



GEOSOPHY

2017-18

GEO- GROUP

Mega Cities : Issues and Challenges



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2017-18



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September 30, 2018

Message

I am pleased to know that the Department of Geography, Kalindi College, University of Delhi, is going to release Annual magazine GEOSOPHY with focal theme on "Climate Change, Environment, Urban Problems etc." I would like to congratulate Principal: Dr. Anula Maurya and Editors: Dr. Seema Sahdev and Dr. Manish Kumar for taking such excellent initiative.

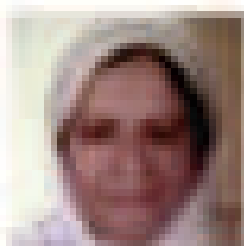
According to the 2007 Fourth Assessment Report by the Intergovernmental Panel on Climate Change (IPCC), global surface temperature increased $0.74 \pm 0.18^{\circ}\text{C}$ ($1.33 \pm 0.32^{\circ}\text{F}$) during the 20th century. Most of the observed temperature increase since the middle of the 20th century was caused by increasing concentrations of greenhouse gases, which results from human activity such as fossil fuel burning and deforestation. Climate model projections summarized in the latest IPCC report indicate that the global surface temperature is likely to rise a further 1.1°C to 6.4°C (2.0°F to 11.5°F) during the 21st century. A gradual decreasing trend in mean annual temperature for the region of northwest India has been observed. The maximum contribution to this decrease is during the southwest monsoon ($-0.52^{\circ}\text{C}/100$ years). An assessment on extreme weather events over India for the last 100 years has been done. Global scientific communities under leadership of International Science Council (ISC) are implementing important initiatives. Recently, UN has passed resolution to implement Sustainable Development Goals on 25th September, 2015. Geographers need to contribute towards these initiatives that analyze local, regional and national patterns of climate variability, natural resource management using GIScience. Besides, our country shall fulfill their obligations under the national framework, SDGs Agreement and the 2030 Agenda for Sustainable Development, and actively engage for indigenous efforts in dealing with climate change. The magazine will bring insights and pinpoint cultural and resource differences and dimensions in India.

On behalf of the IGU, I wish the **magazine** a great success.

R.B.Singh

Scientific Committee Member-International Science Council: Urban Health and Wellbeing

Springer Series Editor-Advances in Geographical and Environmental Sciences and SDGs

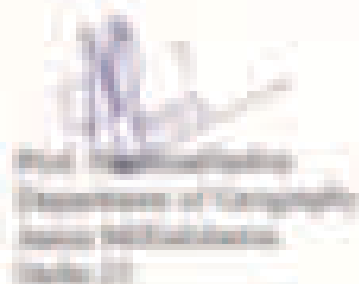


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This is a matter of course given that the "Council" of Department of Geography, Bahadur College is bringing out its annual magazine "GEOGRAPHY" on the occasion of "World Water Day" (22nd March 2018). It will provide a platform for young geographers to express their ideas about the global ecological understanding and sustainable development. I would like to congratulate the Principal, Dr. Anandharaman for her great vision, Dr. Narayana Subbiah (Director, Bahadur College) and faculty members for taking such excellent initiative.

The magazine provides not only a forum meeting students and researchers to discuss their writing, but also to confront the issues and challenges of contemporary life.

It would be a good to benefit organizations of the construction, identify them and evaluate the their efforts, successfully bringing out the correct issue of education. It would also require a great success.



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NAAC ACCREDITED 'A' GRADE COLLEGE

MESSAGE



It gives me immense pleasure to congratulate the Geography Department of our college bringing out its first Magazine "GEOSOPHY" on the occasion of annual Geo-fest "Resurgence" 2017-18.

The Magazine promotes not only a form enabling students to showcase their writing talents but also understand the issues and challenges of Mega Cities.

I would like to congratulate, Teacher-Incharge Dr. Seema Sahdev and other faculty members for taking such excellent initiative.

I wish the very best to the Geography Department in all their endeavors.

PRINCIPAL

Principal

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Message

'GEOSOPHY' The annual Magazine of Department of Geography, gives a platform to the young minds to express their views, knowledge and ideas about various concepts. It gives me immense pleasure to introduce to you "GEOSOPHY 2017-18". The current issue of the Magazine discusses a very vibrant and imperative theme of 'Mega Cities: Issues and Challenges'. There are many challenges to living in megacities; however a combination of technology, ingenuity, entrepreneurial spirit and resilience addresses many of them. Students should be able to discuss a range of responses to the many challenges of living in megacities.

I would like to express my heartfelt congratulations to all the contributors, editorial team, students and other faculty members who made this happen.

Dr. Seema Sahdev

Annual Report 2017-18

The Department of Geography has always committed for excellence, perfection and provides a magnificent environment to the students for overall development. To make of the beginning of the activities of Geo- Group in current session, an orientation Programme was organised on 12th September 2018. Dr. Pankaj from Department of Geography gave an explicit lecture on concept of plate tectonics and explained endogenous and exogenous activities with associated features. In orientation Programme, Office Bearer of the Departments introduced themselves with their role, outcome and outline for the upcoming year. Students were invested with various responsibilities and pledged to do their duties with utmost dedication and sincerity.

Department organised two days training programme on Statistical Methods in Geography for Honours Students on 13th and 14th November 2017. Dr. Netranand Sahu, Assistant Professor, Department of Geography, University of Delhi delivered a lecture on topic “Measures of Association and Correlation”. On 14th November 2017, Dr. V. Ravi delivered a lecture on the topic “Sampling and Hypothesis Testing”. During two days programme students were given exercise to develop practical knowledge of the subject.

Geo-Group organised Inter-College Geo Fest : RESURGENCE, 2017-18 on 19th Feb as per scheduled. Prof. R.B. Singh from Department of Geography, University of Delhi delivered lecture on “Mega City: Issues and Challenges”. He mainly touched upon various things such as unprecedented growth of mega cities, environmental problems arise due to rising population, remedial issues, Green building concept, role of various institutions in combating urban issues etc. The second lecture was delivered by Mr. K. Siddhartha, Chairman, Ensemble IAS Academy on the topic “How to Make Civil Services Career a certain success”. During the course of his lecture he suggested valuable points to prepare for civil services exams and get success in the prestigious profession. Apart from the lecture session several events were conducted to inculcate competitive attitude amongst the students. In the following events, students from various colleges i.e. Shaheed Bhagat Singh College, Bhim Rao Ambedkar College, Shyama Prasad Mukherjee College, Aditi Mahavidyalaya, Atma Ram Sanatan Dharam College, Miranda House and Kalindi College participated with full enthusiasm.

