



Energy Flow through Ecosystems

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Transcript

Introduction

VIDEO CLIP: Gulf of Mexico

The Gulf of Mexico is home to over 15,000 species of marine wildlife. Among them is the bull shark, an apex predator, with an appetite for anything from fish to other sharks.

They lurk in the warm, shallow waters of the Gulf. Here, they have plenty of fish to choose from for a meal — like perch, mackerel, tuna, and even other small sharks and rays. This large number of prey species for sharks have even more abundant food sources than the predator at the top of the food web: plankton.

These creatures are found in virtually every liter of seawater. They include tiny animals called zooplankton and photosynthetic producers called phytoplankton. Together, these tiny organisms are vast in number and support the entire marine food web.

Just like in other ecosystems, the number and total biomass of organisms in the Gulf tend to be larger near the base of the food web than at the top. But why is that so? How does energy enter the ecosystem? And why is there less of it at the top of the food web?

Explore this interactive to answer these questions and learn more.

Global

Energy Balance

VIDEO CLIP: Asmeret Asefaw Berhe summarizes what happens to solar energy

[BERHE:] So the Sun is the dominant source of energy on Earth. When solar energy comes down to the Earth, some of it is reflected back from reflective surfaces. Some of it is absorbed by the ground surface and is reradiated back to the atmosphere as infrared energy.

Gases such as carbon dioxide, methane, or water vapor that accumulate in the Earth's atmosphere, they're absorbing that irradiated heat and are able to trap that heat and cause warming of our planet.