This bit of research is about climate change. Yes, that big hot potato, even with Covid floating around, it still appears in the news. But what I'm looking into isn't the actual claims/disclaims etc., but about the famous number. The famous '97% of scientists agrees that there is climate change'.

Where did this come from? Is it really all scientists? Is it worldwide? How did they ask?

Well, I have no idea, so let's start at the beginning.

I did a search for some sort of starting point, and found this from NASA:

https://climate.nasa.gov/scientific-consensus/

And in there is this statement:

"Multiple studies published in peer-reviewed scientific journals1 show that 97 percent or more of actively publishing climate scientists agree*: Climate-warming trends over the past century are extremely likely due to human activities. In addition, most of the leading scientific organizations worldwide have issued public statements endorsing this position. The following is a partial list of these organizations, along with links to their published statements and a selection of related resources."

Okay, so there it is research over with. I don't need to look any further; NASA has explained it all for us.

Yeah, right. Not gonna happen with me, even if it is 100% true. I want to find out for real ☺

So, I'll start off with the first of the organizations listed, as they may be able to explain more. In that site, the first is American Association for the Advancement of Science.

https://whatweknow.aaas.org/get-the-facts/

And in there, is the actual full report for you to view:

https://whatweknow.aaas.org/wp-content/uploads/2014/07/whatweknow_website.pdf

On page 2 of the pdf (or 4 of 14 if using the actual pdf viewer), it says:

"So let us be clear: Based on well-established evidence, about 97% of climate scientists conclude that humans are changing the climate. This widespread agreement is documented not by a single study but by a converging stream of evidence over the past two decades from polls of scientists, [4,5] content analyses of peer-reviewed literature,[3,6] and from public statements issued by virtually every expert scientific membership organization on this topic.[7]"

We have some links to look at: 3,6 and 4,5…or easier 3-6.

If you scroll down to the end, you will find them:

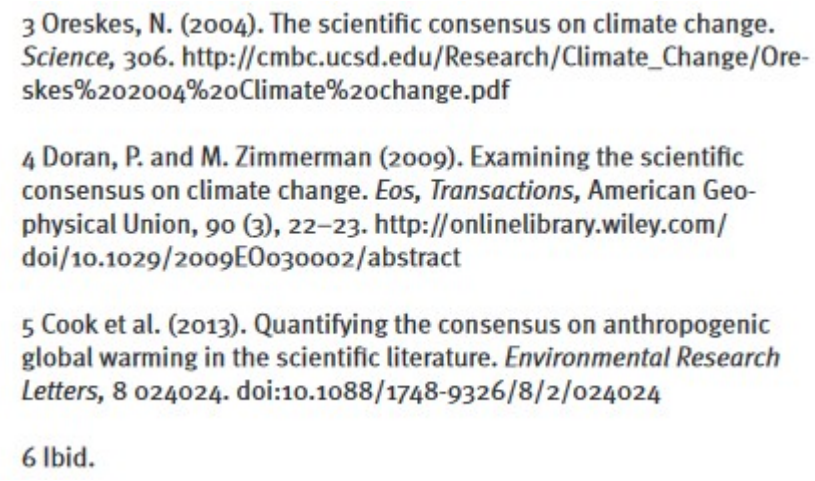
"3 Oreskes, N. (2004). The scientific consensus on climate change. Science, 306. http://cmbc.ucsd.edu/Research/Climate_Change/Ore-skes%202004%20Climate%20change.pdf

4 Doran, P. and M. Zimmerman (2009). Examining the scientific consensus on climate change. Eos, Transactions, American Geo-physical Union, 90 (3), 22–23. http://onlinelibrary.wiley.com/doi/10.1029/2009EO030002/abstract

5 Cook et al. (2013). Quantifying the consensus on anthropogenic global warming in the scientific literature. Environmental Research Letters, 8 024024. doi:10.1088/1748-9326/8/2/024024

