



PELAGIC
RESEARCH SERVICES

2023/24 DeSSC Community Meeting

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Director of Information

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- Pelagic Research Services was founded in 2013
- A commercial sensibility supporting:
Academic, Government, and Commercial Ocean Research
- An affordable, mobile, robust deep-water ROV system with services offered globally

2023 Recap



On mission with Ocean Networks Canada

PRS assisted in maintaining and installing infrastructure and instrumentation at ONC's NEPTUNE observatory located off the west coast of Vancouver Island.

Odysseus dove to depths of 2,600 meters, recovering and deploying equipment that enables continuous ocean data to keep flowing from NEPTUNE to ONC's open-access data portal, Oceans 3.0.

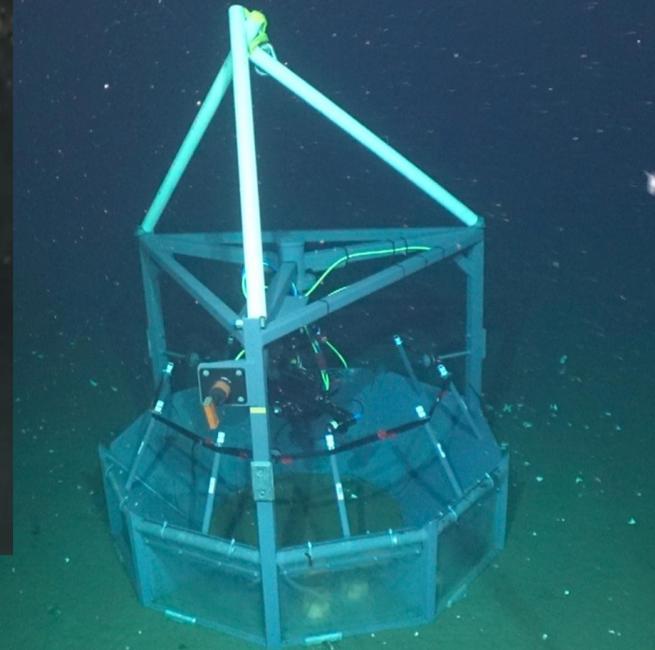
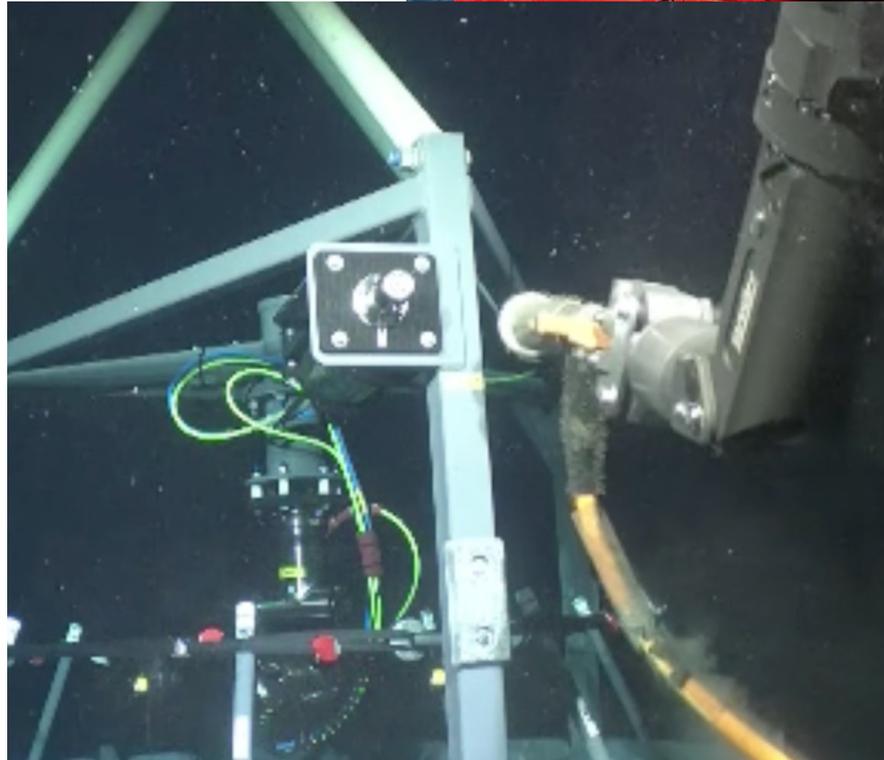
OCEAN
NETWORKS
CANADA



