

PUBLISHED ON 29<sup>TH</sup> FEB 2012



## IMPACT OF GLOBAL WARMING AND CLIMATE CHANGE ON

### BIODIVERSITY

PRANAB PAL

WILDLIFE INSTITUTE OF INDIA, DEHRA DUN.

[ppal@wii.gov.in](mailto:ppal@wii.gov.in)

#### ABSTRACT:

Conservation of Biodiversity is a serious concern for today's Societies. The decrease of biodiversity in an ecosystem or in a order frequently threatens its health. Calculate approximately of the figure of species at present living on soil choice broadly, mostly because most living species are microorganisms and small invertebrates, but the majority estimates go down between 5 million and 30 million species. Around 1.75 million species have been formally described and specified taxonomic names. The quantity of under scribed species is certainly a great deal higher, though, now one assembly of animals without help, the insects, may account for an implausible 50 million species. In spite of expressive about biodiversity significance for a lengthy time, human movement has been causing enormous extinctions. Internationally, enormous efforts have been made so for to extensively reduce the present rate of biodiversity loss. The loss of biodiversity may not unswervingly have an effect on humans, but the indirect effects of bringing up the rear several species as well as the assortment of ecosystems in common are gigantic. Deforestation, mostly all the way through conversion of forests to agricultural land, continues at an frighteningly elevated rate. The loss of most important forest since 2000 has been likely at 6 million hectares yearly. According to WWF 10-30% of the mammal, bird and amphibian species endangered with disappearance, due to human dealings. marshland and marine areas have endured sky-scraping levels of habitation damage. Expert estimates that over 400 million people in India rural area have no way in to electricity. These people mostly option to kerosene for lighting and fuel wood for cooking, firewood which are costly, harmful to health and a root of deforestation. Whereas much of this occurred in northern countries during the first 50 years of the 20<sup>th</sup> century The Economics of ecosystems and Biodiversity (TEEB 2009). In European country also 60%-70% wetlands have been utterly damaged. Climate change is one of the the largest part important budding risks facing the world today, presenting enormous challenges to the environment and to worldwide and total economics. International energy agency estimate that 70% of greenhouse gas emission reductions could be achieved throughout the diffusion of accessible low-carbon and energy – proficient technologies. Scientist convey that over the past 30 years, freshwater species have declined earlier

composite to global or marine species. A new worldwide study concludes that 90% of all large fishes have vanished from the world's oceans in the past half century, the overwhelming result of industrial fishing. An additional reason for extirpated fish extinction is the damage of coral reef. Climate change not only pressure the animal behavior but also hack the genetic diversity of the animals. A section of people believes that more than Rs. 40,000 crore importance of forest produce as well as minerals are extracted from India's forests yearly. Estimate of the effects of climate change on crop yields are mainly negative for the tropics, still when description and direct effects of CO<sub>2</sub> on plant processes are taken into contemplation. Ecological output and biodiversity will be untouched by climate change and sea-level rise, with an amplified risk of destruction of some vulnerable species. An estimates point out that human action may eradicate 20 to 30 million species in the next generation alone. Natural systems are vulnerable to climate change, wild tiger numbers have fallen by about 95% over the past 100 years. Tiger survive in 40% less area than they occupied a decade ago. Therefore, it is of supreme meaning to defend our look after nature by protecting our valuable biodiversity. Biodiversity is imperative not just from of outlook of conservation. Biodiversity can be measured at most important levels, such as the genetic variation of populations the number, relative abundance and uniqueness of species, the variety extent and condition of ecosystems, the interrelationships between biodiversity and ecosystems and the like.