6 Ibid"

I've copy/pasted them here, as its easier if you want to search for them. But here is a screenshot:



3 Oreskes, N. (2004). The scientific consensus on climate change. *Science*, 306. http://cmbc.ucsd.edu/Research/Climate_Change/Oreskes%202004%20Climate%20change.pdf

4 Doran, P. and M. Zimmerman (2009). Examining the scientific consensus on climate change. *Eos, Transactions*, American Geophysical Union, 90 (3), 22–23. http://onlinelibrary.wiley.com/doi/10.1029/2009EO030002/abstract

5 Cook et al. (2013). Quantifying the consensus on anthropogenic global warming in the scientific literature. *Environmental Research Letters*, 8 024024. doi:10.1088/1748-9326/8/2/024024

6 Ibid.

Let's look at the first link that mentions the poll: 4,5

The first was (4):

https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/2009EO030002

Yep, definitely the right one, the authors stated in the AAAS pdf are also located on the Wiley website. But in the reference it states 2009, but the Wiley one is 2011?

Well, the actual website that they originally posted on was here:

https://www.agu.org/

And that is where the Wiley one is, but can't see why only 2011. Anyway, let's look at that pdf. It's from a magazine, the EOS Vol 90, No. 3, 20 January 2009. So, it matches, maybe the 2011 was the upload date.

https://agupubs.onlinelibrary.wiley.com/doi/epdf/10.1029/2009EO030002

I'll just grab the main points, but please read the pdf fully yourself.

An invitation to participate in the survey was sent to 10,257 Earth scientists. The database was built from *Keane and Martinez* [2007], which lists all geosciences faculty at reporting academic institutions, along with researchers at state geologic surveys associated with local universities, and researchers at U.S. federal research facilities (e.g., U.S. Geological Survey, NASA, and NOAA (U.S. National Oceanic and Atmospheric Administration) facilities; U.S. Department of Energy national laboratories; and so forth). To maximize the response rate, the survey was designed to take less than 2 minutes to complete, and it was administered by a professional online survey site (http://www.questionpro.com) that allowed one-time participation by those who received the invitation.

This brief report addresses the two primary questions of the survey, which

contained up to nine questions (the full study is given by *Kendall Zimmerman* [2008]):

1. When compared with pre-1800s levels, do you think that mean global temperatures have generally risen, fallen, or remained relatively constant?

2. Do you think human activity is a significant contributing factor in changing mean global temperatures?

With 3146 individuals completing the survey, the participant response rate for the survey was 30.7%. This is a typical response rate for Web-based surveys [*Cook et al.*, 2000; *Kaplowitz et al.*, 2004]. Of our survey participants, 90% were from U.S. institutions and 6% were from Canadian institutions; the remaining 4% were from institutions in 21 other nations. More than 90% of participants had Ph.D.s, and 7% had master's degrees. With survey participants asked to select a single category, the most common areas of expertise reported were geochemistry (15.5%), geophysics (12%), and oceanography (10.5%). General geology, hydrology/hydrogeology, and paleontology each accounted for 5–7% of the total respondents. Approximately 5% of the respondents were climate scientists, and 8.5% of the respondents indicated that more than 50% of

their peer-reviewed publications in the past 5 years have been on the subject of climate change. While respondents' names are kept private, the authors noted that the survey included participants with well-documented dissenting opinions on global warming theory.

Results show that overall, 90% of participants answered "risen" to question 1 and 82% answered yes to question 2. In general, as the level of active research and specialization in climate science increases, so does agreement with the two primary questions (Figure 1). In our survey, the most specialized and knowledgeable respondents (with regard to climate change) are those who listed climate science as their area of expertise and who also have published more than 50% of their recent peer-reviewed papers on the subject of climate change (79 individuals in total). Of these specialists, 96.2% (76 of 79) answered "risen" to question 1 and 97.4% (75 of 77) answered yes to question 2. This is in contrast to results of a recent Gallup poll (see http://www.gallup.com/poll/1615/Environment.aspx) that suggests that only 58% of the general public would answer yes to our question 2. The two areas of expertise in the survey with the smallest percentage of participants answering yes to question 2 were economic geology with 47% (48 of 103) and meteorology with 64% (23 of 36).