The Department of Geography organized a workshop on '**Essential Skills for Life**'. Ms.Neha Sharma, ADG, National Skill Development Agency, Government of India. She described the importance of Skills for a better life, and started her lecture by telling the students a short story about a boy who can sleep even in storm. The moral of that story was that one shall be well prepared before the problem comes. She explained 'mindfulness' as something that increases awareness of the destructive patterns and help to recognise them. She advised the students to focus on enhancing creative thinking, problem solving and critical thinking skills.

Department of Geography organised a special lecture on “**Role of University Education in Inclusive Development**”. The Speaker for the lecture was **Dr. Gaurav J. Pathania**, who is presently working with College of Education University of Massachusetts, Amherst, USA and Post-Doctoral Researcher University of South California, Los Angeles, California United State of America, as a Post-Doctoral Fellow having specialized in University Education and Campus Environment over the past 8 years. In his lecture Dr. Gaurav discussed the diversity in inclusive development in context of university education from the western society to India. He interacted with the participants by discussing the various components of development and role of human being in decision making to utilize resources. He also introduced the challenges in current education system and approached to include society and environment while studying inclusive development. In his views he explained the difference between “Knowledge and Education”, and discussed the discriminative approach of our education system, which is not able to cover marginalized section of society, known as Lower caste. He also talked about the 'critical consciousnesses' in context of studying the reproduction and inclusiveness while getting education, as we approach to be casteless but whenever we go to the market and social life we started to follow the caste/society.

Department of Geography, Kalindi College in association with Special Police Unit for Women and Children (SPUWAC) of Delhi Police conducted a 7-day session, in the campus of the college, on self-defence for the students. Along with this engendering empowerment among girls by training them in the art of self-defense, the Delhi Police (Traffic) provided Traffic Awareness Training for them especially for road-safety.

A certificate course on Travel and Tourism was introduced in the Department of Geography in the year 2016 for imparting theoretical as well as practical training on Travel and Tourism to the aspiring candidates who wish to choose their career in this field. Our main motive is to help and prepare our young talents to get suitable employment.

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प्रदूषण और भारत

Deepika

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सिंधु घाटी सभ्यता जिसका इतिहास हो,
स्वच्छता जिसकी संस्कृति का अभिन्न अंग हो,
आशा है ऐसे ही स्वर्णिम इतिहास की तरह,
मेरे भारत का भविष्य भी स्वर्णिम हो ।

परंतु देख प्रतिदिन हालत देश की,
मन में उठती है टीस एक ही,
किस प्रकार इस गौरवमयी इतिहास को,
सहेज कर रख पाएंगे,
जिन हाथों को हो कचरे से दिक्कत
वो देश क्या संभाल पाएंगे ।

जब हाथ और दिमाग ही भक्षक बन चुके हों,
तो रक्षा की उम्मीद भला किसी से कैसे हो,
बढ़ रहे प्रदूषण पर आखिर रोक कौन लगाएगा,
और सड़कों पर पड़े कूड़े को आखिर कौन उठाएगा ।

आखिर कैसे भरोसा करें, शब्द की सच्चाई पर,
जब पराग ही लिया गया हो रिश्वत की कमाई पर,
यदि बढ़ता रहा यूँ ही प्रदूषण,
तो भविष्य दम तोड़ देगा यूँ ही सड़कों पर ।

हमारा पर्यावरण

Kajal

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हमारा पर्यावरण है अनमोल,
इसे बचाएँ ।

न बढ़ने दें ग्लोबल वॉर्मिंग,
अन्यथा यह होगी आखिरी वॉर्मिंग
स्वच्छ ईंधन द्वारा चलित वाहनों का करें प्रयोग,
सोच- विचारकर करें संसाधनों का प्रयोग ।
जीवन बचाने का समझें इसे योग ।

चलो हम सभी यह कसम खाएँ,
अपने जन्मदिवस पर पेड़ लगाएँ ।
वातावरण की करेंगे हिफाज़त,
तो प्रदूषण से मिलेगी राहत,
आज से डालें यह आदत ।

पर्यावरण को स्वच्छ और सुंदर बनाएँ
स्वच्छ और शुद्ध वातावरण पाएँ
सुखी, निरोग समष्टि और जगत बनाएँ
विश्व में खुशहाली फैलाएँ ।

हमारा पर्यावरण है अनमोल,
इसे बचाएँ ।

HUMAN- A THREAT TO NATURE.....

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"Nature bears long with those who wrong her.

She is patient under abuse.

But when abuse has gone too far, when the time of reckoning finally comes, she is equally slow to be appeased and to turn away her wrath"

- Nathaniel H. Egleston.

This world comprises of thousands or more of organisms but humans are considered the most intelligent one.

Where there are things in excess, overflow is obvious.

When anything exceeds its limits occurrence of disaster is pretty clear.

We, humans are aware that how we are damaging our mother nature but for our selfish needs we are ignoring it as we ignore people around us, but we are unaware of the fact that ignoring people may not affect our lives that much while ignoring nature will chill us to the marrow.

Name the thing and nature will provide you with it and what it requests in response is just little bit of caring, a bit of our time from our busy schedule that we too demand from our loved ones.

It's said never test someone's patience, same goes for our environment. Till the moment it's bearing our cruelties upon it, you are safe, the moment it bursts out consequence of it will not be on our side, mind that.

All humans have two sides of their behaviour.

1. One is exploitative, brutal, greedy, cruel and bullying side.

2. Another is good caring side, the compassion and empathy, tolerance, love and responsibilities.

Now, choice is ours to show which side of our nature to the nature; the caring one or exploiting one.

On the basis of our choice environment will choose how to react upon it.

If intelligence of mankind is used in a good way it can invent transparent solar panels, sprout pencil in favour of environment if it is used in exploitative way more inventions will be done like atomic bomb, or land mines that are deadly for both mankind and nature . Environment should be put in the category of our national security.

One should not desire to protect the environment but to create a world where the environment doesn't need protection.....

कुदरत का मज़ाक

Kusum Kapuria

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कहते थे सुबह की हवा,
तंदरूस्त करती है,
पर ज़माने के साथ
वो बीमार हो गई ।
हमको अमीर करने वाली
खुद आज गरीब हो गई ।

समय के साथ इंसान ने
कुदरत का मज़ाक बना दिया,
जिसने हर ख्वाइश पूरी की
उसे ही खोखला कर दिया ।

घने जंगल थे गहने उसके,
पन्नियों से बदल दिए हमने,
हरा भरा अंगना पृथ्वी का,
उजाड़ कर दिया ।

कारखानों के धुँए ने
पर्यावरण को समय से पहले
बुजुर्ग कर दिया ।

THE DYING CORALS

Threats to the longest living structure on earth

Mansi Chauhan

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The Great Barrier Reef, world's largest coral reef system and the biggest single structure made by living organisms on earth is a marvel in itself. Located in the Coral Sea, off the coast of Queensland, Australia, this great coral structure is composed of over 2,900 individual reefs and 900 islands stretching for over 2,300 kilometers over an area of approximately 344,400 square kilometers. The Great Barrier Reef can be seen from outer space and is a chosen World Heritage Site, labeled as one of the seven natural wonders of the world.

