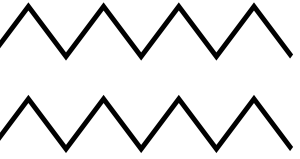


**APPLICATION OF DNA
EXTRACTION AND
SEQUENCING ON
PHYTOPLANKTON
POPULATIONS IN
GALÁPAGOS**

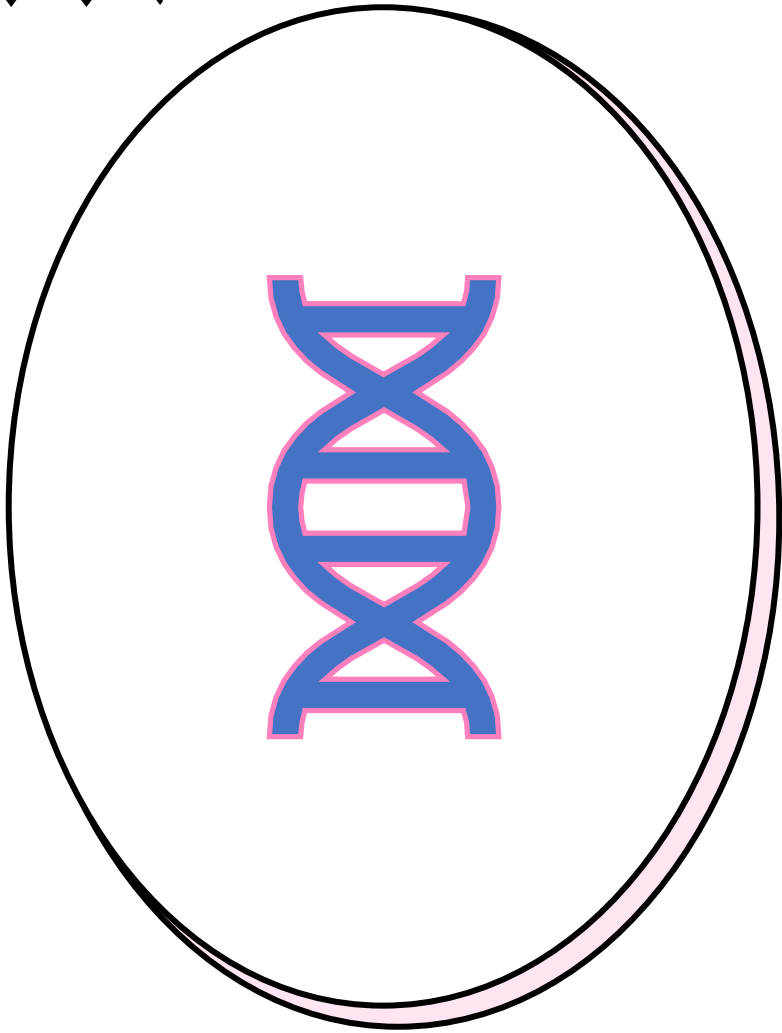


PRISCA LIM
MARCHETTI LAB





Overview



- Why Galapagos?
- Sample collection
- Sequencing protocol
- Results
- Interesting observations



○ What are phytoplankton?

