



1

00:00:00,040 --> 00:00:04,230

Phytoplankton...tiny, mostly single-celled organisms

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00:00:04,230 --> 00:00:08,440

that live in the oceans, creating energy for our ocean's ecosystems.

3

00:00:08,440 --> 00:00:12,650

They're eaten by zooplankton, slightly larger organisms

4

00:00:12,650 --> 00:00:16,760

that make a daily trek from the ocean's sunny upper layer to its pitch-black depths.

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00:00:16,760 --> 00:00:20,940

In this cycle, they drift through an important region,

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00:00:20,940 --> 00:00:25,110

a dimly lit middle ground between light and shadow...an area scientists call

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00:00:25,110 --> 00:00:29,320

the twilight zone.

8

00:00:29,320 --> 00:00:33,530

Enter the Export Processes in the Ocean from RemoTe Sensing, or EXPORTS project

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00:00:33,530 --> 00:00:37,630

– a team of more than 150 scientists...from 29 different institutions...

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00:00:37,630 --> 00:00:41,810

onboard two research vessels with a fleet of autonomous vehicles...

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00:00:41,810 --> 00:00:45,920

traveling west from Seattle to study these phytoplankton.

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00:00:45,920 --> 00:00:50,100

The team, made up of researchers from NASA, the National Science Foundation, including

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00:00:50,100 --> 00:00:54,290

the University of California- Santa Barbara, the Woods Hole Oceanographic Institute

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00:00:54,290 --> 00:00:58,480

and other university and agency partners, will deploy robotic explorers

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00:00:58,480 --> 00:01:02,660

and instruments from the two ships to study the diversity of plankton in the ocean.

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00:01:02,660 --> 00:01:06,860

The ocean absorbs approximately 1/2

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00:01:06,860 --> 00:01:11,060

of the carbon dioxide from Earth's atmosphere. Like plants on land,

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00:01:11,060 --> 00:01:15,230

phytoplankton take in this carbon and release oxygen. Their blooms can

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00:01:15,230 --> 00:01:19,420

even be seen in images taken from space. As the phytoplankton die

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00:01:19,420 --> 00:01:23,660

or are eaten by zooplankton, that consumed carbon is exported into the

21

00:01:23,660 --> 00:01:27,740

twilight zone and stored there. Understanding the diversity

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00:01:27,740 --> 00:01:31,940

and makeup of plankton in the ocean can help scientists understand the role the ocean plays

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00:01:31,940 --> 00:01:36,130

in consuming, and sequestering, carbon from the atmosphere.