OZONE LAYER DEPLETION AND ITS EFFECTS A REVIEW

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ABSTRACT

There are many situations where human activities have a significant impact on the environment. Ozone layer damage is one of them. The purpose of this paper is to review the origin of the ozone layer, the mechanism to protect it against the extinction, along with the lower layer. Chlorofluorocarbons and Halon are powerful ozone. Vaccination is one of the main reasons for widespread anxiety. Estimated increase in the ozone layer deficiency is the amount of ultraviolet radiation found on the surface of human impact on Earth and the effect of Earth on it. Ozone tax prospects remain uncertain. In the absence of other changes, the stratosphere ozone should increase in abundance in the future because the halogen load falls in response to regulation. However, the future behavior of the ozone will also affect methane, nitrous oxide, water vapor, sulfate richness of aerosols, and changing climates.

Keyboard: Bio effects, chlorofluorocarbon, Ozone Layer, Depletion, Protection**.**

1. Introduction

The ozone layer is a layer in the Earth's atmosphere, which is relatively high concentration of ozone (O3). This layer absorbs 93-99% of high-frequency ultraviolet light, which is potentially harmful to life on Earth. Up to 91% of the ozone in the Earth's atmosphere is present here. It is mainly located in the lower part of the stratosphere, about 50 km from the earth about 10 km, although the thickness varies in season and geographically. The ozone layer was discovered by French physicists in 1913, Charles Fabry and Henry Beausan. Its properties were British Meteorologist G. M. B. Dobson, who had developed a simple spectrophotometer (A), Dobson Meter) can be used to measure the stratosphere, ozone from the ground. Between 1928 and 1958, Dobson established a worldwide network of ozone surveillance which is still in progress. "Dobson Unit", one of the most convenient measures of the total amount of ozone column overhead, has been named in his honor.

1.1 Ozone

Without ozone, life on earth would not have developed as it is. The first stage of single cell organism requires an oxygen-free environment for development. Thus, the existence of the Earth was 3000 million years ago. To multiply and develop the primitive forms of plant life They started releasing the amount of minute oxygen through the photosynthesis reaction (which converts carbon dioxide to oxygen) [3]. The formation of ozone layer or stratosphere in the upper atmosphere formed in the atmosphere of oxygen formed in the atmosphere. This layer filters incoming radiation "cell-dimming" ultraviolet (UV) part of the spectrum Thus, the development of the ozone layer formed with more advanced life forms. Ozone is a form of oxygen. The oxygen we breathe in is in the form of oxygen molecules (O2) - two atoms of oxygen are tied together. The normal oxygen which we breathe is colorless and odorless. Ozone, hands on the other, consists of three atoms of oxygen (O3). Most of the atmosphere is in the region called ozone, stratosphere. Ozone is colorless and very rigid odor. Ozone is less common than normal oxygen. Out of 10 million air molecules, approximately 2 million are normal oxygen, but only 3 are ozone. Most ozone is produced in the upper atmosphere or stratosphere naturally. While ozone can be found through the entire environment, the greatest concentration occurs at a height between 19 and 30 km above the surface of the earth. This band of ozone-containing air is known as "ozone layer". [4] Ozone also occurs in very large quantities in the smallest amount of atmospheres, small amounts in the atmosphere, the region known as the troposphere. Its production is on the ground Through a reaction between sunlight and volatile organic, level compounds (VOC) and nitrogen oxide (NOx) are manufactured by human activities such as driving some cars. Ground-level ozone is a component of urban smog and may be harmful to human health. Even if both types of ozone are the same molecule, their presence in different parts is very different results of the environment. Stratospheric ozone - Harmful solar radiation - blocks all life - This filtered solar radiation on Earth is conducive to. The ground level ozone, on the contrary, is just a pollutant. It absorbs some incoming solar radiation, but it can not make up for the loss of ozone in stratosphere.

1.2 Ozone hole

In some popular news media, as well as several inkitches, the word "ozone hole" is often used very far and loosely. Often, any word is employed to describe the case of ozone depletion, irrespective of how mild it is. Unfortunately, this sloppy language describes the problem of insignificance and blends important scientific differences between The ozone depletion in the polar regions and the very small, but still important, the losses in other parts of the ozone world. Technically, the term "ozone hole" should be applied in areas where stratospheric ozone deficiency is so severe This level falls below 00 Dobson units (DU), traditional measures of stratospheric ozone. The general ozone concentration is approximately 300 to 350 D.U [3]. The loss of such ozone now occurs every spring on Antarctica, and restricts one to the low Arctic, where special

meteorological conditions increase the speed of the ozone loss by speeding up in very low air temperatures and man-made ozone decreasing chemicals (ODC).