**Key Words :** *Global Warming, Climate Change, Effects on Biodiversity.*

## **INTRODUCTION :**

Growing climate change will compel biodiversity loss, disturbing both individual species and their ecosystems. While climate conditions are vary, sudden results may follow. Climate change can also increase an ecosystem's vulnerability to existing pressures. An ecosystem means a community of plant and animals species and the physical environment that include climate system. The enlarged concentrations of atmospheric carbon dioxide that are driving global warming also have a direct effects on plants, both increasing rates of photosynthesis and improving water use efficiency ([www.unep-wcmc.org](http://www.unep-wcmc.org)). Scientific evidence including Intergovernmental Panel for climate change (IPCC) assessment report that approximately 20% -30% of species assessed so far are probable to be at increased threat of extinction. A number of the wildlife species hardest strike so far by global warming comprise Polar bears, Penguins, Gray wolves, Painted turtles, Reindeer and Arctic foxes. The list of wildlife populations pressed to the edge of disappearance by a changing climate. Global warming might also impact ocean life and life on earth by changing the ocean's circulatory patterns and the upwelling and down welling, which can have an effect on nutrient and oxygen delivery over large areas. Much concentration focuses on the pragmatic retreat of Himalayan glaciers, the basis region for India's three major rivers. The Indian Network for Climate Change

Assessment (INCCA) information anticipates an augment in water run – off in the Himalayan region of 5%- 20%. Further than the 2030s, the 500 million people living in the catchments of the Ganges, and Indus rivers might practice retreating and water accessibility in summer. Researcher estimates that yearly monetary losses arising from normal disasters by now sum to 2% of India's GDP. Climate change will steadily put prominence on about all of the disaster risks concerned. The warming of the planet is mostly the consequence of emissions of carbon dioxide and other greenhouse gases from industrial processes, relic fuel burning , and changes inland use such as deforestation. Tropical species are in danger by deforestation and global climate change. Species in protected areas may perish as a result of rising ocean levels and climatic changes. Climate changes could powerfully impact biodiversity. Plants and animals, human habitation are now endangered due to climatic reasons ([www.conservation.org](http://www.conservation.org)). Global climate change is a supreme challenge of the 21<sup>st</sup> century. In view of the fact that the commencement of the industrial revolution, atmospheric concentrations of carbon dioxide (CO<sub>2</sub>), the main heat trapping GHG, have risen 35% due to the burning of fossil fuels and deforestation. If current trends in GHG emissions growth are not changed, global temperatures are likely to rise between 1.4 and 5.8<sup>0</sup>c by 2100. Such temperatures changes are likely to have damaging impacts on forests, agricultural production, water supply, and overall human health and development ( Sarkar A.N. 2010). The terms global warming and climate change are the two different phenomena. Global warming is the rise in global temperatures due to an increase of heat-trapping carbon emission in the atmosphere. Climate change, on the other hand refers to changes in many climatic factors namely, hotness and rainfall. Biodiversity the variety of life on earth as well as diversity of the genetic level, among species and among ecosystem and habitats and provides the basis for ecosystems and the services they provide, upon which all people fundamentally depend, any change in climate over time whether two decades after our common future emphasized the urgency of sustainable development, ecological degradation continues to threaten human wellbeing, endangering biodiversity (GOE4). The biodiversity plays an important role in the way ecosystems function and in the many services like maintenance of ecosystem, climate stability, soil formation, pollution breakdown, protection of water resource, food and pharmaceuticals importance ([www.iucn.org](http://www.iucn.org)).Forest area an integral part of global sustainable development, forest related economic activities affect livelihoods of 1.6 billion people worldwide, they provide socio-cultural benefits and are the foundation for indigenous knowledge; and as ecosystems, forests play a critical role in mitigating the effects of climate change and protecting biodiversity. It is in this context that the need for sustainable forest management arises. This refer to the use and conservation of forest for the benefit of present and future generations. It is clearly an issue of widespread interest. It is estimated that every day,

some 350 square kilometers of forest cover are lost worldwide. Conversion to agricultural land, unsustainable harvesting of timber, unsound land management practices and creation of human settlements are the most common reasons for this loss of forest areas.

