World Geography 30
Student Work

World Patterns of Physical Elements

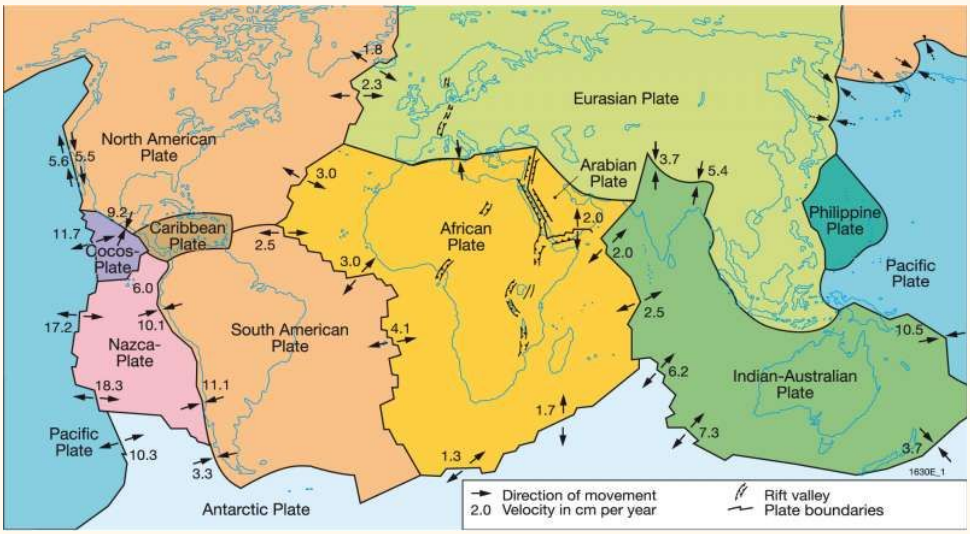
Physical Geography

Lithosphere:

Definition: The lithosphere is a solid and rigid outer part of the earth. It consists of the crust and the upper portion of the mantle.

The lithosphere is significant because is the point where goelists and rheologists (scientists who study the flow of matter) mark the difference in ductility between the two layers of the upper mantle. The lithosphere is has a elasticity characteristic to it, and is also ductile. The characteristics depend on temperature, stress and curvature of the Earth. The lithosphere has the ability to conduct heat associated with convection taking place in the plastic mantle below the lithosphere. There are two types of lithosphere: oceanic and continental. Oceanic lithosphere is associated with oceanic crust, and is denser than continental lithosphere. Continental lithosphere can be much thicker, stretching more than 200 km below earth's surface, and is also associated with continental crust. The lithosphere is divided into 15 tectonic plates that fit together around the earth. These plates consist of African, Antarctic, Arabian, Australian, Caribbean, Cocos, Eurasian, Indian, Juan de Fuca, Nazca, North American, Pacific, Philippine, Scotia and South America.These plates slowly move and creating friction can that cause earthquakes and volcanoes.

Map of Lithosphere:



This map above shows the different 15 tectonic plates that make up the lithosphere. The arrows demonstrate the direction of movement that the plates are moving in (which is estimated 2.0 velocity in cm per year). The two downwards striped describe the Rift valley which is a linear shaped lowland between several highlands or mountain ranges created by the action of a geologic rift or fault. The plate boundaries demonstrated the three types of boundaries that deal with the lithosphere. These are the divergent, convergent and transform. These tectonic plates undergo some scale motions in which this map points out.

How the Lithosphere impacts/influence human activity on the planet:

Deforestation: the process where natural forests are cleared through by logging or burning the trees to use the number or replace the area for other usage. Deforestation impacts the lithosphere by damaging the quality of the land. The effect of this is erosion of soil, flooding and drought. Also many animals lose their homes to this issue.

Agriculture: The growing of both plants and animals for human resources, can also be called farming. Farming destroys the lithosphere by the use of chemical pesticide and fertilisers that contaminate soil and affect soil fertility. It can also cause erosion in the soil. The effect of can be seen in water, animals and pollution.