1.3 Ozone layer

The ozone layer is not actually a layer, but it has become known in this way because most ozone particles are scattered in the atmosphere of the earth between 19 and 30 kilometers (12 to 30 miles) in the region called stratosphere. Ozone concentration in ozone layer is usually less than 10 parts ozone per million. Without the ozone layer, much of the sun's ultraviolet radiation (UV) radiation will not be prevented from reaching the surface of the earth, causing the most damaged living species. In the 1970s, scientists found that chlorofluorocarbons (CFCs) could destroy ozone, stratosphere When ozone is formed in the stratosphere on the UV, the radiation from the Sun attacks the oxygen (O2) molecules and causes two oxygen atoms to separate. If a free atom bumps into another O2, it adds up, creating ozone (O3). This process is known as light-decomposition. Ozone is also naturally occurring in the sunlight and chemical reactions with various compounds broken down into the stratosphere by nitrogen, hydrogen and chlorine. These chemicals are all in very small amounts in the environment naturally. In the balance between an unpublished atmosphere amount, ozone is being produced and the amount of ozone destroyed is destroyed. As a result, the stratosphere is relatively stable in the total concentration of ozone. At different temperatures and pressure (i.e. different altitude) stratosphere), different formations and destruction are rates. Thus, the amount of ozone within the stratosphere varies according to height. Ozone concentrations are highest between 19 and 23 km [6]. In most ozone, the stratosphere is formed on the equator, where the level of sunlight is the largest of the earth. It is transported by winds towards high latitudes. Consequently, the amount of zodiac ozone differs from one place on Earth, naturally with latitude, weather and day-to-day. Under normal circumstances, the highest ozone value is found in Canada Arctic and Siberia, while the lowest values are found around the equator. Ozone layer above Canada is usually rough and vulnerable in early spring, naturally varies between January and July approximately 25%. Weather conditions can also make daily changes.

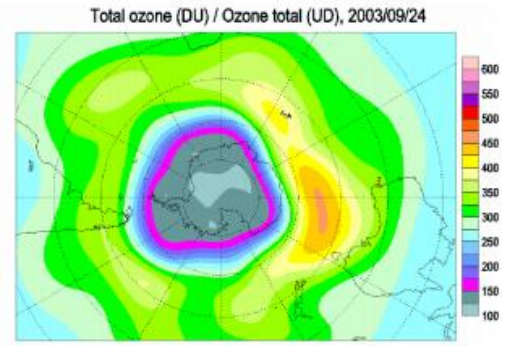

Figure 1: The depletion of ozone layer above Antarctica

1.4 In India Ozone deficiency

With so much concern about ozone depletion in place, in different parts of the earth, Indian scientists are closely related to potential deficiencies to monitor the ozone layer throughout India. Opinions are many more diverse. According to S. K. Srivastava, head of National Ozone Center in New Delhi, there is no trend of showing total ozone deficiency above India. V.V. of Indian Science Thaphial and S.M Kulashreeps also show that for the period 1956 to 1986, "ozone measurement rates show variability in the year, but do not show any growing or declining trend on India." However, the National Ozone Center Former Chairperson of Chatterjee, now with development option, warns that there is no case of complacency, he claims That its calculation shows an ozone depletion trend in the upper layers of the stratosphere from New Delhi and Pune in the 1980's in the year 1983 when the Antarctic ozone hole was at its maximum. Since India already receives high doses of ultraviolet (UV-B) radiation, and on the threshold to speak, there may be effects of the lack of ozone layer, it is far more destructive in India. AP Mitra, former director of the Scientific and Industrial Research Council, clarifies that while there is no trend in total ozone value, there are some evidence of ozone depletion at high altitude - at a distance of about 30 to 40 km - on the tropics as well. He argues, however, that there is insufficient data and deficiency is due to solar cycle and other natural phenomena. However, CFCs and related effects can not be dismissed Total column ozone data for India has been recorded for long periods. A network of stations that use Dobson, m-fixed total ozone from spectrophotometer, some six times a day, Srinagar, New Delhi, Varanasi, Ahmedabad, Pon and Kodaikanal. Ozone profiles are also regularly recorded using balloons. Ozone has the lowest level of November and December and the highest in summer. In the cross country, diversity exists. In Kodaikanal, total ozone 240 to 280 dubson unit (DU), 270 in New Delhi 320 DU and 290 to 360 DU in Srinagar. At the pressure of a Dobson unit, the nationalized 760 rare mercury of 0.01 mm of compressed gas and 0 ° CB N Srivastava Physical Laboratory, which was working at the radiation level of the incident, says that during the summer, in the afternoon, UV-B is radiation with wavelength of 290 nanometer (nm) The period of ozone hole in the equivalent levels obtained during Antarctica He warns that even a small reduction in ozone layer in India can reach a large percentage of changes in UV-B radiation in the country. According to the famous dermatologist in New Delhi, the incidence of skin cancer is low in India, but they acknowledge that the surveys conducted in order to identify any trends are insufficient. To study the effects of changing UV-B radiation, the study said that the focus was on the crops. Although no area has been surveyed so far in the country.

