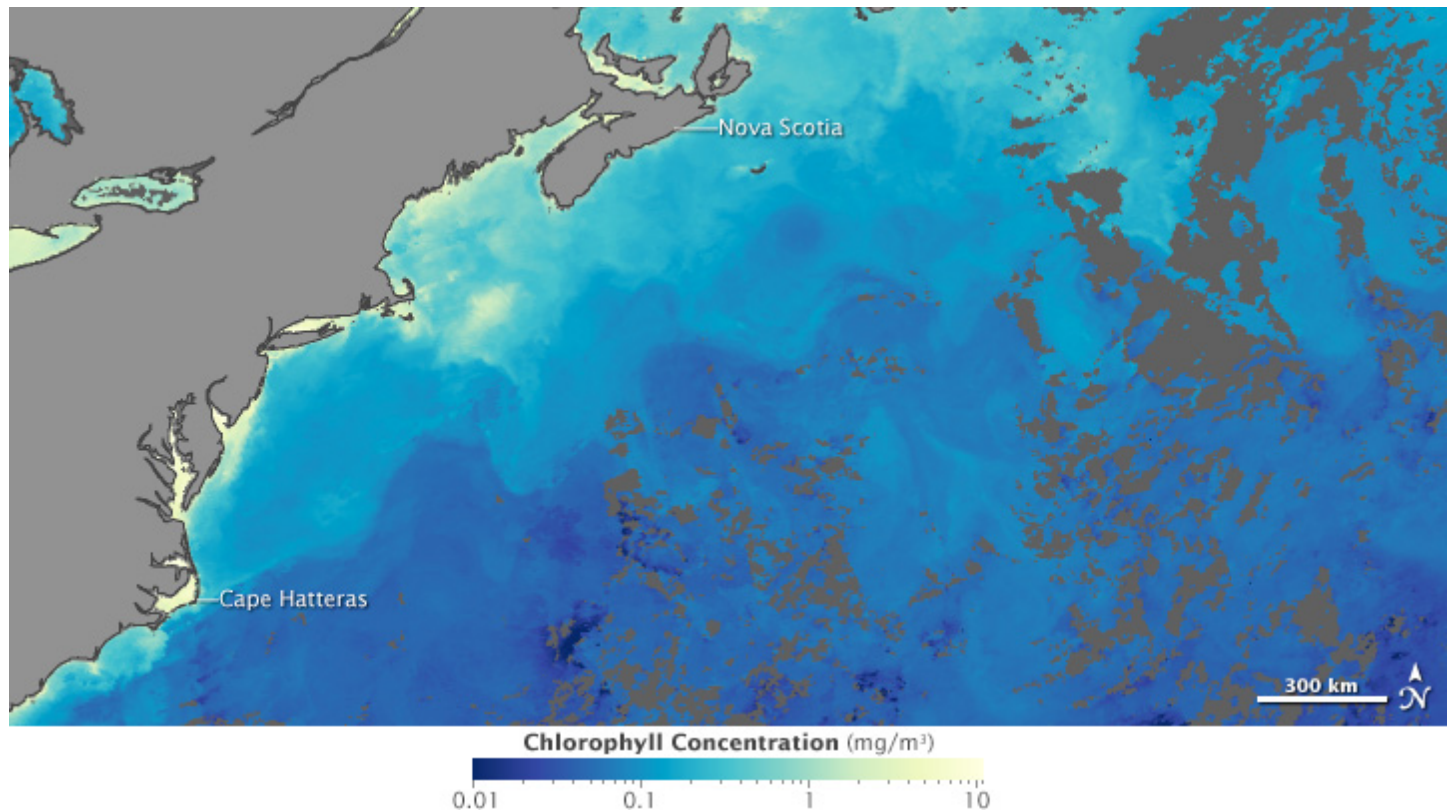


## My NASA Data - Mini Lesson/Activity

### How are Phytoplankton and Sea Surface Temperatures Related?



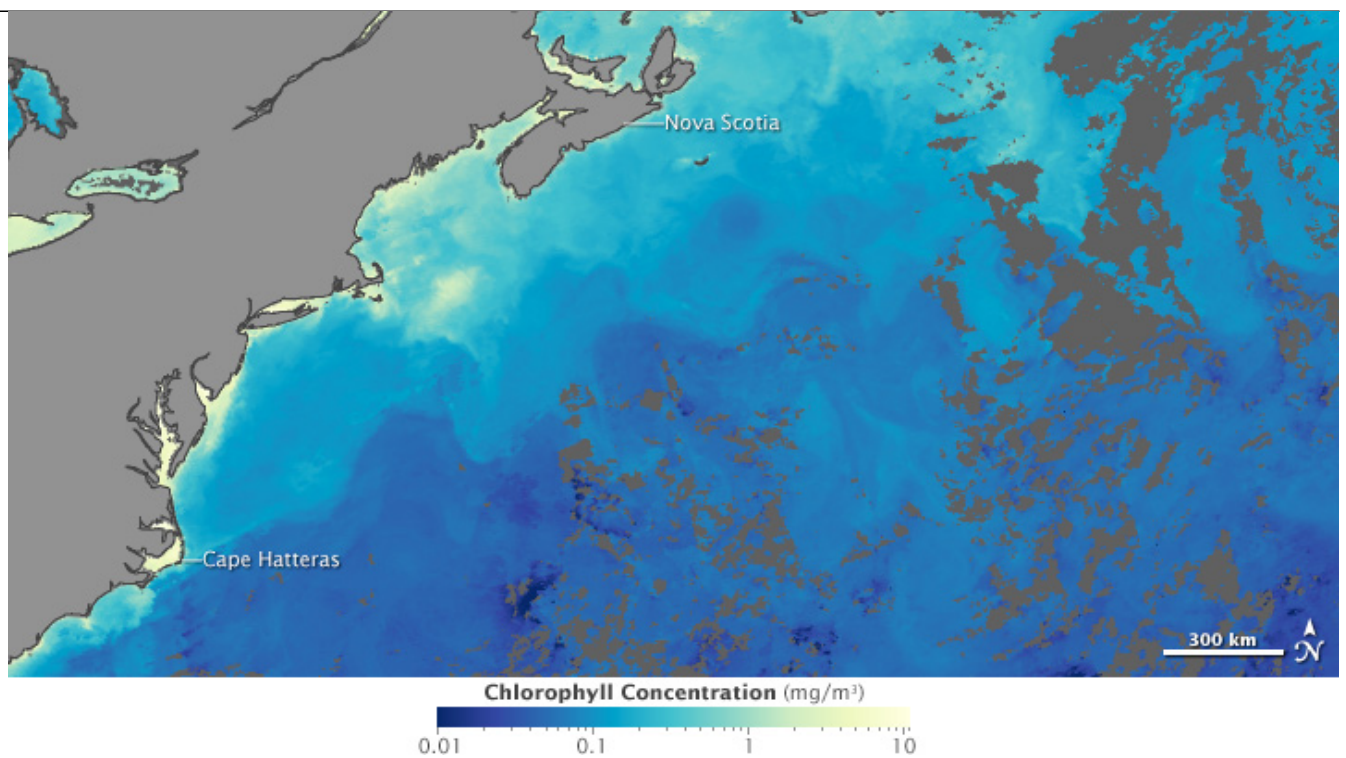
### Student Directions

[Phytoplankton](#) are microscopic, floating, plant-like organisms that live in oceans, lakes, and rivers. They use photosynthetic pigments (like chlorophyll) to convert energy from the Sun into organic matter. For this reason, NASA satellites can observe the amount of phytoplankton in the ocean by measuring chlorophyll concentrations.

Observe the Ocean Chlorophyll Concentrations and Sea Surface Temperatures maps, along with the video. Answer the following questions.

