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March 2020



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"The sea, the great unifier, is man's only hope. Now, as never before, the old phrase has a literal meaning: We are all in the same boat."

—Jacques Cousteau





**In honor of International Women's Day and Women's History Month, we share this story from the National Marine Sanctuaries website.**

**Inspiring!**

**[WOMEN'S HISTORY MONTH](#)**

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## **Are You Missing These Guys?**

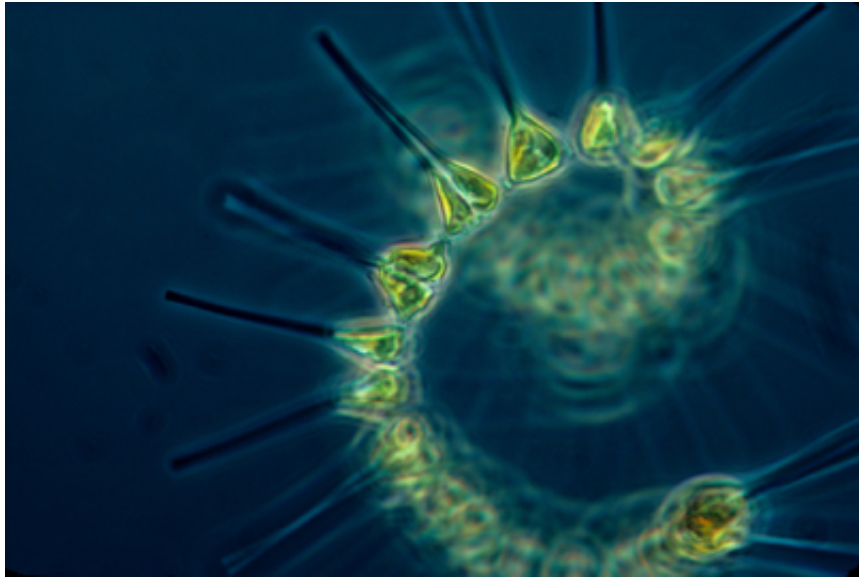
by Ashley Sexton

When we think about the many different types of living things that make up the marine ecosystem, we often consider only plants and animals that our eyes can see. Have you ever stopped to consider what you may be missing – what life we cannot see with our eyes alone? This month we are taking a deeper look at some of the smallest ocean residents,

plankton.

**The term “plankton” refers to a family of microscopic organisms that inhabit our waters.**

Water that contains large amounts of plankton will look cloudy and brown or greenish, while areas that do not have high plankton levels will be much more clear. The plankton group of organisms is named after the Greek term planktos, meaning “drifting or wandering.”



This is a fitting name as plankton are often unable to swim on their own in the Earth’s waters and instead just drift along. There are two categories of plankton: phytoplankton and zooplankton.

**Phytoplankton, also called algae, are very much like plants.** They use the sun’s energy to turn carbon dioxide into energy. Because of this dependence on the sun, phytoplankton is found closer to the surface of the water, where the light is strong enough for them to survive.

- Phytoplankton are very diverse, and most are single-celled.
- Some of the most common types of phytoplankton are diatom, dinoflagellates, phaeophyta (brown algae) and cyanobacteria.
- Cyanobacteria are unique because in addition to using photosynthesis they also use nitrogen for energy. Cyanobacteria are known as “nitrogen fixers” because they have the ability to change free nitrogen into nitrates that are then used by other cyanobacteria or other marine plant life.
- Phytoplankton forms the foundation of the food chain for all aquatic life, supporting directly or indirectly the health and survival of organisms ranging from tiny zooplankton to multi-ton whales.



**Zooplanktons are animals who must eat in order to stay alive.** Zooplanktons exhibit a wide range of diet preferences from grazing on algae, to scavenging for other dead

organisms or waste, to actively hunting other zooplanktons. One of the most common zooplankton types is the Copepod, sometimes called the insect of the sea.

- There are about 10,000 species of Copepods and they make up the largest source of protein in the ocean. Copepods can be found in both fresh and saltwater and range in size only a few millimeters long to over 12 inches! Copepods are crustaceans with segmented bodies and an outer shell who eat phytoplankton and other zooplankton.
- Some zooplanktons are not microscopic at all. Jellyfish and Portuguese man-o-war are both considered zooplankton but are definitely something to watch out for with your own eyes!

