Ocean Research Project - GO-MARIE - 2023

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Woodard & Curran Foundation's mission is to support organizations working to protect our water and environment. Ocean Research Project's mission is to investigate the health of the ocean's and the impacts from climate change on the marine environment.

The generous **Giving While Living Donation** nominated by Sean Tarbox was awarded at a critical junction to foster ORP's preparation in provisioning for the continuation and advanced scientific operations of the Arctic marine ecosystem. ORP pursues the scientific exploration of the western Arctic's glaciated coastline during the United Nation's deemed "Ocean Decade", where we contribute to programs and Sustainable Development goals, notably for oceans and climate studies. The surprise donation came a few months prior to deploying on the summer 2023 campaign. This surprise donation came at a time when ORP needed to make adjustments to the SRV Marie Tharp during a winter yard period in order to improve our ice-capable ship operations and to improve our power generation capacity to advance our mission's work in the Arctic.

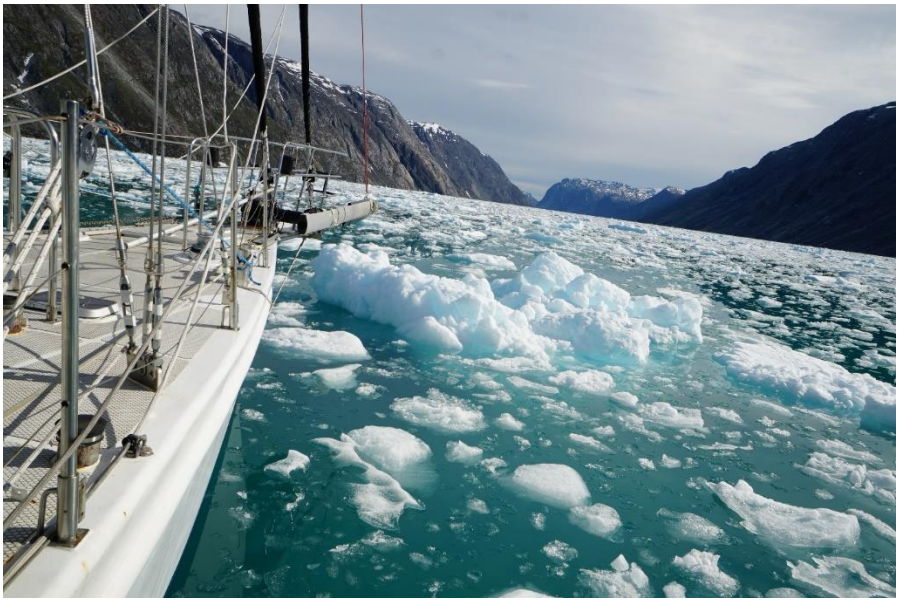


Figure 1 SRV Marie Tharp mapping Greenland glacial fjords 2023

The ORP set in late May of 2023 for the second year of a decadal mission, GO-MARIE, a Glacier-Oceans Mapping and Research Interdisciplinary Research Effort. It is the SRV Marie Tharp's second voyage and scientific campaign returning to Greenland and beyond. This year's primary operational objective was to advance our mapping further north, above the Arctic Circle, extending our investigation into the Canadian Arctic and Northwest Passage.

The Giving While Living Donation came at a pivotal time, a necessary boost that would allow ORP to further advance our capability to conduct ocean research amongst the melting glaciers. Director Matthew Rutherford expressed his gratitude to his 20,000+ podcast listeners in his Single-handed sailing show regarding this surprise donation to the Ocean Research Project.

The Giving While Living Gift contributed to ORP's mission needs towards operational capacity development:

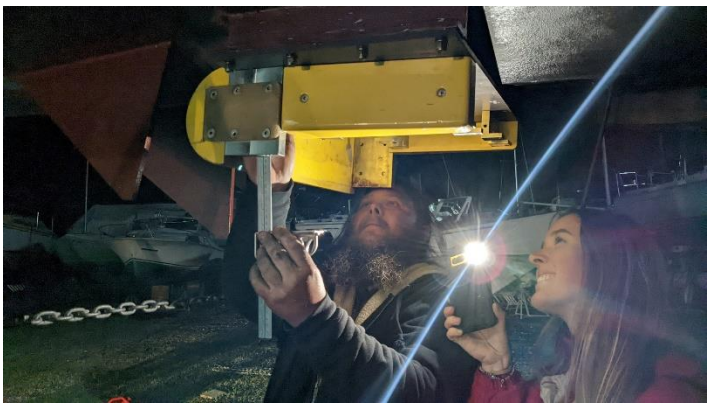
Ice-Capable Operations

This season, the SRV Marie Tharp would map more readily in ice strewn waters near the glaciers by way of two major ship hull transformations. First, by transitioning the placement for the operation of a science-grade multibeam echosounder from an affixed bow pole mount to a hull mounted configuration. Secondly, a propeller upgrade with propeller ice-impact protection guards was welded to its exterior.

