



THE EFFECT OF ENVIRONMENTAL CHANGE ON WILDLIFE POPULATION IN SOMALIA

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Abstract

The study sought to establish the effect of environmental change on wildlife population. The research methodology utilized in this study was exploratory study. The problem was investigated quantitatively using the methodology of questionnaire (online survey). The population that was considered during this study comprised in Somalia. The sample data that was analyzed consisted of 73 respondents and Simple random sampling was used to choose the respondents. The Data was analyzed by using Statistical Package for Social Science (SPSS 27). Findings of the study indicated that environmental change has hindrance role in wildlife population and it also includes pollution, deforestation, and flood. The study also shows that harmful effects of environmental change on wildlife population most likely occur when environmental change increases wildlife will decrease. Finally, the study indicates that investment has a negative effect on the wildlife population. So, the researcher recommends for the ecologists and the governments should reduce the change related environmental in areas of wildlife population such as pollution, burning fossil, deforestation, overconsumption and wildfires, drought and floods. This will in turn help to achieve the wild wellbeing

Keywords: - ENVIRONMENTAL CHANGE/ WILDLIFE
POPULATION

Introduction

At least since Roman times, people have been concerned about how issues like air and water pollution affect human life. Between the late 14th and the middle of the 16th century, epidemic sickness in Europe was linked to pollution, and soil preservation techniques were used in China, India, and Peru as early as 2,000 years ago. Yet, these issues typically did not spark widespread activism. The late 19th century worries about the preservation of the countryside in Europe and the wilderness in America, as well as the negative effects of pollution during the Industrial Revolution on human health, were the main causes of the modern environmental movement. Most early environmentalists believed that government should be in charge of protecting the environment and ensuring resource conservation rather than the market. This was in contrast to liberalism, which was the dominant political philosophy at the time and held that all social problems, including environmental ones, could and should be solved through the free market. The late 19th century worries about the preservation of the countryside in Europe

and the wilderness in America, as well as the negative effects of pollution during the Industrial Revolution on human health, were the main causes of the modern environmental movement. Most early environmentalists believed that government should be in charge of protecting the environment and ensuring resource conservation rather than the market. This was in contrast to liberalism, which was the dominant political philosophy at the time and held that all social problems, including environmental ones, could and should be solved through the free market. Gifford Pinchot (1865–1946), the founding director of the U.S. Forest Service, created an early philosophy of resource conservation, according to which conservation meant making intelligent and effective use of resources (Lorraine 2000).

Turkey has a large and diverse wildlife population. Turkey is a sizable nation with numerous geographical and climatic zones, as well as a wide variety of flora and animals, each suitable for a certain ecosystem. There are around 1,500 species of vertebrates and 19,000 types of invertebrates known to exist in the nation. This region was where many of the world's basic foods were initially domesticated, and it is now home to many of its wild ancestors. Several migratory birds use the nation as a crossing point between Europe, Asia, and the Near East (Muminjanov, H.; Karagöz, A. 2018).

In prehistoric periods, one-third of the land that is now Rwanda was covered by montane forest, which is what makes up Rwanda's flora and fauna today. The three National Parks and four small forest reserves still have some natural vegetation, although the rest of the land is dominated by terraced agriculture (Booth, Janice 2006).

In the past, Somali wildlife was found in all parts of the nation, but poaching and the widespread destruction of animal habitats in the north have decimated the herds of giraffes, zebras, oryx, hippopotamuses, rhinoceroses, and elephants that previously called that region

home. A few national parks were created in the 1980s, but they have been neglected ever since the unification of the country's government in 1991. But they still remain, and it's possible to still see animals there that have vanished from other parts of Somalia (A-Z animals 2008).

