



# Around Africa Expedition 2025

## High Level Mission Summary

**OceanX**

**OceanQuest**

July 2025

## Around Africa Expedition Goals

The overall goals of the transit portions of the UN Ocean Decade-endorsed Action “Around Africa” Expedition were the following:

1. To utilize the unique access opportunity in data-limited regions to conduct globally significant and scientifically relevant basin-scale scientific projects, and establish OceanX and OceanQuest as global contributors to the oceanographic and ocean biomolecular observing community;
2. To provide opportunities for Early Career Explorers from regions-of-study (via the Partnership for Observation of the Global Ocean (POGO), Deep-Ocean Stewardship Initiative (DOSI), UN Ocean Decade Early Career Ocean Professional Programs, and the Ocean Biomolecular Observing Network (OBON)) to conduct research using the R/V *OceanXplorer* in support of regional capacity exchange and training objectives;
3. To collect maximal scientific data possible in international waters with the goal of submission to public repositories;
4. To establish and build upon partnerships with global and regional organizations involved in implementation of the UN Decade of Ocean Science and other global science programs.

## Around Africa Expedition Timeline

Mobe: December 15, 2024

Departure Port: Singapore

Expedition Duration: December 15, 2024 – April 8, 2025

Demobe: April 8, 2025

Arrival Port: Las Palmas de Gran Canaria, Canary Islands

## Around Africa Partners and Institutions

***OceanX***

OceanX is a non-profit organization supporting and conducting research and exploration of the Earth's oceans, fostering and promoting public awareness, scientific discovery, and education relating to the oceans. OceanX's mission is to unlock the ocean's sustainable potential. With more knowledge of the unknown ocean and more students pursuing careers that benefit the ocean, we can create a future that makes both ocean health and human progress possible. Our work is designed to support ocean biodiversity and uncover new, less destructive ways for people to benefit from ocean resources. OceanX believes that a healthy ocean is the foundation of human prosperity. We seek to build a global community deeply engaged in understanding, enjoying, and protecting our oceans. OceanX is an operating program of Dalio Philanthropies, which furthers the diverse philanthropic interests of Dalio family members.

### ***OceanQuest***

The Kingdom of Saudi Arabia is establishing a new foundation called *OceanQuest (OQ)* to advance deep ocean exploration to the world. The vision is to explore the ocean's secrets for the benefit of humanity. The mission is to accelerate ocean discovery, drive ocean-tech innovation, contribute to the blue innovation economy, strengthen global scientific cooperation, and excite the public.

## **Partner Institutions and Networks**

### **Global**

Challenger 150  
Deep-Ocean Stewardship Initiative (DOSI)  
Ocean Biomolecular Observing Network (OBON)  
Partnership for Observation of the Global Ocean (POGO)  
Seabed 2030  
UN Decade of Ocean Science for Sustainable Development – Endorsed Decade      Actions

### **Regional**

African Network of Deep-water Researchers – Challenger 150  
Partnership for Atlantic Cooperation

### **United States**

City College of New York (CCNY)  
Columbia University Climate School - Lamont-Doherty Earth Observatory (LDEO)  
US National Oceanic and Atmospheric Administration (NOAA)  
US National Aeronautics and Space Administration (NASA)  
US State Department  
US Office of Naval Research (ONR)  
Woods Hole Oceanographic Institution (WHOI)

### ***Route-Specific Partnerships by Country/Transit locations***

Collaboration with OceanQuest for the Around Africa Expedition began in Moroni, Comoros and ended in Las Palmas de Gran Canaria.

