

The Wind

Factor Affecting Wind:

- 1) Pressure Gradient: it is the difference between high pressure and low pressure of 2 places and it determines speed and intensity of the winds
- 2) Temperature: Temperature creates the pressure gradient.
- 3) Frictional Force: Surface winds experience a lot of frictional force and this frictional force is one of the factors which determine the speed of the wind.
- 4) Coriolis Force: It is a defective force which is generated because of rotation of earth and it increase towards poles.

Ferrel's Law

This law is the outcome of coriolis force. It states that any wind moving in northern hemisphere is deflected to the right of its direction-in southern hemisphere to the left of its direction not to the direction of observer but to the direction of origin of wind.

Air in motion is called wind. It is the horizontal expression of atmosphere circulation which is generated with the help of pressure gradient.

Wind are 3 Types

1. Permanent Wind/Planetary Wind
2. Seasonal Winds/Monsoonal Winds
3. Local Winds

Types of Winds

The word trade has been derived from a German word 'Treat' which means Trap to Bow. There are the winds which blow from sub tropical high pressure belts to equatorial low pressure belts in Northern and Southern hemisphere. In N hemisphere the deflection is towards right thus wind become N.E called as NE Trade winds

In Southern hemisphere deflection is towards left so these are called south east winds. Both the winds converge with each other at equatorial Low Pressure Belts and form ITCZ (Inter Tropical Convergence Zone).

The movement of ITCZ to North and South is according to the sun rays which leads to the origin of Monsoon.

Westerlies- It blows from sub tropical HP belts to sub-polar LP belts. However, the deflection of wind is more than that the equator. Thus winds appear to come from west. In Northern hemisphere the deflection is towards right. So they are called as south-west westerlies and south hemisphere the deflection is towards left so they called as North-west westerlies.

Westerlies due to higher gradient have higher velocities and their velocity is higher in Southern Hemisphere as compared to Northern Hemisphere. At 40° latitudes they are called as roaring 40° and at 50° S latitude these are called as furious 50° and at 60°S called as screaming/sharle 60°.

Westerlies become more intense in winter because of shifting of Sub-tropical HP belts due to the shifting of sun rays towards the equator.

Easterlies blow from polar HP Belts to Sub Polar Low Pressure Belts in both the hemisphere in Northern Hemisphere called as N-E polar easterlies and in Southern Hemisphere called S-E polar easterlies.