



1
00:00:11,209 --> 00:00:07,730
there's been predictions that summer sea

2
00:00:19,010 --> 00:00:11,219
ice cover will be gone by 2040 which is

3
00:00:21,950 --> 00:00:19,020
just around the corner these huge masses

4
00:00:24,439 --> 00:00:21,960
of ice can change far more rapidly than

5
00:00:26,810 --> 00:00:24,449
we thought they don't change on

6
00:00:29,000 --> 00:00:26,820
timescales of centuries we've seen

7
00:00:36,910 --> 00:00:29,010
changes within a decade which were quite

8
00:00:39,110 --> 00:00:36,920
significant despite its name the

9
00:00:42,170 --> 00:00:39,120
International polar year research

10
00:00:45,020 --> 00:00:42,180
project runs two full years to allow

11
00:00:48,080 --> 00:00:45,030
thousands of scientists from over 60

12
00:00:51,049 --> 00:00:48,090
nations to study to complete cycles of

13
00:00:54,170 --> 00:00:51,059

Earth's North and South Poles they will

14

00:00:58,569 --> 00:00:54,180

study all aspects of the poles land

15

00:01:03,560 --> 00:00:58,579

regions ice sheets glaciers sea ice

16

00:01:07,670 --> 00:01:03,570

oceans and the atmosphere we live in

17

00:01:13,609 --> 00:01:07,680

area of satellite observations we have

18

00:01:15,469 --> 00:01:13,619

more quantitative information we go

19

00:01:19,249 --> 00:01:15,479

beyond telling you the green ice sheet

20

00:01:21,370 --> 00:01:19,259

is melting and losing mass we can

21

00:01:23,390 --> 00:01:21,380

actually put a number to that and

22

00:01:28,980 --> 00:01:23,400

convert that number into something

23

00:01:33,160 --> 00:01:31,059

we know that from studying the Earth's

24

00:01:35,739 --> 00:01:33,170

poles that if you take an ice core it

25

00:01:37,809 --> 00:01:35,749

can tell us about the climate history of

26

00:01:39,819 --> 00:01:37,819

the earth they look at the trapped gases

27

00:01:41,590 --> 00:01:39,829

in the ice core and then they can tell

28

00:01:42,880 --> 00:01:41,600

for example how much carbon dioxide was

29

00:01:47,039 --> 00:01:42,890

in the atmosphere how much methane was

30

00:01:50,260 --> 00:01:47,049

the atmosphere other greenhouse gases I

31

00:01:52,270 --> 00:01:50,270

think to the general public it's

32

00:01:53,980 --> 00:01:52,280

difficult to relate to a warming of air

33

00:01:55,839 --> 00:01:53,990

temperature if the air temperature warms

34

00:01:58,809 --> 00:01:55,849

up one or two degrees I don't think it

35

00:02:02,850 --> 00:01:58,819

speaks very much if hear stories about

36

00:02:07,059 --> 00:02:02,860

the ice caps melting the sea is being

37

00:02:09,100 --> 00:02:07,069

gone by 2040 or even polar bears dying

38

00:02:11,430 --> 00:02:09,110

because of it there's no sea ice for

39

00:02:14,350 --> 00:02:11,440

them to survive they can relate to that

40

00:02:17,680 --> 00:02:14,360

the consequences both natural and

41

00:02:20,920 --> 00:02:17,690

man-made are seen at the poles sooner

42

00:02:23,160 --> 00:02:20,930

than elsewhere this international

43

00:02:25,809 --> 00:02:23,170

warrior the main goal is to establish

44

00:02:30,580 --> 00:02:25,819

the state of health of the polar regions

45

00:02:33,860 --> 00:02:30,590

and other reference for future studies

46

00:02:38,180 --> 00:02:33,870

NASA scientists are using polls to learn

47

00:02:39,620 --> 00:02:38,190

about our world and others the ice

48

00:02:42,230 --> 00:02:39,630

sheets of Earth and the polar regions

49

00:02:44,750 --> 00:02:42,240

are true frontiers and their frontiers

50

00:02:47,960 --> 00:02:44,760

that link earth to the planets beyond

51
00:02:52,420 --> 00:02:47,970
Earth in 2008 during the Nike why NASA

52
00:02:56,000 --> 00:02:54,620
it will land in the northern polar

53
00:02:58,040 --> 00:02:56,010
region of Mars will be in that

54
00:02:59,900 --> 00:02:58,050
environment that we can dig down into

55
00:03:02,090 --> 00:02:59,910
the soil and sample the ISIS in the soil

56
00:03:06,260 --> 00:03:02,100
that's their and analyze it in our

57
00:03:07,880 --> 00:03:06,270
onboard instruments in 2008 during the

58
00:03:09,590 --> 00:03:07,890
IP why NASA will launch the lunar

59
00:03:12,110 --> 00:03:09,600
reconnaissance orbiter and this vehicle

60
00:03:14,450 --> 00:03:12,120
will explore in earnest using remote

61
00:03:16,760 --> 00:03:14,460
sensing the poles of the moon relate

62
00:03:19,400 --> 00:03:16,770
them back to our earth polls even to the

63
00:03:22,310 --> 00:03:19,410

poles of Mars and open that frontier we

64

00:03:24,680 --> 00:03:22,320

hope for human presence and eventually

65

00:03:27,050 --> 00:03:24,690

sustain human presence so we can

66

00:03:30,380 --> 00:03:27,060

actually learn about ourselves by

67

00:03:34,370 --> 00:03:30,390

exploring the moon Mars Saturn Saturn's

68

00:03:37,850 --> 00:03:34,380

icy moons mercury even Venus and apply

69

00:03:39,620 --> 00:03:37,860

it to home all through this scientific