The three main sources of ecological theory are: (1) attempts to control fisheries, pests, or wildlife, (2) inquiries into patterns in nature, particularly spatial pattern and the apparent order of species assemblages, and (3) studies into "the balance of nature" (and how that balance can be disturbed). In some ways, the fields of plant ecology and animal ecology developed their own ecological theories independently. For instance, animal ecologists tended to focus more on population dynamics while quantitative plant ecologists were more interested in patterns of plant dispersion and the connections between specific plants and their environments. But neither plant nor animal ecologists produced the most significant early ecological models. Instead, physicists, mathematicians, and human demographers made the bulk of the contributions to these ground-breaking models

Environmental change is a pressing issue as evidenced by the rise of extreme weather conditions in many parts of the world, threatening the survival of vulnerable species and habitats ((Ma et al., 2018).

Wildlife refers to undomesticated animal species, but has come to include all organisms that grow or live wild in an area without being introduced by humans (Usher, M. B. 1986).

The main objective of this study was to investigate the effect of environmental changes on wildlife population.

While the specific objectives of this study were:

- ❖ To determine the impact of natural disasters on wildlife population
- ❖ To find out the effect of human interference on wildlife population
- ❖ To establish the relationship between environmental changes on wildlife population

Methodology

The study was quantitative in design. In quantitative design, the researcher aims to determine the problem numerically. This type of design doesn't need to go deep into the details of the problem and it will be conducted through survey research design. The data collected from surveys is then statistically analyzed to draw meaningful research conclusions. It was used to collect a large amount of data in a relatively short period. Surveys can also be used to collect information on a broad range of things, including personal facts, attitudes, past behaviors, and opinions. We use this design drainage system in Mogadishu Somalia. This study was conducted in 100 people of target population this target population has been Chosen because it is the available populations and can collect the information easily and as soon as possible. The population consists of students, business community, drivers and engineers.

The sample size of the study was consisting of 80 to determine the best sample size for the population; it will also collect data from 80 respondents. A justification of sample size, because this study was used Slovenes formula which is $n=N/(1+(N*e^2))$, where n = sample size, N = population size, and e = margin of error of 5% $N= 100/(1+(100*0.0025)) = 80$ subjects.

Literature Review

A natural disaster is the occurrence of an extremely hazardous event that impacts communities, causes damage, disruption, and casualties while rendering the affected communities unable to function normally without outside assistance. Examples of natural hazards include earthquakes, landslides, tsunamis, windstorms, floods, and droughts (Twig, 2007).

Depending on the objective of the study and the scientist doing the evaluation, the term "natural disaster impact" (NDI) can take on several meanings. It can be described as the direct, indirect, and intangible losses a natural disaster causes to the environment and society (Swiss Re, 1998).

Direct losses involve tangible consequences like devastation and adjustments that make a person or structure less functional. The cost of clean-up and disposal, as well as damages to individuals (death/injury), buildings, their contents, and vehicles, is included.

By interfering with or harming local companies and utility services, indirect losses have an impact on society. Revenue loss, cost growth, costs associated with providing aid, accommodation, and drinking water, as well as expenditures related to having to go farther because of blocked.

Several people are impacted by disasters all throughout the world, regardless of their location, race, or economic standing. In actuality, they are now a common occurrence. Nearly every day, you hear of

disasters occurring in one part of the world or another. To take corrective action, we need to understand how disasters affect people, companies, governments, and the environment. Many of the consequences of disasters are the same for both natural and man-made disasters. First, we talk about the effects of natural disasters, both good and bad.

On a worldwide scale, natural disasters pose a severe concern. Natural catastrophes occur more frequently each year (Center for Research on the Epidemiology of Disasters [CRED], 2020), and this trend is anticipated to continue as a result of climate change in the future (Intergovernmental Panel on Climate Change [IPCC], 2018). Natural catastrophes alone harmed 68.5 million people globally in 2018, with over 11,000 deaths projected, and caused damages of US\$132 billion (CRED, 2019).

