



1
00:00:08,080 --> 00:00:12,090
Ocean circulation plays

2
00:00:12,110 --> 00:00:16,130
a key role in distributing solar energy and maintaining

3
00:00:16,150 --> 00:00:20,150
climate, by moving heat from Earth's equator to the poles.

4
00:00:20,170 --> 00:00:24,190
At the ocean surface, currents are primarily driven by wind.

5
00:00:24,210 --> 00:00:28,210
Deep below the surface however, currents are

6
00:00:28,230 --> 00:00:32,220
controlled by water density, which depends on the temperature and salinity

7
00:00:32,240 --> 00:00:36,270
of the water. In a few important regions, such as

8
00:00:36,290 --> 00:00:40,310
the North Atlantic, sea water can get cold and salty

9
00:00:40,330 --> 00:00:44,350
enough to sink to great depths. This globally

10
00:00:44,370 --> 00:00:48,380
interconnected process of "overturning circulation" occurs

11
00:00:48,400 --> 00:00:52,410
in all ocean basins and helps to regulate Earth's climate.

12
00:00:52,430 --> 00:00:56,430
Aquarius will measure the salinity in the ocean,

13
00:00:56,450 --> 00:01:00,450

giving scientists the tools needed to improve predictions of future

14

00:01:00,470 --> 00:01:04,460

climate trends and events, like El Niño.

15

00:01:04,480 --> 00:01:08,470

Until now, researchers did not have a full set of data on

16

00:01:08,490 --> 00:01:12,510

ocean salinity and how it impacts climate change.

17

00:01:12,530 --> 00:01:16,560

Aquarius salinity data, combined with data from other sensors

18

00:01:16,580 --> 00:01:20,590

that measure sea level, rainfall, temperature,

19

00:01:20,610 --> 00:01:24,620

ocean color, and winds, will give us a much clearer

20

00:01:24,640 --> 00:01:28,650

picture of how the ocean works. Will higher temperatures

21

00:01:28,670 --> 00:01:32,690

intensify evaporation and alter sea surface salinity patterns?

22

00:01:32,710 --> 00:01:36,720

Will changes in salinity affect ocean circulation and how

23

00:01:36,740 --> 00:01:40,740

heat is distributed over the globe? Aquarius' measurements