Figure 2 Pole-mounted Multibeam Echosounder 2022 - Greenland

In 2022, during our maiden voyage of the SRV Marie Tharp and the inaugural GO-MARIE surveys, our activity in mapping the seafloor became limited to areas with limited ice because our sonar was highly exposed to ice impact where it was affixed to the end of a pole in front of our boat unprotected from smaller passing ice debris in glacial fjords. In addition, our propeller was exposed to smaller ice debris and was damaged during our operations. The propeller damaged led to a delay in our mapping activity for a week as we had to haul out at a shipyard for an emergency repair in Greenland's capital in Nuuk further reducing our mapping period.

In order to be able to return to investigate the great impacts glacier melt has on the coastal marine ecosystem across the Arctic and to map the uncharted seafloor of these areas we needed to prioritize boat modifications during our 2023 yard. However, our vessel preparedness fundraising goal was in need of a champion foundation to commit to our mission and Woodward and Curran Foundation Giving While Living Grant ensured we could meet this goal.



During the 2023-yard period, an upgraded propeller was installed onto the SRV Marie Tharp, the multibeam sonar was integrated into the hull and a volunteer welder installed protective guards around both features. Due the support of skilled volunteers our costs towards the installation to complete these critical modifications was significantly reduced.

Figure 3 multibeam sonar hull installation in the yard

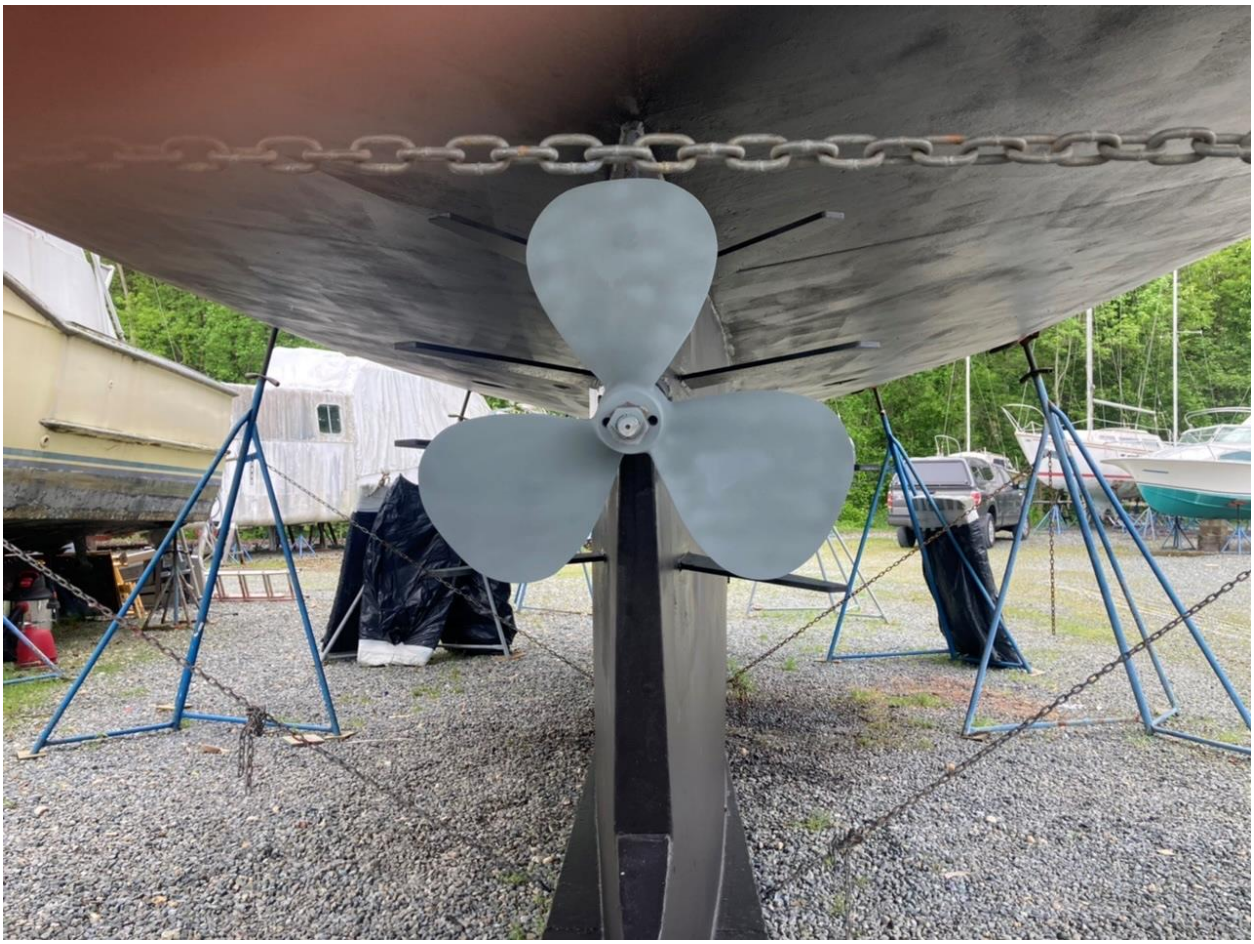


Figure 4 Propeller Installation and welded Ice-deflectors

Power improvement

Our vessel contains numerous systems that require a reliable power supply from our power generation options. Power maintains ship systems like lights, and pumping water but it also powers our lab fridges, our computers and data server, all critical components to our marine environmental investigation.

Additional power generation systems to the vessel can allow us to rely on less fuel demanding pathways for power generation such as the use of the diesel engine. By incorporating an electric generator and a wind generator we can support ships' power draw needs and we can ensure data integrity reinforcing the power pathways to maintain data and sample preservation in remote oceans.

During the winter yard period we were able to acquire and install both an electric generator and a wind generator to better support ship and science operations during our 2023 mission.