It seems that the debate on the authenticity of global warming and the role played by human activity is largely nonexistent among those who understand the nuances and scientific basis of long-term climate processes. The challenge, rather, appears

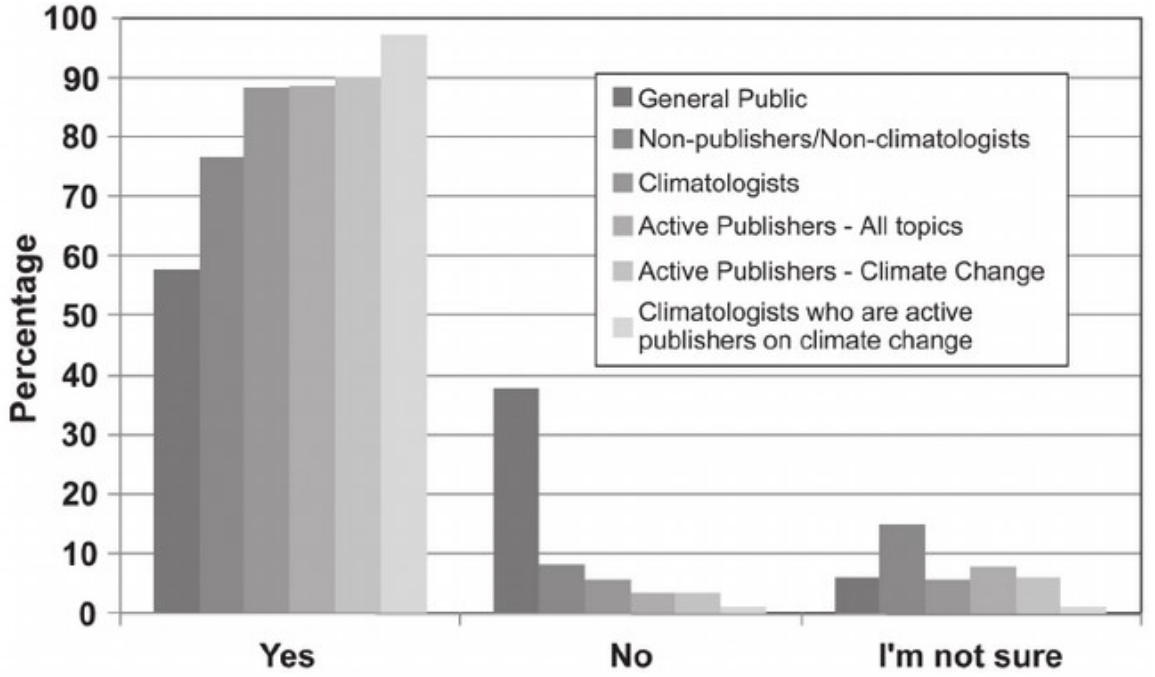


Fig. 1. Response distribution to our survey question 2. The general public data come from a 2008 Gallup poll (see http://www.gallup.com/poll/1615/Environment.aspx). Original color image appears at the back of this volume.

So, what can we get from this? Firstly, it was sent to 10,257 Earth scientists, compiled from a database by Keane and Martinez (2007). This is the database (book):

https://www.amazon.com/Directory-Geoscience-Departments-45th-2007/dp/0922152799

I can't buy it in the UK Amazon, but in there apparently is the database.

However, one thing stands out. Remember, 97% of scientists agree. But the database is only US scientists!! What about all those other countries out there? Pretty sure the UK has some boffins that are up in the same ranks as the US.