Natural catastrophes result in significant changes to the way of life in the impacted areas (Economic Commission for Latin America and the Caribbean [ECLAC], 2014). Secondly, according to the findings (Klomp and Valckx (2014) and Lazzaroni and van Bergeijk (2014), there is less economic development following a disaster. Natural disasters also have an impact on the development of human capital. On the one hand, they have the potential to devastate local hospitals, schools, and transportation systems. Yet, if they have an impact on household income, there may be less of a need for human capital due to lower discretionary money and a rise in the marginal utility of child labor (Ferreira and Schady, 2008). The effects of disasters were also examined in dimensions such as health (Maclean et al., 2016; Hikichi et al., 2019; Ogasawara, 2019), poverty (Sánchez and Calderón, 2015; González et al., 2019; 2020) or education (Caruso, 2017).

Given the possible effects of natural disasters, having a uniform methodology that enables measuring their socioeconomic impact and streamlines the execution of mitigation and prevention measures is crucial. Today, though, a variety of techniques are seen to exist. As a result, ECLAC (2003) proposed two categories of damage that are frequently used in the literature on disasters: direct effects, which refer to the actual physical harm caused by the disaster (including damage to assets, mortality, and morbidity), and indirect effects, which take into account the impact on productive flows. Similar distinctions between first order effects (assimilable to direct effects) and higher order effects (effects of order n deriving from effects of order $n-1$) are made by the WorldBank (2010).

Natural disasters and their negative effects on wildlife

Natural disasters affect wildlife in numerous ways. The effects include

1. Droughts.

2. Floods.
3. Wildfire.

DROUGHTS

A lack of precipitation over a lengthy period of time is called a drought. It is a typical, frequent aspect of the climate that appears in almost all climatic zones. The length of droughts varies significantly. Occasionally, due to extremely high temperatures and/or strong winds, a drought may emerge quite rapidly and last just a short while. Other times, a drought will endure for several years or even decades. Knowing when prolonged droughts have occurred may frequently be determined by studying the paleoclimate record.

The National Integrated Drought Information System (NIDIS), which was formed by Congressional Act in 2006 to construct an integrated drought monitoring and forecasting system at federal, state, and local levels, includes the USDM as a crucial monitoring component. As part of its early warning system, NIDIS incorporates drought monitoring, forecasting, response, research, and teaching components. The U.S. Drought Portal includes these elements.

The U.S. Drought Monitor (USDM) is a weekly product that provides a general summary of current drought conditions. Multiple drought indicators, including various indices, outlooks, field reports, and news accounts are reviewed and synthesized. In addition, numerous experts from agencies and offices across the country are consulted. The result is the consensus assessment presented on the USDM map. <http://droughtmonitor.unl.edu> <http://drought.unl.edu>

Drought Impact Reporter: The National Drought Mitigation Center's Drought Impact Reporter's objective is to compile, measure, and map documented drought impacts for the United States and to make the reports accessible through interactive search capabilities. Via the tool's user-friendly web interface, users may submit their own drought effect reports.

The U.S. Monthly and Seasonal Drought Outlooks (MDO, SDO) identify potential drought hotspots and forecast trends for regions that are currently experiencing drought as shown by the U.S. Drought Monitor. On the third Thursday (SDO) and final day (MDO) of the month, the NOAA Climate Prediction Center releases this monthly product along with their long-lead temperature and precipitation outlooks. The broad large-scale patterns shown are based on a variety of factors, such as short-term and long-range forecasts. A discussion detailing the short and long-range

forecasts. Atmospheric, hydrologic, and climatic conditions affecting the drought trends is included: Human factors, such as water demand and water management, can exacerbate the impact that drought has on a region. Because of the interplay between a natural drought event and various human factors, drought means different things to different people. In practice, drought is defined in a number of ways that reflect various perspectives and interests.

Common Types of Drought

Meteorological Drought is based on the degree of dryness (rainfall deficit) and the length of the dry period.