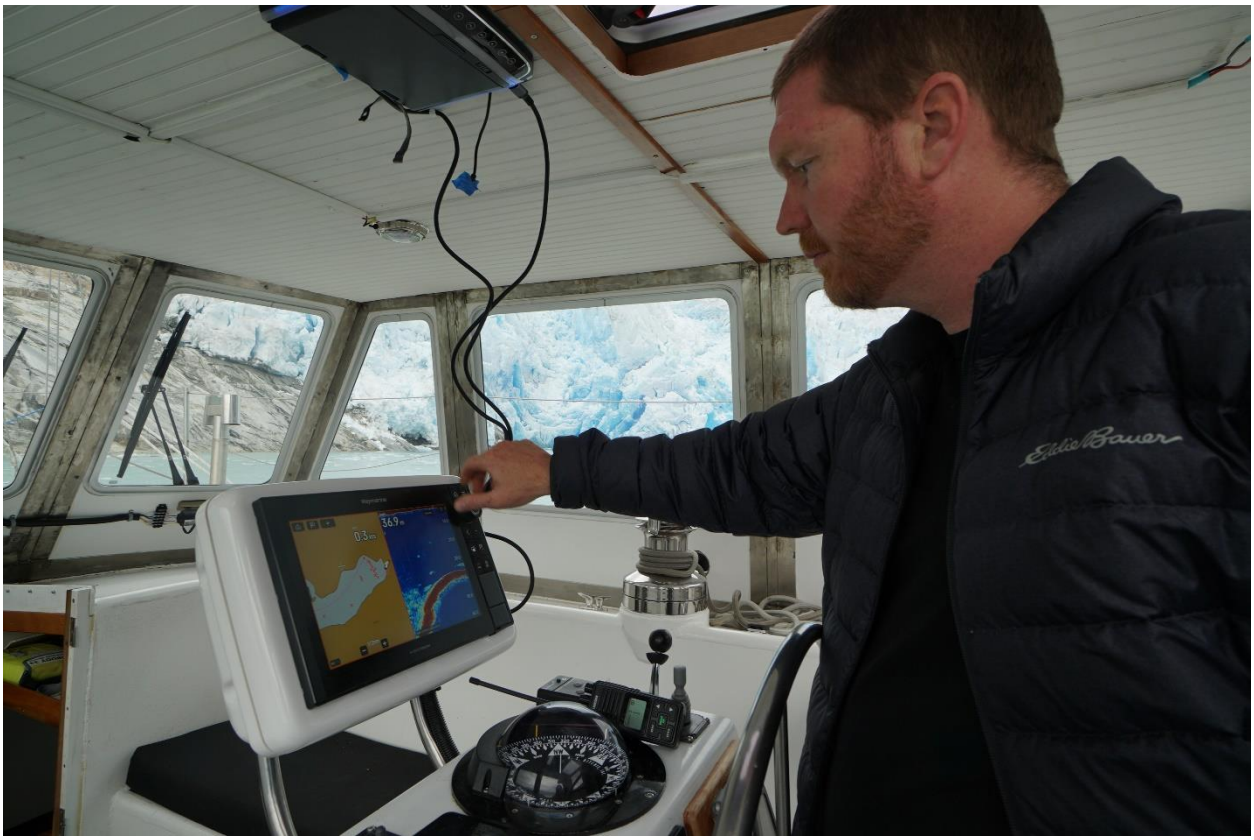


Figure 5 Captain Rutherford gets ORP to our sampling station

At present the SRV Marie Tharp and team are underway and finalizing project reports. Along with this report, you will