1.5 Measuring Ozone Depression

The most common stratospheric ozone measurement unit is the Dobson Unit (DU). The name of the Dobson unit is named after the atmospheric ozone pioneer GM. Dobson who carried out the initial study on ozone in the atmosphere from the 1920s to the 1970s. A Dobson Unit measures the total amount Ozone in an overhead column of the atmosphere. Dobson units are measured how thick the ozone layer is if it is compressed into a

layer at 0 degree Celsius and with the pressure of an environment on it. Millimeter thickness of every 0.01 layer is equal to one Dobson unit [8]. The average amount of ozone in the stratosphere is crossing The globe is around 300 DU (or 0 ° C only 3 mm thick and 1 atmospheric pressure!). The highest levels of ozone are commonly found in the middle of high latitudes in Canada and Canada. Siberia (360DU) When stratospheric ozone comes below 200, DU is considered to be very low to show the beginning of the ozone hole. Generally ozone holes form on the top of Antarctica during spring, and to a lesser extent the Arctic.

1.6 Ozone hole 2009

1.6.1 2009 position

The ozone hole in November 2009 has become very much now. The stratosphere is experienced in the stratosphere in the continent. The residual vortex is above the Waddel Sea and the Antarctic Peninsula and the minimum price is around 160 DU and depletion exceeding 50%. Outside the ozone values, the polar vortex has fallen near the 400 DU and inside, the atmosphere of ocean vortex is increasing as the atmosphere gets warm [7]. The temperature of the ozone layer above Antarctica is now increasing, although the smallest area is still very cold for the polar region of the stratosphere (PSCs) exists. During the early winter, the polar vortex was more oval rather than frequent 2008, and it gave birth to some early deficiency in the circumpolar area, the regions with the stratosphere were exposed to sunlight. It returned to a more spherical circulation with the increase of the winter and due to this, the "hole" did not begin until the middle of August, with another relatively slow ozone hole (as measured by NASA / SBUV2). Vortex became active with the South Georgia again in the end of August, ozone hole swings between the more elliptic is effected on September 2 and 6. The hole increased to reach almost one area by the middle of September 24 million square kilometers, But till mid-November there was a decline of 12 million square kilometers. It is now slightly larger than the average last decade. The tip of South America and South Georgia was affected by the edge of the ozone hole, from September 24 to September 30, and again from October 3 to October 7.

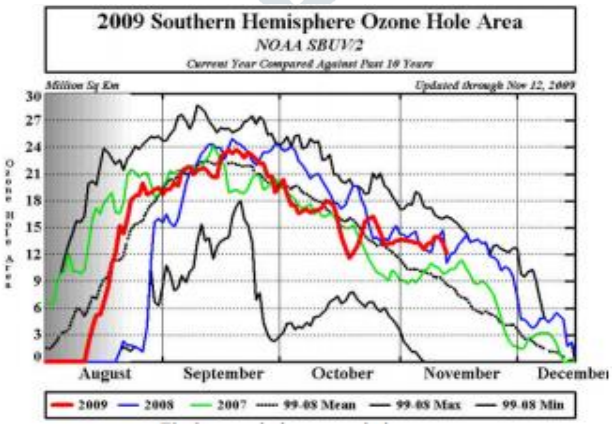

Figure 2: Ozone hole area variation

2. Ozone's condition

Ozone depletion occurs when natural equilibrium occurs between the production of stratospheric ozone and the tension in favor of destruction destruction. Although natural phenomena can cause temporary ozone loss, chlorine and bromine is released from man-made compounds such as CFCs, it was accepted as the main reason for this shortage [10]. It was previously suggested by Drs. M. Molina and S. Rowland, a group of man-made compounds known in 1974 Chlorofluorocarbons (CFCs) were likely to be the main zones source of depletion. However, this idea was not taken. Antarctica survey by seriously surveyed the ozone hole in 1985 until it was discovered. Chlorofluorocarbons are "washed" back on the earth with rain or other chemicals not destroyed in reactions. They do not break into the bus less environment and they can live in the environment from 20 to 120 years or more. As a result of their relative stability, instead of CFC, they are moved into the stratosphere where they are finally broken. Ultraviolet (UV) rays from the sun releases free chlorine. Chlorine actively joins in the process of ozone destruction. The pure result is two molecules, ozone is replaced by three molecular oxygen, except to repeat the chlorine-free process: $Cl + O3 = ClO + O2$

