1
00:00:00,130 --> 00:00:04,140
[music]

2
00:00:04,160 --> 00:00:08,180
Welcome to an Operation IceBridge sea ice interlude.

3
00:00:08,200 --> 00:00:12,220
[music]

4
00:00:12,240 --> 00:00:16,250
We start with a visualization of AMSR-E data from the Aqua satellite,

5
00:00:16,270 --> 00:00:20,360
showing sea ice, or frozen seawater, pulsing over the course of months

6
00:00:20,380 --> 00:00:24,410
around the Antarctic continent.IceBridge often passes around the Antarctic continent.IceBridge often passes

7
00:00:24,430 --> 00:00:28,600
passes the scenic Antarctic Peninsula on its way to survey the continent’s ice sheets, glaciers,

8
00:00:28,620 --> 00:00:32,640
Usually the peninsula's mountains are shrouded by clouds

9
00:00:32,660 --> 00:00:36,710
but today we have a clear view.

10
00:00:36,730 --> 00:00:40,770
As we descend, we see vast fields of sea ice, which comes in an array of shapes

11
00:00:40,790 --> 00:00:44,840
and thicknesses. Large pieces of sea ice are called floes

12
00:00:44,860 --> 00:00:48,870
and these formations often collide, creating thick ridges along their edges,

13
00:00:48,890 --> 00:00:52,880

or raft over top of each other.

14
00:00:52,900 --> 00:00:56,920
This ice appears to be thick enough to be 2nd-year ice, or ice which survived a summer melt season.

15
00:01:00,960 --> 00:01:04,970
Darker, grayer ice

16
00:01:04,990 --> 00:01:09,010
appears to be more recent, and might be around 10 cm thick,

17
00:01:09,030 --> 00:01:13,070
while the white ice covered by snow is probably more than 30 cm thick.

18
00:01:13,090 --> 00:01:17,110
The area in the lower center here is so smooth,

19
00:01:17,130 --> 00:01:21,150
it might just be a few hours old.

20
00:01:25,250 --> 00:01:29,270
This is frazil ice. It’s granular,

21
00:01:29,290 --> 00:01:33,440
like a slushy beverage, and is created by very dynamic conditions

22
00:01:33,460 --> 00:01:37,500
of turbulence in the water.

23
00:01:37,520 --> 00:01:41,550
This is a region of brush, containing sea ice and a few icebergs.

24
00:01:45,630 --> 00:01:49,680
IceBridge measures Antarctic ice from 500 meters above the surface, using

25
00:01:49,700 --> 00:01:53,720
radar, laser altimetry, and with these crisp images

26
00:01:53,740 --> 00:01:57,760
from the DMS or Digital Mapping System.

27
00:01:57,780 --> 00:02:01,790
Here we have ice that’s holding fast to the shore,

28
00:02:01,810 --> 00:02:05,800
and immobilizing icebergs from a nearby glacier or ice shelf.

29
00:02:05,820 --> 00:02:09,830
These slabs of ice from continental ice shelves,

30
00:02:09,850 --> 00:02:13,870
sticking above the water by perhaps 50 meters

31
00:02:13,890 --> 00:02:17,950
are large and flat enough to be called tabular bergs.