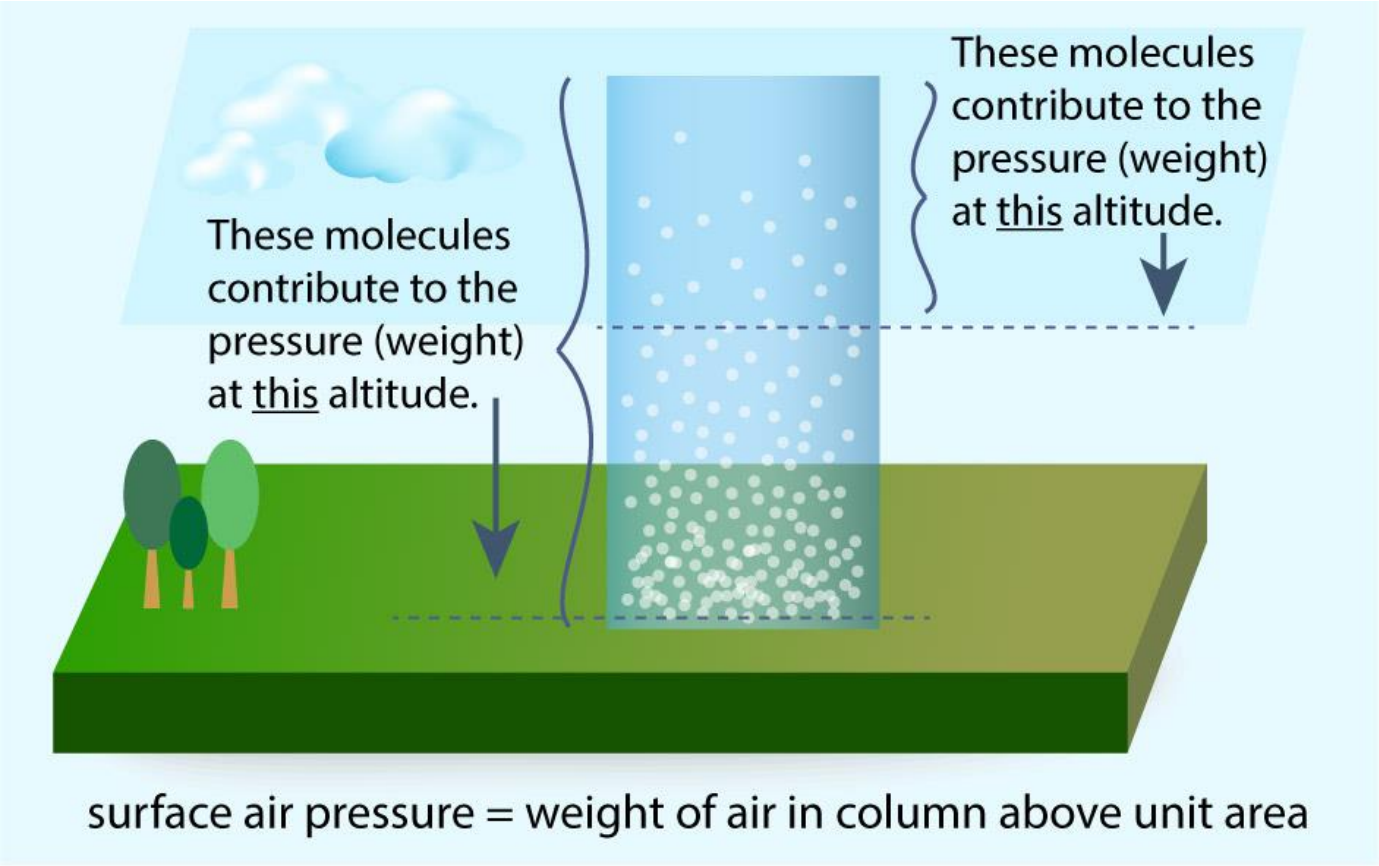
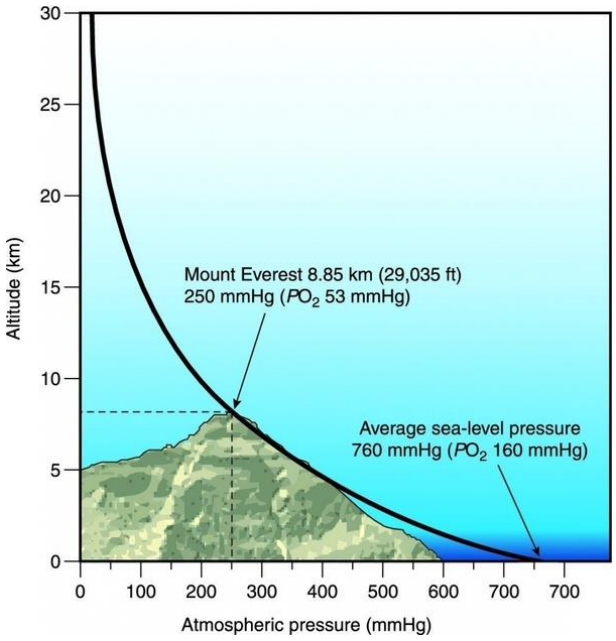
Atmospheric pressure as an Ecology Factor