And where were these scientists from (as in work)? Well, according to the survey:

"The database was built from Keane and Martinez [2007], which lists all geosciences faculty at reporting academic institutions, along with researchers at state geologic surveys associated with local universities, and researchers at U.S. federal research facilities (e.g., U.S. Geological Survey, NASA, and NOAA (U.S. National Oceanic and Atmospheric Administration) facilities; U.S. Department of Energy national laboratories; and so forth)"

So, universities (fine), US Federal Research like NASA, NOAA, and Department of Energy. But these ones are all government ran. Sure, most people inside do what they can, but in the end, it's a federal research facility. Not your local school, or the guy that is retired but still published papers. So, straight from the off, it's skewed.

Then, the survey was created so it only took 2 minutes to fill in. Why? On something so important that will change the world, in regards economy, living, and various things, why only 2 minutes. We've all seen those types of surveys, we get that at work now and then, and you just click any old thing to get to the end, and back to your actual job.

Back to the pdf. Apparently, the result that we're holding on with baited breath from the US ONLY scientists was based on just 2 of the 9 questions. What was the point of the other 7? Couldn't they have expanded on the 2?

"1. When compared with pre- 1800s levels, do you think that mean global temperatures have generally risen, fallen, or remained relatively constant?

2. Do you think human activity is a significant contributing factor in changing mean global temperatures?"

So, it explains where the famous 97% comes from. But first it gives some statistics to explain how many completed, what fields and what this relates to. So, again, let's put that here for ease of use, and to see who said what.

To begin with, the overall response rate:

"With 3146 individuals completing the survey, the participant response rate for the survey was 30.7%. This is a typical response rate for Web- based surveys"

Awesome. So, as we already found out earlier, not that many actually took part and the number was a staggering 30.7%.WOW!!! Can tell it's on everyone's minds, that this needs to be looked at in great depth.

Next, where they were from:

"Of our survey participants, 90% were from U.S. institutions and 6% were from Canadian institutions; the remaining 4% were from institutions in 21 other nations."

Interesting. What I mean by this is the fact that the database that it was taken from was US. So, who or where was the others in Canada (6%) and the 21 other nations (a staggering 4%)?

Who knows, as it doesn't say? But when people start touting it's a worldwide survey, just remember. Outside of the US, only 6% were Canadian, and 4% from 21…that's TWENTY ONE other nations. Not really a worldwide result in my eyes.

Now, we know they were all intellectual:

"More than 90% of participants had Ph.D.s, and 7% had master's degrees."

But a PhD/Masters isn't only for people that can do complex stuff, and to be of a certain calibre, that only 1% of the entire world can do. People have these in many fields, from all walks of life. Maybe if some were professors, but apparently not.

Now, what were their jobs etc.:

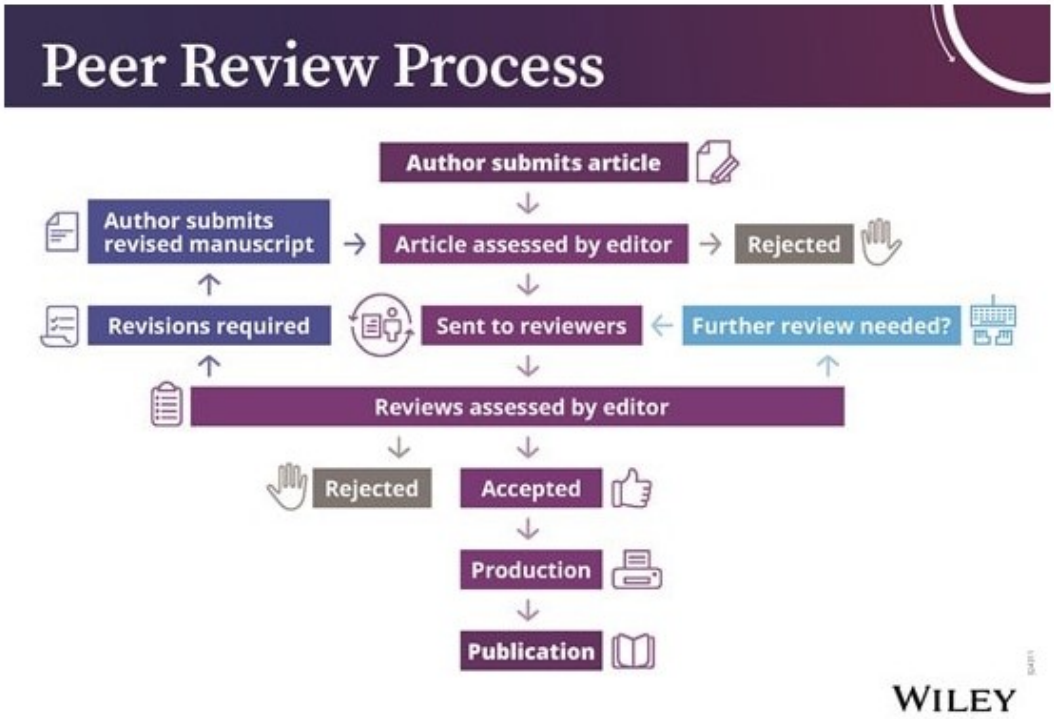
“With survey participants asked to select a single category, the most common areas of expertise reported were geochemistry (15.5%), geophysics (12%), and oceanography (10.5%). General geology, hydrology/ hydrogeology, and paleontology each accounted for 5–7% of the total respondents. Approximately 5% of the respondents were climate scientists, and 8.5% of the respondents indicated that more than 50% of their peer reviewed publications in the past 5 years have been on the subject of climate change. While respondents’ names are kept private, the authors noted that the survey included participants with well documented dissenting opinions on global warming theory.”

A decent spread of roles there, not all one area, so that’s a good thing. And the thing about publications. If someone is peer reviewing your paper on say, ants and their migrating habits, and that reviewer doesn’t agree to your theory, then it doesn’t get published. No matter if you have proof or not. Sounds fair don’t it.

Here is a detailed description:

https://authorservices.wiley.com/Reviewers/journal-reviewers/what-is-peer-review/the-peer-review-process.html

And their image on the site:



See the 2nd line down, on the right? Editor rejects it…..that’s the end. Can’t resubmit it. Tough, only specific articles allowed.

Anyway, I digress, back to the article in hand.

“Results show that overall, 90% of participants answered “risen” to question 1 and 82% answered yes to question 2. In general, as the level of active research and specialization in climate science increases, so does agreement with the two primary questions (Figure 1).”