A natural phenomenon like Great Barrier Reef is something that should be protected and preserved, but unfortunately, a large part of the reef has died due to various environmental issues - natural or man-made both. In March, 2017, the journal 'Nature', published a paper showing that huge sections of a 800 km stretch in the northern part of the reef had died in course of 2016 because of high water temperature, which is an ill-effect of global climate changes. This phenomenon is termed as coral bleaching.

Pollution is yet another threat faced by the Great Barrier Reef. About 90% of this pollution comes from farms runoffs. Farming practices damages the reef due to overgrazing, increased runoffs of agricultural sediments, nutrients and chemicals including fertilizers, herbicides and pesticides. The unsustainable overfishing of keystone species, like Giant Triton can disrupt food chain vital to reef life, also impacts the reef life negatively. Shipping accidents are also a pressing concern; there have been about 1,600 known shipwrecks in Giant Barrier Reef. Tourism, as well raises some threats to the Great Barrier Reef.

The Australian Government had taken some steps to minimize the threats and rectify the problem. Mining had been banned in the area, while one-third of Great Barrier Reef Marine Park is protected from species removal of any kind, including fishing. Also, in 1999, The Australian Parliament passed the Environmental Protection and Biodiversity Conservative Act, which improved the operation of national environmental law by providing guidance about regional biodiversity.

Since then every step taken is in itself is a big help towards conserving this mesmerizing natural wonder of the world.

ANTARCTICA

Still untouched or tainted?

Mansi Chauhan

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Antarctica, one of the most pristine place on earth, a safe haven for a variety of exotic species that braves the freezing cold temperature of the area, a place largely undiscovered and left alone in the past, but in present times, just how unspoiled is this place? Is it safe from man-made problems? Are animals living over there any safer?

The answer is a shocking No. As trips to Antarctica -----both scientific and recreational, increased, then so did a number of problems. In the past one hundred years, a large number of people have started visiting this once untouched land. While a number of scientific tour are made in hopes of some ground-breaking research, A large number of trips were made to recover large fishing areas. Needless to say, these expeditions have left more than just human imprints. The negative effects have started to surface.

All the oceans of the world are already overfished, and there are chances that if technology were to improve, Antarctica may suffer the same fate. An ozone hole has also appeared over Antarctica for over 30 years, due to chemicals pollutants and CFC's produced thousands of miles away. Waste is also being generated due to human explorations and exploitation of mineral reserves, oil and gas. Plus invasive species are a very concerning matter. Organisms not native are being taken there on ships, attached as seeds to boots or clothing. Rats in particular are a threat to the vulnerable Antarctic nesting birds.

The biggest threat yet, out of all these, is global warming. Climate change resulting in warming of sea and loss of sea ice and land-based ice. Already some ice shelves have collapsed and ice slopes and glaciers have retreated. The breeding populations and ranges of penguins have already been altered.

The age old moral question that rises is that why should the regional species ----- like whale, penguins, snails, Antarctic huskies suffer due to our unnecessary interference? The rest of the world has already been environmentally tainted, so shouldn't we leave these pure-white ice covered poles alone, so that at least one part of the earth can remain untouched, in it's original glory.

ARTICLE ENVIRONMENTAL ISSUES AND CHALLENGES

Monika

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The natural environment encompasses all living and non-living things occurring naturally, meaning in this case not artificial. The term is most often applied to the Earth or some parts of Earth. This environment encompasses the interaction of all living species, climate, weather, and natural resources that affect human survival and economic activity. The concept of the natural environment can be distinguished as components.

1. Complete ecological units that function as natural systems without massive civilized human intervention, including all vegetation, microorganisms, soil, rocks, atmosphere, and natural phenomena that occur within their boundaries and their nature.

2. Universal natural resources and physical phenomena that lack clear-cut boundaries, such as air, water, and climate, as well as energy, radiation, electric charge, and magnetism, not originating from civilized human activity.

3. In contrast to the natural environment is the built environment. In such areas where man has fundamentally transformed landscapes such as urban settings and agricultural land conversion, the natural environment is greatly modified into a simplified human environment. Even acts which seem less extreme, such as building a mud hut or a photovoltaic system in the desert, modify the natural environment into an artificial one. Though many animals build things to provide a better environment for themselves, they are not human, hence beaver dams and the works of Mound-building termites are thought of as natural.

15 MAJOR CURRENT IN ENVIRONMENTAL PROBLEMS

Pollution: Pollution of air, water and soil require millions of years to recoup. Industry and motor vehicle exhaust are the number one pollutants. Heavy metals, nitrates and plastic are toxins responsible for pollution.

Global Warming: Climate changes like global warming is the result of human practices like emission of Greenhouse gases. Global warming leads to rising temperatures of the oceans and the earth's surface causing melting of polar ice caps, rise in sea levels and also unnatural patterns of precipitation such as flash floods, excessive snow or desertification.

Overpopulation: The population of the planet is reaching unsustainable levels as it faces shortage of resources like water, fuel and food. Population explosion in less developed and developing countries is straining the already scarce resources. **Natural Resource Depletion:** Natural resource depletion is another crucial current environmental problem. Fossil fuel consumption results in emission of Greenhouse gases, which is responsible for global warming and climate change.

Waste Disposal: The over consumption of resources and creation of plastics are creating a global

crisis of waste disposal. Developed countries are notorious for producing an excessive amount of waste or garbage and dumping their waste in the oceans and, less developed countries.

Climate Change: Climate change is yet another environmental problem that has surfaced in last couple of decades. It occurs due to rise in global warming which occurs due to increase in temperature of atmosphere by burning of fossil fuels and release of harmful gases by industries.

Loss of Biodiversity: Human activity is leading to the extinction of species and habitats and loss of bio-diversity. Eco systems, which took millions of years to perfect, are in danger when any species population is decimating.

Deforestation: Our forests are natural sinks of carbon dioxide and produce fresh oxygen as well as helps in regulating temperature and rainfall. At present forests cover 30% of the land but every year tree cover is lost amounting to the country of Panama due to growing population demand for more food, shelter and cloth.