Agricultural Drought

Agricultural Drought is based on the impacts to agriculture by factors such as rainfall deficits, soilwater deficits, reduced ground water, or reservoir levels needed for irrigation.

Socioeconomic Drought

Socioeconomic drought is based on the impact of drought conditions (meteorological, agricultural, or hydrological drought) on supply and demand of some economic goods. Socioeconomic drought occurs when the demand for an economic good exceeds supply as a result of a weather-related deficit in water supply.

Floods

Wildlife have been affected by the floods that are currently impacting many areas of Victoria. An updated factsheet regarding safety and wildlife welfare has been prepared.

Provision of food

Feeding of wildlife is generally not recommended as it can cause a range of issues for the existing and recovering environment, wildlife and community members, including:

Wildlife becoming dependent on people for food and not dispersing away from flood-affected areas or undertaking normal foraging behaviours. Dietary deficiencies or harmful foods impacting animal welfare, Transferring disease between wildlife, Creating weed problems from unsterilised feed Attracting predators and pests to feeding sites, resulting in negative impacts on wildlife through predation and competition for resources.

Favouring aggressive species or individuals leading to unnatural densities and disadvantaging threatened species. Wildlife becoming a nuisance and acting aggressively towards people to

Wildfire

There aren't many locations in western North America where wildfire and its consequences are unfamiliar sights, however this is changing in the north of Canada and Alaska. Wildfires occurred in 2017.

More than 800,000 hectares of National Forest land were destroyed by fire in the same year as a record 4.1 million hectares of US land were destroyed. Almost 3.6 million acres of National Forest areas have been burnt in the five years between 2011 and 2015, making them particularly hard-hit. Given the horrifying pictures that are produced by these flames, it is not unexpected that the public has a very negative opinion of wildfires and that the majority of people support measures to lower the risks of large, catastrophic fires.

The public is also less knowledgeable about the benefits of wildfires, such as the creation of wildlife habitat or the maintenance of ecological processes upon which many desirable ecosystem services depend.

But, as experts in wildlife know, many ecosystems in North America are fire-adapted and require fire to change their structures, functions, and processes, which in turn alter the habitats and populations of animals in significant ways. Yet, throughout the past century, combined effects of land expansion, logging, livestock grazing, and fire suppression have resulted in situations where many wildfires are bigger and burn more intensely than they did in the past (The Wildlife Professional, 2016).

SPECIFIC OBJECTIVE TWO: HUMAN INTERFERENCE

In particular, large and rare mammals like the Asian lion (*Panthera leo persica*) and Sumatran tiger (*Panthera tigris sumatrae*) as well as less endangered species like the snow leopard (*Uncia uncia*) and red colobus monkey are seriously threatened by human-wildlife conflict (HWC), which is quickly growing into a serious issue (*Procolopus kirkii*). All eight species of bears are involved in human-bear conflict (HBC), which affects large portions of Europe, Asia, North America, and the South American Andes. Human-wildlife conflict is severe, as seen by the numerous incidents from nations across the globe. This suggests that a thorough study is necessary to comprehend the issue and support the chances for the conservation of vulnerable and potentially endangered species.

So what exactly is HWC, and when and where does it often happen? The World Conservation Union (World Park Congress 2003) states that it happens when wildlife needs conflict with those of human populations, posing a financial burden on both locals and wild animals. Direct encounters with wildlife happen in both urban and rural areas, but they tend to happen more frequently in and around protected areas due to factors like higher wildlife population density, a lack of delectable food in the forest, and the fact that animals frequently stray into nearby cultivated fields or grazing areas.

When people inflict harm on animals and vice versa, human-wildlife conflicts (HWC) result. HWC, according to Conover (2002), occurs anytime a human activity or a wildlife action has a negative impact on one another. A wide range of animal species have been involved in such fights, which have been

documented around the planet in terrestrial, aquatic, and aerial habitats (Torres et al.,2018).

