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A STUDY OF MAJOR FACTORS INFLUENCE THE CHANGE OF CLIMATE

Geography

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ABSTRACT

Weather describes the condition of the atmosphere. It might be sunny, hot, windy or cloudy, raining or snowing. Climate means the average weather conditions in a particular location based on the average weather experienced there over 30 years or more. Global climate zones with similar flora, fauna and climate are called biomes.

KEYWORDS

Weather, Climate, Factors, Affecting

INTRODUCTION

Climates are influenced by many factors, such as proximity to the equator or the poles and proximity to the sea, as well as things like ocean currents, atmospheric pressure belts and prevailing winds.

A place's climate influences the types of vegetation and animals that live there. It is possible to divide the world into a number of climatic zones or biomes, each with their own characteristic climate, vegetation and wildlife.

REVIEW OF LITERATURE

N.H. Ravindranath and R. Sukumar (1998) Report that the changes in temperature, rainfall and soil moisture are considered at regional level for India under two scenarios, the first involving green house gas forcing, and the second, sulphate aerosols.

M. Lal, K.K. Singh, G. Shrihivasan, L.S. Rathore, D.Naidee and C.N. Tripathi (1999) tried to assess the impact of thermal and moisture stresses associated with observed intra-seasonal and inter-annual variability in key climatic elements on the nature and extent of losses in growth and yield of soybean crop in central India through the use of CPOPGRO Model.

Neeraj Vedwan and Robert E. Rhodes (2001) examines how apple farmer in the western Himalayas of India perceive climatic change. In this research paper entitled "Climate change in the Western Himalayas of India: a study of local perception and response" they compared the locally idealized traditional weather cycle with climate change as perceived by the farmers of the region.

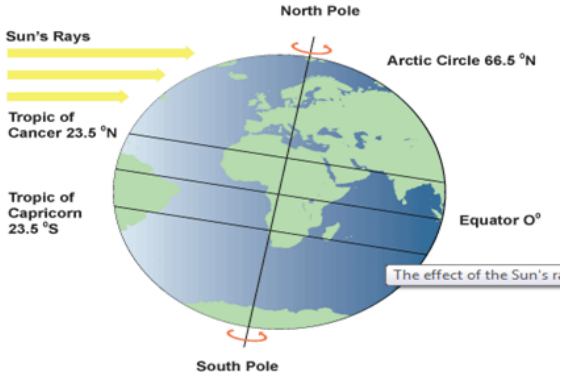
Kalra, Naveen, Chandar, Subhash, Pathak, H. Aggarwal, P.K. Gupta, N.C. Sehgal, Mukesh (2007): Chakraborty, Debashis assessed that climate change has emerged as the most prominent of the global environment issues and there is a need to evaluate its impact on agriculture. They tried to contribute in their work "Impact of climate change on agriculture".

David H. Douglass, John R. Christy, Benjamin D. Pearson and S. Fred Singer (2007) examined the tri-phosphoric temperature trends and Climate of 20th century model simulation in their work named "A comparison of tropical temperature trends with model prediction" and tried to reconcile them with the best available updated observations (in the tropics during the Satellite era).

FACTORS AFFECTING CLIMATE

Temperatures drop the further an area is from the equator due to the curvature of the earth. In areas closer to the poles, sunlight has a larger area of atmosphere to pass through and the sun is at a lower angle in the sky. As a result, more energy is lost and temperatures are cooler.

In addition, the presence of ice and snow nearer the poles causes a higher albedo, meaning that more solar energy is reflected, also contributing to the cold.



There are lots of factors that influence our climate Elevation or Altitude effect climate Normally, climatic conditions become colder as altitude increases. “Life zones” on a high mountain reflect the changes, plants at the base are the same as those in surrounding countryside, but no trees at all can grow above the timberline. Snow crowns the highest elevations.

Prevailing global wind patterns

There are 3 major wind patterns found in the Northern Hemisphere and also 3 in the Southern Hemisphere. These are average conditions and do not essentially reveal conditions on a particular day. As seasons change, the wind patterns shift north or south. So does the intertropical convergence zone, which moves back and forth across the Equator. Sailors called this zone the doldrums because its winds are normally weak.

Latitude and angles of the sun’s rays

As the Earth circles the sun, the tilt of its axis causes changes in the angle of which sun’s rays contact the earth and hence changes the daylight hours at different latitudes. Polar regions experience the greatest variation, with long periods of limited or no sunlight in winter and up to 24 hours of daylight in the summer.

Topography

The Topography of an area can greatly influence our climate. Mountain ranges are natural barriers to air movement. In California, winds off the Pacific ocean carry moisture-laden air toward the coast. The Coastal Range allows for some condensation and light precipitation. Inland, the taller Sierra Nevada range rings more significant precipitation in the air. On the western slopes of the Sierra Nevada, sinking air warms from compression, clouds evaporate, and dry conditions prevail.

Effects of Geography

The position of a town, city or place and its distance from mountains and substantial areas of water help determine its prevailing wind patterns and what types of air masses affect it. Coastal areas may enjoy refreshing breezes in summer, when cooler ocean air moves ashore. Places south and east of the Great Lakes can expect “lake effect” snow in winter, when cold air travels over relatively warmer waters.

In spring and summer, people in Tornado Alley in the central United States watch for thunderstorms, these storms are caused where three types of air masses frequently converge: cold and dry from the north, warm and dry from the southwest, and warm and moist from the Gulf of Mexico - these colliding air masses often generate tornado storms.
Surface of the Earth

Just look at any globe or a world map showing land cover, and you will see another important factor which has a influence on climate: the surface of the Earth. The amount of sunlight that is absorbed or reflected by the surface determines how much atmospheric heating occurs. Darker areas, such as heavily vegetated regions, tend to be good absorbers; lighter areas, such as snow and ice-covered regions, tend to be good reflectors. The ocean absorbs and loses heat more slowly than land. Its waters gradually release heat into the atmosphere, which then distributes heat around the globe.

Climate change over time

Cold and warm periods punctuate Earth's long history. Some were fairly short; others spanned hundreds of thousands of years. In some cold periods, glaciers grew and spread over large regions. In subsequent warm periods, the ice retreated. Each period profoundly affected plant and animal life. The most recent cool period, often called the "Little Ice Age," ended in western Europe around 1850.

Since the turn of the 20th century, temperatures have been rising steadily throughout the world. But it is not yet clear how much of this global warming is due to natural causes and how much derives from human activities, such as the burning of fossil fuels and the clearing of forests.

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