Ocean Acidification: It is a direct impact of excessive production of CO₂. 25% of CO₂ produced by humans. The ocean acidity has increased by the last 250 years but by 2100, it may shoot up by 150%.

Ozone Layer Depletion: The ozone layer is an invisible layer of protection around the planet that protects us from the sun's harmful rays. Depletion of the crucial Ozone layer of the atmosphere is attributed to pollution caused by Chlorine and Bromide found in Chloro-floro carbons (CFC's). **Acid Rain:** Acid rain occurs due to the presence of certain pollutants in the atmosphere. Acid rain can be caused due to combustion of fossil fuels or erupting volcanoes or rotting vegetation which release sulfur dioxide and nitrogen oxides into the atmosphere.

Water Pollution: Clean drinking water is becoming a rare commodity. Water is becoming an economic and political issue as the human population fights for this resource.

Urban Sprawl: Urban sprawl refers to migration of population from high density urban areas to low density rural areas which results in spreading of city over more and more rural land.

Public Health Issues: The current environmental problems pose a lot of risk to health of humans, and animals. Dirty water is the biggest health risk of the world and poses threat to the quality of life and public health.

Genetic Engineering: Genetic modification of food using biotechnology is called genetic engineering. The environmental challenges the world faces have never been greater or more complex. And never before have we lived in such an uncertain political climate. Recent world events, such as the U.S. presidential election and Brexit, indicate that global action on climate change and other environmental issues could face stronger political headwinds in the years ahead.

Growing Population:

A population of over thousands of millions is growing at 2.11 per cent every year. It puts considerable pressure on its natural resources and reduces the gains of development. Hence, the greatest challenge before us is to limit the population growth.

Poverty:

India has often been described a rich land with poor people. The poverty and environmental degradation have a nexus between them. The vast majority of our people are directly dependent on the nature resources of the country for their basic needs of food, fuel shelter and fodder. About 40% of our people are still below the poverty line.

Agricultural Growth:

The people must be acquainted with the methods to sustain and increase agricultural growth with damaging the environment. High yielding varieties have caused soil salinity and damage to physical structure of soil.

Need to Ground Water:

It is essential of rationalizing the use of groundwater. Factors like community wastes, industrial effluents and chemical fertilizers and pesticides have polluted our surface water and affected quality of the groundwater.

Development and Forests:

Forests serve catchments for the rivers. With increasing demand of water, plan to harness the mighty river through large irrigation projects were made. Certainly, these would submerge forests; displace local people, damage flora and fauna. ***Degradation of Land:***

At present out of the total 329 of land, only 266 possess any potential for production. Of this, 143 is agricultural land nearly and 85 suffer from varying degrees of soil degradation.

Air and Water Population:

Majority of our industrial plants are using out-dated and population technologies and makeshift facilities devoid of any provision of treating their wastes. A great number of cities and industrial areas that have been identified as the worst in terms of air and water pollution.

OZONE LAYER DEPLETION

Pragya

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Ozone (O₃) is a triatomic form of oxygen. It is found largely in the stratosphere that extends from about 6 km at the poles and 17 km at the equator to about 50 km above the earth's surface. It is present in traces less than 1 ppm in the atmosphere. It has a peak concentration (10 mg kg⁻¹) in the stratosphere.

Being a natural constituent of the stratosphere, O₃ is regularly formed and destroyed in a cyclic manner with solar radiation as the driving force.

Substances such as CFCs, and others that are cited, that lower the ozone layer do not directly destroy ozone. First, they undergo photolysis, forming hydrogen chloride (HCl) or chlorine nitrate (ClONO₂), molecules that do not react with ozone directly, but slowly decompose, giving, among other things, a small number of chlorine atoms (Cl) and of chlorine monoxide (ClO) molecules that catalyze the destruction of ozone.

The causes of ozone layer depletion are as follows:

- Chlorofluorocarbons(CFCs)
- Hydrochlorofluorocarbons(HCFCs)
- Halons
- Methyl bromide(CH₃Br)
- Carbon tetra-chloride(CCl₄)

EFFECTS OF OZONE LAYER DEPLETION ON HUMAN HEALTH

Ozone layer depletion increases the amount of UVB that reaches the Earth's surface. Laboratory and epidemiological studies demonstrate that UVB causes non-melanoma skin cancer and plays a major role in malignant melanoma development. In addition, UVB has been linked to the development of cataracts, a clouding of the eye's lens.

EFFECTS OF OZONE LAYER ON PLANTS

UVB radiation affects the physiological and developmental processes of plants. Despite mechanisms to reduce or repair these effects and an ability to adapt to increased levels of UVB, plant growth can be directly affected by UVB radiation.

EFFECTS OF OZONE LAYER DEPLETION ON AQUATIC ECOSYSTEM

The loss of phytoplankton, the basis of the marine food chain, has been observed as the cause of the increase in ultraviolet radiation. Under the ozone hole in the Antarctic phytoplankton productivity decreased between 6 and 12 percent.

SOME SOLUTIONS:

- Check on the label of the products, which we buy at the supermarket, to report that they do not damage the ozone layer.
- Do not buy refrigerators or air conditioner equipment that use CFCs as refrigerant. Look for

this information in the labels, or ask the supplier of the product directly.

- Replace halon-based fire extinguishers with others using foam.
- Do not use sprays, and do not buy objects made of plastic foam (dry ice or freezer). If you receive these products as a fill of your mail packages, return them immediately to the sender. Low consumption of these products will discourage plastic foam manufacturers.
- Use your car only when necessary. The less we use our cars, the less pollutants we will emit into the atmosphere. Remember that burning fossil fuels breeds many substances that damage the ozone layer.

CONCLUSION:

The Ozone layer is improving since the Montreal Protocol came into effect to stop and control the use of these chemicals. The Ozone layer depends on UV-C rays from the sun to replenish its self. The contaminants from chemicals prevent it from getting what it needs to protect the earth from harmful UV-B Rays. The Ozone layer is improving, but it will need many years before it the damage is repaired.

SOIL DEGRADATION

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Soil Degradation has been defined as a process that leads to decline in the fertility or future productive capacity of soil as a result of human activity.

There are several physical factors contributing to soil degradation distinguished by the manners in which they change the natural composition and structure of the soil. Rainfall, surface runoff, floods, wind erosion, tillage, and mass movements result in the loss of fertile top soil thereby declining soil quality.

All these physical factors produce different types of soil erosion (mainly water and wind erosion) and soil detachment actions, and their resultant physical forces eventually changes the composition and structure of the soil by wearing away the soil's top layer as well as organic matter. In the long-term, the physical forces and weathering processes lead to the decline in soil fertility and adverse changes in the soil's composition/structure.