Human habitat loss and encroachment for various economic activities are having a growing negative impact on primates and other wild species (Fourie et al., 2015). HWC results from situations when people and wildlife are at odds with one other, such as when crops are raided, animals are harmed, or people are killed (Woodroffe et al., 2005).

The HWC problem is not a recent development. Conflict between humans and nature has existed since the dawn of civilisation, but today's phenomena, which over the past two decades has gotten worse, offers a severe environmental concern (Anand and Radhakrishna, 2017). Conflicts between people and wild animals have existed as long as they have used the same resources.

HWC will result from sharing and competition for scarce resources. Wild animals frequently raid crops across the world (Fenta, 2014).

Kate, 2012; Gandiwa et al., 2013, Gandiwa et al., 2012; Gusset et al (2009). If there is a clash between wild animal needs and human needs, overlap (Gandiwa et al., 2012). (Gandiwa et al., 2012). Somewhere in the globe, there is conflict. Although HWC is a global issue, it is most acute on the African continent, where the bulk of the population relies on agriculture, hastening the change of natural habitat to agricultural fields (Kate, 2012). The most common kind of HWC on the African continent is crop damage (FAO, 2009). Human population growth in or near animal habitats and alteration of the natural environment for agricultural or other commercial purposes increase HWC (Hockings and Humle, 2009; Knight) (2000).

Animals can directly endanger people's lives, livelihoods, and general wellness. For instance, seals harm crops when elephants graze on them.

Livestock can be killed by fishing nets or Jaguars, costing families their livelihoods. Often, retaliation against the species that was accused follows.

The phrase "human-wildlife conflict" has historically exclusively been used to refer to these antagonistic interactions between humans and wildlife, however this assumes purposeful action on the part of animal species and ignores disagreements among human communities regarding the appropriate course of action. The Human-Wildlife Conflict & Coexistence Specialist Group of the IUCN Species Survival Commission (SSC) defines human-wildlife conflict as:

Conflicts between humans and animals are increasing in frequency, severity, and prevalence because to human population increase, agriculture expansion, infrastructure improvement, climate change, and other

factors are also responsible for habitat loss. Conflicts between people and animals can arise wherever that there are overlapping populations of both, therefore any factor that brings the two groups closer together increases the likelihood of conflicts.

Several efforts have been made to date to prevent negative effects on people and reprisal against animals by erecting barriers, using deterrents, or transporting wildlife.

The primates are experiencing enormous difficulties as natural woodlands are being removed. HWC mitigation is essential for wildlife conservation (Ogra and Badola, 2008).

The primary issues that hinder animal life are residential and commercial development, agricultural and aquaculture expansions into forest regions. Understanding HWC drivers is a requirement for creating successful and affordable conservation strategies.

Conflict between people and wildlife (HWC) arises when either the needs or behavior of wildlife negatively affects humans or when humans negatively affect the requirements of wildlife.

These conflicts may arise when wildlife destroys crops, poses a threat to, harms, or kills people or domestic animals (Oxford University; 2001).

These are serious issues that the expanding rural population in and surrounding areas with wildlife habitats has brought about (Sukuma 1968).

Because they depend on the presence of animals nearby, human-wildlife conflict situations are common but not uniformly distributed. Additionally, other species contribute to harm of various kinds at various periods of the year. Depending on the households' level of livelihood security at the time of the occurrence, the damage produced has varying effects on their quality of life (Mulonga S, Suich H, 2003).

Population near areas that support wildlife. Conflicts of this nature become more frequent and intense as human population and resource demand rise.

This may be seen in the expansion of human encroachment into wildlife habitats. Because of this, populations of species that cannot adapt to changed environments may move into marginal areas or become less numerous (Newmark WD, Leonard NL, Sarko HI, Gemassa DM 1993).

Conflicts between humans and animals threaten human welfare, health, and safety while also having an impact on the economy and society (Ogada MO, 2003).