There are so many types and unique attributes of plankton it would take many newsletters to write about them all – they are a wonderful example of the immense diversity found in the marine ecosystem. The next time you visit a waterway, see if you can spot any of these organisms: scoop up some water in a clear container and look for signs of life as you hold it up to the light. You may catch a glimpse of these building blocks of the marine world.

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## Phytoplankton vs. Zooplankton

### Phytoplankton

**Source of food:** Photosynthesize sunlight.

**Habitat:** Autotrophic, so must live in the top layer of the water where the sun is available.

**Swim?:** Cannot swim, but drift in the current.

**Oxygen:** Generally, they release lots of oxygen.

### Zooplankton

**Source of food:** They eat other organisms like phytoplankton, bacterioplankton, zooplankton, and nektonic organisms.

**Habitat:** Found mostly in cold, shady or deep water; can drift to surface during the day.

**Swim?:** Some, like jellyfish, can swim.

**Oxygen:** They consume oxygen and release carbon dioxide.

## References:

<https://nhpbs.org/natureworks/nwep6d.htm>

<https://www.britannica.com/science/plankton>

<https://oceanservice.noaa.gov/facts/phyto.html>

<https://earthobservatory.nasa.gov/features/Phytoplankton>

<https://askabiologist.asu.edu/explore/plankton>



Video: What are zooplankton, and why do they matter?

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### BRAIN TEASER

A man is looking at a photograph of someone. His friend asks who it is. The man replies, “Brothers and sisters, I have none. But that man’s father is my father’s son.” Who was in the photograph?

(see the April AFO newsletter to see the answer)

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## International News for Ocean Conservation Efforts

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## World Ocean Summit 2020 Cancelled Due to Covid-19 Concerns

The World Ocean Institute announced the cancellation of the annual World Ocean Summit 2020 which was to be held March 9-10 in Japan. [Read their press release here.](#)

## Science Daily Lists Ocean Policy Headlines

If you want to stay up to date on policies relating to the world's ocean, check out [ScienceDaily](#).

## "Whales Represent One of the Greatest Allies Against Climate Change..."

Read all about how whales provide food for the biggest oxygen supplier of all: the phytoplankton! Check out [GoodNewsNetwork.org](#)

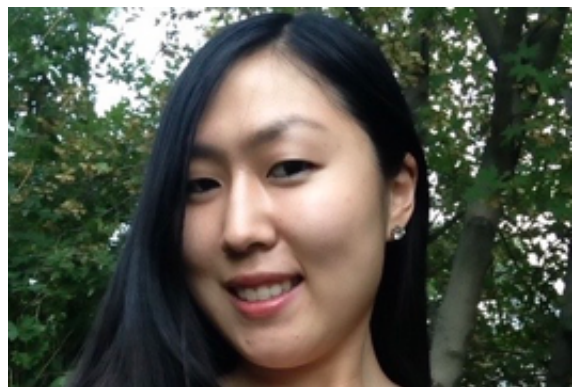
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## Updates to Our AFO Staff

We are happy to announce our team is growing! We have added these two exciting volunteers to our Aeon of Ocean Pod. Visit [Our Team](#) webpage for their profiles.



**Michael Patrick Conway** has joined us as **Fundraising Associate** in the Finance group.



**Shelia Axelsen** has joined us as **Grant Writing Associate** in the Finance group.



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## Past Events

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### VR Presentation at Cedar Ridge Elementary

Our own Marissa Nietzke led session on Coral Bleaching and VR experience with two section of a 6th grade class at Cedar Ridge Elementary school in Eden Prairie, Minnesota.



## Upcoming Events

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Aeon for Ocean is suspending all volunteer activities for 30 days.

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### Note From Editor...

We forgot to give credit to Kelsey's daughter for her great sea turtle drawing in the Jan/Feb AOF Newsletter. Sorry 'bout that!



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## Did You Know? ...

You can help keep recycling programs working better? Follow these guidelines:

- Do not put plastic bags and styrofoam in curbside bins, but recycle those bags at local store drop off sites.
- Remember, you can recycle electronics like TVs and computer monitors -- Did you also know that you can send things like computer cables, video adapters, cell

phones, rechargeable batteries, and ink cartridges to a variety of local retailers or through their local recycling centers to avoid the landfill.

For more information, check out <https://how2recycle.info/> and your local city, county, or waste hauler websites for their specific recycling list.

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