**CLIMATE CHANGE AND THREAT TO BIODIVERSITY :-** Disappearance is a natural event and from a geological outlook, routine. The globe has previously practiced five natural extinctions. The first at about 440 million year back (m.y.a) (Ordovician) , Second 370 (M.y.a.) (Devonian), Third 250 (m.y.a.), Fourth 110 m.y.a. (Triassic) and Fifth 65 (m.y.a.) (Cretaceous) when dinosaurs extinct (BIOCOM,2008) The entire these five extinctions were caused due to climate change. It has long been feared that human activity is causing immense extinctions. In spite of increased efforts at conservation, it has not been enough and biodiversity losses continue. The costs associated with weakening ecosystems will be high. However, sustainable development and consumption would help prevent ecological problems. Life on planet earth faces a increasing risk of extinction due to threat of global warming. The reasons behind global warming is man who are exploiting the nature for his own benefits, thereby bringing about a immense climatic change. Human enterprises have emerged as the root cause of global warming. These have increased the emission of greenhouse gasses, which lock up the heat in the earth's atmosphere. These gases have led to the depletion of the ozone layer, as a result of which all species are now exposed to the harmful ultraviolet rays of the sun climate change effects are due to an increase in greenhouses gasses in the atmosphere such as carbon dioxide, methane, nitrous oxide and fluorocarbons, forest destruction human activities such as burning of fossil fuels, farming is responsible for greenhouse gasses emissions in the atmosphere. Climate change will increasing drive biodiversity loss, affecting both individual species and their ecosystems. An ecosystem can be defined as a community of plant and animals species and the physical environment that they occupy, which include climate regime. Due to human actions, species and ecosystems are threatened with destruction to an extent rarely seen in earth history. Due to large dam projects in the northeast, especially in Arunachal Pradesh, has become a major conservation concern in recent years. Many of these large dams are likely to submerge vast biodiversity forest areas. The elephant habitats of the north bank of the Brahmaputra are under severe pressure resulting in degradation and fragmentation. The most important pressures on biodiversity and ecosystem services are habitat change such as land use changes, physical modification of rivers or water withdrawal from rivers and loss of coral reefs, climate change, invasive species, overexploitation and pollution. Experts analysis that in India there are 410 species of mammals 8.86% of the world's mammals, which are spread over 186 genera, 45 families and 13 orders out of which nearly 89 species are listed as threatened in the IUCN and Red list of threatened species (Table:-1)

