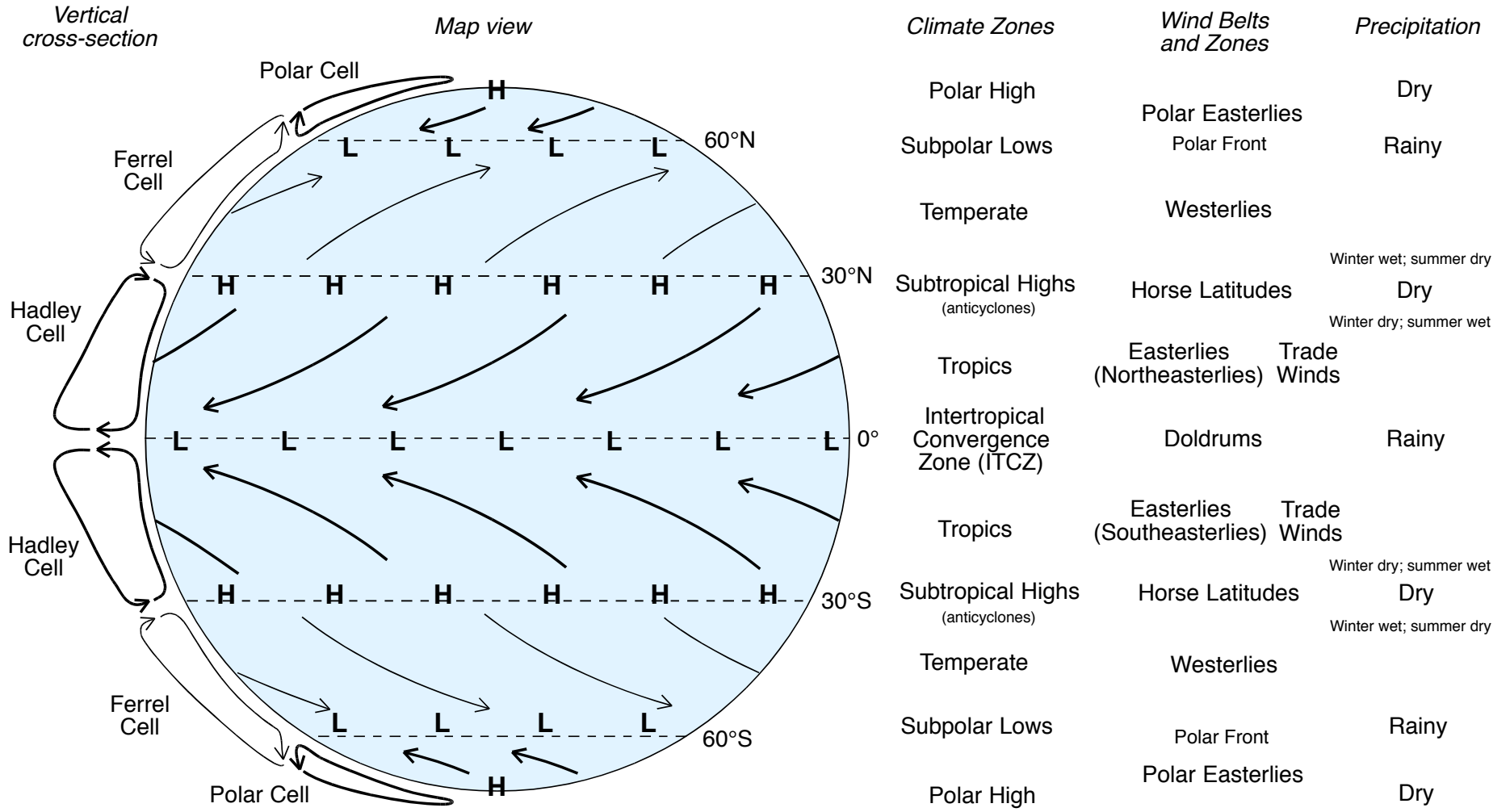


# Global climate zones Id: an idealized simple view



The diagram above is a typical schematic representation of Earth's surface atmospheric pressure, surface winds, and tropospheric circulation. It mimics diagrams in many introductory climatology and oceanography textbooks. Parts II to V of this series expand on this theme in a little more detail.

Atmospheric circulation is driven by rising of warm air at the equator (at the latitude of maximal solar heating) and by sinking of cold air at the poles (at the latitude of minimal heating). On Earth, the air that has risen from the equator sinks at about 30° N and S, and some of that air returns across Earth's surface to the equator to close the Hadley Cells. The air that has sunk and moved out from

the poles warms and rises at about 60° N and S, and the air that returns aloft to the pole closes the Polar Cells. In between, the Ferrel Cells mirror the vertical flow at 30° and 60° N and S, with each Ferrel Cell like a ball bearing rolled by the Hadley and Polar cells. Earth-surface movement of air in these three kinds of cells gives the surface winds belts shown here.