Except for $ClO + O = Cl + O2$ chlorine atoms, ozone is converted into oxygen

It is free to repeat the process up to 100,000 times, resulting in low ozone levels of low bromine compounds, or halys, also destroy the stratosphere ozone. Compound containing

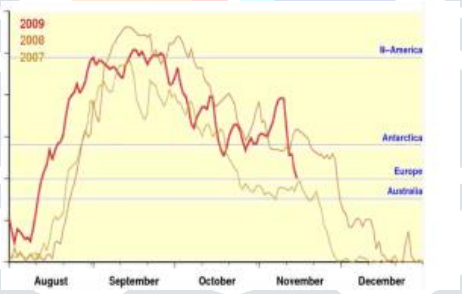

Figure 3: Ozone hole area variation on various continents

Chlorine and bromine are known from human-made compounds as industrial halocarbons. CFC emissions account for approximately 80% of total stratospheric ozone depletion. Thankfully, the developed world has stopped its use. The CFC ozone layer in response to international agreements for safety. However, because CFCs are built in such a long environment, the ozone layer will not completely cure itself until at least the middle of the 21st century. Having chlorine in seamlessly has similar effects on the ozone layer, but there is a short life span in the environment.

2.1 Chloro

Chlorofluorocarbons or CFCs (also known as fron) are non-toxic, non-flammable and non-carcinogenic. They contain fluorine atoms, carbon atoms and chlorine atoms. 5 Main CFCs include CFC-11 (Trichlorofloremethane - included CFCl3), CFC-12 (dichloro-difluoromethane - CF2Cl2), CFC-113 (trichlorro-triphloroethane - C2F3Cl3), CFC-114 (dichloro-tetropluoroten-C2F4Cl2), and CFC-115 (Chloropentaphloroethane - C2F5Cl). CFCs are widely used Cleaner in refrigeration and air conditioner, cleaners in the form of solvents, especially for electronic circuit boards, extinguish an agent (for example fire) in the form of foam, and as a propellant in aerosol . In fact, many of the 20th century's modern life styles were made possible using CFCs. Contemplative CFCs, however, are the main causes of stratospheric ozone deficiency [1] The lifetime of CFCs is in the atmosphere from about 20 years to 100 years, and as a result, the CFC molecule can do a great deal of losses in eliminating one free chlorine atomic oFC. Although the emissions of CFCs have almost ceased in the developed world, the international control agreements will continue to damage the stratospheric ozone layer in the 21st Century.

2.2 Rocket launch

Rocket launch may require more global market stricter regulation to prevent harsh damage According to a new study by the researchers in the ozone layer of Earth's stratospheric ozone layer in the coming decades, Colorado In future, losses from ozone irregular rocket launches will ultimately exceed ozone loss, chlorofluorocarbons or CFC, which stimulated 1987. The Montreal Protocol banned ozone-depleting chemicals, said Martin Ross, the chief study author of The Aerospace, the corporation in Los Angeles. The study, which provides a market analysis for the University of Colorado University Aeronautical University in Boulder and Embry-Riddle, estimates the lack of future ozone layer based on the expected launch of the space industry and the known effects of rockets. "As soon as the rocket launch market grows, It will also be the destruction of ozone-rocket emissions, "Professor Darin said. Cu-Boulder's very department of atmospheric and ocean science. "If left unregulated, the rocket launches to the year could be more ozone destruction than ever in 2050." Since some proposed space efforts will require continuous projection of larger rockets than extended periods, periods , The new study was designed to bring attention Ross said the issue in hopes of promoting additional research. "The uncertainty of the policy is often unnecessary regulation," he said. "We are suggesting that it might be possible to avoid the ozone layer avoided with a more robust understanding of the rocket." Present global rocket launches The ozone layer was completed by not exceeding a few hundred percent annually, much said. But the space grows in the industry and in the decline of other ozone-erosional chemicals Is The issue of ozone deficiency from the Earth's stratosphere, the rocket, is expected to move forward in projections. Highly reactive trace-gas molecules are known as radicals which dominate the stratosphere, ozone destruction, and even a single fundamentalist in the stratosphere can destroy 10,000 ozone molecules before being destroyed and removed from the stratosphere .

