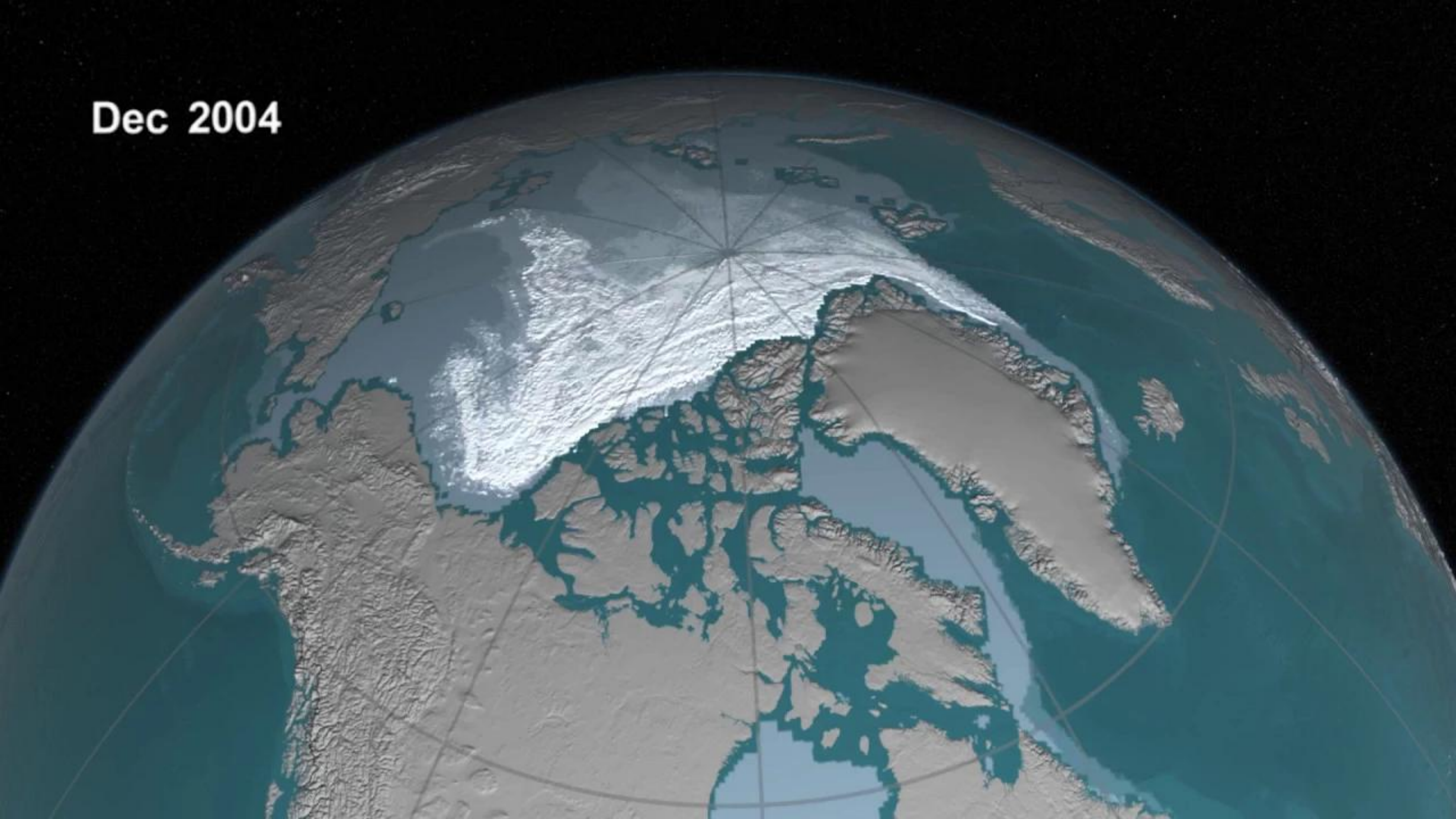
Dec 2004

1
00:00:00,100 --> 00:00:04,160
Dr. Walt Meier: In this animation, we're taking Arctic sea ice

2
00:00:04,180 --> 00:00:08,240
into the third dimension. Here we're looking at the

3
00:00:08,260 --> 00:00:12,340
ice age, which is an indication of thickness. Generally older ice is

4
00:00:12,360 --> 00:00:16,420
thicker ice. And so what you see in this animation is first of all, the ice

5
00:00:16,440 --> 00:00:20,530
pulsing out and in with the seasons.

6
00:00:20,550 --> 00:00:24,640
In winter the ice grows out and expands outward, and in summer it contracts inward as it

7
00:00:24,660 --> 00:00:28,750
melts. in addition, you see the whiter ice

8
00:00:28,770 --> 00:00:32,910
which is the older ice, moving around the Arctic, being pushed around

9
00:00:32,930 --> 00:00:37,070
by winds and currents that move the ice. And what you can see is over the years

10
00:00:37,090 --> 00:00:41,150
the ice pulses around and moves around towards the top

11
00:00:41,170 --> 00:00:45,270
of the coast of Greenland. You see that the older ice eventually moves out of the

12
00:00:45,290 --> 00:00:49,360
Arctic and into the north Atlantic where it melts.

13
00:00:49,380 --> 00:00:53,440

But the ice gets replenished within the Arctic because some of the ice survives

14
00:00:53,460 --> 00:00:57,560
each summer and grows older. And particularly,

15
00:00:57,580 --> 00:01:01,700
in the region north of Alaska called the Beaufort Sea where the ice

16
00:01:01,720 --> 00:01:05,830
spins around in a clockwise direction, called the Beaufort Gyre

17
00:01:05,850 --> 00:01:09,960
and that ice can keep spinning around, often times for several years, and gradually getting older

18
00:01:09,980 --> 00:01:14,130
and thus getting thicker.

19
00:01:14,150 --> 00:01:18,190
Eventually, the ice will spin out of that gyre and go out through Fram Strait.

20
00:01:18,210 --> 00:01:22,290
But in the past, what is happened, we've always had enough ice growth

21
00:01:22,310 --> 00:01:26,420
and ice aging, enough ice surviving the summers, to

22
00:01:26,440 --> 00:01:30,460
replenish the older ice that's lost. But in recent

23
00:01:30,480 --> 00:01:34,560
years, we've seen less replenishment. There's been more melt

24
00:01:34,580 --> 00:01:38,700
during the summer and so the ice that goes out through Fram Strait has not been

25
00:01:38,720 --> 00:01:42,840
compensated by the ice growth. In addition,

26
00:01:42,860 --> 00:01:47,020
especially in recent years, we've seen some pretty remarkable things

27
00:01:47,040 --> 00:01:51,120
in the Beaufort Sea, where that area that used to be a nursery

28
00:01:51,140 --> 00:01:55,180
for the development of older ice, allow the younger

29
00:01:55,200 --> 00:01:59,280
ice to age and mature, what we've seen instead

30
00:01:59,300 --> 00:02:03,410
is the ice is now more broken up, more scattered, and

31
00:02:03,430 --> 00:02:07,530
that's allowing the older ice to melt within the Beaufort Sea.

32
00:02:07,550 --> 00:02:11,660
So we're seeing the Beaufort Sea go from a nursery to a graveyard

33
00:02:11,680 --> 00:02:15,810
for older ice. And as we get towards the

34
00:02:15,830 --> 00:02:19,970
more recent years, much of that oldest ice, the ice that's older than five years

35
00:02:19,990 --> 00:02:24,150
old in the bright white is almost virtually disappeared