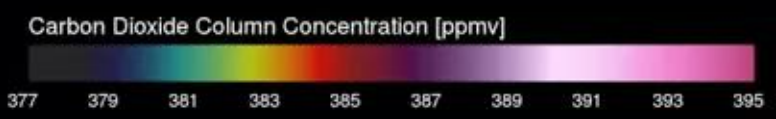


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Global Modeling and Assimilation Office



1
00:00:01,150 --> 00:00:06,900

Hi, this is Bill Putman. I'm a climate scientist at NASA's Goddard Space Flight Center.

2
00:00:06,950 --> 00:00:12,680

What you're looking at is a supercomputer model of carbon dioxide levels in the Earth's atmosphere.

3
00:00:13,630 --> 00:00:17,510

The visualization compresses one year of data into a few minutes.

4
00:00:20,000 --> 00:00:24,880

Carbon dioxide is the most important greenhouse gas affected by human activity.

5
00:00:25,000 --> 00:00:34,840

About half of the carbon dioxide emitted from fossil fuel combustion remains in the atmosphere, while the other

6
00:00:36,600 --> 00:00:44,930

In the Northern Hemisphere, we see the highest concentrations are focused around major emission sources over

7
00:00:46,500 --> 00:00:55,570

Notice how the gas doesn't stay in one place. The dispersion of carbon dioxide is controlled by the large-scale

8
00:01:02,000 --> 00:01:12,140

During spring and summer in the Northern Hemisphere, plants absorb a substantial amount of carbon dioxide from

9
00:01:13,000 --> 00:01:16,940

We see this change in the model as the red and purple colors start to fade.

10
00:01:32,000 --> 00:01:37,570

Meanwhile, in the Southern Hemisphere, we see the release of another pollutant—carbon monoxide.

11
00:01:37,860 --> 00:01:41,200

This is a gas that's both harmful to the environment and to humans.

12
00:01:42,000 --> 00:01:51,480

During the summer months, plumes of carbon monoxide stream from fires in Africa, South America and Australia.

13
00:01:53,500 --> 00:01:58,360

Notice how these emissions are also transported by winds to other parts of the world.

14

00:02:07,000 --> 00:02:14,780

As summer transitions to fall, and plant photosynthesis decreases, carbon dioxide begins to accumulate in the

15

00:02:16,300 --> 00:02:23,410

Although this change is expected, we're seeing higher concentrations of carbon dioxide accumulate in the atm

16

00:02:24,000 --> 00:02:28,020

This is contributing to the long-term trend of rising global temperatures.

17

00:02:32,000 --> 00:02:41,540

The Orbiting Carbon Observatory-2, or OCO-2, will be the first NASA satellite mission to provide a global view