Biological factors refer to the human and plant activities that tend to reduce the quality of soil. Some bacteria and fungi overgrowth in an area can highly impact the microbial activity of the soil through bio-chemical reactions, which reduces crop yield and the suitability of soil productivity capacity. Human activities such as poor farming practices may also deplete soil nutrients thus diminishing soil fertility. The biological factors affect mainly lessens the microbial activity of the soil.

The reduction of soil nutrients because of alkalinity or acidity or water logging are all categorized under the chemical components of soil degradation. In the broadest sense, it comprises alterations in the soil's chemical property that determine nutrient availability. It is mainly caused by salt buildup and leaching of nutrients which corrupt the quality of soil by creating undesirable changes in the essential soil chemical ingredients. These chemical factors normally bring forth irreversible loss of soil nutrients and productivity capacity such as the hardening of iron and aluminum rich clay soils into hardpans.

The excessive use and the misuse of pesticides and chemical fertilizers kill organisms that assist in binding the soil together. Most agricultural practices involving the use of fertilizers and pesticides often entail misuse or excessive application, thereby contributing to the killing of soil's beneficial bacteria and other micro-organisms that help in soil formation.

The complex forms of the fertilizer's chemicals are also responsible for denaturing essential soil minerals, giving rise to nutrient losses from the soil. Therefore, the misuse or excessive use of fertilizers increases the rate of soil degradation by destroying the soil's biological activity and builds up of toxicities through incorrect fertilizer use.

Deforestation causes soil degradation on the account of exposing soil minerals by removing trees and crop cover, which support the availability of humus and litter layers on the surface of the soil. Vegetation cover primarily promotes the binding of the soil together and soil formation, hence

when it is removed it considerably affects the capabilities of the soil such as aeration, water holding capacity, and biological activity.

When trees are removed by logging, infiltration rates become elevated and the soil remains bare and exposed to erosion and the buildup of toxicities. Some of the contributing activities include logging and slash and burn techniques used by individuals who invade forest areas for farming, rendering the soils unproductive and less fertile in the end.

Urbanization has major implications on the soil degradation process. Foremost of all, it denudates the soil's vegetation cover, compacts soil during construction, and alters the drainage pattern. Secondly, it covers the soil in an impermeable layer of concrete that amplifies the amount of surface runoff which results in more erosion of the top soil. Again, most of the runoff and sediments from urban areas are extremely polluted with oil, fuel, and other chemicals. Increased runoff from urban areas also causes a huge disturbance to adjacent water sheds by changing the rate and volume of water that flows through them, and impoverishing them with chemically polluted sediment deposits.

Soil quality decline is one of the main causes of land degradation and is considered to be responsible for 84% of the ever diminishing acreage. Year after year, huge acres of land lost due to soil erosion, contamination and pollution. About 40% of the world's agricultural land is severely diminished in quality because of erosion and the use of chemical fertilizers, which prevent land from regenerating. The decline in soil quality as a result of agricultural chemical fertilizers also further leads to water and land pollution thereby lowering the land's worth on earth.

Drought and aridity are problems highly influenced and amplified by soil degradation. As much as it's a concern associated with natural environments in arid and semi-arid areas, the UN recognizes the fact that drought and aridity are anthropogenic induced factors especially as an outcome of soil degradation. Hence, the contributing factors to soil quality decline such as overgrazing, poor tillage methods, and deforestation are also the leading causes of desertification characterized by droughts and arid conditions. On the same context, soil degradation may also bring about loss of biodiversity.

Because soil degradation contributes to land degradation, it also means that it creates a significant loss of arable land. As stated earlier, about 40% of the world's agricultural land is lost on the account of soil quality depreciation caused by agro-chemicals and soil erosion. Most of the crop production practices result in the topsoil loss and the damage of soil's natural composition that make agriculture possible.

Land is commonly altered from its natural landscape when it rids its physical composition from soil degradation. For this reason, the transformed land is unable to soak up water, making flooding more frequent. In other words, soil degradation takes away the soil's natural capability of holding water thus contributing to more and more cases of flooding.

Most of the soil eroded from the land together with the chemical fertilizers and pesticides utilized in agricultural fields are discharged into waterways and streams. With time, the sedimentation process can clog waterways, resulting in water scarcity. The agricultural fertilizers and pesticides also damage marine and freshwater ecosystems and the limits the domestic uses of the water for the populations that depend on them for survival.

Avoiding deforestation completely is an uphill task. However, deforestation can be cut down and this can create an impressive way of reshaping and restoring forests and vegetation cover. As populations grow, individuals can be sensitized and educated regarding sustainable forest management and reforestation efforts. Also, preserving the integrity of guarded areas can significantly reduce demonstration.

Hence, there is a necessity for individuals all over the world to respect forest cover and reduce some of the human-driven actions that encourage logging. With the reduction of deforestation, soil's ability to naturally regenerate can be restored. Governments, international organizations, and other environmental stakeholders need to ensure there are appropriate measures for making zero net deforestation a reality so as to inhibit soil degradation.

The outcomes of soil erosion and quality decline are widely irreversible. Still, soil organic matter and plant nutrients can be replenished. To restore the lost soil mineral matter and organic content, it would require what is known as land reclamation. Land reclamation encompasses activities centered towards restoring the previous organic matter and soil's vital minerals. This may include activities such as the addition of plant residues to degraded soils and improving range management.

Salinized soils can be restored by salt level correction reclamation projects and salinity control. One of the simplest but most forgotten methods of land reclamation is planting of vegetation such as trees, crops, and flowers over the affected soils. Plants act as protective covers as they are helpful at making the soil stronger by stabilizing the land surface.

Just like the old adage states that “prevention is better than cure,” so does the same concept apply in solving the worldwide problem of soil degradation through salinization. The costs of preventing salinization are incredibly cheaper than the reclamation projects in salinized areas. Consequently, actions such as reducing irrigation, planting salt tolerant crops, and improving irrigation efficiency will have high pay offs because the inputs and the labor-demanding aspects associated with reclamation projects are zero. Preventing salinization in the first place is thus an environmentally friendly means of offering solution to soil degradation.

Proper tillage mechanisms hold as one of the most sustainable ways of avoiding soil quality decline. This is otherwise known as conservation tillage, which means tillage mechanisms targeted at making very minimal changes to the soil's natural condition and at the same time improving the soil's productivity. Examples include leaving the previous year's crop residue on the surface to shield the soil from erosion and avoiding poor tillage methods such as deep plowing.