**Singapore - Maldives**

Columbia University - Lamont-Doherty Earth Observatory (LDEO) - *USA*  
New York University Abu Dhabi – *United Arab Emirates*  
National Aeronautics and Space Administration (NASA) - *USA*  
Woods Hole Oceanographic Institution (WHOI) - *USA*

**Comoros – Seychelles - Comoros**

Seychelles Island Foundation (SIF)  
Seychelles Ministry of Agriculture, Climate Change and Environment (MACCE)

**Comoros to Cape Town, South Africa; Walter’s Shoal Seamount Science**

OceanQuest  
Challenger 150  
Columbia University - Lamont-Doherty Earth Observatory (LDEO) - *USA*  
Kenya Marine and Fisheries Research Institute (KMFRRI) - *Kenya*  
King Abdullah University of Science and Technology (KAUST) - *Kingdom of Saudi Arabia*  
Ministry of Foreign Affairs, Republic of Madagascar  
National Research Foundation - South African Institute for Aquatic Biodiversity (NRF-SAIAB)  
– *South Africa*  
National Research Foundation – South African Environmental Observation Network (NRF-SAEON) – *South Africa*  
South African National Biodiversity Institute (SANBI) – *South Africa*  
South African National Space Agency (SANSA) – *South Africa*  
Universidade de Aveiro – *Portugal*  
Universidade Federal do Espírito Santo (UFES) - *Brazil*  
Universidade Lúrio - *Mozambique*  
Université de Toliara – Institut D’Enseignement Supérieur D’Anosy (IES-Anosy) -*Madagascar*  
Université de Toliara – Institut Halieutique et des Sciences Marines (IHSM) -  
*Madagascar*  
University of Cape Town (UCT) – *South Africa*  
University of KwaZulu-Natal – *South Africa*  
Wildlife Conservation Society (WCS) - *Mozambique*

**Cape Town, South Africa – Namibia**

OceanQuest  
MAGES Institute – *Singapore*  
National Aeronautics and Space Administration (NASA) - *USA*  
Working Ocean Strategies - *USA*

**Namibia - Cabo Verde**

OceanQuest  
Instituto Do Mar (IMar), Campus do Mar – *Cabo Verde*  
King Abdullah University of Science and Technology (KAUST) - *Kingdom of Saudi Arabia*

MAGES Institute- *Singapore*

National Aeronautics and Space Administration (NASA) - *United States*

Partnership for Observation of the Global Ocean (POGO)

#### **Cabo Verde Science**

OceanQuest

Cardiff University – *United Kingdom*

Challenger150

GEOMAR Helmholtz Centre for Ocean Research - *Germany*

Instituto Do Mar (IMar), Campus do Mar – *Cabo Verde*

King Abdullah University of Science and Technology (KAUST) - *Kingdom of Saudi Arabia*

Ocean Science Center Mindelo (OSCM) – *Cabo Verde*

Partnership for Observation of the Global Ocean (POGO)

South African National Biodiversity Institute (SANBI) - *South Africa*

Universidade do Vale do Itajaí (UNIVALI) - *Brazil*

Universidade Técnica do Atlântico (UTA), Campus do Mar – *Cabo Verde*

University of Cape Town (UCT) - *South Africa*

#### **Cabo Verde - Las Palmas de Gran Canaria**

OceanQuest

Columbia University Climate School - Lamont-Doherty Earth Observatory - *USA*

GEOMAR Helmholtz Centre for Ocean Research – *Germany*

Johns Hopkins University – Applied Physics Laboratory (JHU APL) - *USA*

MAGES Institute – *Singapore*

National Aeronautics and Space Administration (NASA) - *USA*

Partnership for Observation of the Global Ocean (POGO)