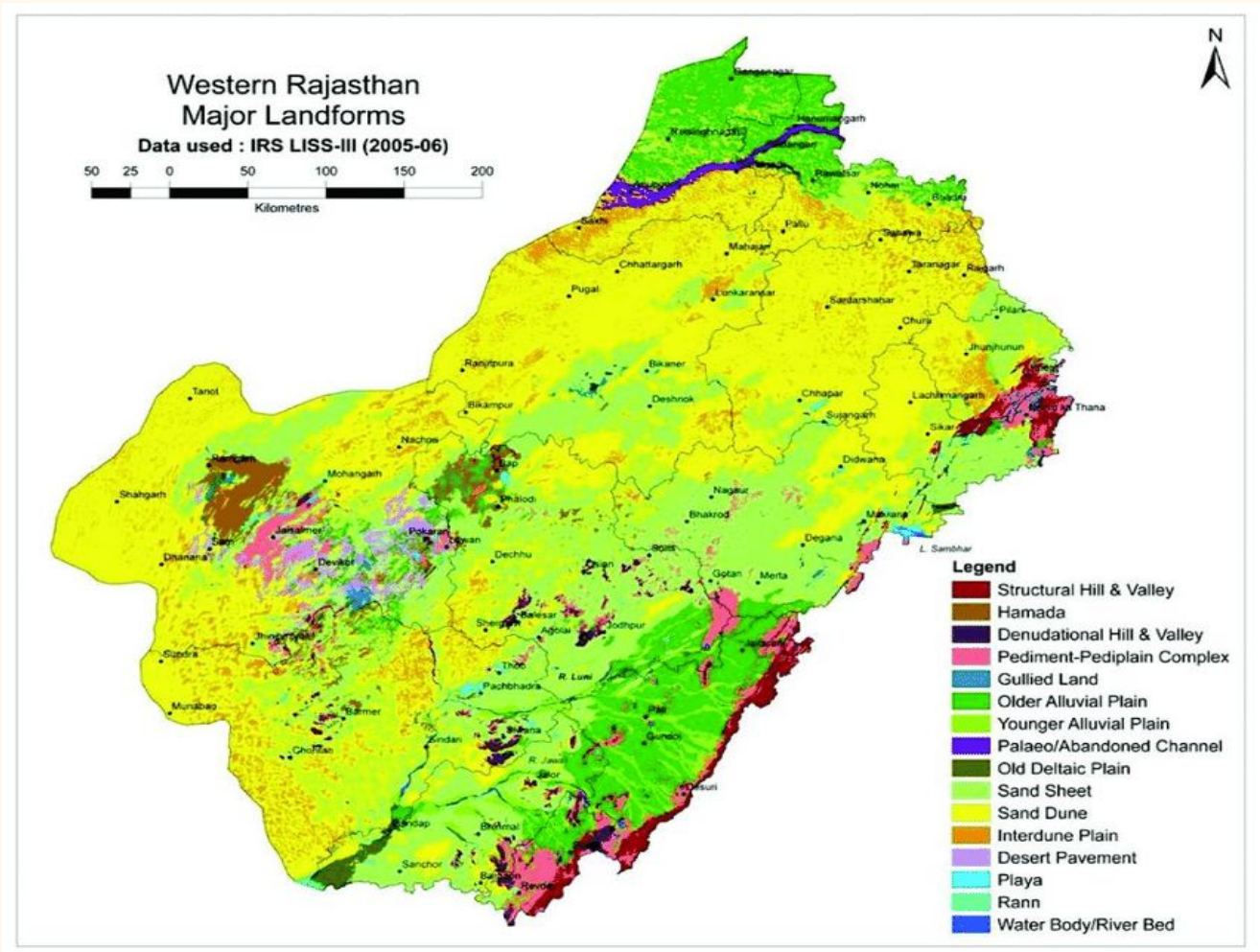
Drilling for Oil and Gas: This can cause ground clearing, grading, drilling, waste management and construction of installation of facilities. The chemicals in the air, water and land can cause many skin infections and diseases. Pipes may rupture which will cause contamination into land and water.

Landforms:

Definition: A landform is a naturally formed feature located on the earth's surface.