On mission with Ocean Networks Canada

Running Tide

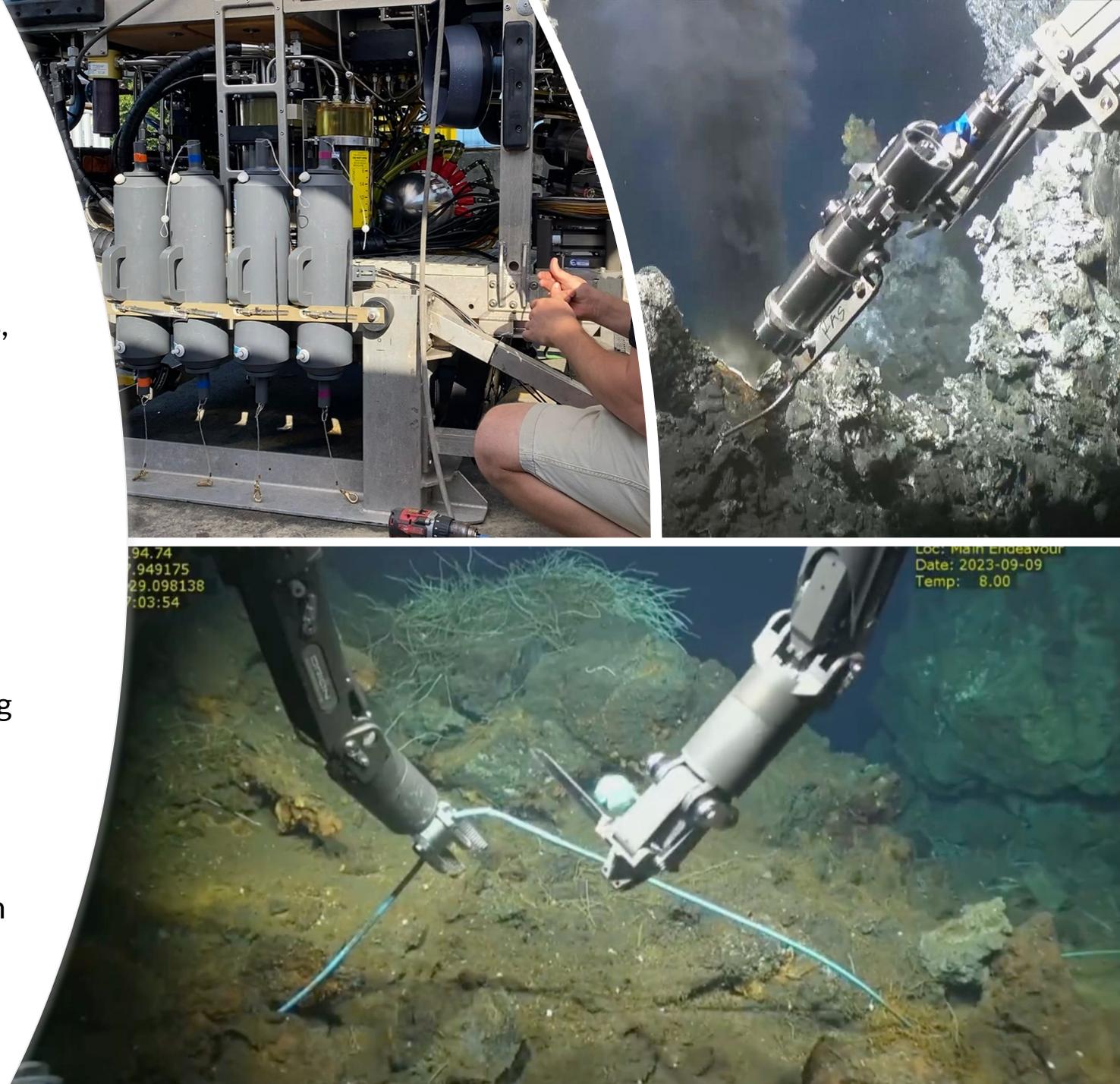
An observational platform designed by ONC was successfully installed with Running Tide's Carbon Buoys at the Clayoquot Slope site at ONC's NEPTUNE seafloor observatory. This research experiment is investigating what happens to carbon-capturing biomass on the seafloor and its potential impacts on the deep sea environment.