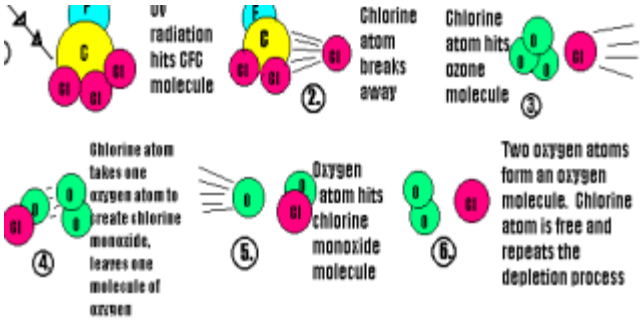

Figure 4: Ozone depletion reaction

3. Ideas for ozone collection

In 1974, millions of tons of CFCs were manufactured and sold; Chemist F Sherwood Roland and Mario Molina of the University of California started wondering where all these CFCs ended. Rowland and Molina proved that the ultraviolet (UV) rays from the sun will break CFCs in the stratosphere, and free chlorine atom will then enter a chain reaction destroying the ozone [12] However, many people were oblivious of this danger until the mid-1980s, when a severe spring fall ozone was first monitored by the British Antarctic Survey. Above the Antarctica The lack of above the South Pole was so serious that the British geophysicist, the decree, which measured it earlier, assumed that his spectrophotometer should be broken and sent the device back to England for repair. Once the deficiency was verified, it is known all over India as NASA through the series of satellite photos through the world Antarctic ozone hole. Laboratory studies and ground-based measurements, supported by satellite, show that free chlorine reacts very rapidly with ozone. They also show that the chlorine oxide formed in that reaction passes forward processes that allow the original chlorine to be reproduced, allowing the sequence to be repeated 100,000 times. This process is known as a "chain reaction". Similar reactions occur between bromine and ozone. Antarctic observations The ozone hole has given a firm and precise display of these processes. Scientists repeatedly observed a large number of chemical species on Antarctica since 1986. Among the measured chemicals were ozone And chain reactions that destroy ozone in the laboratory as one of the participants in chlorine monoxide, which is the identification of reactive chemicals. Show map of satellite is related to the accumulation of chlorine in the picture below. Antarctica and subsequent monoxide observed ozone depletoeo It occurs very fast in some days in the same area.

3.1 Cosmic ray theory for ozone hole

A University of Waterloo scientist says that in a celebrated ozone layer, cyclic holes provides evidence of a new ozone, a theory outlined in the curving theory, involving cosmic rays, their new study, is published only in the physical review letters. King-bin Lu, professor of physics and astronomy and A-Ozone depletion expert, said that it was generally accepted for more than two decades, the ozone layer of the earth is weak, by the chlorine atoms produced by the Sun's ultraviolet Light-induced destruction environment of

chlorofluorocarbons (CFCs) in But increasing evidence supports a new one Theory that cosmic rays, rather than the sun's UV light, plays a major role in ozone-declining molecules and then ozone. Cosmic rays are particles of energy to be produced in space. Ozone is a gas that is mostly concentrated in the ozone layer, the area located in the stratosphere is several miles above the Earth's surface. It absorbs almost all of the sun High frequency ultraviolet light, which is probably Harmful to life and causes of diseases such as skin cancer and cataract. The Antarctic ozone hole is larger than the size of the ray theory, predicting one of the most severe losses of ozone in 2008-2009 in the South Pole and another big hole around 2019-2020 North America In its study, Lou analyzes the cosmic ray of reliable, and ozone data, which covers two, during the period 1980-2007, the entire 11-year solar cycle. The data clearly indicates the time between the cosmic ray intensity and the global ozone depletion, as well as the cosmic ray intensity and ozone hole at the south pole. The cycle of solar activity is the eleventh year cycle of the Shawbay solar cycle or the Schweiba-Wolf cycle. Its name was named after Samuel Henrique. Shweby (25 October 1789, 11 April 1875) A German astronomer was remembered for his work at SunSpot. The highest activity on time, known as Solar Max or Solar Max, Sunspots appear. The lowest activity period is known as the solar minimum. The last solar maximum was in 2001. The solar cycle is not strictly 11 years; It has been reduced to 9 years and in recent years 14 years. This search not only provides a fingerprint for The main role of the cosmic-ray system is ozone, but it is also widely accepted photochemical theory, "said Lu." These observations can be explained by that photochemical model. Instead, they force someone to conclude that the cosmic ray system plays a key role in creating holes. His study was quantitatively estimated that in the total total ozone, the October hole at Antarctica would almost end 187 Dobson units (DU). The latest NASA OMI satellite data sets released on March 13 show that the average total ozone is in. The ozone hole was 197 DU in October 2008, the percentage of Lu's prediction per five percent. The total ozone value in ozone reached almost half of the hole in November and December, at the lowest prices in the record, "Lu said." 2008 ozone hole shrinks quite slowly and sustains till end of December, it is one of the longest running ozone hole on record. "He said that in previous studies, he found a strong local relation between former colleagues and the presence of cosmic ray based on data and ozone depletion from many sources including NASA satellites." Lab Measure demonstrated a mechanism Ozone-depleting halogen can cause rigid reactions inside the polar clouds. "Cosmic rays are concentrated on the north and south pole due to the Earth's magnetic field, and at the height of 15 to 18, the highest electron-production rate is above the ground-km - where the ozone layer is the most increased. Lu says that years ago atmospheric scientific doubts about the cosmic ray mechanism, but now the observed data shows which principle is right. For example, the most recent scientific assessment of ozone reduces by the World Meteorological Organization and the United Nations Environment Program predicts models using photochemical That global ozone will be cured (or increased) between 1 and 2.5 percent between 2000 and 2020 and that antarctic springtime ozone hole will shrink from five to 10 percent per liter between 2000 and 2020. Conversely, cosmic like nitrate. Marine sulfur cycles can also occur due to possible changes in the air

