
NASA

1
00:00:10,759 --> 00:00:09,049
as we enter the dog days of summer in

2
00:00:12,740 --> 00:00:10,769
the United States things are heating up

3
00:00:14,959 --> 00:00:12,750
even more further north with melting

4
00:00:16,700 --> 00:00:14,969
Arctic sea ice and here to join us from

5
00:00:19,099 --> 00:00:16,710
NASA's Goddard Space Flight Center in

6
00:00:20,630 --> 00:00:19,109
Greenbelt Maryland is dr. Tom Wagner

7
00:00:22,370 --> 00:00:20,640
thank you for joining us

8
00:00:24,470 --> 00:00:22,380
hey thank you for having me so the

9
00:00:26,390 --> 00:00:24,480
Arctic is losing sea ice at a faster

10
00:00:28,250 --> 00:00:26,400
rate in recent years how are things

11
00:00:30,470 --> 00:00:28,260
looking this year and what are we seeing

12
00:00:32,330 --> 00:00:30,480
in the long term trend well the good

13
00:00:34,220 --> 00:00:32,340

news is we aren't sent to see another

14
00:00:36,229 --> 00:00:34,230
record low as we have been for the last

15
00:00:37,970 --> 00:00:36,239
few years but the bad news is we're

16
00:00:39,530 --> 00:00:37,980
still set to see one of the lowest sea

17
00:00:41,510 --> 00:00:39,540
ice extent on record and the ice is

18
00:00:43,280 --> 00:00:41,520
about as thin as it's been if you go

19
00:00:45,350 --> 00:00:43,290
back to the 1980s when the satellite

20
00:00:47,779 --> 00:00:45,360
record really starts we've lost almost

21
00:00:49,400 --> 00:00:47,789
two thirds of the volume of sea ice that

22
00:00:50,750 --> 00:00:49,410
used to be there and that's important

23
00:00:53,360 --> 00:00:50,760
because it's a really important part of

24
00:00:55,910 --> 00:00:53,370
the Earth's system are we seeing these

25
00:00:58,130 --> 00:00:55,920
changes in the Arctic the simple answer

26
00:01:00,319 --> 00:00:58,140
is this the planet is warming up but the

27
00:01:02,090 --> 00:01:00,329
Arctic because of various reasons warms

28
00:01:04,280 --> 00:01:02,100
about twice as fast as the rest of the

29
00:01:06,469 --> 00:01:04,290
globe like the heat gets concentrated up

30
00:01:08,149 --> 00:01:06,479
there and that's causing us to lose sea

31
00:01:09,649 --> 00:01:08,159
ice and also lose ice from all the

32
00:01:11,929 --> 00:01:09,659
glaciers around the Arctic one of the

33
00:01:14,929 --> 00:01:11,939
most important changes is that as the

34
00:01:16,609 --> 00:01:14,939
ice recedes water is a darker color so

35
00:01:18,679 --> 00:01:16,619
it absorbs more of that incoming

36
00:01:20,660 --> 00:01:18,689
sunlight one of the ways I like to think

37
00:01:22,280 --> 00:01:20,670
about it the Arctic sea ice is kind of

38
00:01:24,429 --> 00:01:22,290

like a mirrored hat on the top of the

39
00:01:26,929 --> 00:01:24,439
planet and we're taking that hat off

40
00:01:29,179 --> 00:01:26,939
what is NASA doing to understand these

41
00:01:30,200 --> 00:01:29,189
changes so NASA does a couple of

42
00:01:31,880 --> 00:01:30,210
different things you know the first

43
00:01:33,859 --> 00:01:31,890
thing is we study the Arctic with

44
00:01:35,450 --> 00:01:33,869
satellites and you need satellites to do

45
00:01:37,789 --> 00:01:35,460
it because the scales we're talking

46
00:01:40,130 --> 00:01:37,799
about our continent level and we use

47
00:01:41,749 --> 00:01:40,140
satellites like ice at which has lasers

48
00:01:43,520 --> 00:01:41,759
that go down and bounce off the surface

49
00:01:46,370 --> 00:01:43,530
and tell us how high or how thick the

50
00:01:48,560 --> 00:01:46,380
ice is we use satellites like Terra and

51
00:01:50,480 --> 00:01:48,570
Aqua which take really precise pictures

52
00:01:51,889 --> 00:01:50,490
of the Arctic and also things that tell

53
00:01:53,780 --> 00:01:51,899
us about the temperature change in the

54
00:01:55,069 --> 00:01:53,790
Arctic and we have this whole myriad of

55
00:01:56,780 --> 00:01:55,079
other satellites that tell us about the

56
00:01:59,330 --> 00:01:56,790
composition of the atmosphere and the

57
00:02:01,370 --> 00:01:59,340
characteristics of the clouds but on top

58
00:02:03,770 --> 00:02:01,380
of that NASA is kind of a leading agency

59
00:02:05,420 --> 00:02:03,780
for aircraft studies of the earth and we

60
00:02:07,249 --> 00:02:05,430
have some major missions like ice bridge

61
00:02:09,290 --> 00:02:07,259
and a rise which is going out this fall

62
00:02:11,420 --> 00:02:09,300
we take aircraft that are literally

63
00:02:13,970 --> 00:02:11,430

festooned with instruments to study the

64
00:02:16,940 --> 00:02:13,980
Arctic how will these change

65
00:02:18,350 --> 00:02:16,950
affect the united states so the changes

66
00:02:19,940 --> 00:02:18,360
in the Arctic are probably already

67
00:02:21,830 --> 00:02:19,950
affecting the US but that's kind of a

68
00:02:23,539 --> 00:02:21,840
cutting edge of the research some people

69
00:02:25,460 --> 00:02:23,549
say that storm tracks like hurricane

70
00:02:27,830 --> 00:02:25,470
sandy may have been altered because of

71
00:02:29,449 --> 00:02:27,840
Arctic change we also know that general

72
00:02:30,949 --> 00:02:29,459
precipitation patterns are things are

73
00:02:32,900 --> 00:02:30,959
probably changed as things like the

74
00:02:35,449 --> 00:02:32,910
Jetstream changes along with the Arctic

75
00:02:38,119 --> 00:02:35,459
and also larger scale fluctuations in

76
00:02:40,190 --> 00:02:38,129
the Earth's atmosphere and climate where

77
00:02:45,410 --> 00:02:40,200
can we learn more one of the easiest

78
00:02:46,729 --> 00:02:45,420
places to go to is nasa.gov dr. Tom