Plataforma Oceánica de Canarias (PLOCAN) - *Canary Islands*

Universidad de Las Palmas de Gran Canaria (ULPGC) - *Canary Islands*

## **Around Africa Expedition**

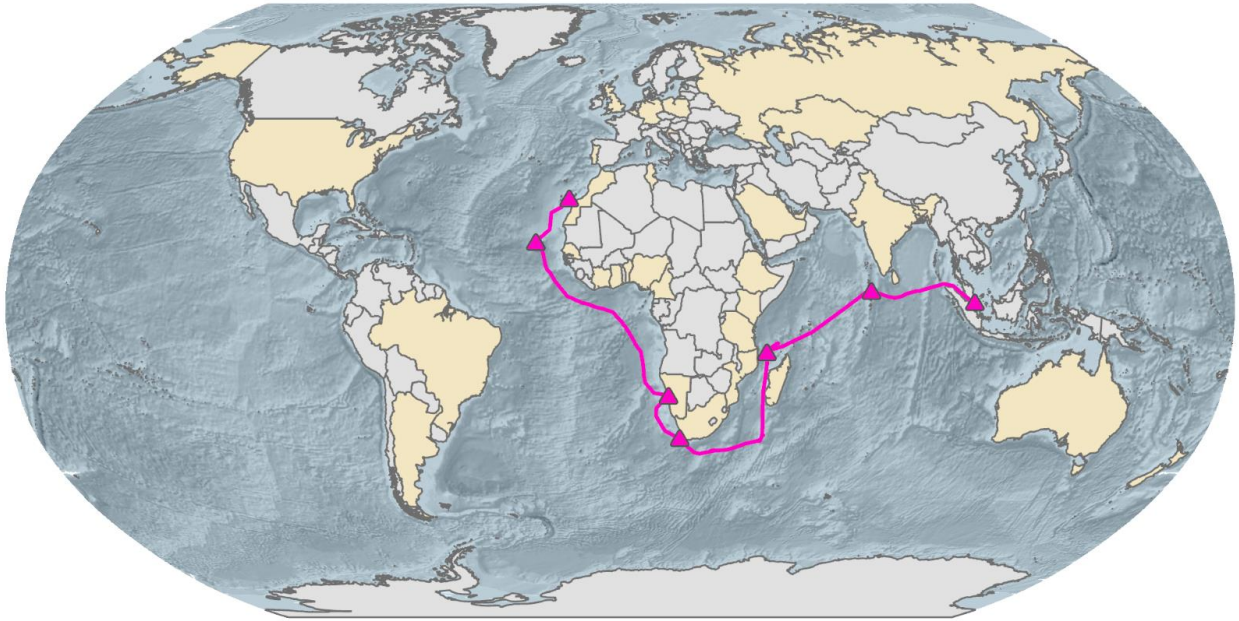


Figure 1. Around Africa Expedition Route and Partner and Participant Countries – Route is depicted by the pink line with pink triangles at port locations. Partner and Participant Countries are highlighted in yellow.