Table 1:- Endangered Animal of India

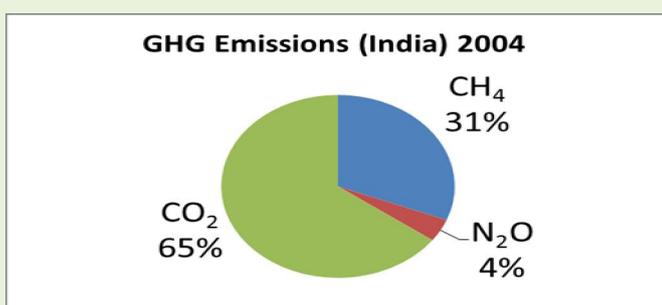
Sl. No.	Name of Mammals	Scientific Name	Sl. No.	Name of Mammals	Scientific Name
1.	Asiatic Golden Cat	<i>Felis temmincki</i>	29.	Jackal	<i>Canisaureus</i>
2.	Asiatic Lion	<i>Panthera leo persica</i>	30.	Hangul	<i>Cervus affinis hanglu</i>
3.	Asiatic Cheetah	<i>Acinonyx jubatus venati</i>	31.	Leopard	<i>Panthere pardus</i>
4.	Indian Wild Ass	<i>Equus hemionus khur</i>	32.	Lesser Panda	<i>Ailurus fulgens</i>
5.	Asiatic Wild Dog	<i>Cuon alpines</i>	33.	Lion tailed Macaque	<i>Macaca silenus</i>
6.	Asiatic Black Bear	<i>Selenar ctos thibetanus</i>	34.	Tiger	<i>Panthera tigris</i>
7.	Bengal Fox	<i>Vulpes bengalensis</i>	35.	Malabar Civet	<i>Viverra civettina</i>
8.	Brow antlered Deer	<i>Cervus eldi eldi</i>	36.	Marbled Cat	<i>Felis marmorata</i>
9.	Brown Bear	<i>Ursus arctos</i>	37.	Markhor	<i>Capra falconeri</i>
10.	Jerdon's Palm Civet	<i>Paradoxutus jerdoni</i>	38.	Nayan	<i>Ovis ammon hodgson</i>
11.	Clawless Otter	<i>Amblonyx cinereus</i>	39.	Niligiri Langur	<i>Presbytis johni</i>
12.	Clouded Leopard	<i>Neofelis nebulosa</i>	40.	Nilgiri Marten	<i>Martes gwatkinsi</i>
13.	Common Otter	<i>Lutra lutra</i>	41.	Nilgiri Tahr	<i>Hemitragus hylocrius</i>
14.	Desert Cat	<i>Felis libyca ornate</i>	42.	Phayre's Langur	<i>Trachypithecus phay</i>
15.	Dugong/ Seacow	<i>Dugong dugon</i>	43.	Pygmy Hog	<i>Sus salvanius</i>
16.	Ganga River Dolphin	<i>Platanista gangetica</i>	44.	Red Fox	<i>Vulpes vulpes montana</i>
17.	Gaur	<i>Bos gaurus</i>	45.	Rusty spotted Cat	<i>Prionailurus rubiginos</i>
18.	Golden Langur	<i>Trachypithecus geei</i>	46.	Serow	<i>Nemorhaedus sumatraensis</i>
19.	Goral	<i>Nemorhaedus goral</i>	47.	Sloth Bear	<i>Melursus ursinus</i>
20.	Indian Rhinoceros	<i>Rhinoceros unicornis</i>	48.	Smooth Indian Otter	<i>Lutrogale oerspicilla</i>
21.	Grey Wolf	<i>Canis lupus</i>	49.	Snow Leopard	<i>Uncia uncia</i>
22.	Himalayan Marten	<i>Martes flavigula</i>	50.	Stump- tailed Macaq	<i>Macaca aectoides</i>
23.	Himalayan Musk Deer	<i>Moschus chrysogaster</i>	51.	Swamp Barasingha	<i>Cervus duvauceli</i>
24.	Sikkim large cla Shrew	<i>Soriculus nigrescens</i>	52.	Takin	<i>Budorcas taxicolor</i>
25.	Hispid Hare	<i>Caprolagus hispidus</i>	53.	Tibetan Wild Ass	<i>Equus hemionus kiar</i>
26.	Hoolock Gibbon	<i>Hylobates hoolock</i>	54.	Banteng	<i>Bos javancius</i>
27.	Indian Elephant	<i>Elephas maximus</i>	55.	Himalayan W-too	<i>Crocidura attenuate</i>