It has several effects that vary in intensity and scale. Since everything we eat starts with what grows in the ground, soil degradation's primary impact for people is how it impacts the food chain. Soil degradation results in land that will not sustain agriculture. It causes two problems for farmers. One being that the soil will not have enough structure for plants to have root support (try growing corn in a sandbox), and the other being a loss of nutrients.

The other effects are less obvious. Soil degradation created by poor farming practices and an over-reliance on chemical fertilizers created the Dustbowl, which made for some pretty horrible living conditions in 1930's America.

Soil degradation also destroys watershed, or a given area's ability to absorb and release water into rivers and reservoirs.

Soil degradation is a global phenomenon that affects human societies at the local level where rural communities closely related to land resources are vulnerable. Success in projects aimed at preventing or mitigating damage at the local level depends on the approach adopted. Since advantages and drawbacks are site- and goal-specific, traditional knowledge and community participation in all assessment stages and decisions related to implementation and follow-up are crucial. Integrated approaches seem to be appropriate to analyze causality and to define local indicators; perceptions and priorities defined by local people enable knowledge integration and consensus about goals and assessment method. Conversely, inadequate top-down policies allowing land mismanagement and unsuitable land use are among the most important underlying causes of degradation.

The priorities of local communities regarding the uses of natural resources must be recognized in order to reach a consensus concerning feasible alternatives within their socioeconomic context. In order to move beyond the typical methods to assess and combat land degradation, it is important to include adequate tools to address the factors that determine the farmers' attitudes to land conservation projects. Likewise, conservation actions need to be designed with consideration of short-term priorities for local people, in order to insure short-term economic benefits. Hence, resource conservation must incorporate actions that guarantee sufficient income for land users. This is likely to stimulate local people to adopt land conservation/restoration practices. Local communities should not be expected to simply adopt suggested practices; they may rather be supported to develop their own projects on the basis of their indicators and perception of land.

EARTHS'S CALL

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We all have a Millstone from the day of our birth,
It's an indispensable one to take care of our Mother Earth.
Our world is always changing,
Constantly rearranging,
From ocean depths to mountain peaks,
Mother Nature moves and speaks.
Man begets but land does not,
Over Population is like an Atom Bomb!
The world is not same as it used to be,
Climate is changing as we all can see.
Your life stands still without the breath,
Yet trees are all gone because of greed.
People pollute every day,
That doesn't help us in anyway,
Let me tell you it's not a joke,
Someday you all will choke!
Glass, paper, plastic or tin,
All must go in the recycle bin.
So, pick up the waste,
At a faster pace.
It is very important to save the water,
So, listen carefully all sons and daughters.
In planting trees if you take the pain,
There will be more oxygen and abundant rain.
Stand still and stitch the ozone soon,
Or else prepare to leave for the moon.
The past is behind, learn from it,
Future is ahead prepared for it.
So, if you want to pollute again,
Think of how the world would end.
Construct a world that needs no fortifications,
Stop jeopardising our future generations.
There must be something we still can do,
But do you still care with the things around you?

URBAN CLIMATE CHANGE: IS URBANISATION GOING TO BE A THREAT TO HUMANITY?

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Urbanization and climate change may be the two important trends to shape global development in the decade ahead.

Urbanization occurs mainly because people move from rural areas to urban areas for better opportunities and it results in growth in the size of the urban population and the extent of urban areas.

Although urban cities have the potential to serve as engines of change, driving economic growth in some of the world's least developed countries; increasing urbanization is presenting a unique challenge for people living in urban regions.

The effects of urbanization on climate change are threatening humanity in dangerous ways. Cities are major contributors to climate change: although they cover less than 2 percent of the earth's surface, cities consume 78 percent of the world's energy and produce more than 60 percent of all carbon dioxide and significant amount of other greenhouse gas emissions, mainly through energy generation, industry and biomass use. Emission and accumulation of greenhouse gases in the environment due to above factors leads to global warming which directly pertains to rise in the sea level. The pollution arising from automobiles also have the potential to increase the phenomenon of global warming.

Rapid urbanization has adverse impact on the environment and quality of life. At the same time, while acting as a major contributor to climate change, cities and towns themselves are heavily vulnerable to climate change. Hundreds of millions of people in urban areas across the world will be affected by rising sea levels, increased precipitation, island floods, more frequent and stronger cyclones and storms and periods of more extreme heat and cold. There would be a huge impact on the population of urban areas. Various issues of health ailments would rise like respiratory infections, other infections, parasitic diseases and many other hazardous diseases as a result of inhaling polluted air containing various toxic gases and dust particulate matter in it, emitted by innumerable vehicles running on urban roads.

Due to gradual rise in the sea level as a consequence of changing climatic conditions, a number of coastal urban areas or cities are now at the risk of submerging into the seas.

As the global rate of urbanization is increasing, the negative impacts of urbanization like the production of pollution, production of waste heat from human activity – most notably air conditioners and internal combustion engines, the modification of the physical and chemical properties of the atmosphere, and covering of the soil surface are becoming more clear which are leading to the creation of Urban heat island (UHI), defined as the rise in temperature of any man-made area, resulting in a well-defined, distinct “Warm land” among the “Cool sea” represented by the lower temperature of the area's nearby natural landscape. Concrete and asphalt act as a giant

reservoirs of heat and make the cities hotter.

In the previous decade, studies from NASA's satellite data confirmed that urban heat islands (UHI) created as a result of excessive artificial urban surfaces are more responsible for an increase in rainfall events around cities.

It has been observed that cities tend to be 1-10 degrees Fahrenheit warmer than its surrounding suburbs and other rural regions. The added heat can lead to destabilization and changes the mode of air circulation in and around cities.

The threat of deadly heat waves and how they might affect health in cities cannot be ignored. It is a public health crises that is just looming around the corner. Researches have warned that a warming climate would result in an increase in the frequency and intensity of heat waves.

Climate change is no longer some far-off problem but it is happening now.

The combined processes of rapid industrialization and population growth in the last few decades have been significantly affecting the urban climate of major developing cities leading to imbalances in the regional climate.

Bangalore, the prosperous software hub of India, is getting thirstier as it destroys its water bodies. New Delhi is blanketed every winter in thick, choking smog that you couldn't cut with a knife. The annual dunking Mumbai gets every monsoon has become a part of life for millions. The signs are clear. Extreme weather events have started hurting cities with frightening frequency.

It is necessary to understand the impact of rapid urbanization on local climate; lest it will cause very serious consequences over humanity.

So, what we are waiting for?

It is our responsibility to curb this increasing climate change which is at high peak in urban areas.

As the soothing green color of tree canopies has been decreasing in cities where the pace of urbanization is higher, climate is changing. So, for climate change mitigation, nature and fully grown trees could play an important role where cities have a higher degree of pollution by improving the air quality which would gradually help in curbing climate change. Reducing vehicle emission and biomass use can also tend to curb urban climate change.