# Mission Synthesis Metrics

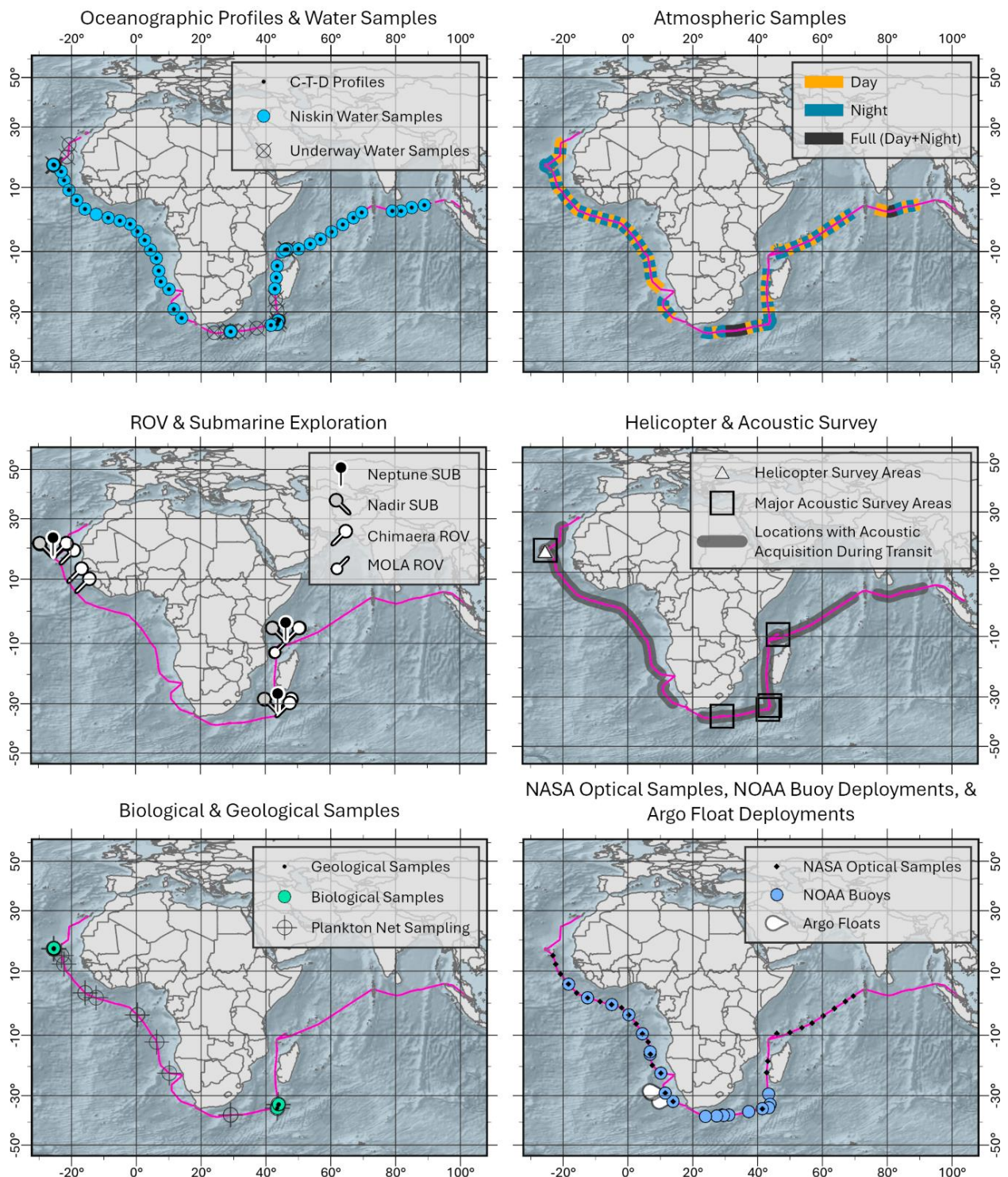


Figure 2. Summary of deployments and data acquisition along Around Africa Expedition route.

## Around Africa Expedition Metadata

Table 1. Around Africa 2025 metrics for all mission and science related events from Singapore to Las Palmas de Gran Canaria.

Metric	Value	Details
<b>Mission Metadata</b>		
<b>Number of Days</b>	83	From Singapore to Las Palmas
<b>Number of nautical miles traveled</b>	15046	From Singapore to Las Palmas, geodesic distance, including systematic acoustic surveys.
<b>Number of Ports/ Countries Visited</b>	8	Singapore, Maldives, Seychelles, Comoros, South Africa, Namibia, Cabo Verde, Canary Islands
<b>Number of Countries where data was collected</b>	4	International Waters EEZs: Seychelles, Madagascar, Cabo Verde, France
<b>Number of Scientists</b>	69	Scientists from 31 countries and 29 institutions
<b>Number of Faculty</b>	17	Education faculty from 10 countries and 9 institutions
<b>Number of YEs and ECEs</b>	59	Young Explorers (29) and Early Career Explorers (30) on education programs from 15 countries and 29 institutions
<b>Number of Missions</b>	11	7 Transit Legs, 4 Science Missions
<b>Number of Livestreams</b>	12	Livestreams over 3 mission legs
<b>Livestream Attendance</b>	1300	Livestream Attendees over 3 mission legs
<b>Number of Education Capacity Building Programs</b>	4	2 Young Explorers Programs, 2 Early Career Explorers Programs
<b>Science Metadata</b>		
<b>Total Amount of Data Generated (TBs)</b>	25	From Singapore to Las Palmas
<b>Total Acoustic Mapping Coverage (km<sup>2</sup>)</b>	120036	Final mapping coverage is based on final grid resolution and utilizing the WGS84 Equal Earth equal area projection (EPSG:8857) geodesic area calculation in ArcGIS Pro (v. 3.4.2, 3.4.3).
<b>Total New Acoustic Mapping Coverage (km<sup>2</sup>)</b>	95357	Our estimate of newly mapped area was derived by comparing our coverage to all direct measurement data available in the GEBCO 2024 bathymetric grid, and all direct measurement data (swath polygons and contributed grid polygons) available in the Global Multi-Resolution Topography Model (GMRT) v. 4.3.0. It should be noted that these two sources do not encompass all known mapping data and are only updated annually or bi-annually.
<b>Number of seamounts explored</b>	5	Walter's Shoal, SW Madagascar Ridge Seamount, Africana Ridge seamount (E Agulhas Plateau), Nola seamount complex, Maio Rise Seamount
<b>Number of ROV Dives</b>	23	ROV Dive time hours = 85
<b>Number of Submarine Dives</b>	16	Submarine Dive time hours = 101
<b>Aerial Flight Time (hours)</b>	10.5	Flight time for aerial megafauna surveys
<b>Aerial coverage (km)</b>	1708	Aerial coverage of megafauna surveys
<b>Total number of sampling events</b>	748	Total of CTD, eDNA, ROV, and Sub sample events



