



Ocean Warming May Lead to an Increase in Sea Life

Warmer ocean temperatures could mean dramatic shifts in the structure of underwater food webs and the abundance of marine life, according to a new study. Until now, little has been known about how changes in temperatures might affect the total productivity and growth of all marine consumers (such as animals, fungi and bacteria) relative to their prey (including algae and plants).

The study looked at a simple underwater food chain and how temperature changes affect organisms' growth and metabolism. In warmer temperatures, these processes happen faster. As a result, demands for food and nutrients increase with temperature. Researchers placed tiny zooplankton (consumers in the food chain) and phytoplankton (which are photosynthesizing producers) in small containers and incubated them at different temperatures and in two nutrient



scenarios reflecting low and high resource supply conditions for phytoplankton. The results suggest that higher temperatures could lead to an increase in the number of consumers in the ocean, such as zooplankton or fish, but a reduction in the overall mass of living creatures in the sea.

The lead scientist said that the findings have implications for how marine and other ecosystems might respond to global warming: "Small changes in ocean temperature, like those expected with climate change or even just a warmer summer, have fundamentally different effects on marine consumers and their food supply," she said.

"This means we may be able to understand some important consequences of ocean temperature change before we go out and study temperature effects on every single species."

Ocean temperature averages about 30°C (86°F) in the tropics and 2°C (35.6°F) in the polar regions, and varies between summer and winter. Current climate models predict ocean temperatures will rise between 2°C and 7°C (or between 1°F and 11°F) in different parts of the world in the next 100 years, and increases of 1°C to 4°C (1°F - 9°F) have already been observed. All of these types of changes would dramatically affect the food chains of the ocean, said one researcher.

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