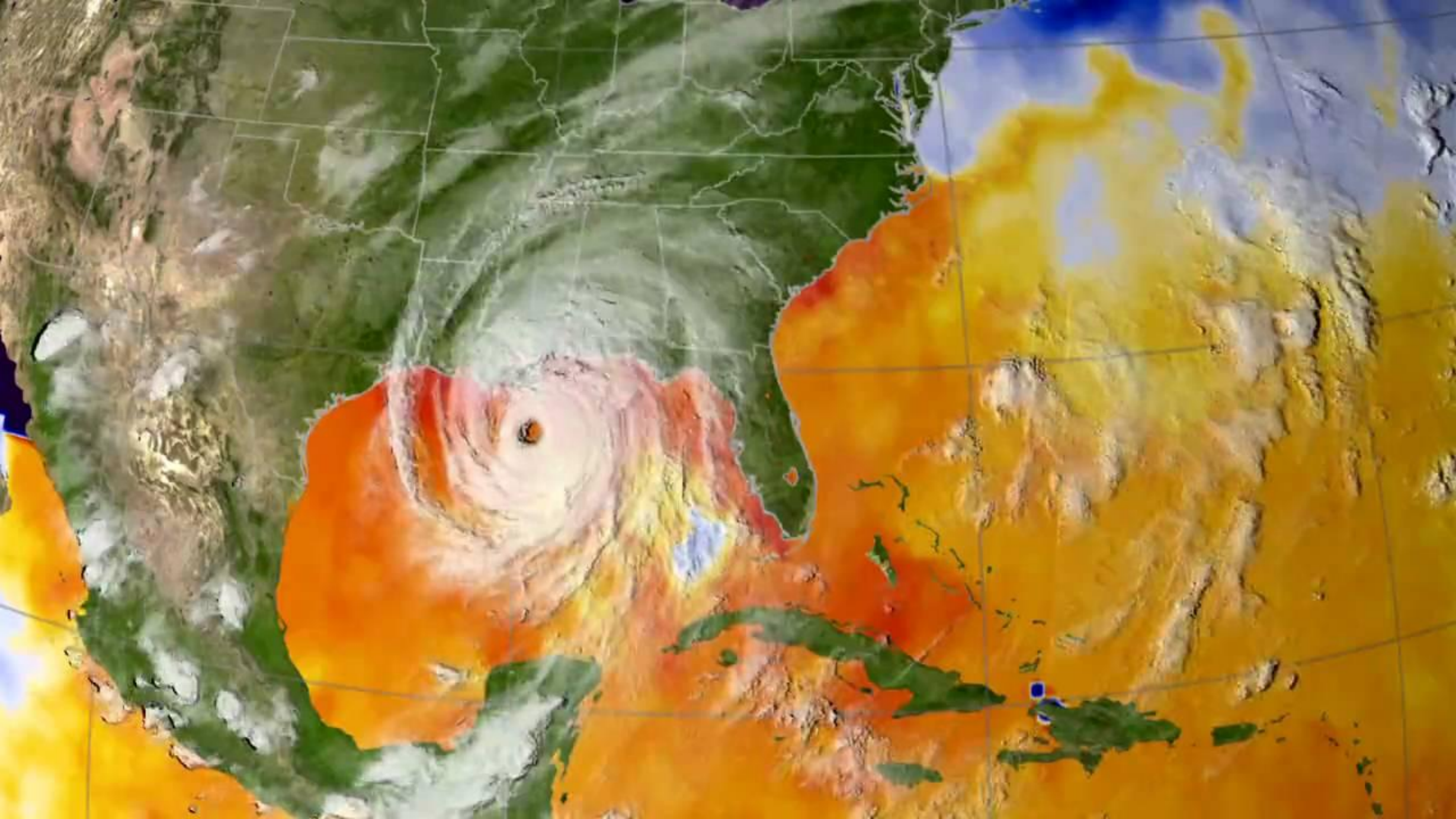

1
00:00:08,190 --> 00:00:04,010
[music]

2
00:00:08,210 --> 00:00:12,360
August 29, 2005.

3
00:00:12,380 --> 00:00:16,530
After passing over the Caribbean, Hurricane Katrina made landfall

4
00:00:16,550 --> 00:00:20,710
along the Gulf of Mexico. By the time the skies cleared,

5
00:00:20,730 --> 00:00:24,880
Katrina had killed more than 1800 people, caused

6
00:00:24,900 --> 00:00:29,050
roughly $125 billion in damages,

7
00:00:29,070 --> 00:00:33,160
and went down as one of the strongest storms to hit the U.S. in a century.

8
00:00:33,180 --> 00:00:37,190
Five years later, NASA revisits Katrina

9
00:00:37,210 --> 00:00:41,210
as captured by NASA satellites.

10
00:00:41,230 --> 00:00:45,390
While these images can't tell the whole story of the hurricane

11
00:00:45,410 --> 00:00:49,570
and its impacts, they remind us of the power and destructive nature

12
00:00:49,590 --> 00:00:53,750
of tropical cyclones.

13
00:00:53,770 --> 00:00:57,930

In the weeks leading up to Katrina, NASA's Aqua satellite

14
00:00:57,950 --> 00:01:02,100
captures sea surfaces temperatures with the AMSR-E instrument.

15
00:01:02,120 --> 00:01:06,280
Warm ocean temperatures, indicated in red,

16
00:01:06,300 --> 00:01:10,450
provide energy to fuel the growing storm.

17
00:01:10,470 --> 00:01:14,630
As Katrina moves, it leaves a trail of cooler water in its wake, stirred up from below.

18
00:01:14,650 --> 00:01:19,160
Two days before landfall...

19
00:01:19,180 --> 00:01:23,250
NASA's MISR instrument on the Terra satellite witnesses growing cloud tops

20
00:01:23,270 --> 00:01:27,420
as the storm gathers strength.

21
00:01:27,440 --> 00:01:31,610
Just before landfall... the TRMM satellite at

22
00:01:31,630 --> 00:01:35,790
"hot towers" - powerful thunderstorms that help propel Katrina

23
00:01:35,810 --> 00:01:39,960
to category 5 strength.

24
00:01:39,980 --> 00:01:44,120
The same satellite reveals heavy rains.

25
00:01:44,140 --> 00:01:48,140
Green means at least a half inch of rain is falling per hour. Yellow, an inch.

26
00:01:48,160 --> 00:01:52,280
Red, over two inches per hour.

27
00:01:52,300 --> 00:01:58,450
As the hurricane sweeps through,

28
00:01:58,470 --> 00:02:02,620
TRMM's multi-satellite analysis reveals where the hurricane delivered the heaviest rain,

29
00:02:02,640 --> 00:02:06,800
shown here in yellows and reds.

30
00:02:06,820 --> 00:02:10,920
Finally, Landsat satellite imagery

31
00:02:10,940 --> 00:02:14,980
shows the extent of flooding in New Orleans.

32
00:02:15,000 --> 00:02:19,070
First, the city before the storm, with Lake Pontchartrain to the north.

33
00:02:19,090 --> 00:02:23,110
Two days after the storm made landfall, much of the city is

34
00:02:23,130 --> 00:02:27,290
flooded by the catastrophic levee failures.

35
00:02:27,310 --> 00:02:31,470
Today, Landsat sees a city still rebuilding from the storm.

36
00:02:31,490 --> 00:02:35,650
[music]

37
00:02:35,670 --> 00:02:39,820
NASA satellites continue to provide detailed observations of tropical cyclones

38
00:02:39,840 --> 00:02:44,000

around the world - to better understand how they work, and so we can