<b>eDNA samples collected</b>	470	Total of bacterioplankton, aerosols, and specific opportunistic DNA samples
<b>ROV samples collected</b>	166	Seychelles, Comoros – Cape Town, Cabo Verde Science
<b>Submarine samples collected</b>	87	Seychelles, Comoros – Cape Town, Cabo Verde Science
<b>CTD Casts</b>	50	CTD casts from Singapore – Mindelo only
<b>XBTs</b>	140	XBT deployed for temperature profiles
<b>Number of NOAA buoys deployed</b>	20	10 Deployments – Science 2: Comoros- Cape Town 2 Deployments - Transit 5: Cape Town – Namibia 8 Deployments - Transit 6: Namibia – Cabo Verde
<b>Number of ARGO Floats deployed</b>	3	Deployed on Transit 5 Cape Town - Namibia

## Data Acquisition and Submissions

Table 2. Around Africa 2025 Repositories for submission of data to public and country specific databases.

Data Type Collected	Data Repository	Country Affiliation	Amount Submitted
<b>Acoustic Seafloor Mapping (Bathymetry, Backscatter, and/or Coverage Area)</b>	NOAA National Center for Environmental Information (NCEI), IHO Data Centre for Digital Bathymetry (DCDB)	Global	
	Ocean Discovery League Global Targeted Deep-Sea Exploration Goals	Global	0.2 MB
	Global Multi-Resolution Topography Synthesis (GMRT), Marine Geoscience Data System (MGDS)	Global	8500 MB
	Seabed 2030 (Nippon Foundation/ GEBCO)	Global	8500 MB
	WIOBathy Project	Regional (Western Indian Ocean)	
<b>Water Column Acoustics (MBES, SBES, ADCP)</b>	NOAA National Center for Environmental Information (NCEI)	Global	
<b>Subbottom Acoustics</b>	NOAA National Center for Environmental Information (NCEI)	Global	
<b>Oceanographic Data (SST, SSS, CTD, XBT)</b>	NOAA National Center for Environmental Information (NCEI)	Global	
	NASA Plankton, Aerosol, Cloud, ocean Ecosystem (PACE)		
	UK Met Office (Argo floats)		
	NOAA Atlantic Oceanographic and Meteorological Laboratory (AOML) Physical Oceanography Division		
<b>Underway Data (position, flowthrough, meteorology, atmospheric, etc.)</b>	NOAA National Center for Environmental Information (NCEI)	Global	

<b>EDNA (Bacterioplankton, aerosols, targeted samples)</b>	Ocean Biodiversity Information System (OBIS)	Global	
<b>Subsea Exploration Locations (ROV, SUB)</b>	Ocean Discovery League Global Targeted Deep-Sea Exploration Goals	Global	
<b>Visual Data: Imaging and video (ROV, Sub)</b>	FathomNet	Global	
	Challenger 150	Global	
<b>All applicable data (for expedition/region associated with the repository)</b>	Seychelles Ministry of the Environment (MACCE)	Seychelles	
	SAEON data repository	South Africa	
	Madagascar Government		
	French Government		
	Cabo Verde Government - IMAR		

## Portside Event Metrics

Table 3. Around Africa 2025 Portside Event metrics for all ship tours led by OceanX Education.