			Shrew
28.	Indian Wild Ass	<i>Equus hemionus khur</i>	

Source:- www.MammalsIndia

Scientist analysis that ocean stage go up of 11 inches over 2000 levels may reason the remain tiger habitat in the Sundarbans (Bangladesh) to decline by 96 % and the threats in front of these Bengal tigers and other iconic species roughly the earth emphasize the require for vital action for diminish greenhouse gas emissions. When climate conditions change, unforeseen results may follow. For instance coral reefs already unhygienic by sediment and nutrient run-off may find it more difficult to survive increasing ocean temperatures. Climate change can also increase an ecosystem’s vulnerability to existing pressures. For example, where fire is used to clear agricultural land, drier, warmer conditions will make an adjacent forest more susceptible to burning. In additions, disturbances such as fires, floods and insect plagues are expected to become more frequent as result of climate change. Up to a point the increased concentrations of atmospheric carbon dioxide that are driving global warming also have a direct effects on plants, both increasing rates of photosynthesis and improving water use efficiency. Marine ecosystems will be affected not only by an increase in sea temperature and changes in ocean circulation, but also by ocean acidification, as the concentration of dissolved carbon dioxide (carbon acid) rises. Polar ecosystems are especially vulnerable to climate change, with effects such as thawing permafrost, decreased snow cover, losses from ice sheets changes in ocean temperatures. Pollution is a nonstop course of action which is going on twenty four hours. Pollution is mainly due to fuels, gases, fumes, smoke coming from certain human activities and exhaust from automobiles. Global increase in carbon dioxide emissions and a variety of human activities including deforestation lead to the largest source of pollution and deforestation can lead to significant levels of CO<sub>2</sub> emissions in some countries (www.epa.gov). In India’s share in the carbon stock in the atmosphere is fairly very small in terms of per capita emissions. Distribution of GHG Emissions from India (Fig:-1).

Fig :-1: Gas by Gas Emission Distribution



Source : State of Environment Report, India, 2009

Deforestation is responsible for about 20% of human-induced carbon dioxide emissions and over the 8000 years about 45% of the earth's original forest has disappeared, most of which was cleared during last century and agriculture is also responsible for biodiversity loss. Unsustainable use and overexploitation remain major threats to biodiversity such as fisheries, agriculture and forestry. Invasive alien species can transform the structure and species composition of ecosystem by excluding native species ([www.cbd.int/climate](http://www.cbd.int/climate) 2010).

**IMPACTS :-** Global warming has represented an impact on different ecosystems. Global warming has resulted in the melting away of glaciers. As a result the water level has risen noticeably resulting in frequent floods, eroding of riverbanks and thus leading to the extinction of several marine species. Run-of-river dams impact the environment in an intensely negative way. The Gangotri glacier is receding at alarming rate of 23 meters per year. The American Space Centre has calculated that by the year 2040 it shall disappear completely (A, Darmora, et al, 2010) There shall be loss of evaporation when river are made to flow tunnels, as a result of which , the glaciers will disappear quickly. the rising necessities of water for inputs to irrigation, household use and developed purposes, has led to the manufacture over 4000 dams across India ([www.indiastat.com](http://www.indiastat.com)) (Table :2).

Table: 2: Dam Commenced through decades in India

Sl. No	Decades/ Periods	No. of built
1.	Before 1900	42
2.	1901-1950	251
3.	1951-1960	234
4.	1961-1970	461
5.	1971-1980	1190
6.	1981-1990	1066
7.	1991-1996	116
8.	1996-2000	695
Note:-Since 2001 more then 500 dam constructe India.		

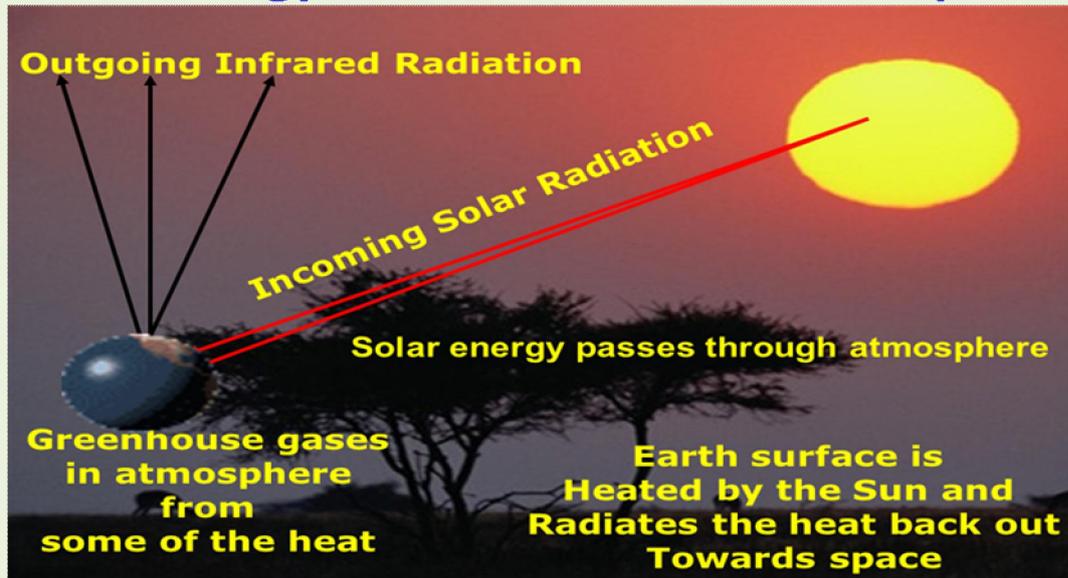
Source :- [www.indiastat.com](http://www.indiastat.com)

