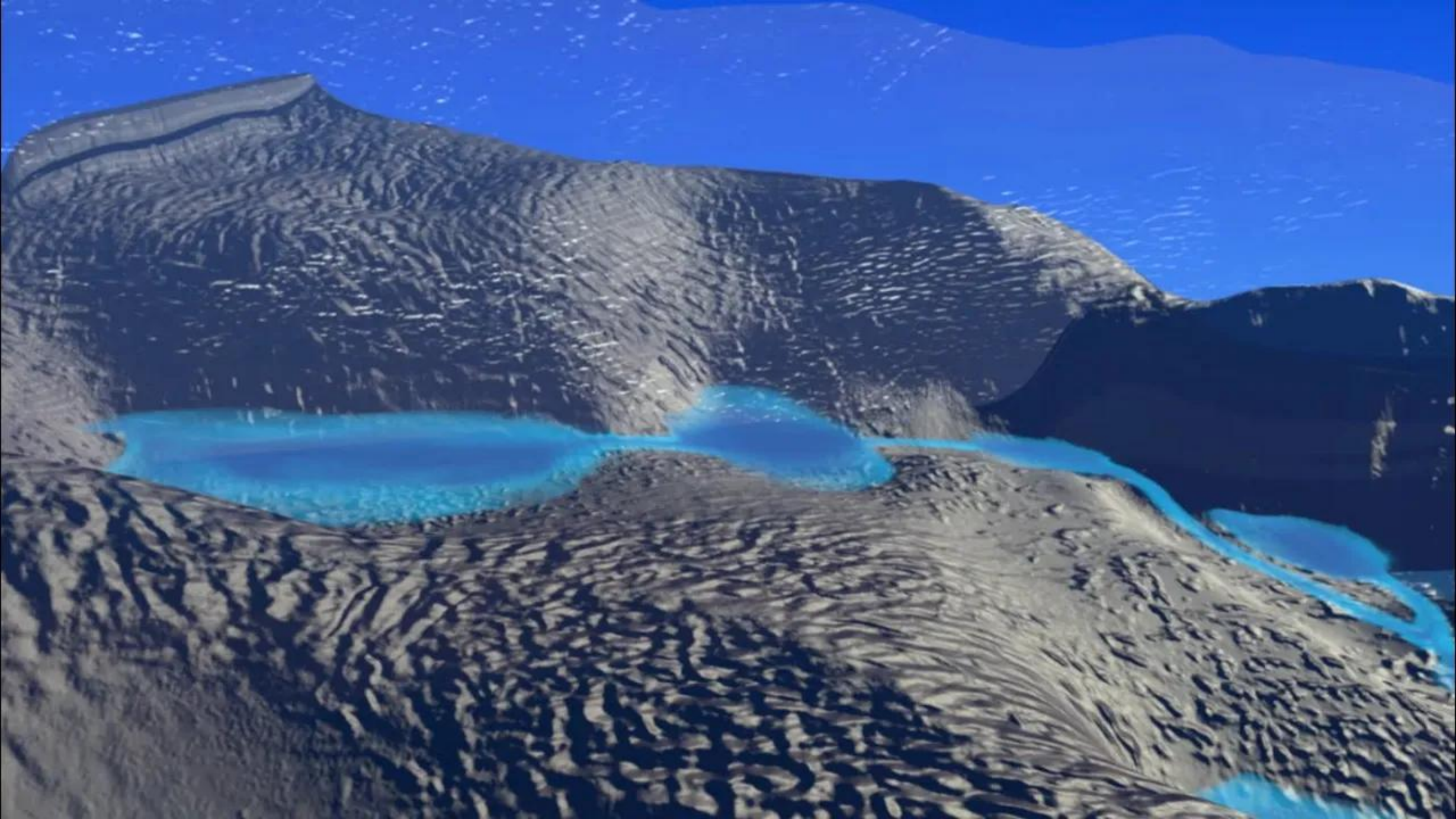

1
00:00:00,000 --> 00:00:04,000
[Music, low plane engine sound] Narrator: Below thousands of meters of ice

2
00:00:04,000 --> 00:00:08,000
ice in Antarctica, lie hundreds of meltwater lakes

3
00:00:08,000 --> 00:00:12,000
where the Antarctic Ice Sheet meets the continent’s bedrock.

4
00:00:12,000 --> 00:00:16,000
Until pretty recently we thought that these lakes sat quietly,

5
00:00:16,000 --> 00:00:20,000
isolated in pockets under the ice.

6
00:00:20,000 --> 00:00:24,000
But in 2007 laser measurements of the ice surface

7
00:00:24,000 --> 00:00:28,000
from NASA’s ICESat satellite were used to infer what was happening far below.

8
00:00:28,000 --> 00:00:32,000
And a much more interesting picture was revealed.

9
00:00:32,000 --> 00:00:36,000
By watching local areas of the surface

10
00:00:36,000 --> 00:00:40,000
of the massive ice sheet rise and fall

11
00:00:40,000 --> 00:00:44,000
due to fluctuations in the lake water levels below,

12
00:00:44,000 --> 00:00:48,000
we learned that vast hydrologic systems like rivers connect many of these lakes,

13
00:00:48,000 --> 00:00:52,000

and that some actively fill and drain all the time.

14
00:00:52,000 --> 00:00:56,000
Thanks to the more advanced laser technology

15
00:00:56,000 --> 00:01:00,000
on NASA’s ICESat-2 satellite, in a region very near

16
00:01:00,000 --> 00:01:04,000
near a pair of larger lakes measured in 2007,

17
00:01:04,000 --> 00:01:08,000
two more of these lakes have just been found.

18
00:01:08,000 --> 00:01:12,000
A new study shows they are currently experiencing a draining period.

19
00:01:12,000 --> 00:01:16,000
The finding also gives us the most detailed picture yet

20
00:01:16,000 --> 00:01:20,000
of how the boundaries of lakes can change over time.

21
00:01:20,000 --> 00:01:24,000
Areas seen here in blue

22
00:01:24,000 --> 00:01:28,000
show that the surface of the ice is getting lower,

23
00:01:28,000 --> 00:01:32,000
which indicates that the lakes below are draining.

24
00:01:32,000 --> 00:01:36,000
Understanding how much water is flowing under the ice sheet, and how quickly

25
00:01:36,000 --> 00:01:40,000
quickly it can drain to the sea, helps give us a better picture

26
00:01:40,000 --> 00:01:44,000
of not only how quickly the Antarctic Ice Sheet will change

27
00:01:44,000 --> 00:01:48,000
due to a warming climate, but also how Antarctic melt will affect