Metrics	Number of Tours	Number of Participants	Tour Types	Key Partners
<b>Cape Town, South Africa Ship Tours</b>	10	144	High School and University students, faculty, government ministries	South African National Research Foundation, South African National Biodiversity Institute (SANBI), South African Department of Forestry, Fisheries, and Environment, South African Environmental Observation Network (SAEON), University of Cape Town, University of Western Cape, Stellenbosch University, Cape Peninsula University of Technology
<b>Mindelo, Cabo Verde Ship Tours</b>	4	79	High School and University students, faculty, US Embassy	OceanQuest, IMar, ISECMAR, UniCV, Universidade Do Mindelo
<b>Las Palmas de Gran Canaria Ship Tours</b>	1	23	High School and University students, faculty	Oceanic Platform of the Canary Islands (PLOCAN)
<b>TOTALS</b>	<b>15 Tours</b>	<b>246 Participants</b>		<b>13 Partners</b>

## Scientific Researcher Institutional Affiliations

Table 4. Around Africa 2025 Researcher Affiliations for all transit and science legs. Researcher affiliations for all external scientists participating in the Around Africa Expedition. These calculations include faculty for Education programs as researchers, as well as ECOPs (ECEs) that were part of science missions. If the same scientists were on multiple legs they are listed for both legs.

Program/ Mission	Leg	Institution	Country	Number of Participants
<b>YE: NYU Abu Dhabi</b>	Transit Leg 2: Maldives - Comoros	NYU Abu Dhabi	United Arab Emirates	3
		Columbia University, Lamont-Doherty Earth Observatory (LDEO)	India	1
		National Aeronautics and Space Administration (NASA)	United States	2
<b>Seychelles Aldabra Atoll</b>	Science Mission 1: Seychelles Aldabra Atoll	Seychelles Ministry of Agriculture, Climate Change and Environment (MACCE)	Seychelles	1
		Seychelles Island Foundation (SIF)	Seychelles	8
<b>Walter's Shoal and Madagascar Ridge Study</b>	Science Mission 2: Comoros – Cape Town	South African Environmental Observation Network (SAEON)	South Africa	3
		University of Cape Town (UCT)	South Africa	1
		South African Institute for Aquatic Biodiversity (SAIAB)	South Africa	2
		Université de Toliara – Institut D'Enseignement Supérieur D'Anosy (IES-Anosy)	Madagascar	2
		Wildlife Conservation Society (WCS)	Mozambique	1
		Universidade Lúrio	Mozambique	1
		Kenya Marine and Fisheries Research Institute (KMFRI)	Kenya	1
		POGO Fellow – South African National Parks	South Africa	1
		POGO Fellow – University of Dar es Salaam	Tanzania	1
		Universidade de Aveiro	Portugal	1
		Universidade Federal do Espírito Santo (UFES)	Brazil	1
		King Abdullah University of Science and Technology (KAUST)	Kingdom of Saudi Arabia	1
<b>YE: Cape Town</b>	Transit Leg 5: Cape Town, South Africa – Walvis Bay, Namibia	National Aeronautics and Space Administration (NASA)	United States	2
		Working Ocean Strategies	United States	1
		MAGES Studio	Singapore/ India	2
		City College of New York (CCNY)	United States	1
<b>ECE: Walvis Bay</b>	Transit Leg 6: Walvis Bay, Namibia – Mindelo, Cabo Verde	National Oceanography Centre (NOC)	Belgium	1
		Instituto Nacional de Investigación y Desarrollo Pesquero (INIDEP)	Argentina	1
		University of Douala	Cameroon	1

