

OceanX + OceanQuest - Around Africa Expedition 2025

Leg 3, Walvis Bay, NA – Mindelo, CV

Weekly Report 1 (14 – 14 March 2025)

On Friday, 14 March, the final day of lab work with the Early Career Ocean Professionals (ECOPs), divided into three teams, marked another milestone in our curriculum—the start of the final block of project work. In the evening, the last group of ECOPs presented their work and research. We had a full house with guests from the crew and the NASA team on board to listen and ask engaging questions.

The following Saturday marked a well-deserved rest day that coincided with the ship's crossing of the equator—a milestone rich in maritime tradition. Crew members crossing for the first time took part in a time-honored ceremony, the details of which are traditionally kept secret until experienced firsthand. This ceremony brought everyone together in good spirits, and by the end of the day, participants emerged as Shellbacks, proudly holding certificates to mark the occasion.

Sunday, 16 March, was the first day of the final block of the curriculum, which saw the ECOPs beginning to shape their own projects, which they will present on the last day of the expedition. However, it was an additional opportunity for many to wrap up unfinished lab work from the previous week. The evening delivered a truly unforgettable moment - a big pod of rough-toothed dolphins encircled the ship, putting on an extraordinary sunset

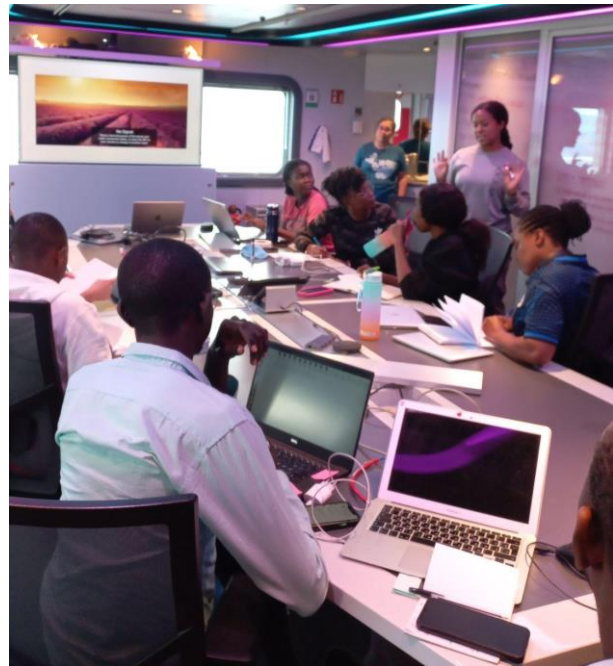
performance. Later, an engaging coffee chat with Chief Officer Marko unveiled fascinating insights into ship navigation, radar systems, and light communication between vessels.

On Monday, 17 March, the week of ECOPs shadowing the OceanXplorer crew kicked off with Chef Scott offering a hands-on introduction to culinary artistry. The morning sessions on Day 4 and Day 5 concentrated on bread-making, while the afternoon sessions posed the challenge of creating a croquembouche — a dessert none of the ECOPs had ever encountered or heard of. Challenge accepted! A remote lecture by Jan Newton, Executive Council Co-chair of the



Global Ocean Acidification Observation Network, proved deeply inspiring. She introduced the Global Ocean Acidification Observing Network and invited contributions and memberships. Meanwhile, the CTD suffered a breakdown, necessitating a manual Niskin bottle surface cast to continue data collection.

Tuesday, 18 March, began with a coffee chat with Alvin, the bosun aboard OceanXplorer. As part of the chat, Alvin offered the ECOPs an exclusive tour of previously unseen areas of the ship. In the morning, OceanX Science Program Director Mattie confirmed that the CTD would remain out of order up until reaching port, prompting a revised plan: ROV dives with Niskin bottles to supply all teams sampling seawater and an ROV dive later in the week en route near Cape Verde to explore seamounts in the area. Additionally, the ship conducted some working boat testing, yielding our first samples of sargassum macro-algae,



which had begun appearing in the water the previous day as we entered the Great Atlantic Sargassum Belt stretching from West Africa to the Gulf of Mexico. In parallel, project work is progressing steadily, with the ECOPs preparing for their upcoming presentations on 23 March. They have selected topics to work on, ranging from satellite imagery comparisons with in-situ measurements to microbiome analyses of zooplankton communities and phytoplankton abundance in oxygen-minimum zones. Many students also went for media-based projects, such as short documentaries and educational virtual reality experiences.



Excitement ran high as the ROV was launched on its first dive of this leg on Wednesday, March, to sample multiple stations at a maximum depth of 200 meters. The ECOPs had the opportunity to watch the dive from the mission control room, witnessing data collection in real time and captivated by the live footage as pilots Olaf and Nico expertly maneuvered the ROV. The dive revealed siphonophores, jellyfish, and a few curious fish.



Later in the day, the ECOPs had the opportunity to witness zodiac tests and receive a boat navigation workshop. We encountered an abundance of Portuguese Man o' Wars in that area — striking warm-water siphonophores known for their vibrant, air-filled sacs that float on the ocean's surface like miniature sails. Despite their jellyfish-like appearance, they are actually colonies of specialized organisms working together, and their long trailing tentacles can deliver a painful sting. The day concluded with a firefighting training session led by Second Officer Izzy Backhouse, ensuring that all aboard had crucial safety skills and a lot of fun while gaining those.



On Thursday, 20, we were fortunate to host the premiere of a workshop on underwater filmmaking, led by Steve Hudson, the head of the OceanXplorer dive center. The underwater filmmakers among the ECOPs found it particularly useful, learning about their mistakes and opportunities for improvement. After lunch, Kobun Truelove, a senior research technician in the Biological Oceanography Group at MBARI, USA, along with Sophie Seeyave, the CEO of POGO, delivered an online talk on eDNA and the mission of the Ocean Biomolecular Observation Network. Many of the ECOPs on board spend numerous hours each day in the lab working with eDNA, making this a valuable supplementary training for them. Later in the day, Nathan Hubot, a faculty member on board, offered a talk on his PhD topic, the ecology of jellyfish. We concluded



the day with two creative workshops: a lab led by AnnMarie Thomson from OceanX on constructing LEGO robots with LEGO Education SPIKE sets and a chat with Dan Goods from NASA about merging science and art.

The swell has increased, and we are back in a situation where some people feel seasick. We have four more days of our voyage before we reach Cape Verde. These days will be focused on several more workshops with the OceanX team and the OceanXplorer crew, including a hyperbaric chamber experience with Steve Hudson in which five lucky ECOPs can participate, a talk on ocean justice from Kailani Acosta, and a workshop on submersibles with OceanXplorer ROV and submersibles pilot Olaf Dieckhoff. We expect these last days to pass quickly, as the ECOPs will also be busy finalizing their projects and preparing to present them on the 23. The highlight of these remaining days will be the ROV dive once we reach the seamounts near Cabo Verde.

This is the second and final report from Leg 3, Walvis Bay – Mindelo, of the OceanX + OceanQuest Around Africa Expedition. The OceanXplorer will arrive in Mindelo on the morning of 24 March. We are grateful for the fantastic voyage and the outstanding, unforgettable program created by the OceanX education team, the OceanXplorer crew, POGO, and OceanQuest!

Greetings from OceanXplorer!

Olga Mironenko