

The “Big Ideas & Key Terms” in Abrupt Climate Change

Triggers: Perturbations (small variations) that lead to abrupt change into a new climate regime. Perturbations may be natural or human-made, or chaotic processes embedded in the climate system itself. (required to initiate the change)

Threshold: The climate system is "forced" to cross some threshold, triggering a transition to a new state, or climate regime. The level at which change occurs. A fixed place or value where an abrupt change occurs. The starting point for a new climate state. (the place where the change begins)

Amplifiers: Intensify the influence of small change (required for abrupt change).

Globalizers: Spread the influence of local change (required for abrupt change).

Source of persistence: Something that allows the altered climate to last for centuries to millennia (required for the change to last).

Forcing: The physical phenomena that exert or "force" change(s) in the climate system. Something that happens that induces a response by the climate system. Examples of forcings include:

1. *Sudden external influences* (massive discharge of freshwater as ice sheets melt)
2. *Slow forcings that bring a system across a threshold* (slow melting of ice, formation of ice dam, then sudden breakage of ice dam followed by flooding; gradual increases in global temperature)
3. *Spontaneous triggers that occur chaotically* in the climate system