On mission with Ocean Networks Canada

Project tasks

- Utilizing heavy-lift for deployment of platforms, hydrophone arrays and experiments along with recoveries of equipment and sensors.
- ROV Niskin water sampling
- Push core sampling
- Vent plume sampling
- Gas tight sampling
- CTD deployment & recovery
- Equipment inspections, relocations and cleaning
- Horizontal Benthic Video Transect
- Vertical Video Transect
- Deploy, connect & recover junction boxes
- Lost shipping container location & investigation
- Deploy Rotary Sonar
- Cable Surveys



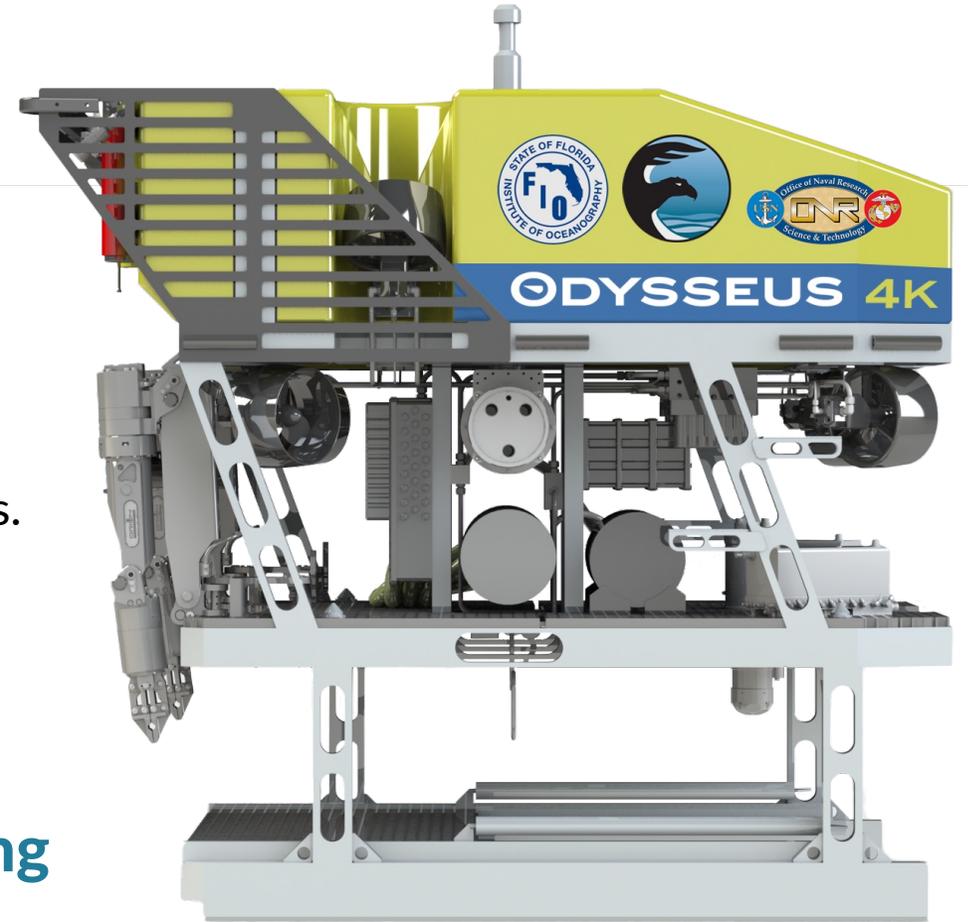
A new approach for supporting science

In 2023 we initiated a new business model to further benefit research.