		MAGES Studio	Singapore/ India	1
		City College of New York (CCNY)	United States	1
		National Aeronautics and Space Administration (NASA)	United States	2
		OceanQuest	Russia	1
<b>Cabo Verde</b>	Science Mission 3: Cabo Verde Nola Seamounts	Instituto Do Mar (IMar), Campus do Mar	Cabo Verde	8
		Universidade Técnica do Atlântico (UTA), Campus do Mar	Cabo Verde	1
		King Abdullah University of Science and Technology (KAUST)	Kingdom of Saudi Arabia	2
		University of Cape Town	South Africa	1
		Cabo Verde Directorate for Marine Resources	Cabo Verde	1
		Universidade do Vale do Itajaí (UNIVALI)	Brazil	1
<b>ECE: Mindelo</b>	Transit Leg 7: Mindelo, Cabo Verde – Las Palmas de Gran Canaria	National Aeronautics and Space Administration (NASA) / City College of New York (CCNY)	United States	2
		Johns Hopkins Applied Physics Laboratory (APL)	United States	1
		MAGES Studio	Singapore/ India	1
		OceanQuest	Poland, Russia, Portugal	3
		Columbia University, Lamont-Doherty Earth Observatory (LDEO)	India, United States	2
<b>TOTALS</b>	<b>7 Legs</b>	<b>30 Institutions</b>	<b>21 Countries</b>	<b>69 Scientists</b>

## Transit Leg Educational Program Metrics

Around Africa total metrics for educational programming conducted on transit legs for students (Young Explorers), early career explorers (ECE), and faculty.

## Young and Early Career Explorer Institutional Affiliations and Totals

Table 5. Around Africa 2025 transit leg Young and Early Career Explorers participant metrics. An additional 2 ECEs were on Science leg 2 Comoros to Cape Town (1 South Africa, 1 Tanzania) and 3 ECEs were on Science leg 3 Cabo Verde (2 KAUST, 1 Cabo Verde).

Program	Leg	Institution	Country	Number of Participants
<b>YE: NYU Abu Dhabi</b>	Transit Leg 2: Maldives – Comoros	NYU Abu Dhabi	United Arab Emirates, Sri Lanka, Ethiopia, Mauritius, Bangladesh, Jamaica, Kenya, Kazakhstan	15
<b>YE: Cape Town</b>	Transit Leg 5: Cape Town, South Africa – Walvis Bay, Namibia	Eduardo Mondlane University	Mozambique	2
		University of Dodoma	Tanzania	2
		Stellenbosch University	South Africa	1
		University of Cape Town	South Africa	1
		Faculty of Sciences of Tunis (FST)	Tunisia	1
		University of Namibia	Namibia	4
		Jomo Kenyatta University of Agriculture and Technology	Kenya	1
		Technical University of Mombasa	Kenya	1
		University of Seychelles	Seychelles/ Mauritius	1
<b>ECE: Walvis Bay</b>	Transit Leg 6: Walvis Bay, Namibia – Mindelo, Cabo Verde	Nigerian Institute for Oceanography and Marine Research	Nigeria	1
		University of Cape Coast	Ghana	1
		University of Ghana	Ghana	1
		Fisheries Scientific Survey Division - Fisheries Commission	Ghana	1
		University of Dodoma	Tanzania	1
		Kenya Fisheries Service	Kenya	1
		University of Cape Town	South Africa	1
		Abdelmalek Essaadi University	Morocco	1
		Faculty of Sciences Ain Chock - National Institute of Fisheries Research	Morocco	1
		Faculty of Sciences of Bizerte	Tunisia	1
		University of Gaston Berger-Saint Louis	Senegal	1
		Institut Halieutique et des Sciences Marines (IH.SM)	Madagascar	1
		University of Namibia	Namibia	1
		King Abdullah University of Science and Technology (KAUST)	Kingdom of Saudi Arabia	2
<b>ECE: Mindelo</b>	Transit Leg 7: Mindelo, Cabo Verde	University of Tunis El Manar	Tunisia	1
		National Institute of Marine Sciences and Technologies	Tunisia	1