from the ocean, the effluent of COS and dimethylsulfid (DMS), two gases which are shown below the stratospheric aerosols in the stratosphere and respectively the troposphere.

3.2 Effect of the effect of ozone layer

3.2.1 Impact on human and animal health

The possibility of increased penetration of solar UV-B radiation has a profound impact on human health with eye diseases, skin cancer and infectious diseases [6] with the potential risks. UV radiation is known to damage the cornea and lens of the eye. Cervical and posterior subsytopyl form can be cataract due to frequent exposure to UV-B. UV-B radiation can adversely affect the immune system due to many infectious diseases. In the light-colored human population, it is likely to develop nonmelanoma skin cancer (NMSC). Experiments on animals show that UV exposure decreases the skin cancer, infectious agents and immune responses to other antigens

3.2.2 Impact on Terrestrial Plants

It is a known fact that the process of physical and developmental plants is affected by UV-B radiation. Scientists believe that the level of UV-B will be required to increase the use of more UV-B tolerant farming and new tolerant breeding in agriculture. The increased structure of the UV-B in forests and grasslands is likely to change the structure of species (mutation) thus changing the biodiversity into different forms of ecosystem [9]. UV-B alsove The plant can affect the community indirectly as a result of changes in the form of plants, secondary metabolism, etc. These changes may be significant implications for plant competitive equilibrium, plant pathogens and bio-geochemical cycle.

3.2.3 Effects on aquatic ecosystem

While more than 30 percent of the animal protein in the world comes from the ocean alone for human consumption, it is expected that the rise in UV exposure levels can be adverse. The impact on the productivity of aquatic systems High levels of tropics and subpropics can affect the exposure distribution of phytoplanktons that form the foundation of aquatic food. A recent study allegedly indicated 6-12 percent of the area due to increase in UV-B due to decrease in toplankan production in marginal ice. UV-B can also cause damage in the early developmental stages of fish, shrimp, crab, amphibians and other animals, the most serious effect is being reduced fertility and impaired larvae development.

3.2.4 Effects on bio-geo-chemical cycles

Increased solar UV radiation can affect the terrestrial and thus the aqueous biogeochemical cycle both sources change and the sink of greenhouse and important trace gases, e.g. Carbon dioxide (CO2), carbon monoxide (CO), carbonyl sulphide COS), etc. These changes will contribute to the biosphere-environment feedback that the atmosphere produces these gases. Other effects of increased UV-B radiation include: Production change

atmospheric gases; Lower bacteriplankton growth in the upper ocean; Increased organic matter (DOM) of aqueous disruption, etc. may be aqueous nitrogen cycling, through the prohibition of nitrifying, enhanced UV-B-affected bacteria and nitrate such as photodecopy of simple inorganic species. Marine sulfur cycles can also occur due to possible changes in the air from the ocean, the emission of affected COS and dimethylsulfid (DMS), two gases which are shown below the stratospheric aerosols in the stratosphere and respectively the troposphere.

3.2.5 Impact on the quality of air

Stratospheric ozone deficiency and increased penetration result in high photo dissociation rates as a result of UV-B radiation. The major trace gases which control the chemical reaction are the troposphere. Production can increase from Destruction of ozone and related oxidants such as hydrogen peroxide, which are known to have adverse effects on humans, health, terrestrial plants and external materials. Changes in atmospheric concentrations of hydroxyl radical (OH) can change the atmospheric lifetime of important gases such as chlorofluorocarbons methane and substitutes (CFCs). Increased ionospheric reactions may also occur due to increased compaction of clouds such as clouds and later the condensation nucleus, nucleation origin (such as COS and DMS) of sulfur both of anthropogenic and natural.

