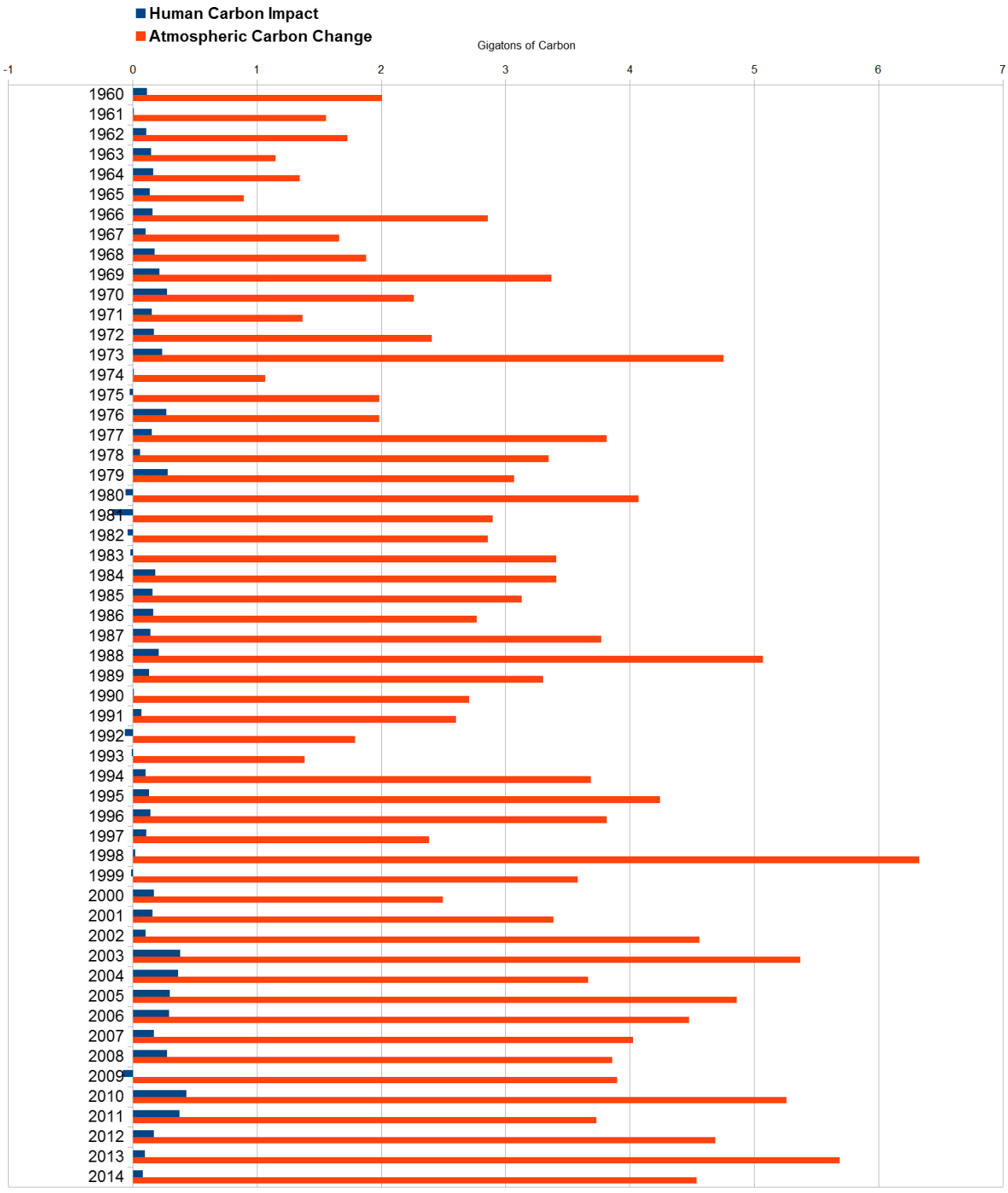
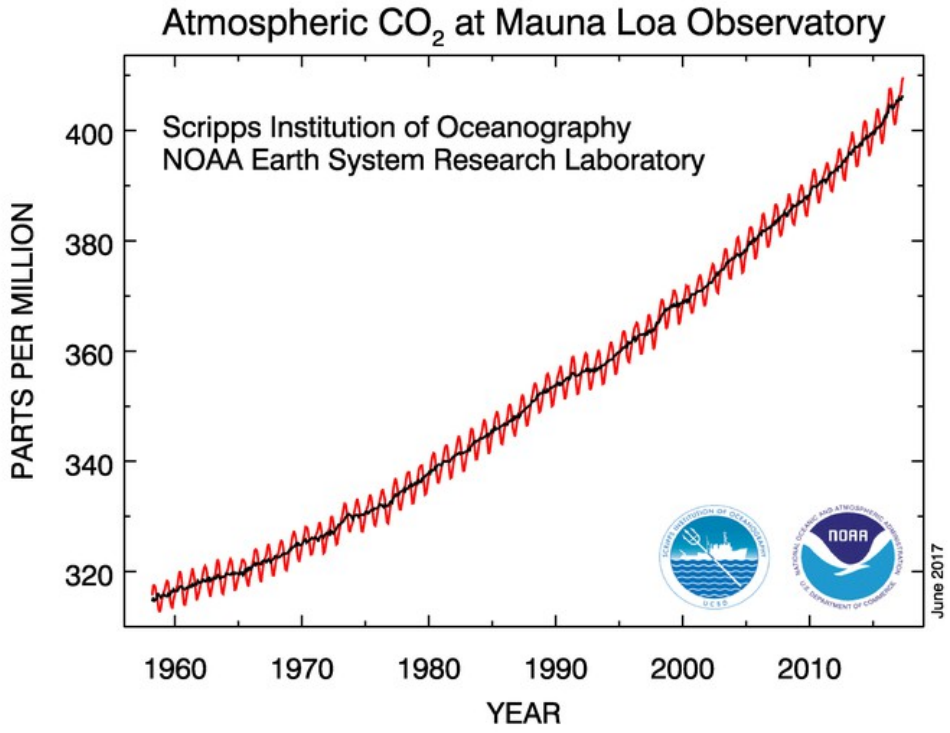
# Show this to your Alarmist friends!




