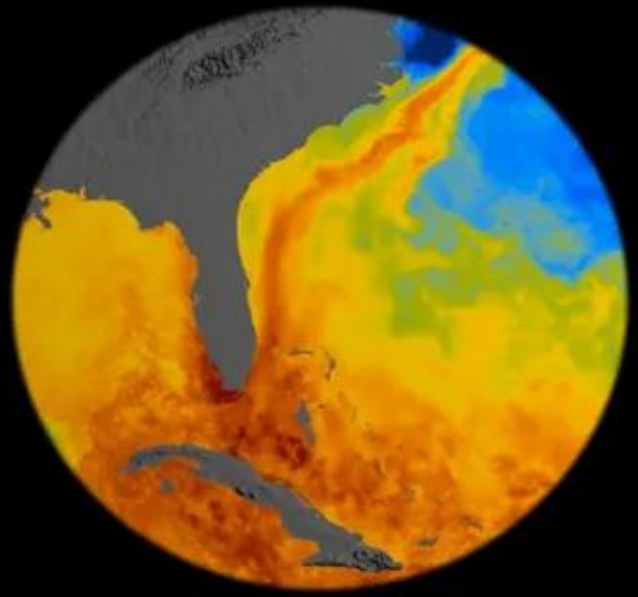


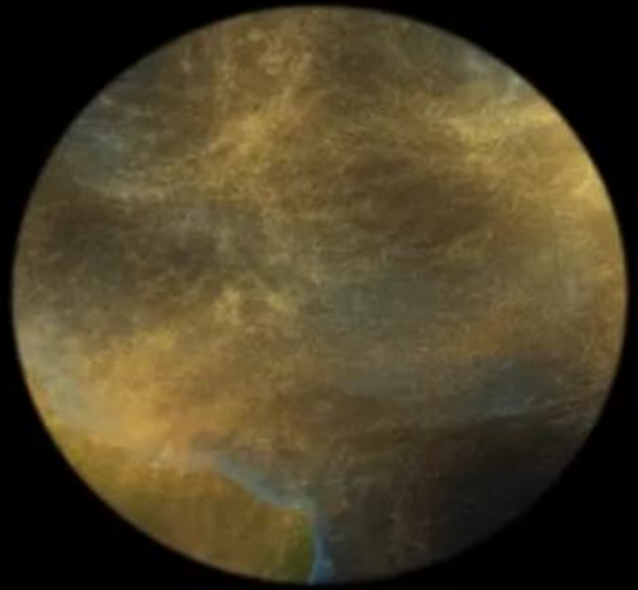

1
00:00:00,000 --> 00:00:04,000
[pulsing music] Narrator: Our planet is the setting for dazzling

2
00:00:04,000 --> 00:00:08,000
and interconnected webs of energy,

3
00:00:08,000 --> 00:00:12,000
physical phenomena, and life.

4
00:00:12,000 --> 00:00:16,000
Amazing to behold from close up, and hypnotic when seen from above.

5
00:00:16,000 --> 00:00:20,000
From space, the fleet of Earth-observing satellites

6
00:00:20,000 --> 00:00:24,000
operated by NASA and its partners illuminate

7
00:00:24,000 --> 00:00:28,000
the links between these systems.

8
00:00:28,000 --> 00:00:32,000
Temperatures on the planet affect all of them, which means

9
00:00:32,000 --> 00:00:36,000
each one is impacted by a warming climate. During 2020

10
00:00:36,000 --> 00:00:40,000
global temperatures matched the warmest year we've measured, and we experienced

11
00:00:40,000 --> 00:00:44,000
the most active hurricane season ever recorded, with many storms

12
00:00:44,000 --> 00:00:48,000
quickly intensifying -- likely as a result of warmer seas.

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

Heat in the oceans is like fuel that

14
00:00:52,000 --> 00:00:56,000
powers these massive storms. But incredibly, dust

15
00:00:56,000 --> 00:01:00,000
swept up from northern Africa actually plays a critical role

16
00:01:00,000 --> 00:01:04,000
in the formation of hurricanes.

