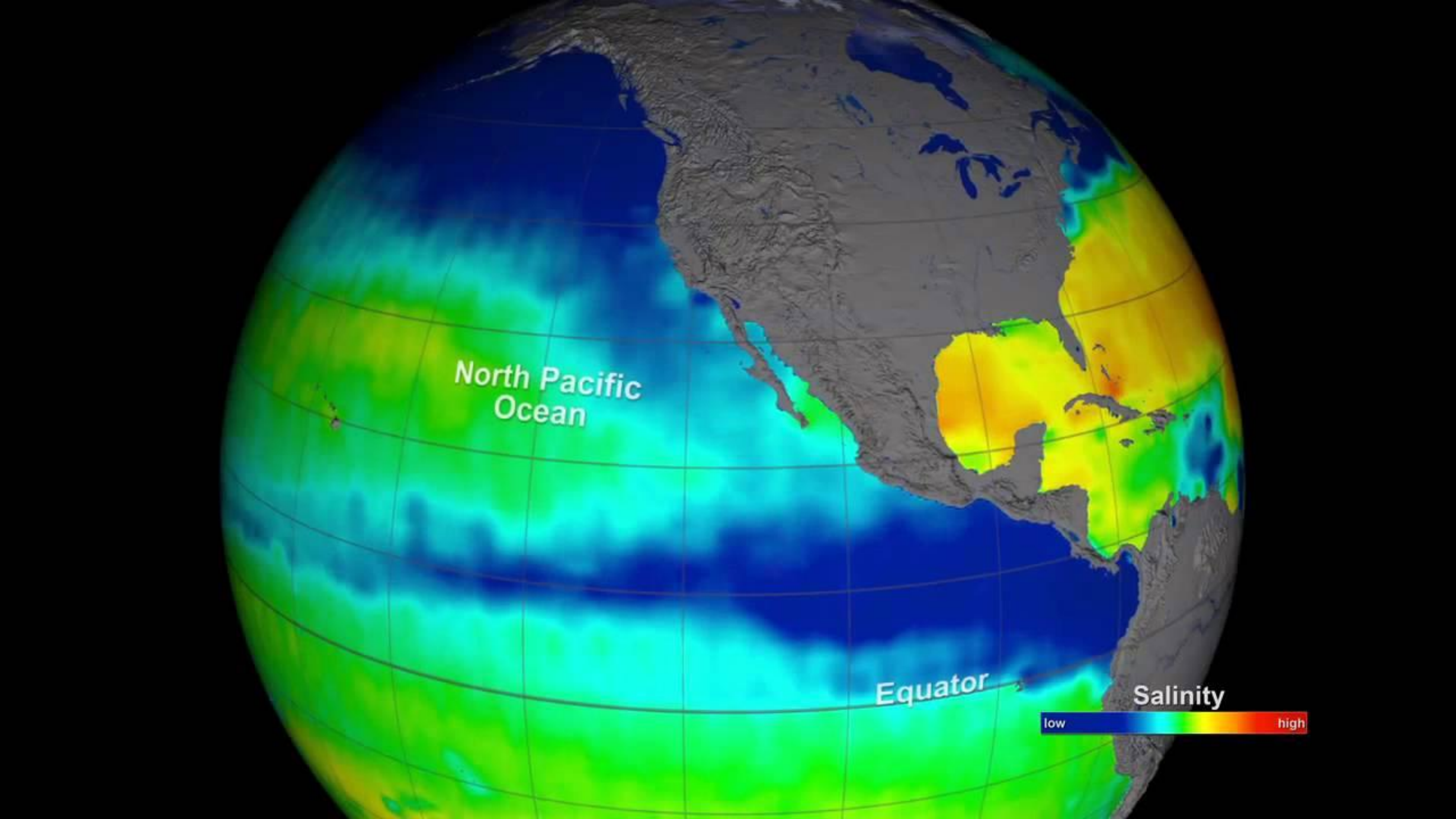
North Pacific
Ocean
Equator
Salinity
low
high

1
00:00:00,000 --> 00:00:02,980
[ music ]

2
00:00:07,000 --> 00:00:17,980
Earth’s climate and the circulation of deep ocean currents are strongly influenced by the saltiness of the sea su

3
00:00:19,200 --> 00:00:21,220
Well, now we do.

4
00:00:22,000 --> 00:00:33,230
After more than a year of continuous measurements, NASA’s Aquarius instrument aboard the Aquarius/SAC-D

5
00:00:34,150 --> 00:00:37,980
A closer look at the data reveals some fascinating features.

6
00:00:39,100 --> 00:00:43,280
Our focus first turns to a salty patch of water in the North Atlantic Ocean.

7
00:00:45,000 --> 00:00:54,230
Evaporation of water from the sea surface leaves behind large amounts of salt that contribute to the active zon

8
00:01:00,100 --> 00:01:03,060
Conditions are different in the North Pacific Ocean.

9
00:01:04,000 --> 00:01:11,030
Near the equator, in one of the wettest regions on the planet, heavy rainfall adds an abundance of water to the

10
00:01:12,000 --> 00:01:18,980
This results in the dark-blue band of low salinity water off the coast of South America and Central America.

11
00:01:23,000 --> 00:01:27,080
Rivers can also influence the amount of salt on the sea surface.

12
00:01:27,250 --> 00:01:34,120
Every second, millions of gallons of fresh water flows from the Amazon River into the Atlantic Ocean.

13
00:01:35,150 --> 00:01:42,000

The effect of this is a sinuous plume of low salinity water that extends from the mouth of this great river.

14
00:01:44,450 --> 00:01:51,130
At high latitudes, the seasonal melting of sea ice causes a sharp decrease in sea surface salinity.

15
00:01:52,000 --> 00:01:57,230
We see examples of this in the Labrador Sea and the coastal waters that surround Greenland.

16
00:01:58,000 --> 00:02:07,250
In spring and summer, surface currents transport the low salinity water south, where it meets warmer and salti

17
00:02:13,200 --> 00:02:23,260
The contrasting patches of high salinity water to the west and low salinity water to the east of the Indian subco

18
00:02:24,150 --> 00:02:31,030
To the west, an arid climate and lack of freshwater input yields the salty waters of the Arabian Sea.

19
00:02:31,150 --> 00:02:39,090
To the east, monsoon rains and freshwater outflow from the Ganges River keep the Bay of Bengal far less salt

20
00:02:42,000 --> 00:02:47,190
Without satellite observations, these global changes would be largely invisible to us.