*Alan Siddons 2017*

Explanation:

We know from reports that atmospheric carbon dioxide is on the rise,




and we're given to understand that our activities are driving this growth. But is this true?

We can assess how much we're contributing by referring to global anthropogenic emission estimates from year to year.

| Global Emissions | | | |
|---|---|---|---|
| Year | Total | Fossil Fuel & Cement | Land-Use Change |
| 2014 | | 9.795 GtC | ~ 0.9 Gtc |
| 2013 | | 9.735 GtC | |
| 2012 | | 9.575 GtC | |
| 2011 | | 9.449 GtC | |
| 2010 | 9.995 Gtc | 9.140 GtC | 0.855 GtC |
| 2009 | 9.567 Gtc | 8.700 GtC | 0.867 GtC |
| 2008 | 9.666 Gtc | 8.740 GtC | 0.926 GtC |
| 2007 | 9.472 Gtc | 8.532 GtC | 0.940 GtC |
| 2006 | 9.355 Gtc | 8.363 GtC | 0.992 GtC |

**Source Data** Global Carbon Project [.xlxs]

These are usually expressed in Gigatons of Carbon (Gt C), and it's easy to determine the difference from the year before, as I've depicted here.

| Year | Gt C | Gt change |
|---|---|---|
| 1946 | 1.24 | 0.08 |
| 1947 | 1.39 | 0.15 |
| 1948 | 1.47 | 0.08 |
| 1949 | 1.42 | -0.05 |
| 1950 | 1.63 | 0.21 |
| 1951 | 1.77 | 0.14 |
| 1952 | 1.8 | 0.03 |

$CO_2$ data is usually expressed in parts per million in the atmosphere. But the government's Carbon Dioxide Information Analysis Center (CDIAC) offers a simple conversion factor to obtain the equivalent gigatons of carbon. Having that, one may once again determine annual differences, as I've depicted here.

| Year | ppm | Gt C | Gt change |
|---|---|---|---|
| 1946 | *310.1* | 660.51 | 0 |
| 1947 | *310.2* | 660.73 | 0.21 |
| 1948 | *310.3* | 660.94 | 0.21 |
| 1949 | *310.5* | 661.37 | 0.43 |
| 1950 | *310.7* | 661.79 | 0.43 |
| 1951 | *311.1* | 662.64 | 0.85 |
| 1952 | *311.5* | 663.5 | 0.85 |

So then, drawing on sources like the CDIAC and the National Oceanic and Atmospheric Administration, one merely compares two respective columns of the year-by-year differences. The chart above is the result.

The average human contribution over this span is 0.135 gigatons, while the atmosphere's average carbon change is 3.202 gigatons, which makes the human contribution 4.2%. This 4.2% is consistent with previous U.S. government/IPCC reports that attributed about 2.9 to 4.5% of yearly emissions to humans. For instance,

**Table 2. Global Natural and Anthropogenic Sources and Absorption of Greenhouse Gases**

| Gas | Sources | | Absorption | Annual Increase in Gas in the Atmosphere |
|---|---|---|---|---|
| | Natural | Human-Made | | |
| Carbon Dioxide (Million Metric Tons of Carbon) . . | 160,000 | 7,100 | 163,000 | 3,200-3,600 |
| Methane (Million Metric Tons of Gas) . . . . . | 160 | 375 | 500 | 35-40 |
| Nitrous Oxide (Million Metric Tons of Gas) . . . . . | 9 | 6 | 11 | 3-5 |

Source: Summarized from ranges appearing in Intergovernmental Panel on Climate Change, *Climate Change 1994: Radiative Forcing of Climate Change* (Cambridge, UK: Cambridge University Press, 1995), pp. 41, 51, 86, and 90.

*source: Emissions of Greenhouse Gases in the United States 1987-1994, October 1995*

Are the human emission estimates accurate? Are Mauna Loa's techniques sound? I don't know. Assuming they are, though, my impression is that we're not driving a trend at all -- but rather riding alongside a lurching kind of $CO_2$ increase that seems to have a mind of its own.

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