find a few examples of our summer project activities. We had several scientific surveys, many of which the reports are still in the works.

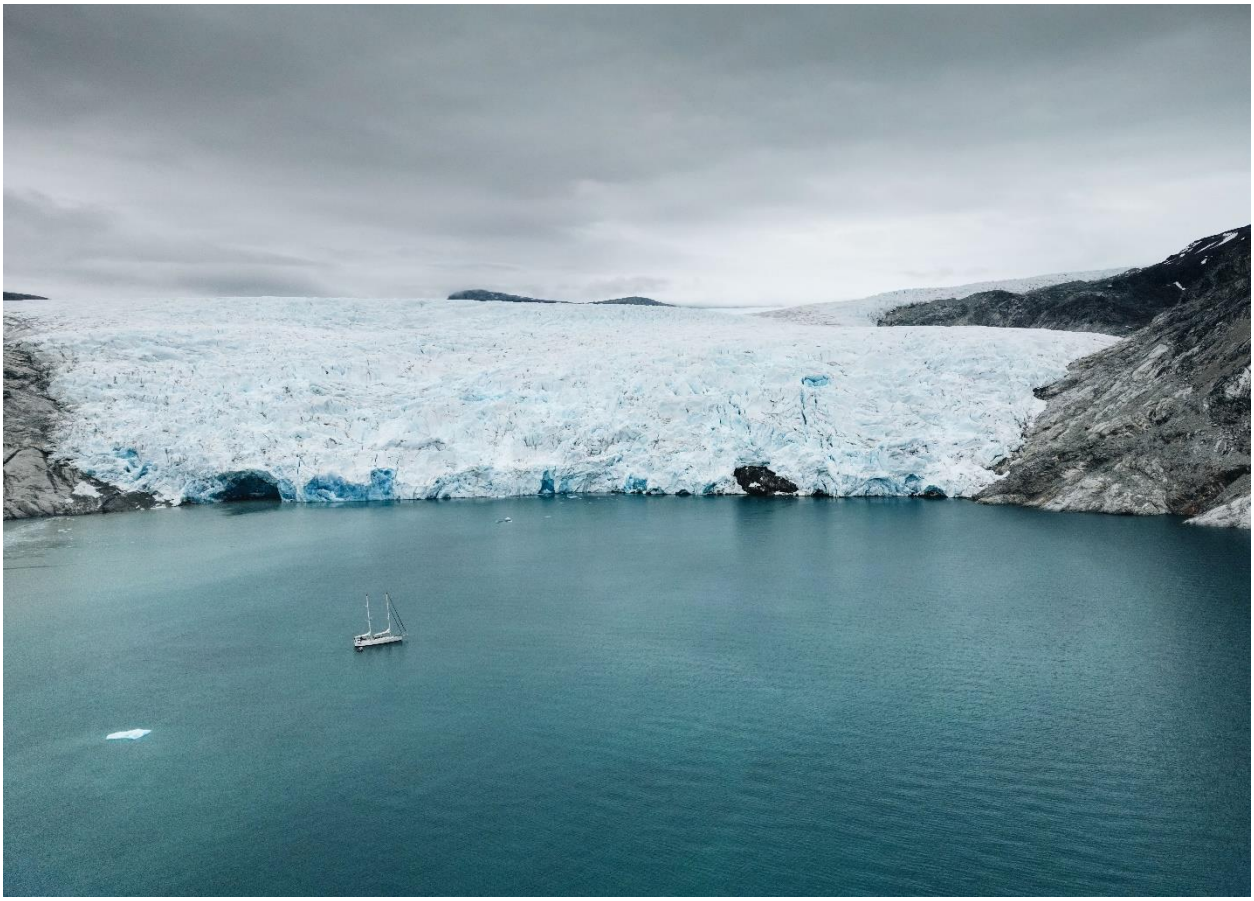


Figure 6 The SRV Tharp underway in Greenland