A landform is a natural geographic feature that can be found on the earth's surface, such as valleys, hills, mountains and plateaux. They are not all the same, some are very high above sea level and some may be very deep below sea level. Some landforms may be covered with vegetation while others do not have any plant life. Landforms are constantly changing features. Landforms are formed by factors grouped into two processes; constructive and destructive. Constructive processes involves the building of features my natural action. Descriptive processes involves the breakdown of land surface to form new features, weathering and erosion are the two descriptive forces that create landforms. There are several types of basic landforms such as a canyon, cape, coastline, delta, glacier, mountain , sand dune, etc. Tectonic plate movement under the Earth can create landforms by pushing up mountains and hills. Erions by water and win wear down land, and create landforms. Both processes happen over a long period of time (sometimes millions of years). Landforms can also exist under water in the form of mountain ranges, and basins under the sea.

Map of Landforms:



This map shows with the colourful legend, the different locations of different types of landforms throughout Western Rajasthan. As you can see, there are several types of landforms that are all located in just one state of India. This demonstrates that there are millions of different types of landforms throughout the earth, and several different types.

How Landforms impact/influence human activity on the planet:

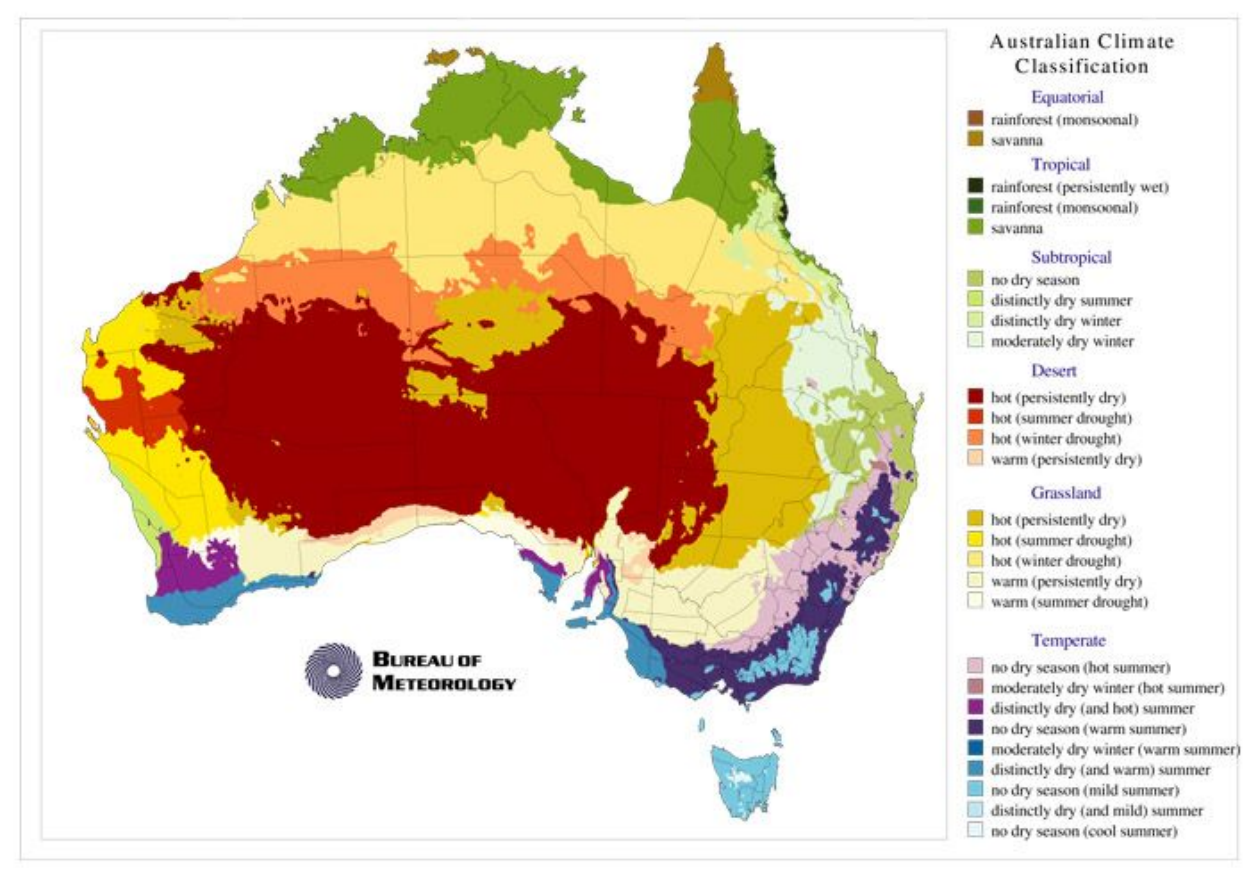
Landforms play critical roles in the life of people. They affect where people live, where food is grown, region's cultural history, societal development, architectural choices and building development. Landforms also influence on many activities that humans can participate in such as winter activities in the mountains; skiing, snowshoeing, sleigh rides etc. and summer activities; hiking, biking, canoeing. If landforms didn't exist than humans would not be able to do these activities.