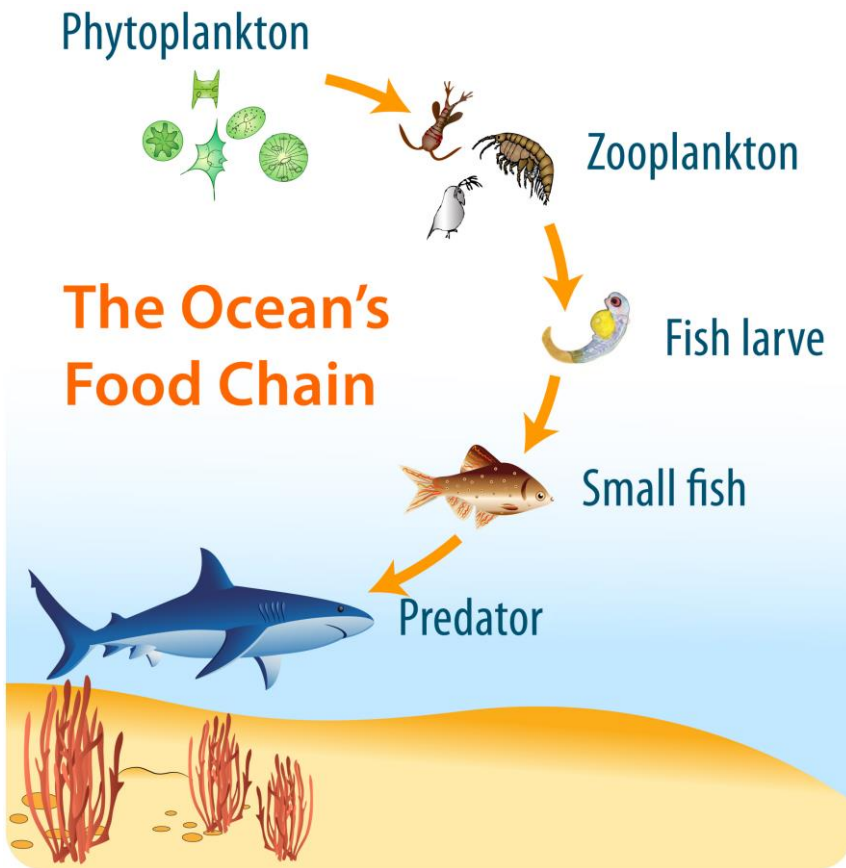
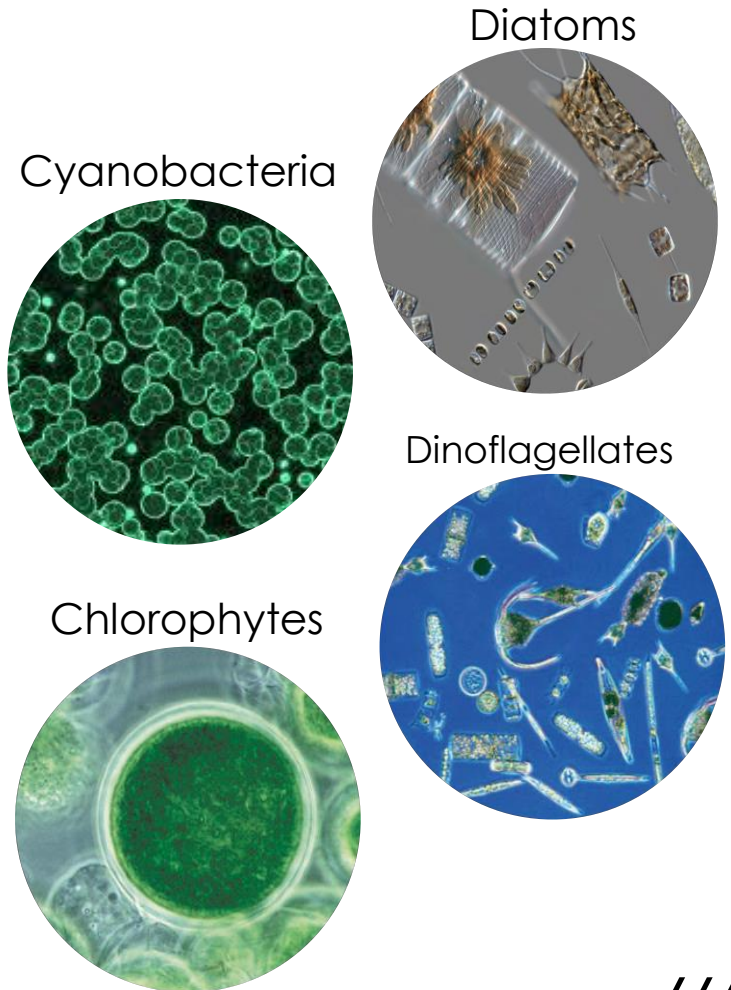
