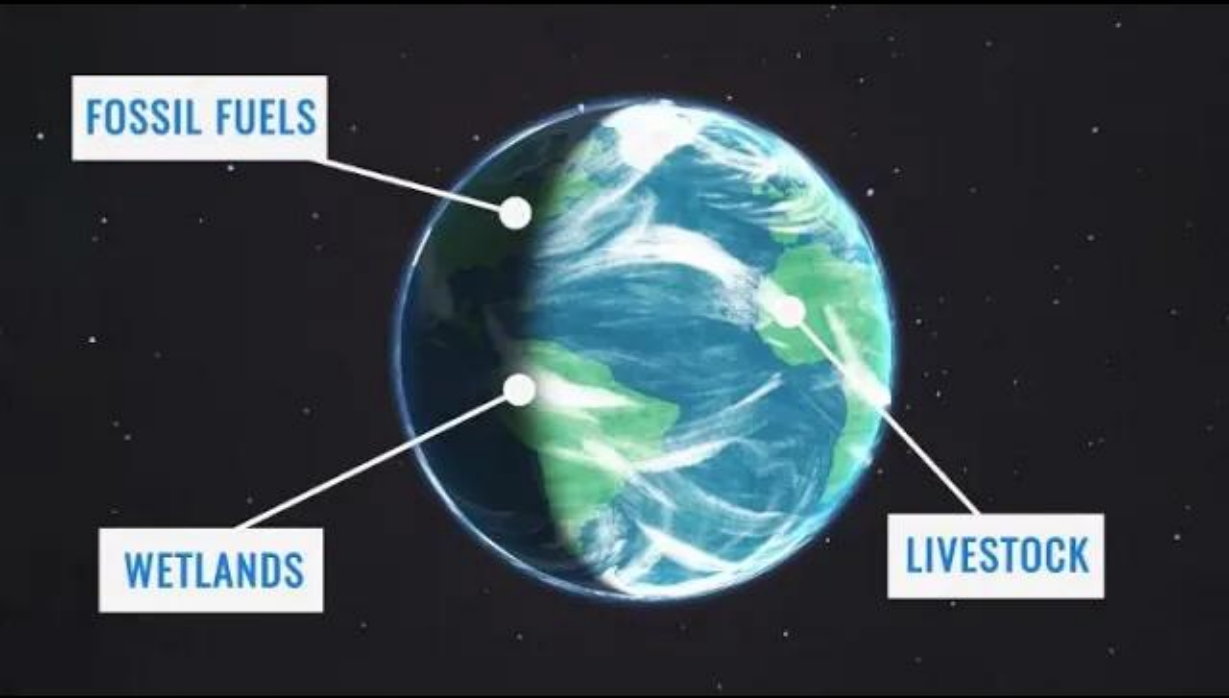
FOSSIL FUELS
WETLANDS
LIVESTOCK

1
00:00:05,150 --> 00:00:02,360
methane shows up nearly everywhere on

2
00:00:08,059 --> 00:00:05,160
our planet it can come from a variety of

3
00:00:11,570 --> 00:00:08,069
sources like wetlands fossil fuels and

4
00:00:13,850 --> 00:00:11,580
even livestock these diverse sources add

5
00:00:17,300 --> 00:00:13,860
to the challenge of tracking this potent

6
00:00:19,490 --> 00:00:17,310
greenhouse gas a molecule of methane is

7
00:00:22,310 --> 00:00:19,500
able to trap more heat than a co2

8
00:00:24,019 --> 00:00:22,320
molecule in fact it is the second

9
00:00:26,450 --> 00:00:24,029
leading gas that is contributing the

10
00:00:29,060 --> 00:00:26,460
climate change and since the Industrial

11
00:00:32,389 --> 00:00:29,070
Revolution global methane concentrations

12
00:00:34,729 --> 00:00:32,399
have doubled its contributed roughly 20

13
00:00:37,250 --> 00:00:34,739

to 30 percent of the climate change that

14
00:00:39,740 --> 00:00:37,260
we've experienced to date and so there's

15
00:00:41,569 --> 00:00:39,750
an urgency and understanding where the

16
00:00:44,180 --> 00:00:41,579
sources are coming from so that we can

17
00:00:46,069 --> 00:00:44,190
be better prepared to mitigate methane

18
00:00:49,520 --> 00:00:46,079
emissions where there are opportunities

19
00:00:52,400 --> 00:00:49,530
to do so by using a combination of field

20
00:00:54,860 --> 00:00:52,410
observations airborne surveys and data

21
00:00:57,200 --> 00:00:54,870
from international partners nASA has

22
00:00:59,470 --> 00:00:57,210
been able to create a new model of the

23
00:01:02,450 --> 00:00:59,480
sources and global transport of methane

24
00:01:04,160 --> 00:01:02,460
this model allows scientists to track

25
00:01:05,870 --> 00:01:04,170
the global methane budget and better

26
00:01:08,149 --> 00:01:05,880
understand that changes over time

27
00:01:11,090 --> 00:01:08,159
everything around methane tends to be a

28
00:01:12,620 --> 00:01:11,100
few years behind carbon dioxide so we're

29
00:01:14,690 --> 00:01:12,630
just catching up to how important and

30
00:01:17,149 --> 00:01:14,700
how dynamic methane is as a greenhouse

31
00:01:19,280 --> 00:01:17,159
gas we see these pulses of methane in

32
00:01:21,200 --> 00:01:19,290
different places and when we look deeper

33
00:01:23,330 --> 00:01:21,210
we understand that those pulses are

34
00:01:25,130 --> 00:01:23,340
occurring for different reasons so we

35
00:01:26,719 --> 00:01:25,140
might see wetlands in one region we

36
00:01:30,350 --> 00:01:26,729
might see industrial pollution in

37
00:01:32,300 --> 00:01:30,360
another area with this new model we can

38
00:01:34,609 --> 00:01:32,310

track the pulses of methane across the

39
00:01:37,050 --> 00:01:34,619
globe to better pinpoint the conditions

40
00:01:39,990 --> 00:01:37,060
and activities that may cause them

41
00:01:41,789 --> 00:01:40,000
methane is a difficult gas for us to

42
00:01:44,310 --> 00:01:41,799
understand given the diversity of

43
00:01:45,870 --> 00:01:44,320
sources and then how the sources and the

44
00:01:48,779 --> 00:01:45,880
emissions get transported throughout the

45
00:01:51,389 --> 00:01:48,789
atmosphere the 3d simulation that we

46
00:01:53,160 --> 00:01:51,399
produced here helps us better put

47
00:01:54,960 --> 00:01:53,170
together the entire story for the

48
00:01:57,630 --> 00:01:54,970
sources of methane and as well as its

49
00:01:59,999 --> 00:01:57,640
removal from the atmosphere by taking a

50
00:02:01,859 --> 00:02:00,009
look at the story of methane scientists

51
00:02:03,630 --> 00:02:01,869
and policymakers can better understand