Avocados\_and\_carbon

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Humans put 7.8 Pg +- 0.6 of Carbon into the atmosphere through fossil fuel burning (IPCC Chapter 6 figure 6.1). An [Avocado is about 215 grams](http://www.avocadosource.com/CAS_Yearbooks/CAS_68_1984/CAS_1984_PG_109-119.pdf) (including the seed + the skin). So 7.8 Pg +- 0.6 is about 7800000000000000 g +- 600000000000000 g.

[Surface area of the moon citation](https://www.universetoday.com/20489/moon-compared-to-earth/)

number\_of\_avacados <- 7800000000000000/215   
  
surface\_area\_of\_moon <- 3790000 #km^2  
surface\_area\_of\_moon <- 3.79e+12 #m^2  
number\_of\_avacados\_per\_meter\_sq <- number\_of\_avacados/ surface\_area\_of\_moon  
number\_of\_avacados\_per\_meter\_sq

## [1] 9.572314

## Energy Trapped in the atmosphere

Humans-manufactured gasses are trapping double the amount of energy every second in the atmosphere than before the industrial revolution (IPCC AR5: figure 1.4). That means that humans have caused the earth to trap enough additional energy every minute to boil all the tea drunk in Britain for 21 years.

The british consume about 60 billion cups of tea per year. <http://www.bbc.com/future/story/20160602-why-do-the-british-love-the-taste-of-tea-so-much> <https://www.teaguardian.com/about/standards/measurements/>

And A cup of tea is about 150 ml. 150 ml is 150 g and the specific heat of water is 4.186 joules/g per degree celsius. Room temperature is 23 degrees C, boiling is 100 degrees C. So, we need to raise the temperature by 77 degrees. We are not boiling the water off, so we don’t need to account for the energy to convert the water to steam. Let’s assume standard atmospheric pressure. So the amount of energy to make all the tea in Britain for a year is 150 g \* 77 degrees C \* 4.186joule/gram °C \* 60 \* 10^9 = 2.9\*10^15 Joules

brittish\_tea <- 150 \* 77\* 4.186 \* 60 \*10^9 #Joules per year  
brittish\_tea

## [1] 2.900898e+15

global\_difference\_in\_watts <- 2.3 \* 510.1 \* 10^12 # watts  
global\_difference\_in\_watts

## [1] 1.17323e+15

global\_difference\_in\_Joules\_per\_min <- global\_difference\_in\_watts \* 60 #joules  
  
years\_of\_tea <- global\_difference\_in\_Joules\_per\_min / brittish\_tea  
  
years\_of\_tea

## [1] 24.26621

Relative to 1750, we increased our Watts/m^2 by 2.3. The Surface area of the earth is 510.1 \* 10^12 m², so we trap 2.3 \* 510.1 \* 10^12 = 1.02e+15 Watts globally. That means that every minute we trap 6.12e+16 Joules, which could boil all the tea in Britain for over 24 years.