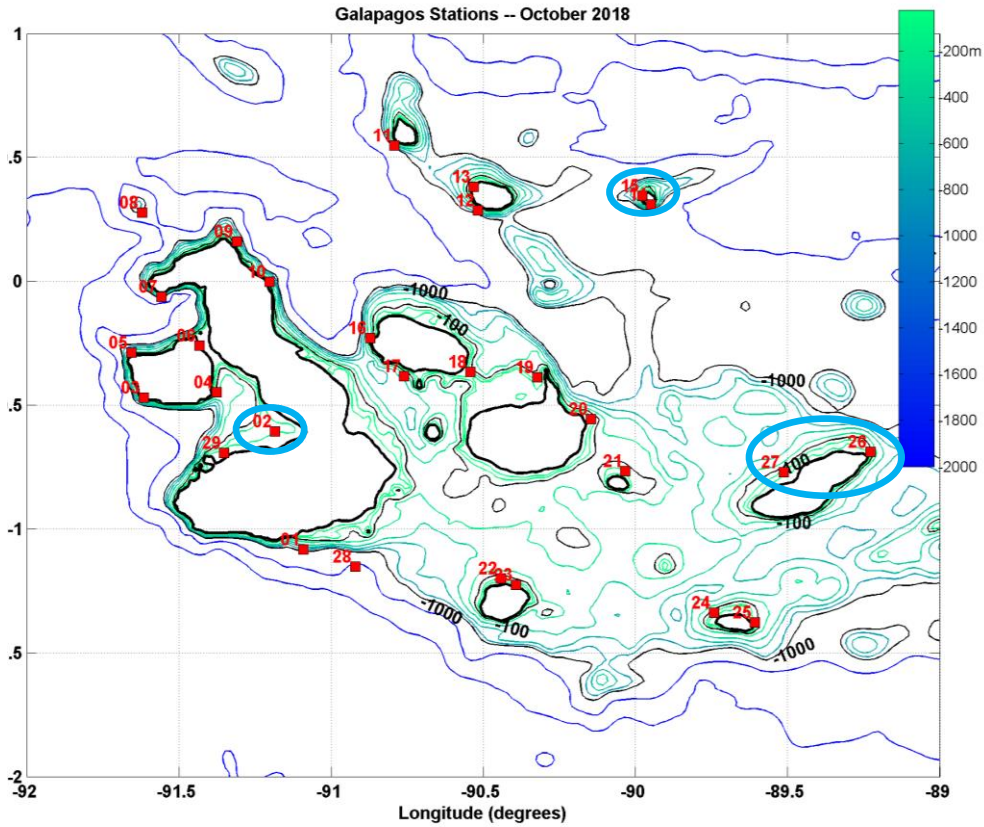


