Bill Clinton once famously said that the truthfulness of a statement depended on <u>"what the</u> <u>meaning of 'is' is."</u> There's a similar usage issue in a recent spat over climate data.

A dispute between Roger Pielke and RealClimate seems to turn in part on whether a statement about current climate trends has to be proven by data from the present and immediate past, or whether it can refer to a longer-term trend. Pielke <u>blasts</u> a commentator for saying certain climate changes "are progressing faster than was expected a few years ago." According to Pielke, sea level rise has been flat since 2006, there has been no statistically significant warming of the upper ocean since 2003, and anomalies in arctic sea ice melting have decreased since 2008. A response from <u>RealClimate</u> raises questions about his data but more generally argues that Pielke's time periods were chosen arbitrarily and are too short for trends to be detectable above random variations.

So what are the meanings of "are" here? It's certainly true that you can use "are" to refer to more than the very most recent time period. A statement that "we are in a bear market" isn't disproved by evidence that the market has been flat for the past week rather than falling. On the other hand, "stock prices are down" could reasonably draw the response, "no, the market is up today." In short, the meaning of the present tense of "to be," in terms of what time span is referenced, varies with context.

When we're talking about climate change, is that more like "we are in a bear market" or "stock prices are down"? Or, to move to a more relevant context, is it like "the summer is hot" (meaning at least several weeks) or "it sure is hot" (probably meaning today)? According to Merriam-Webster, "climate" is defined as "the average course or condition of the weather at a place usually over a period of years as exhibited by temperature, wind velocity, and precipitation." This suggests that an extended time period is involved (enough to make the "average course or condition of the weather" a meaningful gauge.) Thus, in terms of ordinary usage, RealClimate seems to be on solid ground in insisting that assertions about climate have to be based on sufficient time periods to allow statistically meaningful inferences.

To put it another way, one swallow doth not a summer make. (Or as Erasmus apparently put it, *una hirundo non facit ver."*)