- A private/public cooperative effort to reduce overhead costs.
- Building, operating & maintaining ROVs, based on the proven science/work-class Odysseus 6K.
- Supporting research with successful tools & expertise.



Our exciting inaugural project being the design & initial production of ROV Odysseus 4K in partnership with Florida Institute of Oceanography (FIO).



ROV Odyssey 4K

A highly-capable, 4000-meter deep-sea system built on the success and advanced features of the PRS Odyssey 6K.



As an integral asset of FIO's research vessel *Western Flyer*, Odyssey 4K is designed to reveal the deepest, most mysterious parts of the Gulf of Mexico. Launching through the *Western Flyer's* moon pool, Odyssey 4K will be used to livestream video, data and shipboard activities using remote technologies, with the goal of allowing people on land and on ship to cooperatively conduct research in real time.

OceanGate Titan

Rescue & Recovery Mission

June 18–28, 2023



Sunday, June 18

(All times are UTC)

- 12:00** Titan dive to the *Titanic* begins.
- 13:45** Last communication with the *Polar Prince*.
- 19:00** Planned surface time.
- 21:40** U.S. Coast Guard notified of Titan's disappearance.
- 21:49** PRS is activated by OceanGate to respond.





Monday, June 19

PRS began packing and mobilizing the **Odysseus 6K ROV System**. Throughout the day PRS staff arrived onsite and by late afternoon PRS left East Aurora operations on three semi trucks to Buffalo-Niagara International Airport where 2 U.S. Air Force C-17s were waiting with a third en route.







Tuesday, June 20

11:00 Loading onto C-17s begins.

17:30 First C-17 with PRS assets & team leave Buffalo.

20:45 All planes & team members have arrived in St. John's.



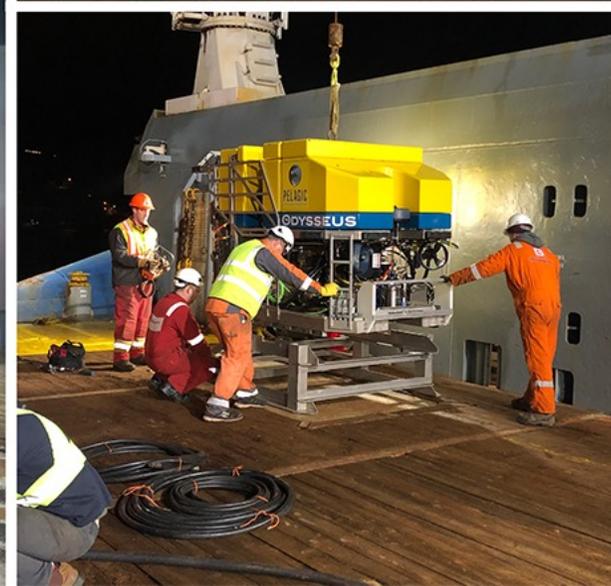
Wednesday, June 21

4:00 7.25 hours after arriving at the airport, all assets are now loaded and secured to the deck of *Horizon Arctic*.

8:10 *Horizon Arctic* departs St. John's to the last known location of the Titan submersible. While in transit, the PRS team assembles, tests, and readies the ROV system for immediate launch upon arrival.

Of critical importance is the integration of the PRS USBL topside and subsea navigation system.







Thursday, June 22

7:53 The *Horizon Arctic* arrives at the last known location of the Titan submersible. PRS coordinates with vessel *Deep Energy* to execute a combined rescue plan.

8:06 Odysseus 6K ROV is off deck and begins the first dive...