Image: <https://line.17qq.com/articles/cplpnppcv.html>





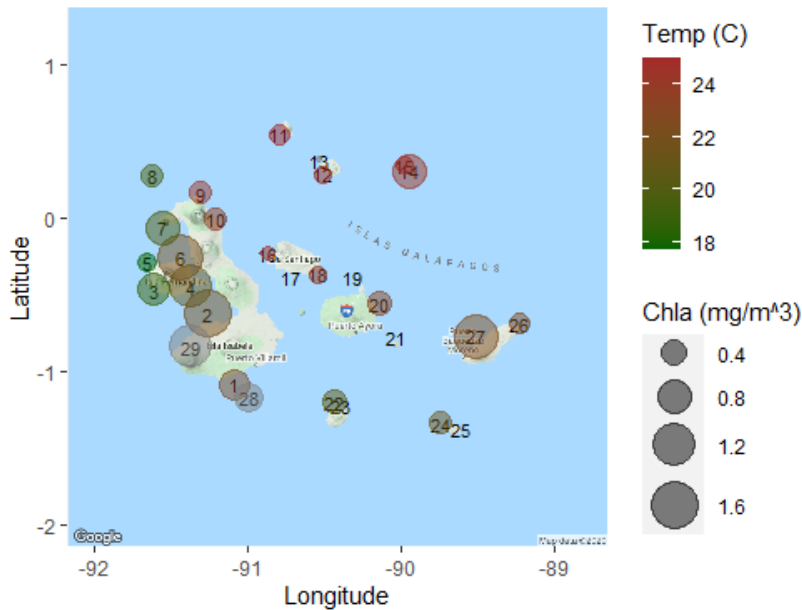
Sample Collection



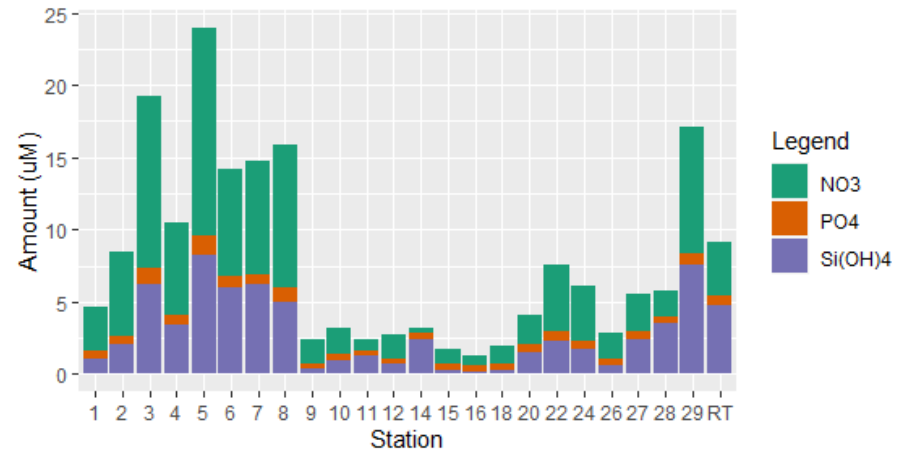


Spatial Distribution of Nutrients, Chlorophyll and Temperature

2018 site map

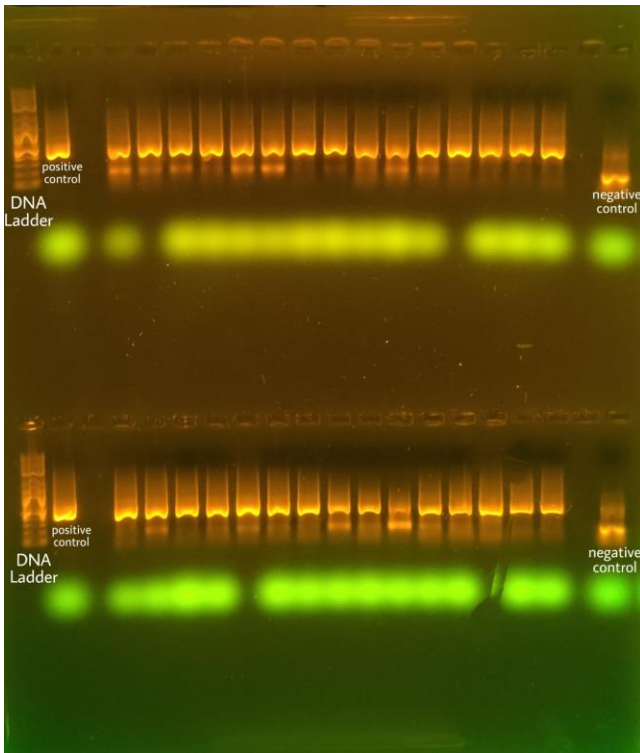


2018 Nutrients



0

Protocol



DNA extraction



Polymerase Chain Reaction



Gel Electrophoresis



PCR clean up



Quantification using qubit

