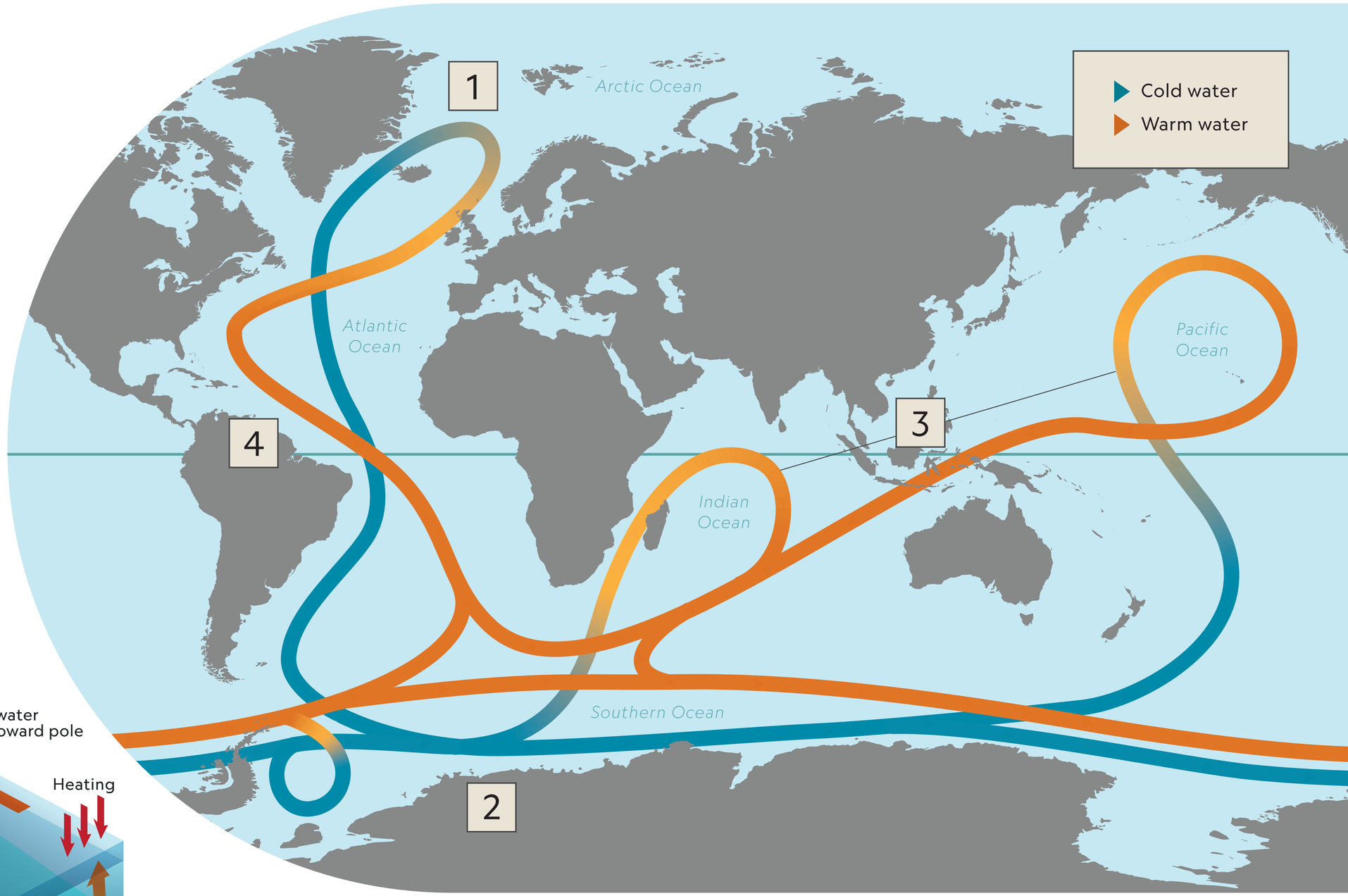
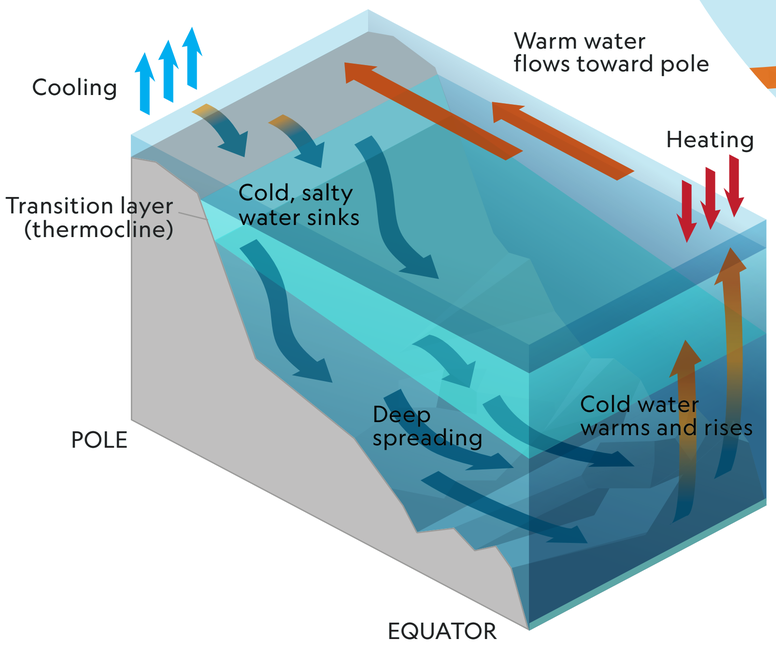
THE GLOBAL CONVEYOR BELT

The global conveyor belt is a system of ocean currents that transport water around the world. While wind primarily propels surface currents, deep currents are driven by differences in water densities in a process called thermohaline circulation. Density depends on both the temperature (thermo) and salinity (haline) of the water. Along this conveyor belt, heat and nutrients are moved around the world in a leisurely 1000-year cycle.

As it transports heat, the global conveyor belt keeps Earth's climate stable. However, scientists have recently noticed a slowdown in ocean circulation. With climate change and rising temperatures, the process may slow down even more and bring extreme temperatures to different regions around the world.



OCEAN WATER FLOW



1 At the poles, cold ocean water becomes saltier and denser from evaporation and ice formation. The cold, salty, dense water sinks and slowly spreads.

2 Because there are no continents to block the water, the current can flow freely around Antarctica. Some water moves into the Indian Ocean while another current travels to the Pacific Ocean.

3 Deep water surfaces in a process called upwelling.

4 The warm surface current flows north toward Greenland, completing the cycle.

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