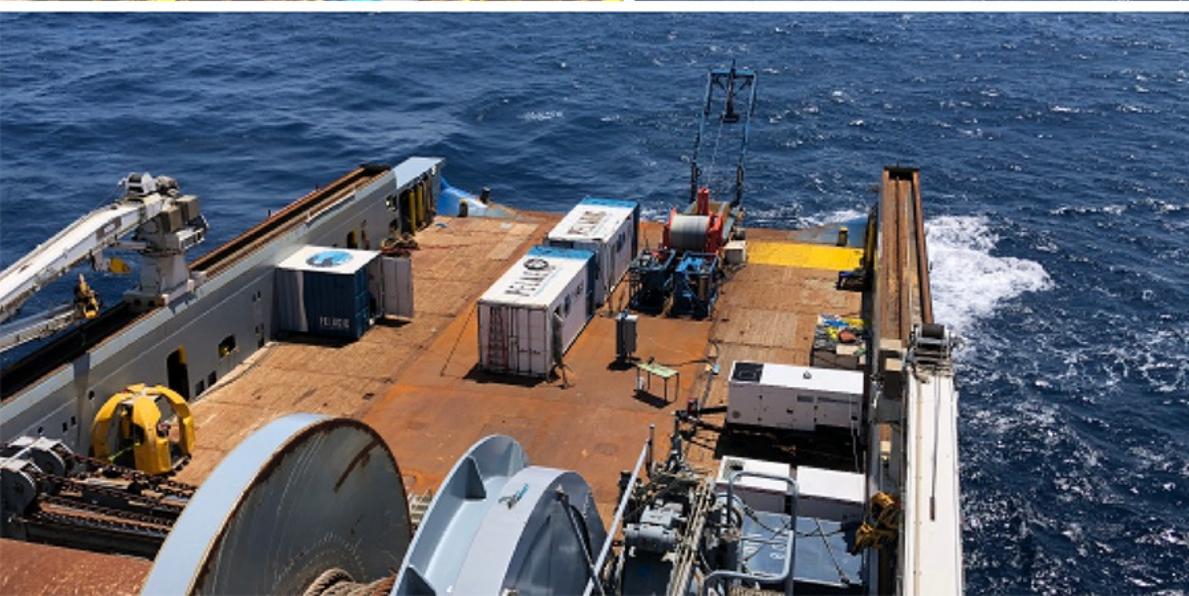
Thursday, June 22

In two hours, at **10:15 UTC**,

Odysseus arrives on the seafloor at 3835m.

Equipped with heavy-lift rigging, special-built tools,
and extra USBL transponders, the search for Titan begins
ready to fulfill the coordinated rescue plan...





Shortly after reaching the seafloor, debris from the Titan submersible was discovered. We continued to search the area and document the full scope of the debris field.

During this period, the US Coast Guard Incident Command contacted the families of the Titan crew, and the mission changed from rescue to recovery.



PRS recognizes the selfless efforts of countless individuals, companies, government entities, and the community of St. John's. The extraordinary response offered real hope for rescue of Titan while keeping personnel safe and effectively working together in the search.



***Between June 22 at 8:06 until June 26 at 23:30
PRS maintained continual ROV operations, 24 hours per day
and completed a total of seven dives.***

Working with the Horizon Arctic, and utilizing the heavy-lift capability of Odysseus 6K, PRS recovered all objects of interest as directed by the Incident Response Team.





Wednesday, June 28

PRS demobilizes from the *Horizon Arctic* and begins the transport of assets and team members back to East Aurora.





Monday, July 3

All Odysseus 6K ROV System assets return to the operations base in East Aurora.

All items are cleaned, inspected, and stored, ready for the next mission...





Key timeframes

- Full packing of Odysseus System & loading onto trucks: **11 hours**
- All assets loaded onto C-17s and airborne: **6.5 hours**
- All assets moved from St. John's Airport and loaded onto ship: **4.25 hours**
- ROV Odysseus 6K operational dive hours: **80+ hours**





Questions or additional info:

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