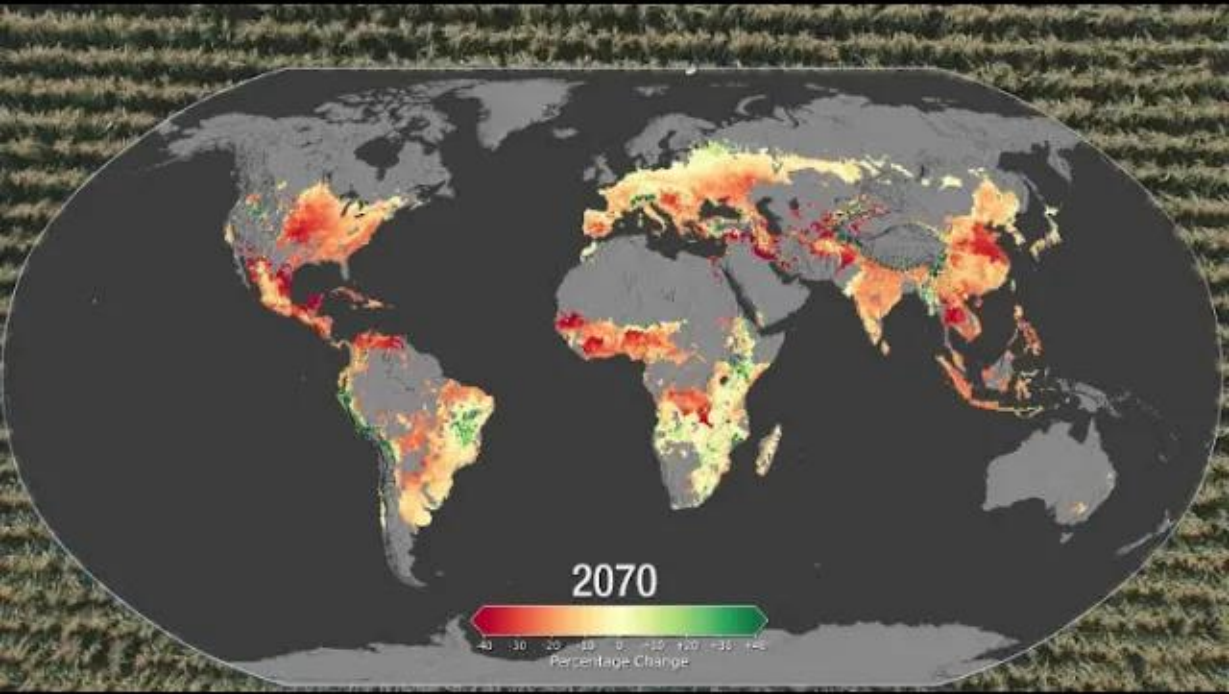
2070
-40 -30 -20 -10 0 +10 +20 +30 +40
Percentage Change

1
00:00:00,000 --> 00:00:04,000
We’re already feeling the effects of climate change.

2
00:00:04,000 --> 00:00:08,000
Intense heat waves, longer fire seasons, droughts and floods –

3
00:00:08,000 --> 00:00:12,000
the impacts of a warmer planet are all around us. And as global

4
00:00:12,000 --> 00:00:16,000
global temperatures continue to rise, we’ll experience even more changes to our planet.

5
00:00:16,000 --> 00:00:20,000
New NASA research suggests that, with high greenhouse gas emissions,

6
00:00:20,000 --> 00:00:24,000
we’ll see declines in global crop yields for maize, corn,

7
00:00:24,000 --> 00:00:28,000
as early as 2030.

8
00:00:28,000 --> 00:00:32,000
Shifting rainfall patterns, higher temperatures, and increased atmospheric carbon levels

9
00:00:32,000 --> 00:00:36,000
levels are likely to affect where, and how much of, staple crops like corn,

10
00:00:36,000 --> 00:00:40,000
soybeans, wheat, and rice can be grown.

11
00:00:40,000 --> 00:00:44,000
Using multiple highly accurate supercomputer models, researchers projected future global conditions based on

12
00:00:44,000 --> 00:00:48,000
greenhouse gas emissions. They ran those results through models that simulate how crops

13
00:00:48,000 --> 00:00:52,000

respond to changes in things like rainfall, temperatures, and atmospheric carbon dioxide.

14
00:00:52,000 --> 00:00:56,000
By using multiple computer models, the teams could compare

15
00:00:56,000 --> 00:01:00,000
results and be more confident in what they learned.

16
00:01:00,000 --> 00:01:04,000
Overall, corn and wheat showed the clearest results.

17
00:01:04,000 --> 00:01:08,000
By 2069-2099, global corn crop yields could decrease 24%.

18
00:01:08,000 --> 00:01:12,000
Corn is grown around the world, with large quantities grown in countries close to the equator.

19
00:01:12,000 --> 00:01:16,000
Rising temperatures in this region will put stress on those plants,

20
00:01:16,000 --> 00:01:20,000
leading to lower crop yields.

21
00:01:20,000 --> 00:01:24,000
Wheat, on the other hand, grows mostly in more temperate regions, like the Northern U.S and Canada,

22
00:01:24,000 --> 00:01:28,000
North China Plains, Central Asia, Southern Australia, Europe, and Russia.

23
00:01:28,000 --> 00:01:32,000
Warmer global temperatures and higher atmospheric carbon dioxide

24
00:01:32,000 --> 00:01:36,000
could increase wheat crop yields up to 17%.

25
00:01:36,000 --> 00:01:40,000
However, these increases will likely level off by 2050 or so.

26
00:01:40,000 --> 00:01:44,000
Changes to our global agriculture are likely to happen relatively soon,

27
00:01:44,000 --> 00:01:48,000
even in scenarios where we significantly lower greenhouse gas emissions.

28
00:01:48,000 --> 00:01:52,000
The more we understand about how our global food systems