Prevailing Winds

A wind is a movement of air in the atmosphere.

Prevailing winds are winds that affect large areas/weather around the world. Winds are affected by the Earth's rotation.

The apparent change in direction of a moving mass in a rotating system is called the **Coriolis Effect.**

Coriolis Effect

http://www.classzone.com/books/earth_science/terc/content/visualizations/es1904/es1904pa01.cfm

http://www.youtube.com/watch?v=i2mec3vgeaI&list=TLahFs7YT1aIk

Major Prevailing Winds

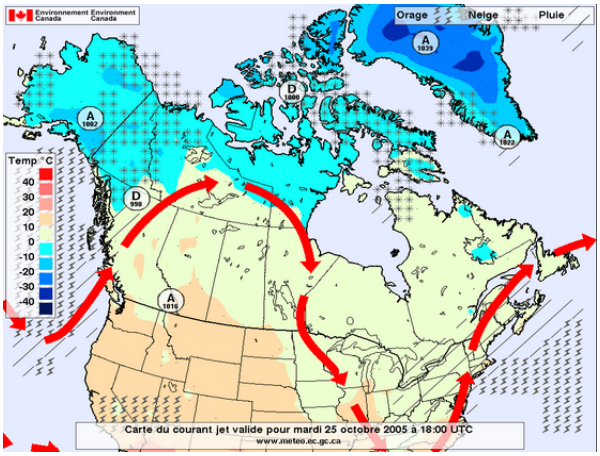
1. Polar Easterlies - near the poles , the air is cold and dense. This air sinks and moves toward the equator. The Earth's rotation cause this air mass to twist to the right in the northern hemisphere(left in South) causing the easterlies.

2. Mid-latitude Westerlies - At 30^0 latitude, some of the warm air from the equatorial convection current meets the cold polar air.
The surface air moving north twists to the right in the northern hemisphere (left in Southern hemisphere) to form the mid latitude westerlies.

3. The Trade Winds - the sun heats up everything at the equator. Hot air rises and moves northward, cools and becomes more dense and falls around 30^0 latitude.This air moves back towards the equator(low pressure area) producing the trade winds.
This air movement twist to the right in the northern hemisphere to form the northeast trade winds (they twist left in the southern hemisphere - southeast tradewinds).

4. Jet Streams - high speed winds in the upper troposphere near the middle
altitudes. The major jet streams on Earth are westerly winds (flowing west to east).


w.youtube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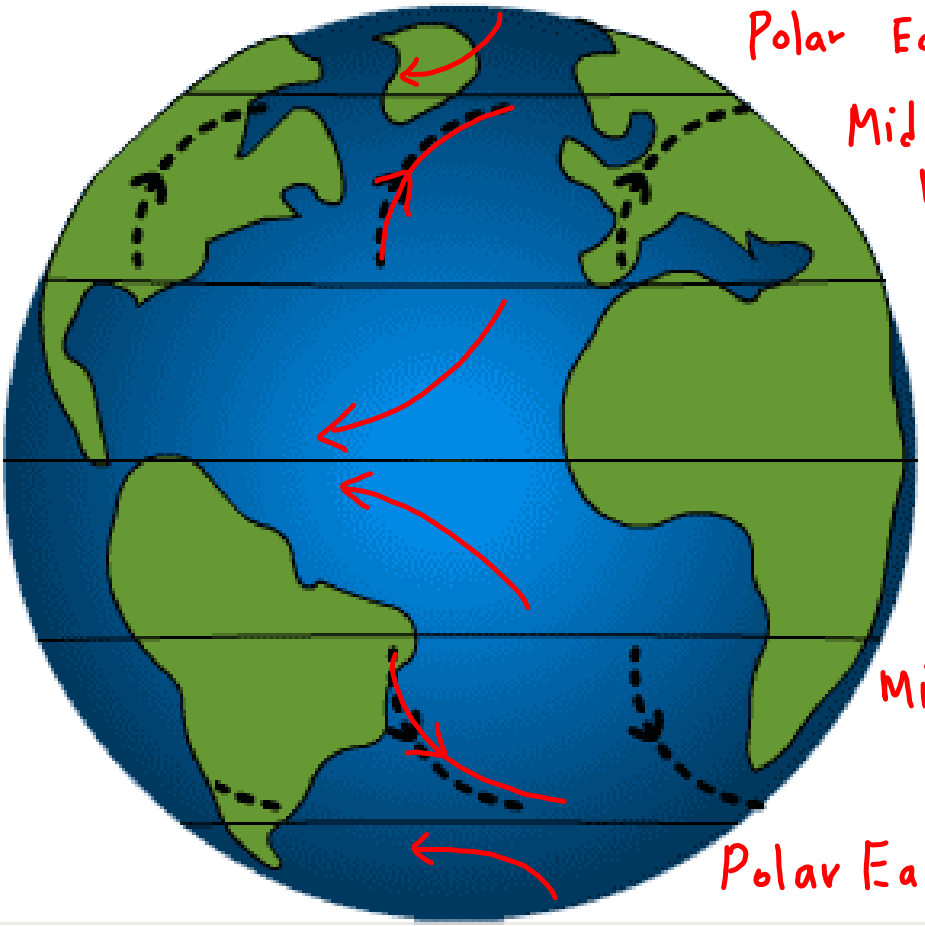
Carte du courant jet valide pour mardi 25 octobre 2005 à 18:00 UTC
www.meteo.ec.gc.ca


Polar Easterlies
Mid-Latitude Westerlies
NE Trade Winds
SE Trade Winds
Mid-Latitude Westerlies
Polar Easterlies

Effects of Prevailing Winds

(1) Distribute solar energy from equatorial regions to colder areas

(2) Carry moisture helping to cause precipitation