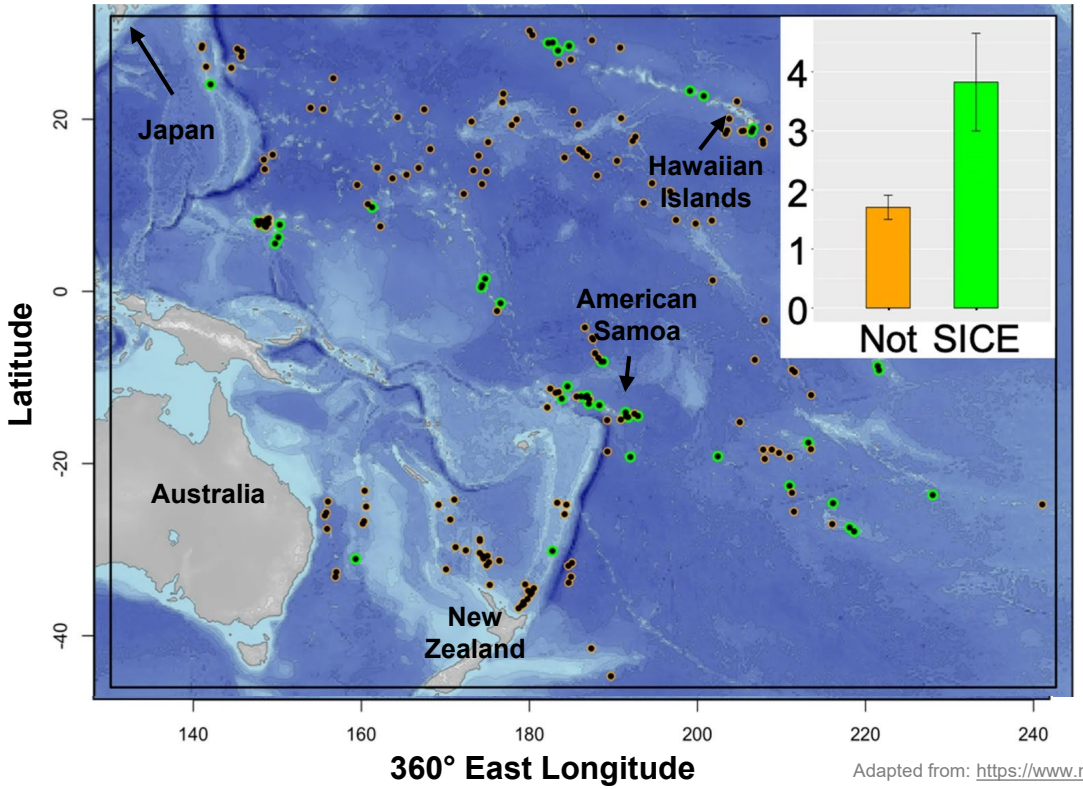
Seamount-Induced Chlorophyll Enhancements (SICE) based on analysis of satellite data.

Key

- Seamount associated with enhanced chlorophyll concentrations
- Seamount not associated with enhanced chlorophyll concentrations