So, it is our moral duty to provide a better environment for our next generations.

However, Urbanization is necessary for humanity but it should not be explored on the expense of humanity.

HUMAN BEINGS ARE THE ONLY ORGANISMS ON THE EARTH

Who first cut trees?

Make pages from these trees

And write save trees ...

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Nature is a great teacher. It is a guide, friend, mentor and philosopher. We always turn towards nature whenever we want to relax and improve our well-being. The reason is that nature fulfills and motivates us. It is our first and foremost duty to conserve nature because it is very well connected with our lives. We desire many benefits from nature. It influences our mind, body and soul. We forget all our sorrows when we spend time in the lap of nature.

The best gift of God for mankind is nature. God is the supreme artist and has created different forms of nature beyond our thoughts....

This nature is being exploited by human beings without knowing its consequences. Its consequences are that, the natural processes of earth are being disturbed such that decrease in rainfall percentage, floods in coastal areas, earthquakes, global warming, etc.

Global warming is the gradual rise in the earth's temperature. It is caused due to greenhouse effect. Greenhouse effect is that the infrared rays from the sun are being trapped by poisonous gases in our atmosphere like carbon di oxide, sulphur dioxide, methane, etc. This results in gradual increase of earth's temperature.

Our life depends on healthy balanced environmental conditions. Our health, working habits, lifestyle, behavior, etc. are closely linked with the environment that surrounds us. Preservation and protection of the environment implies the protection of mother earth, its atmosphere and vital resources. These are the essential ingredients of our life and existence that should be kept alive. Their depletion can prove major damage to our mother earth. For example, the depletion in the ozone layer of our atmosphere has caused a huge hole in the sky above the North Pole that is growing bigger and bigger by the time. Due to this, the harmful ultraviolet rays from the sun are reaching the earth directly without any filtration by ozone layer. It has been caused by the release of chlorofluorocarbons in huge quantities from chemicals mainly used in refrigerators and air conditioners.

We all have to make combined efforts to save our mother earth. Due to our foolishness, many of our great rivers, including the Ganga, are dying. If we do not save these important water bodies, we are risking the rights of future generations to a healthy life-enhancing environment.

Awareness programs should be started to lay stress on the urgency of the hour that nature needs to be conserved at all costs. It is necessary to strike a balance between our environment and individual development. We have to stop this environmental degradation to save the humanity from this crisis. The threat of global warming has forced countries to slow down its energy consumptions. People must come forward in the movement to stop the exploitation of rivers, oceans, forests, etc. and the atmosphere. It is very sad to know that that we celebrate our birthday with huge happiness but we don't even remember the date of our **MOTHER EARTH'S** birthday i.e. earth day. It is the day we have got to just thanks mother earth for what she had provided us but instead of thanking mother earth we exploit its resources.

**WE MUST STOP THE EXPLIOTATION OF THE PLANET EARTH...
IT'S OUR HOME!!!!!!**

ACIDIC SNOW

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I looked out in wonder at new fallen snow
Then thought to myself, it's acidic you know.
This wonder, this cleanser, this skier's delight,
This mantle of brightness, this purity white,
This wintry thing that sets children aglow
Hides one little thing, it's acidic you know

It's strange when you think that such whitish fluff
Can separate earth from that atmosphere stuff,
Through which it has fallen in crystalline form,
At least in the winter that is the norm,
That this thin whiteness that settles so slow
Is such a mixed blessing... acidic you know?

Well, what about rain you may ask in dismay,
Should children avoid it when outside they play?
And what about fog and what about mist,
Are they like the snow, does the problem persist?
Are we to believe that the problem is wide?
Isn't it something our country can hide?
The issue at best is a tough one to solve
Because of some oxides which tend to evolve
To acids, which may etch structural faces,
And damage some life in aquatic places,
As well as hurt plants and soils below;
Because of the snow, it's acidic you know

The pH scale separates acids and bases
By negative logs and logarithmic places.
Above and below a pH midline are bases and acids
To help us define precipitation in all forms we know,
For example, the snow, its acidic you know.

So where are the regions most sensitive now
To inputs of acids regardless of how?
Are they landscapes where crystalline rock is exposed?
According to some people, that is supposed.
In any case you should think twice about snow,
Though lovely and scenic, it's acidic you know.

GREEN LIVING: GOING GREEN IS A BETTER LIFESTYLE

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Green living is a choice that we make as an individual to change to a green lifestyle in ways that reduce our impact on the environment. Going green is a lifestyle which includes water and energy conservation, sustainable living, and protecting our natural resources. through green living we are reducing waste, implementing recycling and reuse programs or simply implementing healthy lifestyle choices. Such as organic or homegrown food. If we all make greener choices, the future of our planet will be brighter; making conscious, informed decisions in your day-to-day life will have a very big effect on our Earth in the long term.

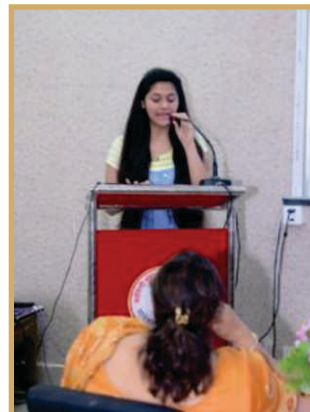
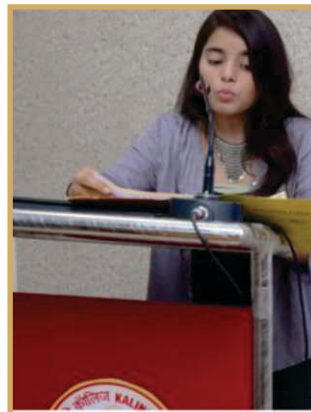
There are numerous ways to go green and be more environmentally conscious when making day-to-day decisions. Installing a programmable thermostat to control when your a/c or heater goes on and off, pays itself after one month. Lowering your thermostat in the winter and raising it in the summer will also help you to reduce your energy consumption. It is also a good idea to have your units' services regularly so they are functioning at optimal efficiency.

What are some other ways to save our planet and consume fewer resources? Purchase only the food you need for the few days. There is a huge amount of waste in food going bad before you have had a chance to eat it. And speaking of food, can you ride your bike to the store-saving gas and lessening the CO₂ emission. Bring re-usable bags to the store for your groceries. Purchase more products that are 'organically' grown, which means there are not pesticides used and this saves the soil and the planet.