Climate; elements, controls, regions:

Definition: The average weather in a pace over many years. Climate takes hundreds, thousands, even millions of years to change.

The description of climate includes information on the average temperature in different seasons, rainfall, and sunshine. Climate change is any systematic change in the long-term statistics of climate variables such as temperature, precipitation, pressure or wind sustained over several decades or longer. The change in climate can be due to natural external forces, or it can be human included. Different parts of the world have different climates. Climate is determined by region's climate system, a climate system has five major components; the atmosphere, they hydrosphere, the cryosphere, the land surface and the biosphere. The composition and movement of gases surrounding the Earth can change drastically, influenced by natural and man-made factors. The hydrosphere can change due to temperature and salinity, which occur at slower rates that changes to the atmosphere. The cryosphere is another consistent section of the climate system. It helps regulate thermohaline circulation. The abundance of plants and the type of land cover (soil, sand) impacts evaporation and ambient temperature. The biosphere; which is the sum total of living things on earth influences climate. Through photosynthesis, plants help regulate the flow of greenhouse gases in the atmosphere. The most familiar climate features of a region's climate is temperature and precipitation Although, other climate features also include wind, humidity and fogginess. Latitude plays a huge role in determining climate, and also landscape can help define regional climate.

Map of Climates:



The map of climates show the different amounts of climates there are around the world, and how they have been for several years. The map forms a legend to put the climates in different categories such as: Equatorial, Tropical, Subtropical, Desert, Grassland and Temperature. These different categories help the person looking at the map where these different climates occur in the shown map. This kind of information can also possibly help researchers.

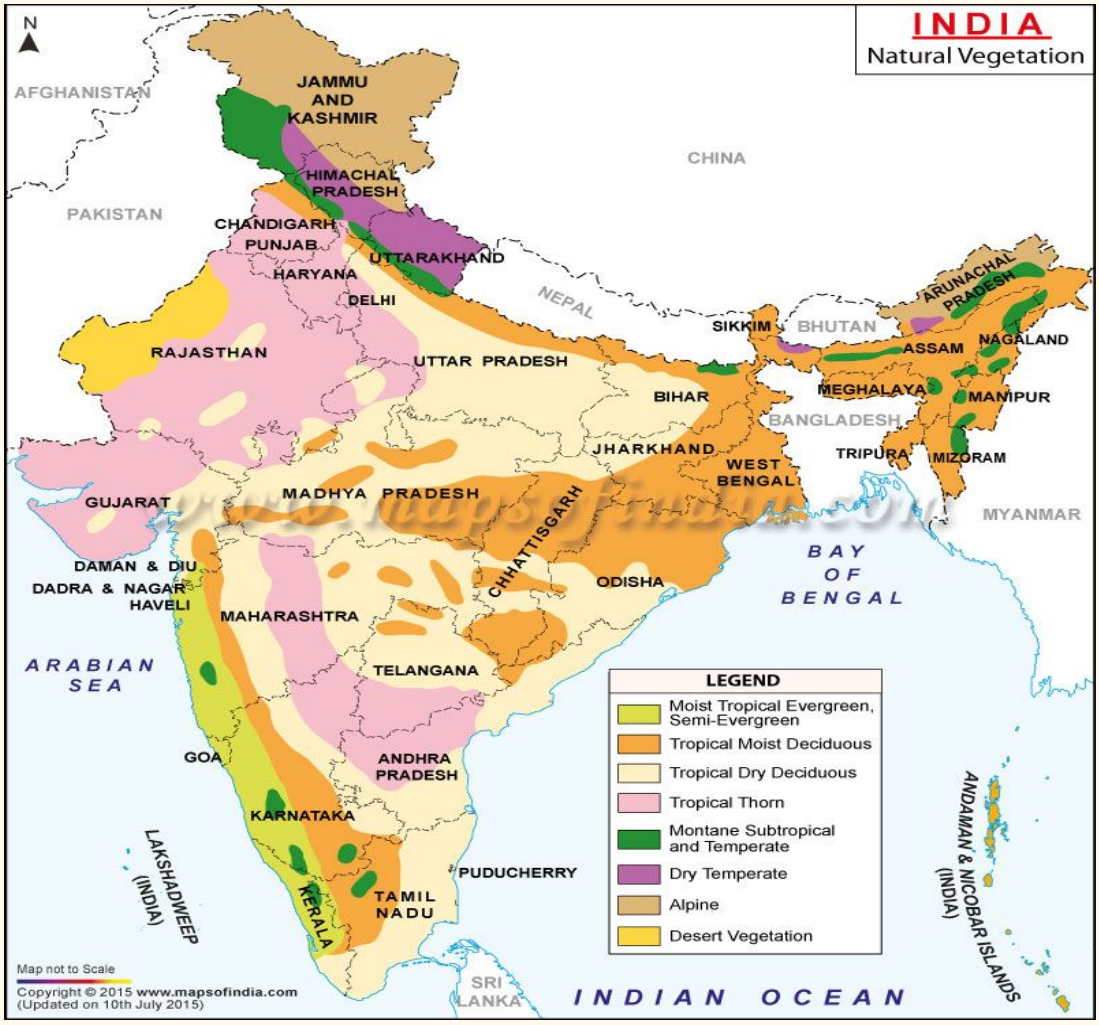
How Climates impact/influence human activity on the planet:

