

Arctic Amplification

Bruce Parker (bruce@chesdata.com)

November 29, 2016

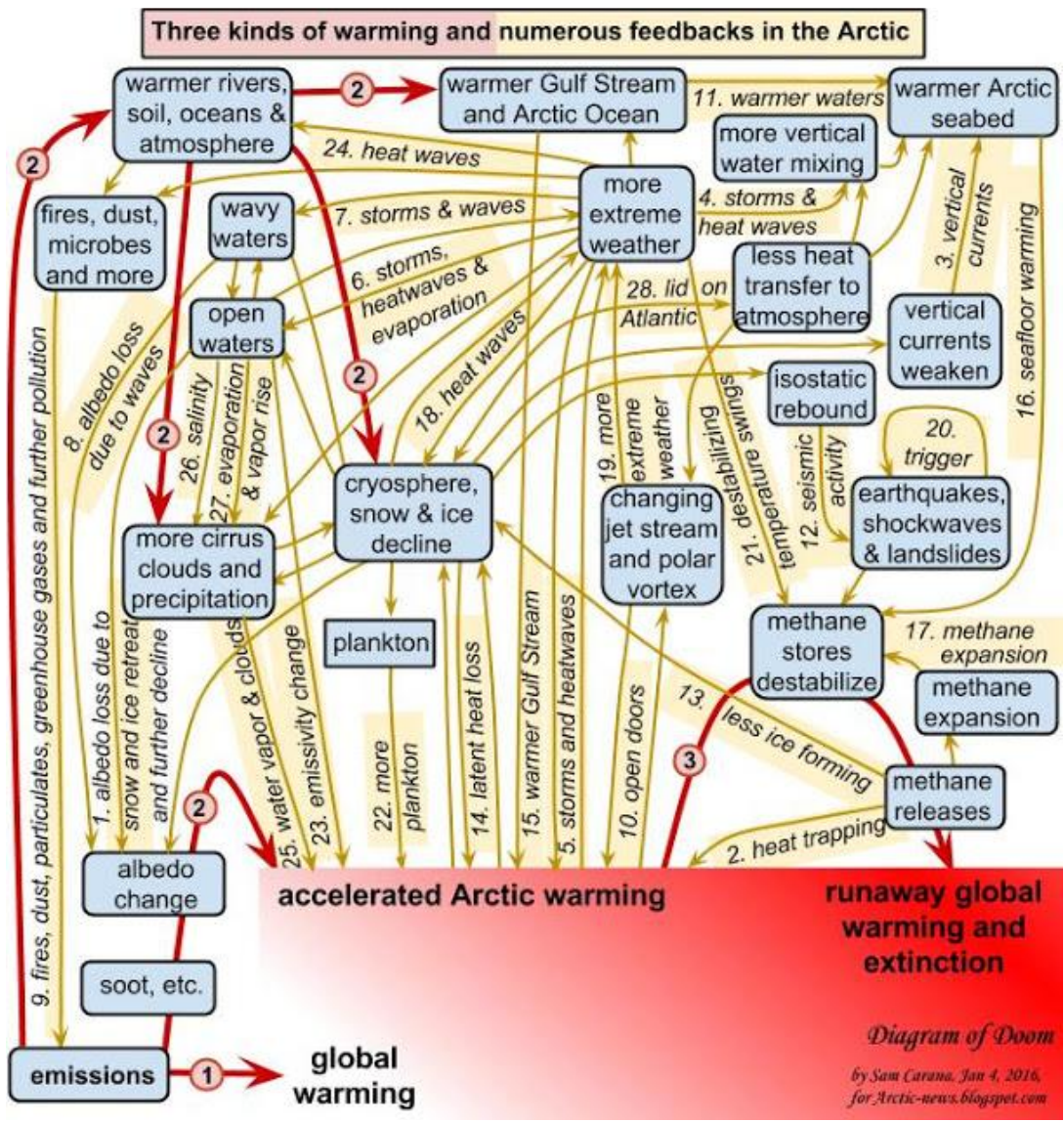
<http://ccdatacenter.org/documents/ArcticAmplification.pdf>

The Arctic is warming much faster than the Earth as a whole, and the consequences of this are likely very serious as the various feedbacks from “Arctic amplification” will almost certainly make it more difficult to limit future warming to less than 2°C simply by reducing anthropogenic emissions. Although the albedo and greenhouse gas feedbacks are known, the magnitude of the feedbacks is poorly understood, particularly with respect to the amount that can be expected for a specific amount of warming.

Some of the feedbacks are “slow feedbacks”, so even if the temperature could be limited to 2°C in 2100 it is very likely that temperatures would continue to rise substantially after that date.

In the last 30 years the Arctic has warmed about .6°C per decade while the Earth as a whole is warming about .15°C per decade. So the Arctic is warming about four times as fast as the Earth as a whole (while most Web sites report that the Arctic is warming only twice as fast as the rest of the Earth).

There are multiple feedbacks in the Arctic which could lead to much more warming than is calculated above.



See <http://arctic-news.blogspot.com/p/feedbacks.html> for more details