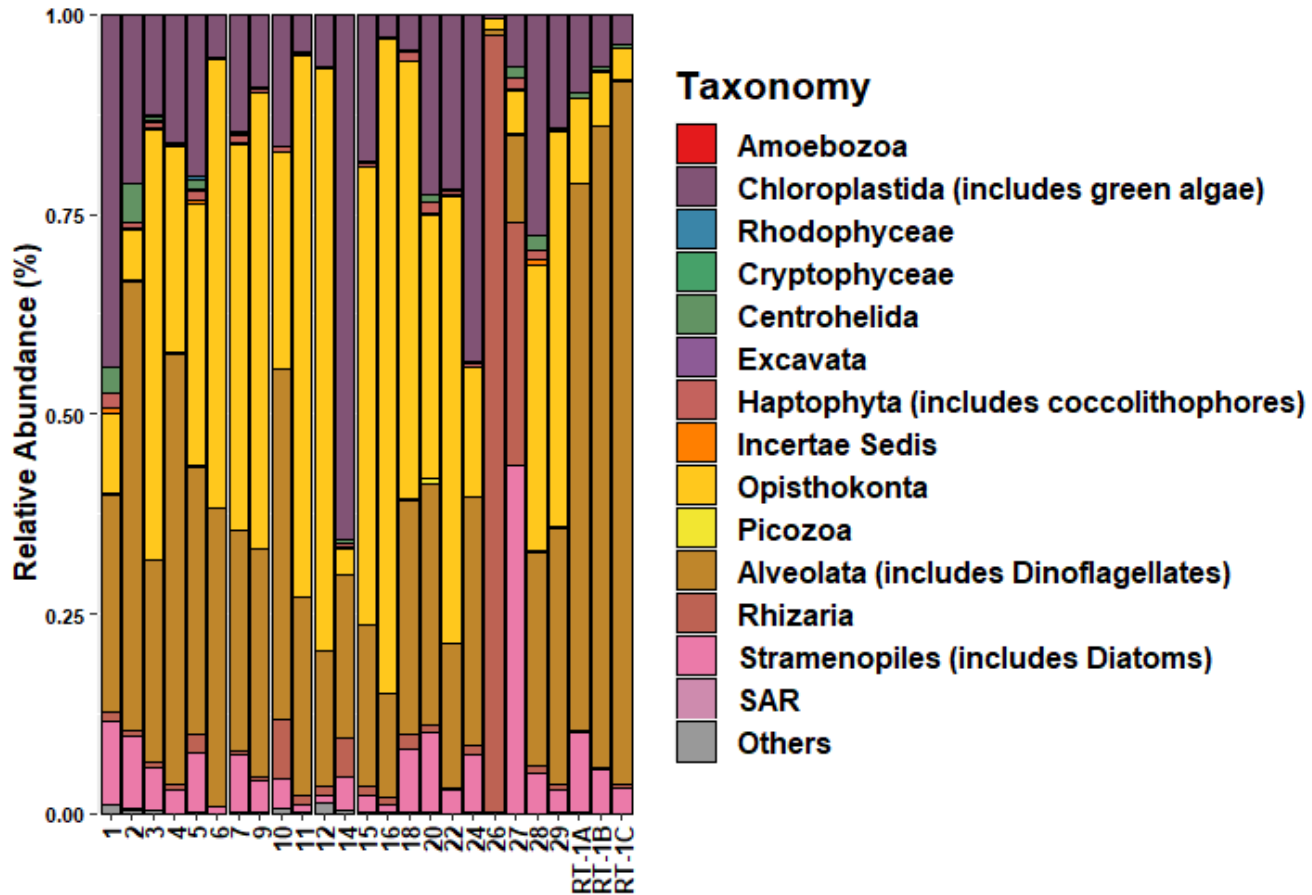


Send to sequencing facility





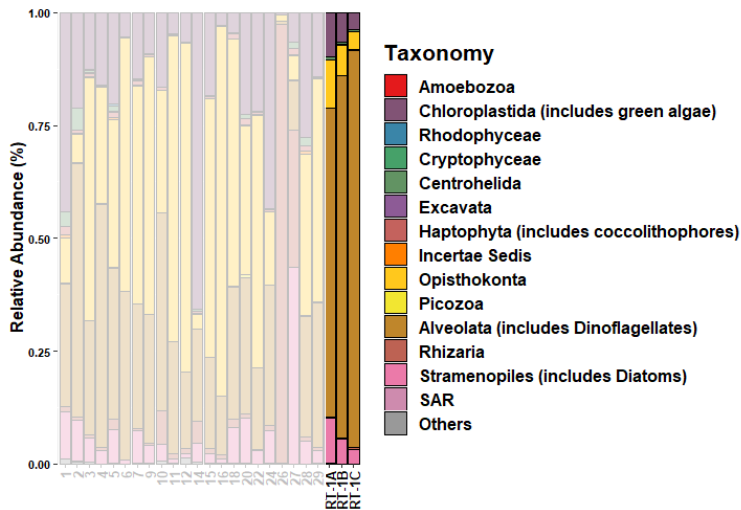
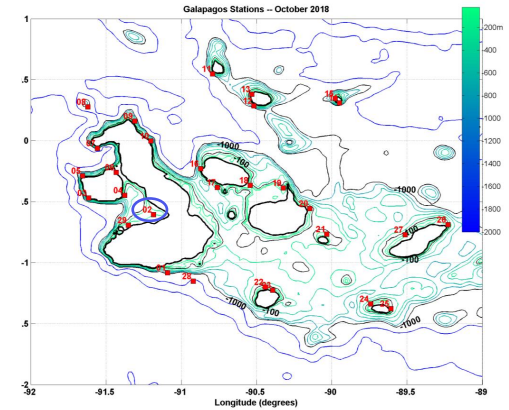
Results





Red Tide dominated by dinoflagellates

- Near station 2
- *Polykrikos kofoidii* (heterotrophic)
- *Scrippsiella lachrymosa*





Localized upwelling around Kicker Rock

- Stations 26/27
- High nutrient & chlorophyll concentrations
- Dominated by rhizaria & stramenopiles