Human activities contribute to climate change because of the changes in the Earth's atmosphere in the amounts of greenhouse gases, aerosols and cloudiness. The largest known factor comes from burning fossil fuels, which releases carbon dioxide to the atmosphere. The greenhouse gases an affect climate change by alerting incoming solar radiation and outgoing infrared radiation that are part of Earth's energy balance. Changing the atmosphere abundance or properties of these gases and particles can lead to a warning or cooling of the climate system.

Vegetation:

Definition: Vegetation is used to describe the overall characteristics of plant cover in a area.
A general term for the plant life of a regio, it refers to the ground cover provided by plants and is by far the most abundant biotic element of the biosphere. Vegetation serves several critical functions in the biosphere. It regulates the flow of numerous biochemical cycles, such as water, carbon and nitrogen. Vegetation strongly affects soil characteristics, including soil volume, chemistry and texture which affect various vegetation characteristics, including productivity and structure. It also serves as wildlife habitat and the energy source for the vast array of animal species on the earth. It is critically important to the world economy, particularly the use of fossil fuels as an energy source, but also the global production of food, wood, fuel and other materials. Global vegetation has been the primary source of oxygen in the atmosphere, enabling the aerobic metabolism to evolve and persist. Vegetation is psychologically important to humans, we depend on vegetation for food, shelter and medicines. Five locations that include vegetation regions would be a forest, grassland, tundra, desert, ice sheets. Vegetation is a key component of an ecosystem. Vegetation converts solar energy into biomass and forms the base of all food chains. Vegetation influences the energy balance in the earth's surface and within the atmospheric boundary layer, often mitigating extremes of local climate. Vegetation affects soil development over time, generally contributing to a more productive soil, and it provides wildlife habitat and food.

Map of Vegetation:



This map of vegetation describes the different forms of vegetation, specifically in India. The legend describes the types of vegetation that can be seen in India such as moist tropical evergreen, semi evergreen, tropical moist deciduous, tropical dry deciduous, tropical thorn, montane subtropical and temperature, dry temperate, alpine, desert vegetation. These maps describe the forms of vegetation around India, which can help researchers locate vegetation around the world.

How Vegetation impact/influence human activity on the planet:

Humans are altering the vegetation on earth, and it is has effect on weather and climate. Farmers and other community professionals might find it interesting to learn about the role of vegetation in weather and climate Vegetation influences both albedo of the earth and the amount of water vapor and carbon dioxide in the air. Carbon dioxide emissions , in order to produce energy that drives the world's economy countries rely on carbon-rich fossil fuels like coal, oil and gas. By burning these materials, humans have added nearly 400 billion tons of carbon dioxide , which ultimately impacts the vegetation of the world.

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