Organic farming is one of a best way to go green in green living. By organic farming we can save our environment as well as our living. When we say organic farming, we mean farming with only the use of natural substances. This means that it doesn't involve any chemical or synthetic fertilizers or hybrid fruit and vegetables. As we all know that artificial growth boosters have an adverse effect on health and cause many diseases, organic farming is a healthy option. Organic fruits and vegetables are priced higher than the regular ones and are available in the top super market. They can also be grown in one's backyard. India is an overpopulated country and to cater to the needs of the huge population the farmer have to use artificial substances. So organic farming on a large scale is out of question for India. But it is said, 'little drops make an ocean'. So, we should all do our bit and try and grow our own vegetables in whatever quantities we can.

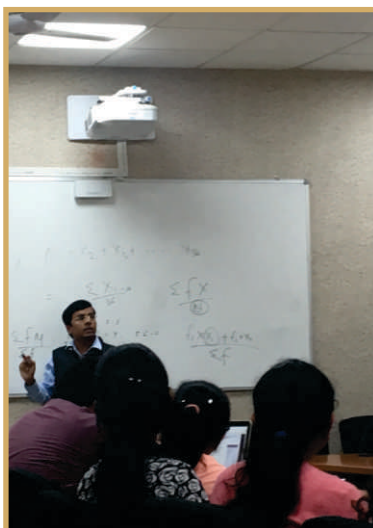
Green living is not only a way of life, it is a state of mind. The next time you are going to turn up your thermostat or go to the store, think about what you could be doing to reduce or re-use your energy consumption. A few small steps now will go a long way in the future to help our quest for conservation and saving the planet.

Glimpses of Orientation Program / Inaugural function



Capture moments of Inauguration, attendance, oath and lecture by Dr. Pankaj Kumar.

Glimpses of Day 1 photographs of Training Programme on Statistical Methods in Geography



Glimpses of Day 2 photographs of Training Programme on Statistical Methods in Geography



Glimpses of Inaugural Functions of Geo Fest





Report of ECO CLUB (2017-18)

ECO CLUB of Kalindi College University of Delhi is a multidimensional, highly active society that runs in coordination with the department of environment, Govt of NCT of Delhi. The Eco Club play an important role in creating environmental awareness amongst the future generation. Eco club is group of teachers and students dedicated to making our campus less wasteful, raising awareness for eco-friendly causes and promoting environmentally friendly habits like reducing, reusing and recycling.

The main objectives of eco club include:

1. Motivate the students to keep their surroundings green and clean by undertaking plantation of trees.
2. Sensitize the students to minimize the use of plastic bags, not to through them in public places as they choke drains and sewers, cause water lagging and provide breeding ground for mosquitoes.
3. Organize tree plantation programmes, awareness programme such as quiz, essay, painting competition, rallies, Nukkad Natak etc regarding various environmental issues.
4. Build attitude to help individuals and social groups acquire a set of values and felling of concern for environment and the motivation for actively participating in environmental implement and protection.
5. Teach skill to students to help individual for identify and solve environment al problems.

Activities of Eco Club: in our campus activities of eco club includes:

- Plantation of saplings in the college campus.
- Maintenance of existing saplings.
- Environmental awareness programme within the campus
- Competition like quiz, slogan writing, poster painting.
- Seminar and panel discussions.
- Raising awareness using power point.
- Installation of waste bins.
- The students are also exposed to various field activities such as visit to natural ecosystems, bird watching sites and biodiversity parks to create enthusiasm regarding issues pertaining to environmental sustainability.

Activities organized by Eco-club, Kalindi College (during 2017-18). Eco-club of Kalindi College is a highly active society that organizes number of environmental awareness programme and projects from time to time.

Paper Recycling Unit – our society manages and collect waste paper generated from college and convert it into recycled paper for reuse in laboratory.

On Deepawali festival, Delhi's air quality suffered due to burning of fire crackers, to spread awareness, our society took initiative and urge all students to say 'No to Fire Crackers'.

Eco-Club will observe 'World Water Day' on 22nd March 2018 by organizing a workshop on 'Water

Treatment and Water Quality'. The workshop will be inaugurating by the Keynote Address of Prof. Haseena Hashia from Jamia Milia Islamia

Four students along with one Assistant Professor Dr. Manish Kumar attended programme on Innovative science-based project organized by the Department of Environment, Government of NCT of Delhi at Mahatma Gandhi Institute of Combating Climate Change, Alipur on 28 February 2018. A number of Scientist from different fields delivered short lectures regarding the uses of various scientific and technological methods for combating problems in the field of agriculture, environmental disaster, climate change etc.

On 22nd March 2018 that is 'World Water Day' Eco-Club activities will be inaugurated with the 'Pledge and Plant a Tree Programme'. The campaign was to sensitize the students for plantation and protection of plants so as to protect mother Earth from various types of pollution and to counter climate change and global warming. Poster making competition was organized on 'Save Water'. For raising awareness power point presentation on Conservation of water by Geography Honours students will be organise on this occasion.

Eco Club Organised Eco Fest: 'Eco Challengers- 2018' On World Water Day (22nd March 2018)

On this Occasion eminent scholars/Scientist Chief Guest Prof. Haseena Hashia, Department Of Geography, Jamia Millia Islamia University, Guest Of Honour Prof. S.C. Rai, Head, Department Of Geography, University Of Delhi, Distinguished Guest Dr. K.L. Babu, Scientist, National Water Mission, Ministry Of Water Resources, River Development & Ganga Rejuvenation have visited the college.



Students participated in Poster Making Competition on save water and the event judged by the Chief Guest Prof. Haseena Hashia, Department of Geography, Jamia Millia Islamia

Self Defense Training Programme



Some Glimpses of Workshop on 'Essential Skills for Life'



Special Lectures on “Role on University Education in Inclusive Development”



Field Trip



Laurels for Department of Geography 2017-18

Name of Students	Institutions joined for higher studies
1. Jyoti Pal	MCA, Management Education And Research Institute, IP University,
2. Pranjali Shukla	PGPM+MBA, ICFAI Business School
3. Megha Bhowmick	O level, National Institute of Electronics & Information Technology (NIELIT)
4. Charu Khanna	M.A in Travel & Tourism, Jamia Millia Islamia University
5. Sheema Irfan	M.A in Early Childhood Development, Jamia Millia Islamia University

Department of Geography

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Dr. Manish Kumar

Dr. Usha Pathak

Dr. Shashi Bhushan

Ms. Geeta

Mr. Jitender Kumar

Lab Staff :

Mr. Rakesh Kumar Yadav

Editorial Board

Dr. Seema Sahdev

Dr. Manish Kumar

Ms. Geeta

Nani Nanya (B.A Hons. 1st Year)

Garima (B.A Hons. 1st Year)

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