Why do air masses move

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Air mass is an extremely large body of air in the atmosphere whose properties – temperature, humidity and lapse rate, which is the decrease of atmospheric temperature with height, are largely uniform over an area which can be several hundred kilometers across the surface of the earth. Climate science defines air mass as a relatively huge bulk of air that is distinctive by its homogeneity of temperature and moisture content.

Air Mass is a voluminous body of air found in the lower regions of the atmosphere. Air masses are identifiable particularly for their unvarying qualities of moistness and heat at any specific altitude. Air Masses persist as distinct and discernible even when they become mobile.

“An air mass is a large body of air with generally uniform temperature and humidity. The area over which an air mass originates is what provides it’s characteristics. The longer the air mass stays over its source region, the more likely it will acquire the properties of the surface below. As such, air masses are associated with high pressure systems.“

Two different air masses can be separated and the line of distinction is called a front. It is along with these fonts that weather formation occurs.

When we refer to air masses we are indicating at those massive air packages that can spread over an area approximately 1,600 kilometers. They exercise a considerable influence on the climatic conditions of the region over which they lodge and carry with them distinctive climatic features of their source region.

Air Masses are most common in the tropics, subtropics, and high latitudes. The zones from which air masses grow are called “source regions.” These are generally tracts of ocean, desert or snow-covered plains. The large surfaces with uniform temperatures and humidity, where air masses originate are called source regions. Uneven warming and cooling of the earth’s surface by the Sun gives rise to air masses.

The warm air masses form over the equator or desert areas where solar radiation is maximum. In clear, almost cloudless days, the heat is reflected back to the atmosphere. The air becomes light and spreads.

Warm wind is light and tends to rise. Cold air is heavy. Areas with the warm light wind have a low-pressure zone. The cold wind is heavy and creates high pressure. Wind flows from high-pressure air masses to low-pressure areas.

When wind speed is low the air remains stationary over a particular landscape and in the process gathers the natural climatic conditions of that region-heat or cold. When the winds move air masses, they carry the weather conditions along to a new region. An air mass on the move begins to transform as it passes over new landscapes, although retaining enough of its original qualities that alter local weather.

When this air mass reaches a new area, it often clashes with another air mass with different temperatures and humidity. This can create a severe storm.

The source regions and their climatic specifications classify the world’s major air masses. An air mass is named by the combination of its humidity and temperature specificity. The type of temperature that an air mass acquires is derived from the latitude of origin; temperatures generally decrease poleward.

Air masses originating near the equator are Equatorial. These are considered hot air masses. At a higher latitude the air masses are called tropical air masses. These are considered warm air masses. The Polar air masses are at a still higher latitude. These range from cool to cold, depending on the position of the sun.

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