Being a reciprocal process, HWC negatively affects both humans and animals, making it one of the most difficult and pressing problems in wildlife management and conservation (ank B, Glikman JA, Marchini S. 2019).

Coexistence is defined as a dynamic yet sustainable condition in which people and animals co- adapt to live in shared surroundings and where there are few conflicts between the two regulated by effective institutions that guarantee the long-term survival of the wildlife population, social acceptability, and acceptable levels of danger (König HJ, Kifner C, Kramer-Schadt S, Fürst C, Keuling 2020).

In Ethiopia's protected regions, there are numerous conflicts between people and animals that require resolution, but not enough empirical research has been done on these problems. Local neighborhoods do not adequately profit from natural resources, and are turned off by businesses that depend on wildlife. Bale Mountains National Park (BMNP), like other parks or protected places in Ethiopia, is greatly influenced by the activities of the people who live there and the surrounding region. This encounter has a negative impact on both the animals and the locals living close to the park.

RELATIONSHIP BETWEEN ENVIRONMENTAL CHANGE AND WILDLIFE

Since around 175 years ago, scientists have understood that "greenhouse gases" like carbon dioxide, which absorb in the infrared region of the electromagnetic spectrum, cause the surface of the Earth to warm. The Swedish scientist Svante Arrhenius conducted the first quantitative analysis of the impact of elevated carbon dioxide concentrations on the atmosphere in 1896. From the Mauna Loa Observatory in Hawaii, Charles Keeling and his colleagues started a regular series of precise observations of the atmospheric carbon dioxide concentration in the 1960s. As a result of human activity, particularly the combustion of fossil fuels, they exhibited rising levels.

The potential effects on the environment were first considered in the 1980s when the pace of rise in carbon dioxide concentration grew. Politicians and scientists are now both concerned about the state of the world's climate. The report of a scientific conference sponsored by the Scientific Committee and held in Villach, Austria in 1985 (SCOPE 29, 1986)

Governments and the general public have been made aware of the potential severity of the situation through the International Council of Scientific Unions' Standing Committee on Problems of the Environment (SCOPE). The carbon dioxide content was predicted to double by the end of the twenty-first century. Three international organizations—the International Council of Scientific Unions (ICSU), the United Nations Environment Programme (UNEP), and the World Meteorological Organization (WMO)—took

action in 1986. (ICSU), founded the Advisory Group on Greenhouse Gases (AGGG), a small international body tasked with evaluating the current scientific data, who had also co-sponsored the Villach meeting. Information regarding the rise in greenhouse gases and its potential effects.

Most biological systems on our planet have been adversely affected by environmental change, and this worry for many species' survival and welfare is growing. At the organismal level, effects include teratogenic and genotoxic effects, immunosuppression, and other immune-system impairments that can directly cause disease or increase the risk of contracting disease, in addition to endocrine disruptions, sex ratio changes, and decreased reproductive parameters. Living things will make an effort to be healthy by identifying and dealing with abnormal circumstances, such as the presence of toxic peptides or invasive bacteria, improper cell division, and detrimental mutations. Fast environmental change, however, may put additional strain on maintaining immunity and health, which may negatively affect population viability and persistence. Here, we discuss the necessity of a healthy immune system for survival and investigate how being exposed to an environment that is changing quickly may affect immune competence.

Then, we discuss the many levels at which anthropogenic environmental change may have an impact on animal health and pinpoint potential deficiencies in reproductive parameters that may develop as a result of fresh immunological challenges in the context of an environment that is changing quickly. Examples and case studies are provided to show the effect of environmental change on animal health throughout the text.

The current conceptual framework can be traced back to the groundbreaking studies of researchers like John Hammond and his Cambridge colleagues (Hammond 1932; Hammond et al. 1976), as well as Robert McCance and Elsie Widdowson. These studies suggested that the phenotype of an adult individual can be influenced by events that occur earlier in life, such as either in utero or during infancy.

