

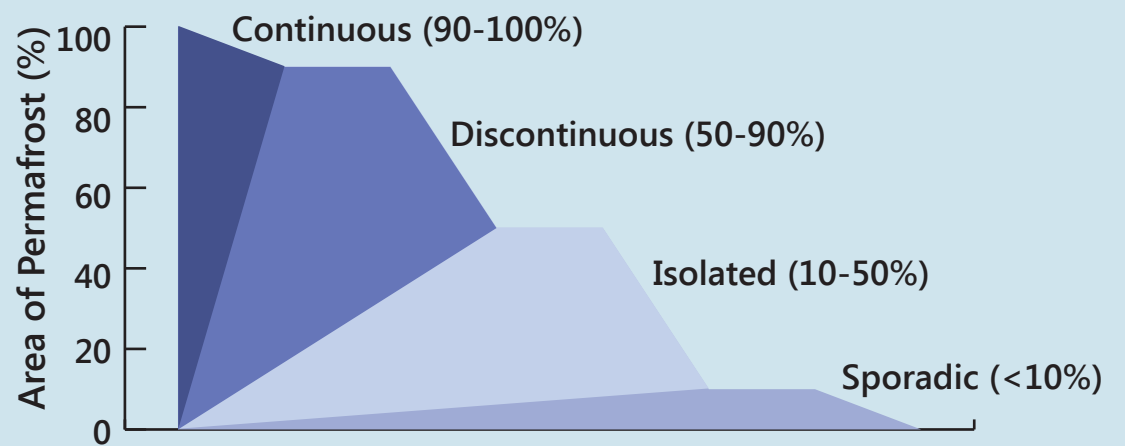
Greening of the Arctic:

How close is the tipping point?

An estimated 1,400 gigatons of carbon is frozen in permafrost, nearly **twice as much** as is in the atmosphere today (Schuur et al., 2008).