Exceptional animals like Himalayan Black bear, Snow trout, Himalayan trout and Smooth-Coated Otter live in the valleys of Bhagirathi and Alaknanda rivers. These species are fast getting extinct. Global warming affects biodiversity in different ways. These comprise: the variety of life on earth, its biological diversity is commonly referred to as biodiversity. The number of species of plants,

animals, and microorganisms, the enormous diversity of genes in these species, the different ecosystems on the planet, such as deserts, rainforests and coral reefs are all part of a biologically diverse earth. (<http://www.globalissues.org/issue/169/biodiversity>). Every species has its chosen climate, and as climate changes, they will try and find that preferred climate by changing their range, if needed. As climate change warms, species will most likely shift upslope and towards the poles. In many cases, that may put species that are found on mountain tops at risk, also species with small ranges or lowland species that may not be able to get to mountain slopes and find equitable climate. Some species, that our study showed to be particularly sensitive to climate change, have already been observed declining in the field, due to warming and drought in South Africa ( [www.pulseplanet.com](http://www.pulseplanet.com)). In a developing like India, climate change could represent an additional stress on ecological systems that are already facing tremendous pressures due to rapid urbanization, industrialization and economic development. With huge and growing population, a 7500 km long densely populated and low lying coastline and an economy that is closely joined to its natural resource base. India is considerably vulnerable to the impacts of climate change. The various studies conducted in the country have shown that the surface air temperatures in India are going up at the rate of 4°C per hundred years, particularly during the post-monsoon and winter season. They predict that mean winter temperatures will increase by as much as 3.2°C in the 2050 and 4.5°C by 2080 due to greenhouse gases. Summer temperatures will increase by 2.2°C in the 2050s and 3.2°C in the 2080s ( Sarkar A.N. 2010).Preserving species and their habitats is important for ecosystems to self-sustain themselves. yet, the pressures to destroy habitat for logging, illegal hunting, and other challenges are making conservation a struggle. Rapid global warming can affect an ecosystems chances to adapt naturally. The arctic is very sensitive to climate change and already seeing lots of changes. Ocean biodiversity is already being affected as are other parts of the ecosystem. One type of ecosystem that perhaps is neglected more than any other is perhaps also the richest in biodiversity the coral reefs. Coral reefs are useful to the environment and to people in a number of ways. However, all around the world, much of the world's marine biodiversity face threats from human and activities as well as natural. It is feared that very soon, many reefs could die off (<http://www.global issues.org/ issue/169/biodiversity>).One often-overlooked consequence of increased temperatures is the spread of disease among wild animals. Because of fragmentation and human development there are few corridors of wild territory for migration. Unable to escape the changes many species within these communities will have to cope or face extinction. One of the contributing factors to the worldwide decline in amphibian populations may be the gradual climate change over the past 100 years, which when coupled with the increase in uv-b radiation, may have weakened their defense to a previously harmless fungal infection. This fungus has been