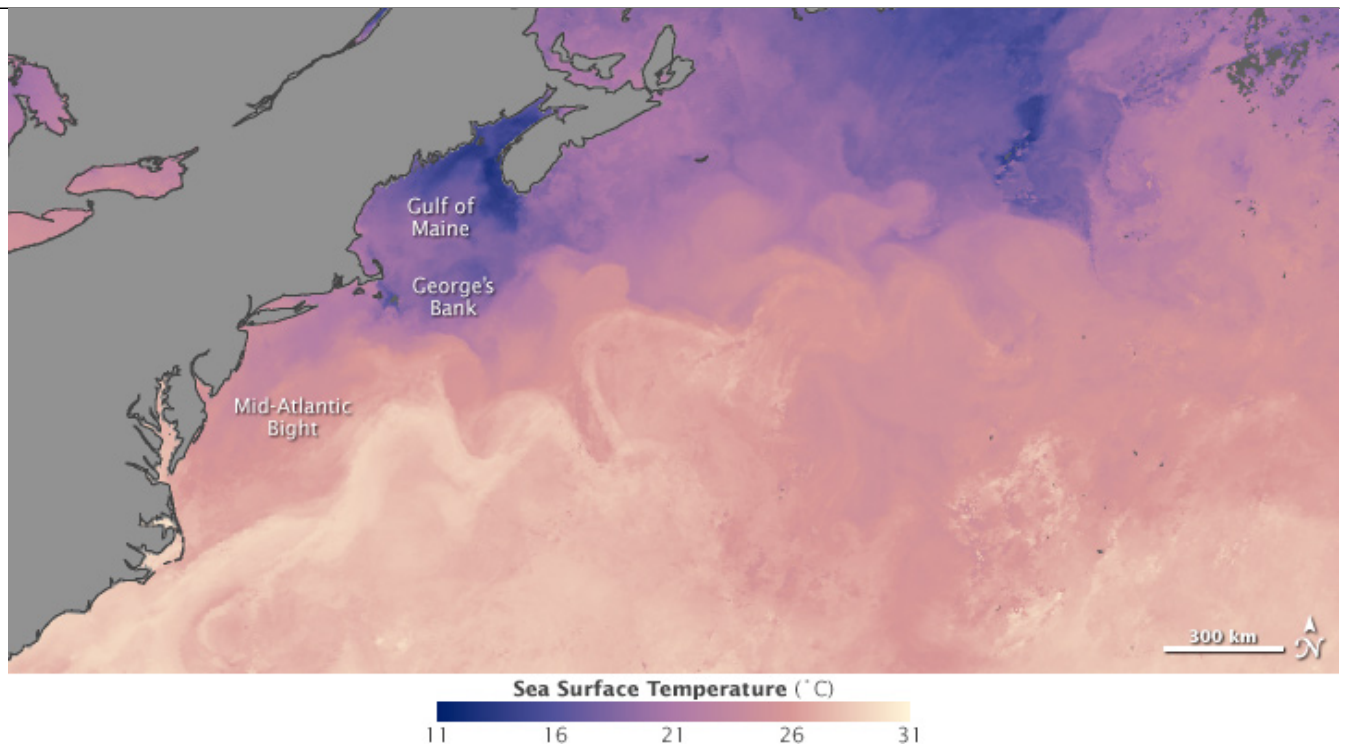
#### Steps:

1. Check with your instructor on how to submit your answers.
2. Analyze the Chlorophyll Concentrations color bar provided with the map.



[Chlorophyll Concentrations \(Source: NASA Earth Observatory\)](#)

1. Describe what you think the color bar legend represents.
  2. Describe where you observe the highest concentrations? Lowest?
  3. What factors do you think control where phytoplankton are distributed?
3. Now, analyze the Sea Surface Temperature mapped image, paying specific attention to the color bar provided and answer the following questions.



[Sea Surface Temperatures \(Source: NASA Earth Observatory\)](#)

1. Where do you observe the highest concentrations? Lowest?
4. Review the following video visualizing [Chlorophyll & Sea Surface Temperature](#) from 2002 to 2019 and answer the following questions:

[Video: Chlorophyll & Sea Surface Temperature](#)

Video

Chlorophyll & Sea Surface Temperature | <https://www.youtube.com/watch?v=kuEHZyj4g74> | Source: NASA Earth Observatory

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## 1. View the video Chlorophyll & Sea Surface Temperature.

1. Where are the highest concentrations of chlorophyll generally located? Do the trends that you observed in the North Atlantic also occur in the Southern Hemisphere?
2. How do the values of chlorophyll change over the seasons?
3. Why do you think that the polar regions experience these changes during the spring/summer seasons?

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Teachers, these mini lessons/student activities are perfect "warm up" tasks that can be used as a hook, bell ringer, exit slip, etc. They take less than a class period to complete. Learn more on the "[My NASA Data What are Mini Lessons?](#)" page.

Teachers who are interested in receiving the answer key, please complete the [Teacher Key Request and Verification Form](#). We verify that requestors are teachers prior to sending access to the answer keys as we've had many students try to pass as teachers to gain access.

## Visualization Tool

- [About the Earth System Data Explorer](#)