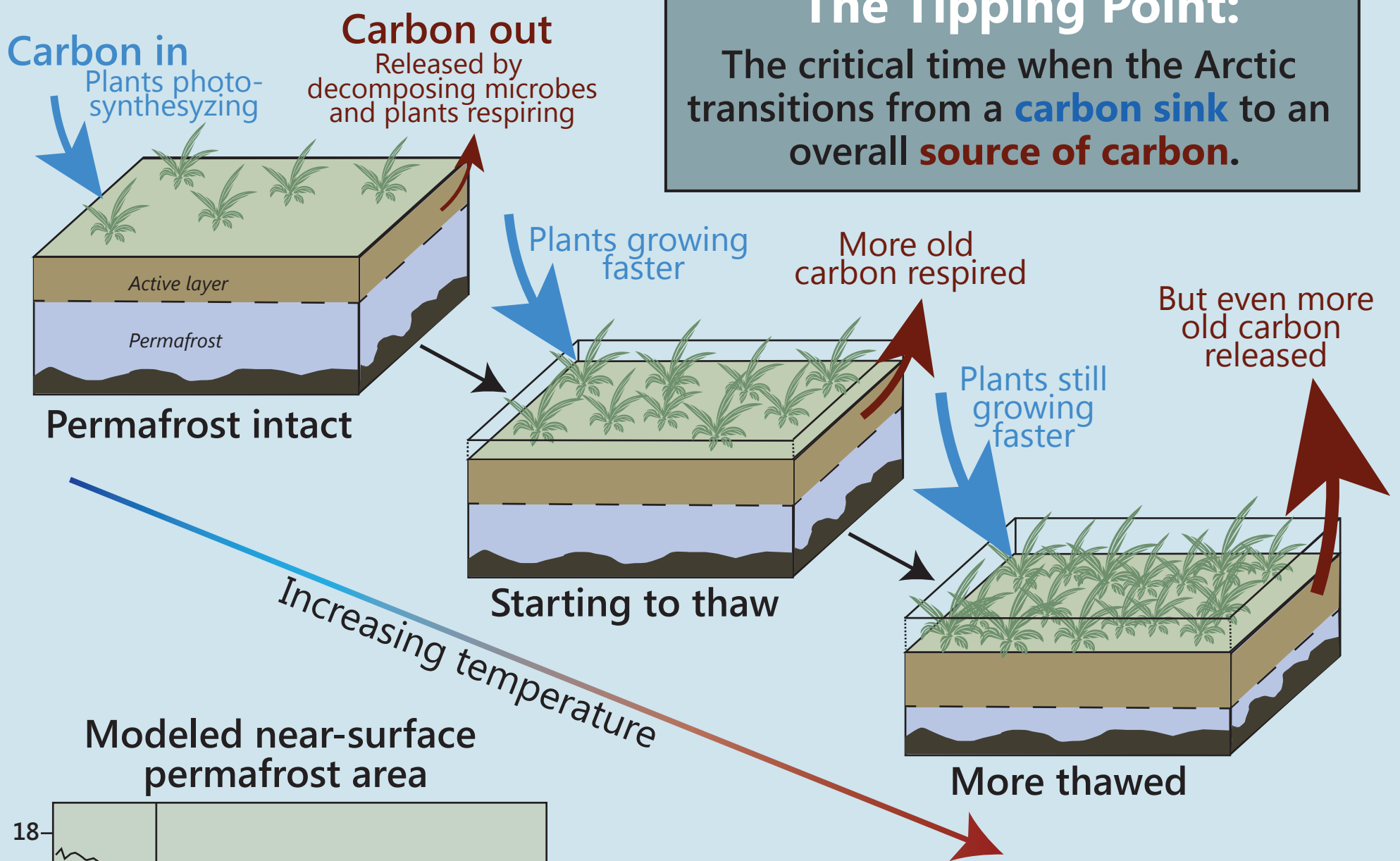


Permafrost: perennially frozen ground
Active Layer: top portion of soil that thaws during summer months

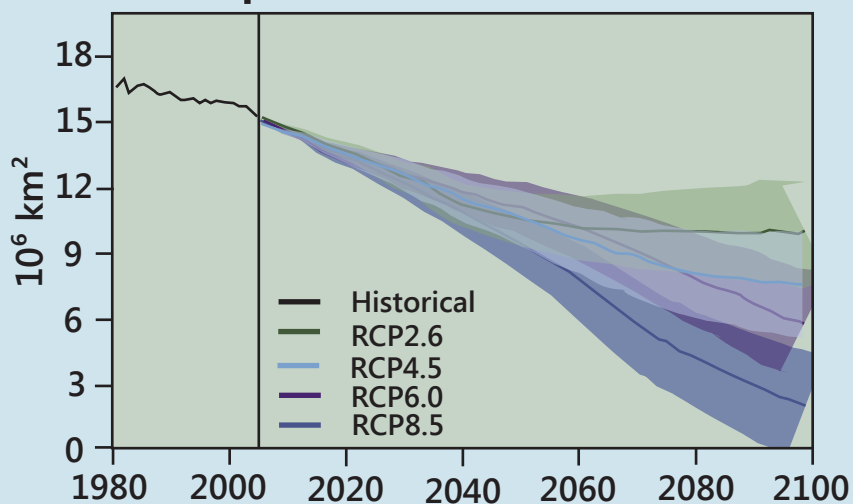


As Arctic air temperatures continue to rise and warm permafrost, greenhouse gases in the form of **methane** and **carbon dioxide** are being released and further fueling changes in climate.

The Tipping Point:
 The critical time when the Arctic transitions from a **carbon sink** to an overall **source of carbon**.



Modeled near-surface permafrost area



Why should we care?
 While the Arctic is remote, the thawing of permafrost impacts local inhabitants via increasing hazards to existing infrastructure (i.e. houses, pipelines, roads, etc.) and the greater world through greenhouse gas emissions.