detected on dead or dying frogs in locations around the world. As these species vanish from globe, the world is truly a poorer place. As a result, the biodiversity impacts and ecosystem degradation have extensive community and economic consequences as they outcome in the irreversible scratch and dreadful conditions of biological services that citizens, societies and businesses depend on. Lacking a intensive hard work to defend and protect biodiversity the whole human contest would be in threat. Loss of species and habitats, wetlands conservation, wildlife trade, pollution, and climate change are concerns requiring efforts to be efficiently addressed (Biodiversity, 2010) Atmosphere change impacts human being fitness directly and indirectly by disturbing natural ecosystem, altering the ecology of a variety of water borne, vector borne, allergens borne diseases as Schistosomiasis, Encephalytis, skin cancer, Asthma, Cholera, Dengue- Malaria Fevers, Sleeping Sickness, waterway blindness and Chacogo diseases in different ecozones of of India, embedded with tropical to temperate precipitations etc (Sharma V.P et al ,2010). Failure of woodland biodiversity can decrease the pliability of forest and go away them more in danger to rising pressures, as well as climate change. Mounting support suggests that biodiversity loss makes forest ecosystems more vulnerable to accessible pressures such as pests and allows outbreaks that reason extensive dreadful conditions or even ecosystem fall down. Degraded forests are less able to maintain and distribute the produce and services that the social order standards and requirements (UNEP, 2011). There is a occurrence of a figure of worldwide in danger avian group such as the Bengal Florican ( present global residents less than 500), Swamp Francolin, lesser Adjutant and the White winged Duck, in addition a number of other grassland and wetland birds. A lot of of these birds as well as the critically–endangered Bengal Florican and vulnerable Swamp Francolin breed in the grasslands in the chapories and lay their eggs on the ground or reed beds (Sanctuary,2011).According to MOEF more than 70% of vegetation vulnerable to vary and Impact on decrease in wheat and rice yields. Rainfall patterns and quantities in periods of drought in some regions, further rainfall in central India and concentrated rain in the north-east, important to changes in forestry and vegetation. Rainwater spells in the Ganga, Krishna and Godavari additional passionate. The downstream impact of dams in the Northeast include; loss of fisheries, changes in wetland ecology in the floodplains; impacts on agriculture on the riverine islands and tracts; impacts on various other livelihoods due to the blockage of of rivers by dam. E.O. Wilson one of greatest biologists estimates that 20 % extinction rate of all species is possible by the year 2022 in addition the loss of forest species due to forest clearing in the past may not be apparent yet today. A study of west African primates found an extinction debt of over 30 % of the total primate fauna as a result of historic deforestation ([www. Rainforests mongubay. com](http://www.Rainforests mongubay. com)).

## Some Energy is Reflected Back out To space



Picture :1- Some Energy is Reflected Back out to Space Source :- Sarkar A.N.

Scientists suggest that a one meter increase in ocean level would relocate over 7 million people, pressure freshwater materials and the attention of production and communications and the reflect this risk world's major cities are Mumbai, Kolkata, Chennai. The World Bank also analysis that 500 million people live in states flat to overwhelming cyclones which are predicted to decrease in frequency but add to intensity.

### CONCLUSION :

Significance of biodiversity to the running of ecosystems is well-known. Ecosystem services are the benefits of the people obtaining from ecosystems. Biodiversity plays an important role in the way ecosystems function and in the many services they provided. Services include nutrients and water cycling, soil formation and retention, resistance against invasive species, pollination of plants, regulation of climate as well as pest and pollution control by ecosystem. Biodiversity loss has harmful impacts on food security, clean water, liability to natural disasters, energy safety and human health ([www.greenfacts.org](http://www.greenfacts.org)). Forests acts a very vital role in protecting the environment and contributes much to economic development and storing up of forest is a prerequisite for maintaining a well-built ecosystem (Thiru K.S. Neelakantan 2006). If natural habitat is destroyed and then species survival is at risk. Destruction of natural habitat may lead to biological disproportion. For protection of forest biodiversity we have need of effective biological conservation if workable solution are to be found to challenges facing the conservation of diversity – surrounding all natural life forms and areas because species wolf disappear off the face of this planet forebear. Given current trends, temperature extremes, heat waves and heavy rains will

