENDANGERED	100,000 individuals	up to 440 pounds	Forest	CONGO BASIN	50	important reproductive function within the forest ecosystem, allowing the dispersal and germination of seeds from the numerous fruit trees they consume.	habitat loss / poaching
NGTZE FINLESS PORPOISE	CRITICALLY ENDANGERED	1000-1800	100 - 150 pounds	Lakes & Rivers/ Freshwater habitat	Yangtze	20	keep their environment healthy.	Overfishing
AFRICAN WILD DOG	ENDANGERED	1409	40-70 pounds	Deserts, Forests, Grasslands	Coastal East Africa	17	eliminating sick and weak animals	accidental and targeted killings by human diseases like rabies and distemper. habit
ASIAN ELEPHANT	ENDANGERED	Fewer than 50,000	Around 11,000 pounds	Forests	Eastern Himalayas, Greater Mekong	48	maintaining the region's forests	demand for ivory / hunting for tusk
BLACK FOOTED FERRET	ENDANGERED	370	1.5-2.5 pounds	Grasslands	Northern Great Plains	1-3	key indicators of healthy ecosystems as they help manage prairie dog populations,important members	shrinking numbers of their main prey: prai / habitat loss
BLUE WHALE	ENDANGERED	10,000-25,000	200 tons	Oceans	Southern Chile, Gulf of California, Coral Triangle	80 -90	important part of the marine food chain	commercial **whaling**



SWOT ANALYSIS			
S	W	O	T
1.IT IS FOR A GREAT CAUSE 2. HELPS PREVENTING EXTINCTION OF ANIMALS 2.SPECIES EXTINCTION WILL BE HINDERED FOR THIS WE CAN INTRODUCE VARIOUS DRIVES AND YOJANAS 2.THE DESTRUCTION OF EVEN ONE STRATA OR ORGANISM MAY LEAD TO THE DISRUPTION OF THE ECO SYSTEM AND THE SURVIVAL GAME.	1.THE GREEDY NATURE AND THE URGE TO MAKE A LIVELIHOOD IS HINDERING THE PROCESS OF SAVING THE ORGANISMS FROM EXTINCTION. 2.YOJANAS ARE NOT WELL KNOWN TO THE PEOPLE.	1.THESE YOJANAS ARE UNIQUE. 2.THESE YOJANAS WILL HELP TO SAVE THE ANIMALS AND THEIR HABITATS.	1. SINCE THE DAMAGE HAS BEEN MADE THERE IS A LOT TO CHANGE, A LOT OF MONEY WILL BE INVOLVED IN THE ENTIRE PROCESS, A LOT OF ENLIGHTENEMENT ON THIS ISSUE IS NEEDED TO CHANGE THE MINDSET OF THE PEOPLE.

Results

After visualizing the data, we have come to the conclusion that –

1. The top three reasons that contribute to extinction are poaching, habitat fragmentation and hunting. That means most of the organisms that are on the verge of extinction are terrestrial organisms.
2. Second characteristic which we got to know about the organism which are critically endangered Is the habitat. Most of the organisms reside in a fresh water followed by oceans which again tells us that the animals that are highly on the verge of extinction are terrestrial organisms.

3. The way to save terrestrial organisms is by building national parks, sanctuaries and practicing in-situ and exsitu conservation.

4. The animals which are going to extinct by 2050 are Javan Rhino, Sumatran Rhino and Amur Leopard.

5. Strict laws and yojanas should be made against poaching and hunting. Imprisonment and hefty fines should be charged to the ones violating the laws.

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