FjordPhyto

This project requires some pre-season preparation.

Background

Phytoplankton are microscopic, plant-like creatures that live in the ocean and use sunlight as well as nutrients to produce energy via photosynthesis. They are the foundation of the food web, providing a food resource for everything from microscopic, animal-like zooplankton to seals, penguins and multi-ton whales. They play a critical role in the global carbon cycle, drawing carbon dioxide out of the atmosphere and into the deep ocean. Phytoplankton also contribute to over half of the Earth's oxygen – more than all the trees and plants on land combined! Over the past 40 years, the Antarctic Peninsula has experienced some of the fastest warming rates on the planet. Warming temperatures cause ice and glaciers to melt, and this melted fresh water drains into the fjords, changing the ocean chemistry and potentially the phytoplankton community. FjordPhyto www.fjordphyto.org is a Citizen Science project relying on data collected by Antarctic travellers as they visit various fjords along the Antarctic Peninsula throughout the austral summer. By collecting phytoplankton throughout the entire summer season, citizen scientists can help researchers understand how melted glacial water can influence and change the population of phytoplankton in fjords and what impact this might have on the polar coastal ecosystem.

IMPORTANT NOTICE: It is recommended that you discuss permitting or authorisation needs with the project lead for any citizen science project in advance of the Antarctic season, engaging with your National Competent Authority as necessary. Please remember to add citizen science activities to your Post Visit Report form.

How can you/guests participate?

FjordPhyto is a fantastic project to engage guests in the hands-on scientific sampling process to collect phytoplankton from fjords along the Antarctic Peninsula using some of the same techniques as oceanographers. Sampling is designed to take approximately one hour, but we recommend alloting 1.5 hours for a relaxed guest experience. This can be done as part of a Zodiac cruise or a landing stop. There is a list of GPS coordinates for multiple sites of interest, which will be provided by the FjordPhyto team.

The project should be led by a trained expedition staff member, who will help guests record data and collect phytoplankton. The leading expedition staff member is responsible for making sure samples are labelled and stored properly as well as data sheets are filled in correctly. Recorded data should be scanned and sent via email to the FjordPhyto Team (see contact info below). Transfer of samples and gear back to the USA or Argentina will be coordinated between the FjordPhyto Team and the leading expedition staff member in charge toward the end of the Antarctic season.

Training and equipment required

FjordPhyto requires a few hours (2-3) of pre-season training to become familiar with the equipment and sampling methods. The leading expedition staff member is asked to schedule a call with FjordPhyto Team members. A virtual eCourse is provided to facilitate training, however additional in-person training session with FjordPhyto Team members, or an expedition staff with prior experience, is best to assure project success.

All equipment needed for this project is provided by the FjordPhyto Team.

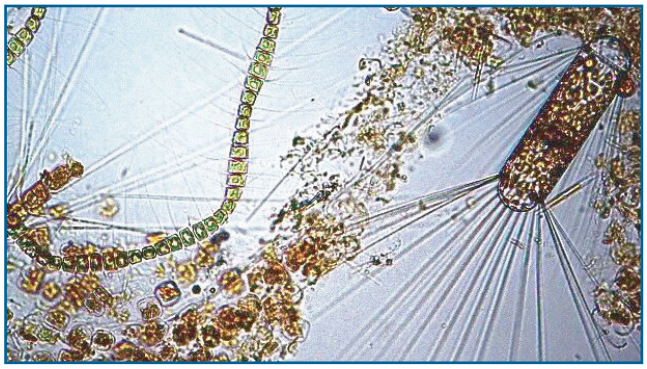
Expected results/feedback

The collected samples will contribute to the PhD projects of two graduate students investigating how glacial meltwater influences phytoplankton communities along the Antarctic Peninsula. Researchers will process the data and send updates and results to the expedition staff/participating company prior to each subsequent season. Guests can also follow blog posts and updates on www.fjordphyto.org and on social media @fjordphyto.

Resource material

Detailed project instructions, data sheets as well as on board presentation materials will be provided by the FjordPhyto Team.

Scientific project partners



The data and samples are sent to FjordPhyto scientists in the Vernet Lab at Scripps Institution of Oceanography, University of California San Diego and at Universidad Nacional de La Plata, Argentina for analysis.

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Main contact information

To see how you can get involved, for questions or concerns, please contact the FjordPhyto Team at fjordphyto@gmail.com

The Lead Scientists are PhD Candidates Allison Cusick and Martina Mascioni, and the PI Maria Vernet and CO-PI Rick Reynolds

Social Media:

@FjordPhyto (Twitter, Facebook, Instagram)
www.facebook.com/fjordphyto
www.instagram.com/fjordphyto
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