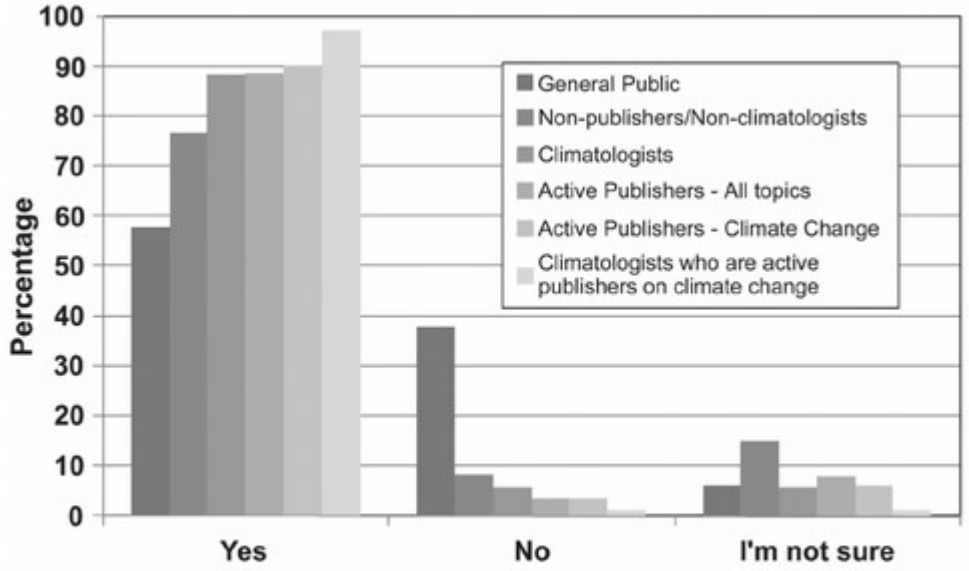


Fig. 1. Response distribution to our survey question 2. The general public data come from a 2008 Gallup poll (see http://www.gallup.com/poll/1615/Environment.aspx). Original color image appears at the back of this volume.

Well, yes, those backs up what they said above, but remember those poor people that can’t get passed the rejection on peer reviewing? Looks like they’re about 78%.

“In our survey, the most specialized and knowledgeable respondents (with regard to climate change) are those who listed climate science as their area of expertise and who also have published more than 50% of their recent peer reviewed papers on the subject of climate change (79 individuals in total).”

79 individuals!!! WOW, that is a big number out of the 3146 that replied. So, a quick maths (and yes, I can do maths, and not had a peer reviewed paper, so maybe not as knowledgeable as these people), that is a staggering 2.5% of all the respondents, that was the most specialized. Okay, lets round it up, make it look bigger…..3%!!!

“Of these specialists, 96.2% (76 of 79) answered “risen” to question 1 and 97.4% (75 of 77) answered yes to question 2. This is in contrast to results of a recent Gallup poll (see http://www.gallup.com/poll/1615/Environment.aspx) that suggests that only 58% of the general public would answer yes to our question 2.”

Ah, let’s take a look at that poll; see if it lists how many of the ghastly public don’t agree with those 79 people.

Now, it’s an interesting poll, as I think it’s updated yearly. Seems to have dates 1985 to 2019, and remember this survey was originally 2009.

Well, according to their website, its typically 1000 people:

https://www.gallup.com/178667/gallup-world-poll-work.aspx

How many people are interviewed in a typical World Poll survey?

The typical survey includes at least 1,000 individuals. In some countries, Gallup collects oversamples in major cities or areas of special interest. Additionally, in some large countries, such as China and Russia, sample sizes of at least 2,000 are collected. Although rare, in some instances, the sample size is between 500 and 1,000.

So, let me get this right. On the original survey, only 34% of people replied, and out of that they looked at only 2 of the questions, and really only looked at 79 people. But a Gallup poll is 1000 people, they all answer? Yep, that sounds a bit bad from that, far better those 79 people.

“The two areas of expertise in the survey with the smallest percentage of participants answering yes to question 2 were economic geology with 47% (48 of 103) and meteorology with 64% (23 of 36).”

Okay, still earth type stuff.

“It seems that the debate on the authenticity of global warming and the role played by human activity is largely nonexistent among those who understand the nuances and scientific basis of long term climate processes. The challenge, rather, appears to be how to effectively communicate this fact to policy makers and to a public that continues to mistakenly perceive debate among scientists.”

And that’s the end of what they types. So, wait, hang on…..something’s not right here. Back up a bit. According to that graph, 90% said risen to question 1, 82% yes to question 2. Are you actually telling me that the 97% really only comes from the 75 of 77 people that were deemed specialists????

Who the hell are these people?

Anyway, hopefully you liked this bit of research. Apart from obtaining that book, and narrowing down the people, which is nigh on impossible, we’ll have to contend ourselves with what there is.

But why not do a new survey, for ALL scientists from any nation, and see what the outcome is?

I’m actually going to look at this in even more depth. I want to look at Question 2:

“When compared with pre- 1800s levels, do you think that mean global temperatures have generally risen, fallen, or remained relatively constant?”

Can we find out the values all the way back to before 1800? If not, what dates can we find to? Where from, and do all the values match? And can we plot them all (that may take some time)?

This is something I will do as an extra bit of research, and release at a later date as it may take a while.