3.2.6 Influence on content

An increased level of solar UV radiation is known to have adverse effects on synthetic polymers, naturally occurring biopolymers and some other materials of commercial interest. Photos of UV-B radiation accelerates the rate of degradation, these materials thus limit their lifetime. From typical damage to discoloration to loss of mechanical integrity. Such a situation would eventually demand replacement of more photographic material and materials in the material future by other plastics. In 1974, two United States American scientist Mario Molina and F Sherwood appeared at the University of Rowland at Lovelock, with a shock to California. CFCs were present in the worldwide environment distributed by more or less equally appreciable concentrations. They suggested that these stable CFC molecules could drift Slowly up to the stratosphere, where they can break down the sun's energy-rich UV-B and UB-Rays through chlorine atoms. Thus the chlorine-derived complex produced can pass through complex chemical reaction producing chlorine monoxide, attacking an ozone molecule and converting it into oxygen and then again the process of reviving chlorine atom. Thus ozone destructive effect catalysts and FC in small quantities will destroy large number of ozone molecules. Which was then put to its original theory to be tested by aeronautics? Scientists of the Space Authority (NASA) and found valid, in many countries the danger ring is ringing and laying foundation for international action.

3.2.7 Impact on climate change

Ozone deficiency and climate change are linked in a number of ways, but ozone deficiency is not a major cause of climate change. There are two effects on atmospheric ozone: the temperature balance of the earth. This absorbs solar ultraviolet radiation, which heats the stratosphere this It also absorbs infrared radiation emitted from the earth's surface, effectively heat trapping in the troposphere. Therefore, the effect of the change in climate ozone concentrations varies with it, at which height these ozone changes occur. Damage of major ozone which has been seen in the lower stratosphere due to man-made chlorine- and bromine-containing gases have a cooling effect on Earth. On the other hand, ozone increases due to which the troposphere is estimated to have surface surface pollution gases have a warm effect on the Earth surface, which contributes to the "greenhouse" effect. In comparison to the effects of changes in other atmospheric gases, the effects of these two ozone changes are difficult To accurately calculate. In the figure below, the upper ranges indicate the possible effects of ozone changes, open straps, and the evidence of severe reduction of ozone and the scientists stirred in the community to take immediate remedial action in an international conference on March 22, 1985 in Vienna Was organized. As a result, on specific measures 1987 is known as an international treaty in an international agreement. Which is known in this form as the Montreal Protocol on substances that reflect ozone layer. The first concrete step to save under this protocol was taken by the immediate consent of the ozone layer, completely out of chlorofluorocarbons (CFCs), Helens, carbon tetrachloride (CTC) and methyl (MCF), according to a scheduled program, the following categories are indicated by solid Bars are used.

3.2.8 Effects on ultraviolet radiation

The decrease of ozone layer, on average, leads to an increase in ground-level ultraviolet radiation, because ozone is an effective absorber of ultra violet radiation. The sun emits radiation in a wide range of energy with about 2% in the form of high-energy, ultraviolet (UV) radiation. Some are particularly effective in generating this UV radiation (UV-B), the loss of living beings, the largest decrease in ozone During the last 15 years Antarctica has been seen, especially during each September and October when the ozone hole forms. During the last several years, simultaneous UV radiation and total ozone measurements have been made on many Antarctic stations. In the late spring, parts of biological harmful ultraviolet radiation may be more likely in the Antarctic continent in San Diego, California, where the sun is too much above the horizon. In areas where the lack of small ozone has been observed, it is more difficult to detect UV-B growth. In particular, the trend in UV-B radiation associated with detecting ozone decreases. The change in the clouds by localization may be more complex than the pollution, and difficulties in detecting the device in the exact same situation in many years. Before the late 1980s, trends were not available for stability in ground-level UV-B for essential equipment accuracy and short long-term measurements. Therefore, data tools in older, less-specific urban locations provide very less reliable information, especially since cloud or local pollution is not available after

changes in measurement simultaneously. When high quality measurements have been made in other areas, the major cities and their respective air pollutants have been reduced, with the regular increase in ozone has been done with UV b. This is shown in the figures given below, where the clear-sky measurements made at six different stations are displayed Ozone deficiency leads to an increase in UV-B radiation, in volume ("model" curve) expected by calculating the surface which is in good agreement with it.