continue to escalate in frequency. The earth's temperatures and seas will continue to rise into the next millennium. These climate change effects are due to an increase in greenhouses gasses in the atmosphere. The main gases are carbon dioxide, methane, nitrous oxide and fluorocarbons, principally from the burning of fossil fuels, forest destruction and agriculture. Water vapor in the atmosphere also plays a role. The scientific community often talk about global warming potential. This relates to the warming effect of a greenhouse gas in relation to the measured effect for carbon dioxide. It is the major greenhouses gas produced by humans which is having the single greatest effect on climate change. This increase in carbon dioxide is largely due to the burning of fossil fuels ( coal, oil and gas) over the last two centuries(<http://www.Climatechoices.org.uk/pages/cchange3.htm>) As climate change and environmental disturbances will compel biodiversity loss and so solutions are needed now. That constant increase of indiscriminate destruction of forest biodiversity, commercial felling of trees, burning of chemicals is greatly responsible for biodiversity loss, if not checked appropriately correct now. At present one of the greatest problems confronting the natural environment is biodiversity loss fouling the natural habitat and atmosphere. So we require to reduce the impacts of climate change that decrease emissions across all sectors and increase the adaptive capacity of all nations ([www.conservation.org](http://www.conservation.org)). As biodiversity boosts ecosystem efficiency where each species have an important role to play. For instance, a bigger number of plant species means a greater variety of crops; greater species diversity ensures natural sustainability for all life forms; and healthy ecosystems can better survive and get better from a variety of disasters. And so, while manage this planet, (<http://www.globalissues.org/issue/169/biodiversity>), we still need to preserve the diversity in wildlife and forest. The evidence shows that the species loss across the planet resulting from climate change and global warming could be more serious threat to biodiversity than deforestation.

#### **REFERENCES:**

- Sarkar A.N. (2010),Global Climate Change Beyond Copenhagen, Pp. 1 – 414.
- GEO-4. Global Environmental Outlook Environment For Development, United Nations Environment Programme (UNEP),2007 Pp. 1 – 473.
- Thiru K.S. Neelakantan ( Ed. ), 2006 ENVIS : DEC, Vol. No. 4. Pp. 2 – 7.
- Sharma.V.P.,Khatrri.R.K.,etal 2010, 5<sup>th</sup> Uttarakhand State Science and Technology Congress, Pp:- 1-150.
- Darmora.A,Panwar.M.S et al, 2010 Environmental and Social Impact of Hydropower Projects , A Report ,MDRS HNB Garhawal University, Srinagar, UK,Pp-1-23.

BICOM, 2008, Proceedings International Conference o Biodiversity Conservation and Management, Pp- 150-650.

World Wildlife Fund Report, 2010

State of Environment Report India-2009 Pp :1-177.

UNEP, Year Book 2011, Emerging Issues in Our Global Environment, Pp :20-73.

Colloquium on Biodiversity : Earth Most Valuable Resource, Pp:- 1-125.

Right of Passage, Call of the wild, Sanctuary Magazine, Vol.XXXI No. 2. April 2011

[www.unep-wcmc.org](http://www.unep-wcmc.org)

[www.conservation.org](http://www.conservation.org)

[www.iucn.org](http://www.iucn.org)

[www.epa.gov](http://www.epa.gov)

[www.cbd.int/climate 2010](http://www.cbd.int/climate 2010)

[www.mammalsindia](http://www.mammalsindia)

[www.indiastat.com](http://www.indiastat.com)

<http://www.globalissues.org/issue/169/biodiversity>

<http://www.pulseplanet.com>

[www.rainforests.mongubay.com](http://www.rainforests.mongubay.com)

<http://www.greenfacts.org>

<http://www.climatechoices.org.uk/pages/cchange3.htm>