

Introduction

<https://pace.oceansciences.org/phyto/phytos.htm>

Phytopia is an online interactive that contains information on ecologically important phytoplankton and cyanobacteria species. The information is available by exploring concepts that are linked together by their relationships – and that as a whole can tell you about the characteristics of these abundant organisms.

Get to Know Phytos

<https://pace.oceansciences.org/phyto/know.htm>

Use the **Get to Know Phytos** page to investigate topics relating to phytoplankton biology. This map is the starting point to explore physical characteristics (green boxes), distribution (red boxes), harmfulness (yellow boxes), classification and taxonomy (blue boxes), pigments and storage products (purple boxes).

Click on any one of the elements on this map to open the *Phytopia* application.



What PACE Will Measure

<https://pace.oceansciences.org/phyto/measure.htm>

PACE will be NASA's most advanced ocean color sensor ever. It will measure the percent reflectance of electromagnetic energy across a broad range of wavelengths, which will be compared with the "spectral signatures" of phytoplankton. Use the **What PACE Will Measure** page to learn what parts of a phytoplankton's biology impacts what satellites can see.

Click on any one of the elements on this map to further explore this relationship in *Phytopia*.



Mighty Phytos

<https://pace.oceansciences.org/phyto/phytos.htm>

Twelve of the species in Phytopia are highlighted in more depth due to their unique ecological roles - these are the "Mighty Phytos."

The Mighty Phyto roster:

- **Alexandrium tamarens**- Eat shellfish? Watch out for this phyto!
- **Chaetoceros debilis**- Very common and potentially harmful
- **Dinophysis species**- Steals pigments and can be toxic!
- **Emiliania huxleyi** – "Hubcaps" help reduce carbon dioxide
- **Microcystis species** – Freshwater species that is harmful
- **Myrionecta rubra** – Dense bloomer that can turn waters red
- **Phaeocystis species**- Helps form clouds and beach foam
- **Prochlorococcus species** – Tiniest phyto is a huge primary producer
- **Protoperidinium divergens** - Deadly beauty? Can be toxic and glow
- **Rhizosolenia species** – Moves nitrogen from depth to surface
- **Synechococcus species** - Thrives where other phytos fail
- **Trichodesmium species** - Key source of nitrogen for food web

Mighty Phytos: Explore by Phyto

Use the **Explore by Phyto** section of the page to start your exploration of the "Mighty Phytos."

Hover over any of the species pictured to get a short profile of what makes them unique.

 *On mobile devices the image will automatically cycle through the different species.



To find out more about a particular species, click/touch the phytoplankton you are interested in. This will launch *Phytopia*, and the species you have selected will be in the center of the new screen.

Mighty Phytos: Explore by Role

Use the **Explore by Role** section of the page to investigate some key ecological roles.

To find out more about a particular role, click/touch the yellow square with the role you are interested in.

This will launch *Phytopia*, and the role you have selected will be in the center of the new screen.