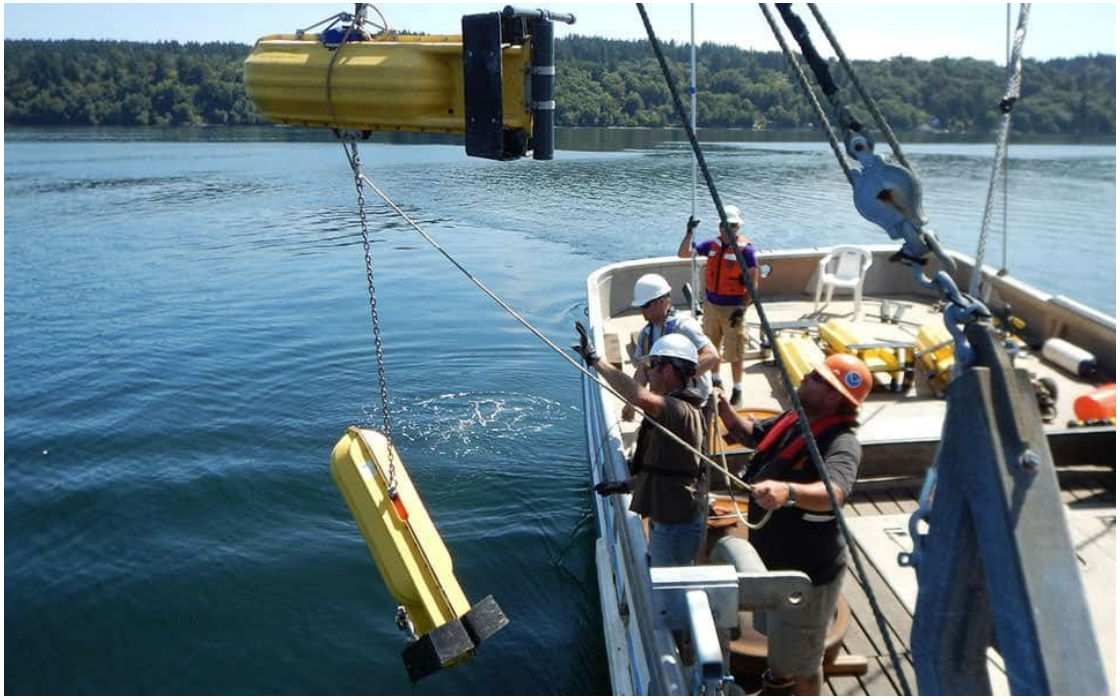


Inset graph shows mean historical total fisheries catch in tens of thousands of metric tons (y-axis) around seamounts not associated with and associated with enhanced chlorophyll concentrations (x-axis).

SICE = **S**eamount-**I**nduced **C**hlorophyll **E**nhancements

Adapted from: https://www.nature.com/articles/s41598-020-69564-0/figures/1

Measuring Currents



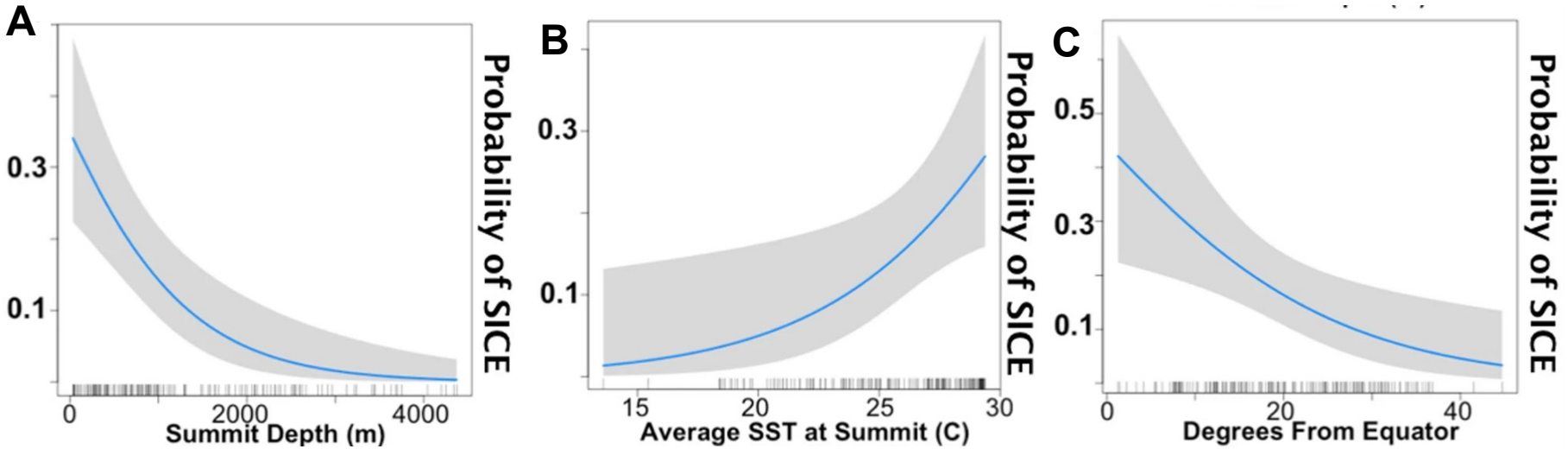
- Current meters attached to cable anchored to bottom at one end and suspended by a buoy at other end taking measurements of currents.
- Several meters were located at various depths along each cable so water motion could be studied at intervals throughout water column.
- Each cable with its attached current meters is called an array.
- Each current meter is capable of recording water movement in 3 directions, similar to x, y, and z- axis of a 3D graph.

Link: https://oceanservice.noaa.gov/podcast/july17/nop09-current-surveys.html

3-D Diagram of Mean Flows in Fieberling Guyot Circulation Cell

Redrawn from Mullineaux and Mills, 1997

Biophysical Drivers of Seamount-Induced Chlorophyll Enhancements (SICE)



Figures A, B, and C show the plots of the modeled probability of SICE with three different geophysical predictors: (A) summit depth, (B) average Sea Surface Temperature (SST), and (C) degrees from equator, all significant predictors of SICE.

Adapted from: https://www.nature.com/articles/s41598-020-69564-0/figures/2