
NASA
nasa.gov/earth
NASA

1
00:00:03,520 --> 00:00:02,080
sea ■■level rise is one of

2
00:00:05,560 --> 00:00:03,530
the clearest signs of

3
00:00:07,180 --> 00:00:05,570
global warming over the last two

4
00:00:08,980 --> 00:00:07,190
decades information collected by

5
00:00:10,540 --> 00:00:08,990
NASA satellites as well as

6
00:00:12,490 --> 00:00:10,550
aerial campaigns and

7
00:00:14,169 --> 00:00:12,500
field research shows a constant rise in the

8
00:00:16,050 --> 00:00:14,179
level of the oceans of the planet

9
00:00:18,160 --> 00:00:16,060
as the polar caps melt we

10
00:00:19,599 --> 00:00:18,170
have Dr. Carlos

11
00:00:21,220 --> 00:00:19,609
del Castillo from

12
00:00:22,689 --> 00:00:21,230
NASA's Goddard Space Flight Center with us to

13
00:00:24,189 --> 00:00:22,699

comment that he is studying NASA

14
00:00:25,840 --> 00:00:24,199
to help us understand how much and

15
00:00:28,210 --> 00:00:25,850
how fast sea levels will rise

16
00:00:29,679 --> 00:00:28,220
in the next decades doctor del

17
00:00:31,960 --> 00:00:29,689
castillo thank you for being here or

18
00:00:33,610 --> 00:00:31,970
thank you for the invitation the last few

19
00:00:35,649 --> 00:00:33,620
years have been the warmest on

20
00:00:37,209 --> 00:00:35,659
record that show us

21
00:00:38,979 --> 00:00:37,219
the new images on the rise in

22
00:00:42,129 --> 00:00:38,989
sea level these new images

23
00:00:45,549 --> 00:00:42,139
were produced by 13 satellites that

24
00:00:47,529 --> 00:00:45,559
nasa and the european space agencies

25
00:00:49,419 --> 00:00:47,539
were working on the planet

26
00:00:51,969 --> 00:00:49,429
earth and these satellites use

27
00:00:53,919 --> 00:00:51,979
radars to measure the rise in

28
00:00:55,479 --> 00:00:53,929
sea level the radars are excellent

29
00:00:57,340 --> 00:00:55,489
they can measure differences in the

30
00:00:59,439 --> 00:00:57,350
sea level at the level of centimeters and what

31
00:01:01,840 --> 00:00:59,449
we are seeing is that On average, the

32
00:01:03,579 --> 00:01:01,850
sea level has risen about 7

33
00:01:04,749 --> 00:01:03,589
centimeters. The image also

34
00:01:06,070 --> 00:01:04,759
shows us that this increase in

35
00:01:08,290 --> 00:01:06,080
sea level is not the same in all

36
00:01:09,610 --> 00:01:08,300
places and this is due to the dynamics

37
00:01:11,740 --> 00:01:09,620
of ocean currents,

38
00:01:14,440 --> 00:01:11,750

differences in temperatures, and

39
00:01:16,390 --> 00:01:14,450
similar situations. but the

40
00:01:18,960 --> 00:01:16,400
main message is that the sea level was

41
00:01:20,760 --> 00:01:18,970
rising dramatically

42
00:01:22,230 --> 00:01:20,770
that is causing this rise in

43
00:01:23,850 --> 00:01:22,240
sea level there are two

44
00:01:25,350 --> 00:01:23,860
fundamental reasons when the planet

45
00:01:27,150 --> 00:01:25,360
warms up the oceans also

46
00:01:30,180 --> 00:01:27,160
warm up and when the water heats up

47
00:01:33,060 --> 00:01:30,190
the water expands and that causes

48
00:01:34,620 --> 00:01:33,070
approximately half of the increase

49
00:01:37,320 --> 00:01:34,630
in sea level that we are seeing

50
00:01:40,230 --> 00:01:37,330
the other part is that there are polar caps

51
00:01:42,360 --> 00:01:40,240
in Greenland and also in Antarctica

52
00:01:45,150 --> 00:01:42,370
and these polar caps contain enormous

53
00:01:46,950 --> 00:01:45,160
amounts of fresh water and as we are

54
00:01:48,510 --> 00:01:46,960
seeing in the image the

55
00:01:51,719 --> 00:01:48,520
pink and colored areas red are places where

56
00:01:53,550 --> 00:01:51,729
ice loss is accelerating and

57
00:01:56,850 --> 00:01:53,560
that melting ice goes into the ocean

58
00:01:58,320 --> 00:01:56,860
causing sea level rise what is

59
00:01:59,910 --> 00:01:58,330
nasa doing to understand

60
00:02:02,640 --> 00:01:59,920
how much sea level could rise in

61
00:02:05,070 --> 00:02:02,650
the future nasa has a fleet of

62
00:02:06,749 --> 00:02:05,080
satellites that look at different aspects

63
00:02:07,800 --> 00:02:06,759

of the planet earth we have satellites

64
00:02:09,810 --> 00:02:07,810
dedicated to studying the atmosphere

65
00:02:12,270 --> 00:02:09,820
they study the oceans they study the land

66
00:02:14,190 --> 00:02:12,280
study the ice sheets and the data

67
00:02:15,570 --> 00:02:14,200
two satellites give us information

68
00:02:17,970 --> 00:02:15,580
that is extremely important because

69
00:02:19,290 --> 00:02:17,980
we can see the entire planet the

70
00:02:21,870 --> 00:02:19,300
second we do is that we have

71
00:02:23,880 --> 00:02:21,880
scientists who go to the field we take

72
00:02:25,350 --> 00:02:23,890
water they take measurements to take

73
00:02:27,810 --> 00:02:25,360
measurements to corroborate the

74
00:02:29,490 --> 00:02:27,820
satellite imagery and all of this is put together with

75
00:02:32,940 --> 00:02:29,500
numerical models that are used to

76
00:02:35,340 --> 00:02:32,950
better understand the earth system but

77
00:02:37,680 --> 00:02:35,350
also to predict how the system is going to

78
00:02:39,240 --> 00:02:37,690
change as the

79
00:02:39,740 --> 00:02:39,250
concentrations of carbon dioxide in

80
00:02:41,670 --> 00:02:39,750
the atmosphere increase

81
00:02:43,590 --> 00:02:41,680
thank you very much for all this information

82
00:02:45,390 --> 00:02:43,600
where we can learn more about this

83
00:02:48,720 --> 00:02:45,400
subject

84
00:02:51,330 --> 00:02:48,730
the best place is to go to nasa.gov