17
00:01:04,000 --> 00:01:08,000
It’s also a key source of fertilization for the Amazon rainforest.

18
00:01:08,000 --> 00:01:12,000
Due to climate change, dust plumes are expected

19
00:01:12,000 --> 00:01:16,000
to decline, and then so will their

20
00:01:16,000 --> 00:01:20,000
impacts on vegetation an ocean away.

21
00:01:20,000 --> 00:01:24,000
Our satellites and field research allow us to pay close attention

22
00:01:24,000 --> 00:01:28,000
to the Amazon rainforest – and other vegetation across the world,

23
00:01:28,000 --> 00:01:32,000
helping us track how fires, deforestation, and disasters

24
00:01:32,000 --> 00:01:36,000
affect the world’s plant life.

25
00:01:36,000 --> 00:01:40,000
We can also study how those vegetation changes, in turn,

26
00:01:40,000 --> 00:01:44,000
impact air quality, waterways, and the climate.

27
00:01:44,000 --> 00:01:48,000
That same science helps the world’s farmers boost productivity

28
00:01:48,000 --> 00:01:52,000
and deal with extreme weather, including drought, early freezes,

29
00:01:52,000 --> 00:01:56,000
and heavy spring rains. The observations can

30
00:01:56,000 --> 00:02:00,000
also help track some unwanted biproducts of food production.

31
00:02:00,000 --> 00:02:04,000
Fertilizers used in farming contain high amounts

32
00:02:04,000 --> 00:02:08,000
of nutrients to help crops grow. But those same nutrients

33
00:02:08,000 --> 00:02:12,000
can cause sometimes-dangerous blooms of algae in waterways,

34
00:02:12,000 --> 00:02:16,000
which can affect local economies, recreation, fishing,

35
00:02:16,000 --> 00:02:20,000
and human health. They're often so large, they're easily

36
00:02:20,000 --> 00:02:24,000
viewed from space. Clean water and clean air

37
00:02:24,000 --> 00:02:28,000
are two cornerstones for maintaining healthy people

38
00:02:28,000 --> 00:02:32,000

… and wildlife. Satellite data and NASA funding

39
00:02:32,000 --> 00:02:36,000
help map how animal migrations are affected by water sources,

40
00:02:36,000 --> 00:02:40,000
as well as light pollution and habitat loss,

41
00:02:40,000 --> 00:02:44,000
and also help find solutions.

42
00:02:44,000 --> 00:02:48,000
The view from space is especially important

43
00:02:48,000 --> 00:02:52,000
in the Arctic and Antarctic, where animal habitats are rapidly changing due to climate change,

44
00:02:52,000 --> 00:02:56,000
and so is the ice itself,

45
00:02:56,000 --> 00:03:00,000
with Greenland and Antarctica losing enough ice in just 16 years to raise sea level

46
00:03:00,000 --> 00:03:04,000
by half an inch globally.

47
00:03:04,000 --> 00:03:08,000
We can also measure snow and ice farther from the poles,

48
00:03:08,000 --> 00:03:12,000
such as vital snowpacks in the Sierra Nevada and Rockies,

49
00:03:12,000 --> 00:03:16,000
and in the Himalayas

50
00:03:16,000 --> 00:03:20,000
where rapidly-draining glacial lakes

51
00:03:20,000 --> 00:03:24,000
can cause sudden and dangerous bursts of water downstream.

52
00:03:24,000 --> 00:03:28,000
Earth’s climate is changing, and with it has come a new intensity

53
00:03:28,000 --> 00:03:32,000
to weather events and hazards that can lead to disasters,

54
00:03:32,000 --> 00:03:36,000
including floods, fires, hurricanes, and heat waves.

55
00:03:36,000 --> 00:03:40,000
As disasters become more frequent and intense,

56
00:03:40,000 --> 00:03:44,000
NASA will use its satellites and resources

57
00:03:44,000 --> 00:03:48,000
to study the effects of climate change on natural systems,