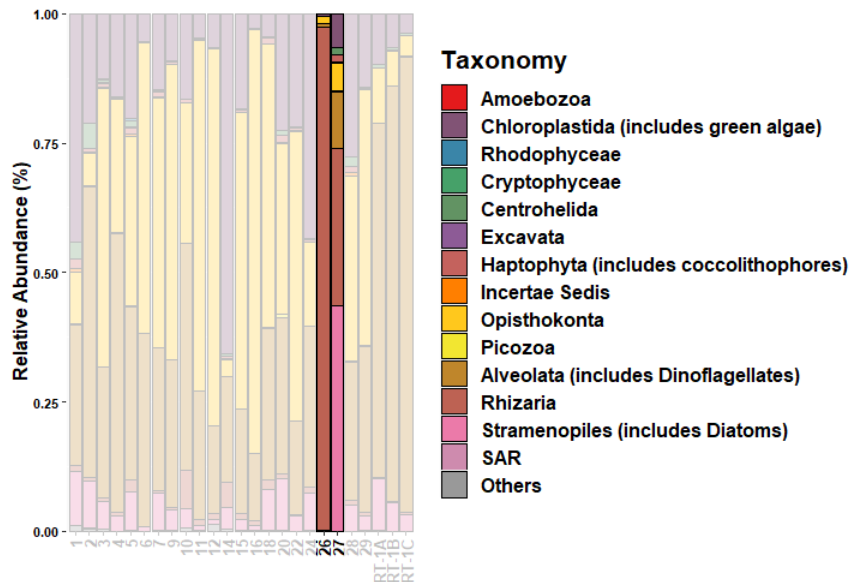
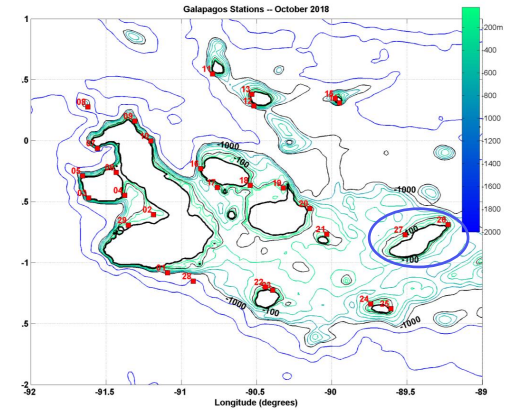


Image: <http://www.boldtravel.com/galapagos-kicker-rock-leon-dormido/>



○ Isla Genovesa, an isolated environment

- Station 14
- Bird-breeding location
- Dominated by chlorophytes

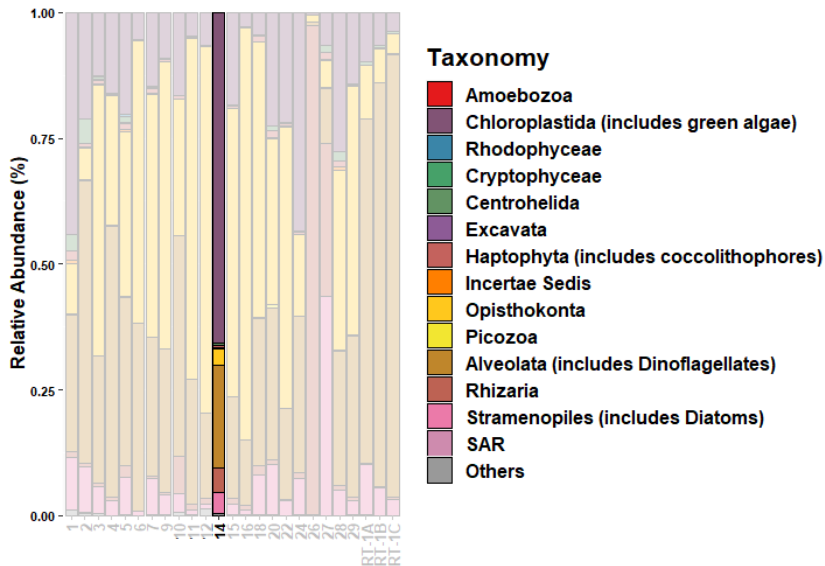
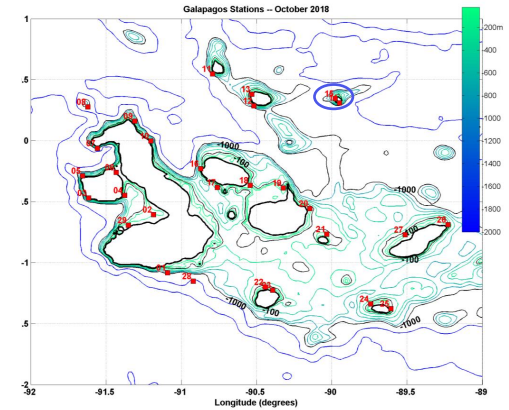


Image: <https://www.pinterest.com/pin/503840277035614614/>





Thank you!

Special thanks to:

- Adrian Marchetti
- Olivia Torano
- Sehyeon Jang
- Marchetti Lab