CONCLUSIONS

This study was intended to examine the effect of environmental change on wildlife population. study has showed that environmental change has a negative effect on the wildlife population.

First objective of this study was to determine the effect of natural disaster on wildlife population in

Somalia. The study found that majority of the respondent assigned agree or strongly agree, which indicates that natural disaster has negative effect on wildlife population and it also leads to loss of livelihood and environmental damage.

The second objective of this study was to find out the effect of human interference on wildlife population in Somalia. The study discovered that most of the respondent assigned agree or strongly agree, which shows that human interference has negative effect on wildlife population, the negative effect also includes deforestation, global warming, and overconsumption.

And the conclusion there is negative relationship between environmental change and wildlife population.

Recommendations

Based on the findings and the conclusions of the study, the researcher offered the following recommendations: -

1. Avoiding excess use of pesticides and fertilizer and learning to enjoy nature quietly.
2. Integrates diverse kinds of knowledge and explicitly engages the social, ecological, physical, health, and engineering sciences.
3. Making carbon pricing systems – such as emissions trading systems that cap emissions of carbon taxes that charge per ton – send a long-term signal to companies by creating an incentive
4. to reduce polluting behaviors and to invest in cleaner energy choices and low-carbon innovation.
5. Increase energy efficiency and use of renewable energy.
6. Develops and employs decision-support resources and tools that make scientific knowledge useful and accessible to decision makers.

Areas of further research

Further areas of research that might be of interest to this study are: the effect of natural disaster on wildlife in Somali and the effects of human interference on wildlife.

References

- Booth, Janice (2006). *Rwanda*. Bradt Travel Guides. ISBN 978-1-84162-180-7. Retrieved 18 April 2013.
- Center for Research on the Epidemiology of Disasters [CRED], (2019)
- Center for Research on the Epidemiology of Disasters [CRED], (2020)
- Ecology, Concepts and Theories in Peter Kareiva, Michelle Marvier, in *Encyclopedia of Biodiversity*, 2001
<https://www.sciencedirect.com/topics/earth-and-planetary-sciences/ecological-theory>
- Fenta, MM (2014) *Human-Wildlife Conflicts: Case Study in Wondo Genet District, Southern Ethiopia*. *Agriculture, Forestry and Fisheries*. 3(5): 352-362
- John P. Rafferty Michele Metych jan 11, 2011 <https://www.britannica.com/event/eruption-of-Thera>
natural disasters articles
- Hockings, K; Humle, T (2009). *Best Practices Guidelines for the Prevention and Mitigations of Conflict between Humans and Great Apes*, Occasional Paper of the IUCN Species Survival Commissions No 37.
- Lorraine Elliott, *The Environment Movement in Australia* (2000). *The British journal Environmental Politics* (quarterly) publishes regular and authoritative updates on green parties in most parts of the world.
- Muminjanov, H.; Karagöz, A. (2018). *Biodiversity of Turkey: Contribution of Genetic Resources to Sustainable Agriculture and Food Systems*. Ankara: Food and Agriculture Organization of the United Nations. ISBN 978-92-5-130959-9.
- Ogra, M; Badola, R (2008). *Compensating Human Wildlife Conflict in Protected Area Communities: Ground-Level Perspectives from Uttarakhand, India*, *Hum Ecol*. 36: 717-729.
- Torres, DF; Oliveeira, ES; Nobrega Alves, RM (2018). *Understanding human-wildlife conflicts and their implications*. *Ethnozoology*. pp. 421-445
- Usher, M. B. (1986). *Wildlife conservation evaluation: attributes, criteria and values*. London, New York: Chapman & Hall. ISBN 978-94-010-8315-7.
- Woodroffe, R; Thirgood, S; Rabinowitz, A (2005). *People and Wildlife, conflict or co-existence?* *Conservation Biology* (No.9).

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