

**Table 4. Example feedback mechanisms on a warming Earth. This is not an exhaustive list only a sample of possible feedbacks.**

<b>Example Feedbacks in Earth's Climate System</b>		
<b>Water Vapor</b>	More evaporation on a warmer Earth leads to more water vapor in the atmosphere	
	<b>Positive</b>	Increase of atmospheric water vapor leads to a greater greenhouse effect.
<b>Carbon Dioxide</b>	Less CO <sub>2</sub> absorption or CO <sub>2</sub> expelled by warmer ocean water results in more accumulating in the atmosphere	
	<b>Positive</b>	CO <sub>2</sub> increases in the atmosphere increasing the greenhouse effect.
<b>Clouds</b>	More water vapor on a warmer Earth leads to more cloud cover.	
	<b>Negative</b>	Increase of low clouds that efficiently reflect sunshine and result in a cooler the surface.
	<b>Positive</b>	Increase of high clouds that efficiently absorbs infrared radiation warming the high troposphere.
<b>Ice - Albedo</b>	Ice melts on a warming Earth exposing darker ground that absorbs more solar radiation.	
	<b>Positive</b>	Greater absorption of solar radiation by exposed surface accelerates warming.
	<b>Negative</b>	Melt water dilutes dense salty water in the southern Arctic/North Atlantic Oceans. Slowing of the oceanic conveyor circulation (thermohaline circulation) because the fresh water inflow lower the density of the water and less sinks driving the circulation resulting in less heat transport poleward and cooling of the far north.
<b>Permafrost</b>	Melting permafrost leads to increasing decomposition in the soil and release of CO <sub>2</sub> and CH <sub>4</sub> . Methane is released by anaerobic decomposition (decomposition without oxygen).	
	<b>Positive</b>	Atmospheric carbon dioxide and methane concentrations increase accelerating warming.
<b>Northern Boreal Forest</b>	Warming climates in Siberia and northern Canada result in the expansion of the vast boreal forests and a longer growing season.	
	<b>Positive</b>	More forest growth due to greater area covered by trees and a longer growing season leads to removal of carbon from the atmosphere through photosynthesis. This is the sink for what was called the "missing CO <sub>2</sub> ".
<b>Soil Processes</b>	Mycorrhizal plants, plants having roots with a symbiotic relationship with mycorrhizae (a fungus) increase carbon uptake in warmer soil.	
	<b>Negative</b>	Symbiotic relationship leads to greater plant growth and greater storage of carbon in the soil, decreasing the amount of carbon in the atmosphere.
	<b>Positive</b>	Decomposition of organic matter by micro-organisms increases, leading to an increase of atmospheric CO <sub>2</sub> (and methane where decomposition is anaerobic). Warmer soils lead to greater rates of decomposition and release of CO <sub>2</sub> to the atmosphere.