4. International action

The first international action to focus on the threat of ozone depletion in the stratosphere and its long-lasting dangerous consequences in life on Earth were in 1977 when the focus of the 32 countries was focused on the action on the ozone layer on a World Plan Washington DC. UNEP was adopted as a coordinator. As experts started in an article, a heap of data and in 1985, Dr. Firman, published in the prestigious science journal, "Nature", told that although it lacks The world's ozone layer was the most severe reduction in Antarctica. This is what is called the famous "Antarctica ozone hole". There were his conclusions. Confirmed with Satellite Remarks and the propaganda of severe ozone depletion of the previously offered and stirred in the scientific community, in order to take immediate remedial action in an international community, the convention was held in Vienna on March 22, 1985. As a result, on specific measures, in 1987, an international agreement is known as an international treaty, which is known as the Montreal Protocol on Substances that Reflect Ozone. The first concrete step to save under this protocol was taken by the immediate consent of the ozone layer completely out of the way of Chlorofluorocarbons (CFCs), Helens, Carbon Tetrachloride (CTC) and Methyl Chloroform (MCF) according to a scheduled program.

5. Montreal Protocol

In 1985 the Vienna Convention established the mechanism of international cooperation in research in the ozone layer and the effect of the depleting chemicals (ODC) of ozone. The first search of the 1985 Antarctic ozone hole was also marked. Protocol on substances based on the Vienna Convention, Montreal, which reflects the ozone layer, negotiated and signed by 24 countries and European countries in September 1987, the economic community Protocol parties called for phase of use of CFCs, Hulls And other man-made ODCs. The Montreal Protocol represents a milestone in the international environmentalist movement. For the first time the whole country was legally obliged to reduce and eventually fully utilized Phase-out CFCs and other Odic. Failure to comply with harsh penalties Original Protocol Objective to reduce the use of chemical compounds Until 999, the ozone protocol in the stratosphere in the stratosphere supplemented the agreements made in London in 1990 and in Copenhagen in 1992, where the same countries promised to stop the use of CFCs and most of the chemical compounds are destructive for ozone by the end of 1995. Are. Fortunately, it has become very easy to develop and introduce, compounds and methods to change CFC compounds. It was

agreed upon in developing countries to deal with the difficulties experienced by That they will be given an extended period of grace, so long as their use of CFC has not increased significantly. For example, China and India are firmly in the use of air conditioning and cooling equipment. In these devices, CFC compounds will be used to replace the ozone cheaper than using replacement compounds. Therefore, an International Fund has been established to help introduce these countries to new and more environment friendly technologies and chemicals. The lack of ozone layer is a worldwide problem, which does not respect the boundary between different countries. It can only be influenced through determined international co-operation.

6. Australian Chlorofloro Carbon Management Strategy

It donates a framework for responsible management and uses CFCs in Australia. The strategy recognizes some of the continuous requirement of these chemicals in pharmaceuticals and uses the laboratory, but is committed to their gradual phasing.

7. Environmental protection (ozone protection)

This is to reduce the disadvantage of the WA policy, the ozone-depleting substance in the environment, and has been expanded to cover the use of alternative refrigerators (where) relevant). This has been done to stop the existing shares. With the release of ozone-depleting substances, the atmosphere of the business which is not recognized or accompanied by the insufficient training and / or equipment on the system in which these substances are included.

8. United Nations Environment Programme

Several environmental estimates have been published by the effects of ozone depletion (United Nations Environment Program), 1998; World Meteorological Organization, 2002

9. Ozone Conservation and Synthetic Greenhouse Gas Management Act 1989 (and related rules and regulations)

Was implemented by the Commonwealth government. Meet your commitments under the Montreal Protocol.

10. Ultraviolet index prediction

The Bureau of Meteorology has developed a model to predict the amount and time of ultraviolet exposure that will be for 45 WA locations. It has been designed to help ultrasound radiation to reduce the risk of people at risk for dangerous levels of people.

11. Conclusion

The United States has cooperative action to prevent the program, including the UNEP, under the auspices of the Environment, and the governments of the world, with ozone depletion "The Montreal Protocol on" substances that depict the ozone layer ", signed in 1987. . Scientists are worried that global warming will continue to accelerate ozone destruction and decrease the growth of stratospheric ozone. Ozone depletion

when stratosphere occurs Where the ozone layer is), it cools down. Because the warming traps heat in the global troposphere reaches less heat than the stratosphere which will make it cooler. Greenhouse gases act as a blanket for the troposphere and make stratosphere. cold. In other words, global warming can make ozone, it is considered to start when a very bad right recovery during the next century. Maintain programs to ensure that ozone-depleting substances are not released and continuous alertness of this effect is necessary. In fact, global warming, acid rain, ozone layer deficiency and ground level ozone pollution are a serious threat to the quality of life of all life on earth. They are different problems, but, as seen, there is a connection between each. Not only does the use of CFC destroy the ozone layer but also leads to global warming.

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