1
00:00:06,140 --> 00:00:03,619
we're trying to think about what's gonna

2
00:00:11,450 --> 00:00:06,150
happen in 50 years that's really what

3
00:00:13,580 --> 00:00:11,460
drives us to change our behavior to

4
00:00:15,620 --> 00:00:13,590
predict how much carbon dioxide might be

5
00:00:17,090 --> 00:00:15,630
affecting our climate in 50 years I

6
00:00:19,310 --> 00:00:17,100
first of all had to predict how much

7
00:00:22,580 --> 00:00:19,320
carbon dioxide will be in the air in 50

8
00:00:23,990 --> 00:00:22,590
years we can start to see these changes

9
00:00:25,820 --> 00:00:24,000
in our temperature and sea level rise

10
00:00:27,230 --> 00:00:25,830
and other things and we're concerned

11
00:00:27,679 --> 00:00:27,240
about where that's gonna go in the

12
00:00:40,280 --> 00:00:27,689
future

13
00:00:42,380 --> 00:00:40,290

Oh co2 is NASA's satellite that's

14
00:00:44,150 --> 00:00:42,390
dedicated to measuring carbon dioxide

15
00:00:45,860 --> 00:00:44,160
we're gonna measure carbon dioxide all

16
00:00:48,619 --> 00:00:45,870
around the globe so get these global

17
00:00:51,650 --> 00:00:48,629
measurements very very precise of carbon

18
00:00:53,090 --> 00:00:51,660
dioxide measurements like those to be

19
00:00:55,220 --> 00:00:53,100
made by the orbiting carbon

20
00:00:59,150 --> 00:00:55,230
observatory-2 are absolutely critical

21
00:01:01,700 --> 00:00:59,160
for us to understand how carbon dioxide

22
00:01:08,149 --> 00:01:01,710
interacts with something called the

23
00:01:15,630 --> 00:01:12,149
when we burn gas in our cars or we burn

24
00:01:18,120 --> 00:01:15,640
coal for power we produce carbon dioxide

25
00:01:20,310 --> 00:01:18,130
that goes into the atmosphere half of

26
00:01:22,679 --> 00:01:20,320
the co2 that's being emitted to the

27
00:01:25,289 --> 00:01:22,689
atmosphere remains in the atmosphere the

28
00:01:28,649 --> 00:01:25,299
other 50% is being absorbed by the

29
00:01:30,810 --> 00:01:28,659
oceans or the terrestrial biosphere so

30
00:01:32,249 --> 00:01:30,820
those are almost imbalanced but as we

31
00:01:34,169 --> 00:01:32,259
add this carbon dioxide to the

32
00:01:37,410 --> 00:01:34,179
atmosphere from burning fossil fuels

33
00:01:38,969 --> 00:01:37,420
some of the extra is going into the

34
00:01:41,490 --> 00:01:38,979
ocean some of the extra is probably

35
00:01:43,109 --> 00:01:41,500
going into the land but we don't know

36
00:01:46,169 --> 00:01:43,119
exactly where that is

37
00:01:48,960 --> 00:01:46,179
we'll see every two weeks or so how much

38
00:01:50,999 --> 00:01:48,970

carbon dioxide there is left in the the

39
00:01:52,710 --> 00:01:51,009
atmosphere and we call this watching the

40
00:01:54,690 --> 00:01:52,720
planet breathe these are things we

41
00:01:56,999 --> 00:01:54,700
clearly have to start understanding we

42
00:02:02,300 --> 00:01:57,009
want to actually manage the carbon

43
00:02:07,789 --> 00:02:04,850
we've discovered this terrifically

44
00:02:09,949 --> 00:02:07,799
important additional contribution we'll

45
00:02:14,150 --> 00:02:09,959
be able to make from us here to plants

46
00:02:16,100 --> 00:02:14,160
grow and they glow so when they glow the

47
00:02:19,309 --> 00:02:16,110
instruments actually going to be able to

48
00:02:21,920 --> 00:02:19,319
see this glow they bring in blue light

49
00:02:23,720 --> 00:02:21,930
and they remit yellow and red light

50
00:02:25,520 --> 00:02:23,730
there's solar induced fluorescence

51
00:02:28,309 --> 00:02:25,530
measurements gives you an indication of

52
00:02:30,559 --> 00:02:28,319
how well a particular region is

53
00:02:33,650 --> 00:02:30,569
absorbing or being a sink for

54
00:02:36,680 --> 00:02:33,660
atmospheric carbon dioxide imagine what

55
00:02:39,140 --> 00:02:36,690
this can tell us about the yield of

56
00:02:40,940 --> 00:02:39,150
crops from the great food baskets of the

57
00:02:44,090 --> 00:02:40,950
world suddenly we could have a new

58
00:02:45,890 --> 00:02:44,100
direct measure of how productive those

59
00:02:48,350 --> 00:02:45,900
food growing areas are going to be and

60
00:02:50,809 --> 00:02:48,360
the two in combination carbon dioxide in

61
00:02:53,479 --> 00:02:50,819
the atmosphere and an indicator of how

62
00:02:55,640 --> 00:02:53,489
effective plants are in taking co2 out