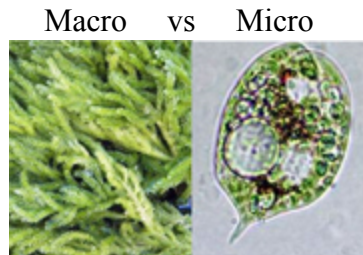


## Phytoplankton: The Bare Facts

Phytoplankton are microscopic, plant-like organisms that live in the ocean. Unlike **macroalgae** or seaweed that you can easily see lying on the beach, it is difficult to see **microalgae** or phytoplankton without a microscope.

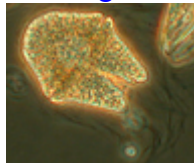
### Algae



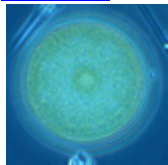
### What are Diatoms and Dinoflagellates?

There are many types of phytoplankton, but two main are most common: 1) diatoms and 2) dinoflagellates. Diatoms are single-celled algae that have **chloroplasts** and can undergo **photosynthesis**. Dinoflagellates are also single-celled and have two whip-like tails called “flagella.” Although many dinoflagellates also have chloroplasts, not all do. Both types of phytoplankton can be **autotrophic** and use photosynthesis to harvest the sunlight to produce their own energy, but some dinoflagellates are **heterotrophic** and rely on eating other organisms for energy; as far as we know, there are no heterotrophic diatoms.

[Dinoflagellates](#) are single-celled algae that have two whiplike tails called flagella.



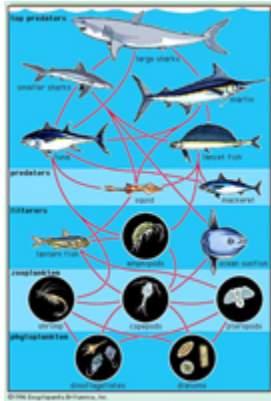
[Diatoms](#) are also single-celled and have chloroplasts that are utilized for photosynthesis.



### What is the Role of Phytoplankton?

Phytoplankton are the **primary producers** at the bottom of the food web, similar to the grasses

and trees found on land. They help to provide food and energy for zooplankton, krill, and abalone that in turn feed the birds, whales, and even us!



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## Glossary terms

- **chloroplast** – a specialized structure in a cell with photosynthetic pigments
- **photosynthesis** –the process of using the sun’s energy to convert carbon dioxide and water into carbohydrates and oxygen; carried out by green plants, algae, and cyanobacteria
- **autotrophic** – describes an organism that makes organic material from inorganic material; a primary producer; examples include plants, phytoplankton, and some bacteria
- **heterotrophic** - an organism that obtains its organic matter from the environment (usually from autotrophs); a consumer
- **primary producer** - an organism that makes organic material from inorganic material; an autotroph; examples include plants, phytoplankton, and some bacteria

Additional Links:

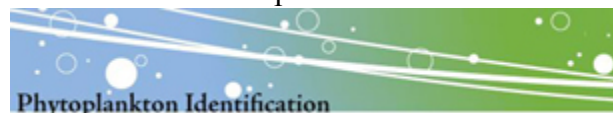
Still curious? Look up more of these terms at [Bigelow’s Glossary](#)

Find a more advanced glossary at [MBARI’s Marine Botany](#)

Learn more about the [Life Cycle of a Dinoflagellate](#)

To find descriptions, pictures, and differences between individual species visit the View the

UCSC [Kudela Lab Phytoplankton ID Gallery](#)



Feeding krill and abalone is not all they can do! Sometimes phytoplankton can change the color of the ocean and cause a “red” tide. Find out more at [The Colors of an Algal Bloom](#)