Background Information

Atmospheric pressure, also called **barometric pressure**, force per unit area exerted by an atmospheric column. Atmospheric pressure can be measured with a **mercury barometer**. As elevation increases, there is less overlying atmospheric mass, so that atmospheric pressure decreases with increasing elevation. Pressure measures force per unit area, with SI units of **Pascal's**. On average, a column of air with a cross-sectional area of 1 square centimeter (cm^2), measured from sea level to the top of Earth's atmosphere, has a mass of about **1.03 kilogram** and exerts a force or "weight" of about **10.1 newton's**.

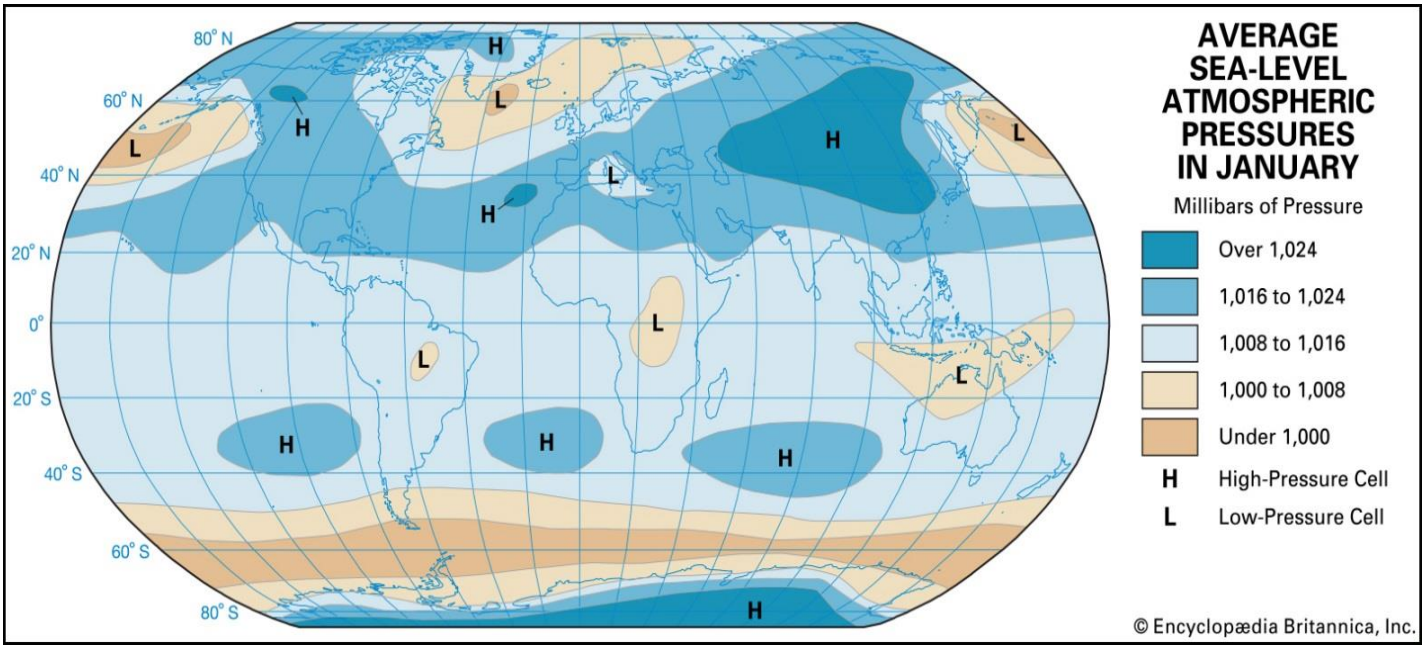


An **atmosphere (atm)** is a unit of measurement equal to the average air pressure at sea level at a temperature of 15 degrees Celsius (59 degrees Fahrenheit). One atmosphere is **1,013 millibars, or 760 millimeters (29.92 inches)** of **mercury**.



As the pressure decreases, the **amount of oxygen** available to breathe also decreases. At very high altitudes, atmospheric pressure and available oxygen get so low that people can become sick and even die.

Atmospheric pressure is an **indicator** of weather. When a low-pressure system moves into an area, it usually leads to cloudiness, wind, and precipitation. High-pressure systems usually lead to fair, calm weather.



Atmospheric pressure measurement method & devices

1. **Water-based barometers**
2. **Mercury barometers**
3. **Aneroid barometers**
4. **Barographs**