	– Las Palmas de Gran Canaria	University of Cape Coast	Ghana	3
		Nigeria Maritime University Okerenkoko	Nigeria	1
		Centre International de Physique Mathématique et Appliquée (ICMPA)	Cameroon/ Benin	1
		University of Namibia	Namibia	1
		Ministry of Fisheries and Marine Resources	Namibia	1
		University of Dodoma	Tanzania	1
		University of San Pedro	Cote D'Ivoire	1
		Cape Peninsula University of Technology	South Africa	1
<b>Totals</b>	<b>4 Legs</b>	<b>29 Institutions</b>	<b>15 Countries</b>	<b>56 Participants</b>

## Education Program External Faculty Institutional Affiliations

Table 6. Around Africa 2025 transit leg Young and Early Career Explorers Faculty Metrics.

Program	Leg	Institution	Country	Number of Participants
<b>YE: NYU Abu Dhabi</b>	Transit Leg 2: Malé, Maldives – Moroni, Comoros	NYU Abu Dhabi	Russia, United States, South Africa	3
<b>YE: Cape Town</b>	Transit Leg 5: Cape Town, South Africa – Walvis Bay, Namibia	Working Ocean Strategies	United States	1
		MAGES Institute	Singapore/ India	2
<b>ECE: Walvis Bay</b>	Transit Leg 6: Walvis Bay, Namibia – Mindelo, Cabo Verde	National Oceanography Centre (NOC)	Belgium	1
		Instituto Nacional de Investigación y Desarrollo Pesquero (INIDEP)	Argentina	1
		University of Douala	Cameroon	1
		MAGES Studio	Singapore/ India	1
		OceanQuest	Russia	1
<b>ECE: Mindelo</b>	Transit Leg 7: Mindelo, Cabo Verde – Las Palmas de Gran Canaria, Canary Islands	Columbia University, Lamont-Doherty Earth Observatory (LDEO)	United States	1
		Johns Hopkins Applied Physics Laboratory (APL)	United States	1
		MAGES Studio	Singapore/ India	1
		OceanQuest	Poland, Russia, Portugal	3
<b>TOTALS</b>	<b>4 Legs</b>	<b>9 Faculty Institutions</b>	<b>10 Countries</b>	<b>17 Participants</b>



## Education Livestreams

Table 7. Around Africa 2025 Education Livestream Metrics.

Program	Leg	Number of Livestreams	Number of Livestream Attendees	Description
<b>Cape Town Events</b>	Site-Specific Events: Cape Town, South Africa	1	50	University of Cape Town partners
<b>YE: Cape Town</b>	Transit Leg 5: Cape Town, South Africa – Walvis Bay, Namibia	1	50	Student friends and family
<b>ECE: Walvis Bay</b>	Transit Leg 6: Walvis Bay, Namibia – Mindelo, Cabo Verde	10	1200	Student classrooms around Southeast Asia and the United States
<b>TOTALS</b>	<b>4 Legs</b>	<b>12 Livestreams</b>	<b>1300 Attendees</b>	

## Around Africa Expedition Route Schedule

Dec 15 – 24, 2024	Singapore – Malé, Maldives
Jan 8 – 17, 2025	Malé, Maldives – Moroni, Comoros
Jan 18 – 29, 2025	Site Specific Mission: Seychelles – Aldabra Atoll
Jan 29 – Feb 23, 2025	Moroni, Comoros – Walter’s Shoal – Cape Town, South Africa
Feb 23 – 28, 2025	Site Specific Events: Cape Town, South Africa
Feb 28 – Mar 4, 2025	Cape Town, South Africa – Walvis Bay, Namibia
Mar 4 – 25, 2025	Walvis Bay, Namibia – Mindelo, Cabo Verde
Mar 25 – Apr 2, 2025	Site Specific Mission: Cabo Verde Seamounts
Apr 2 – 8, 2025	Mindelo, Cabo Verde – Las Palmas de Gran Canaria

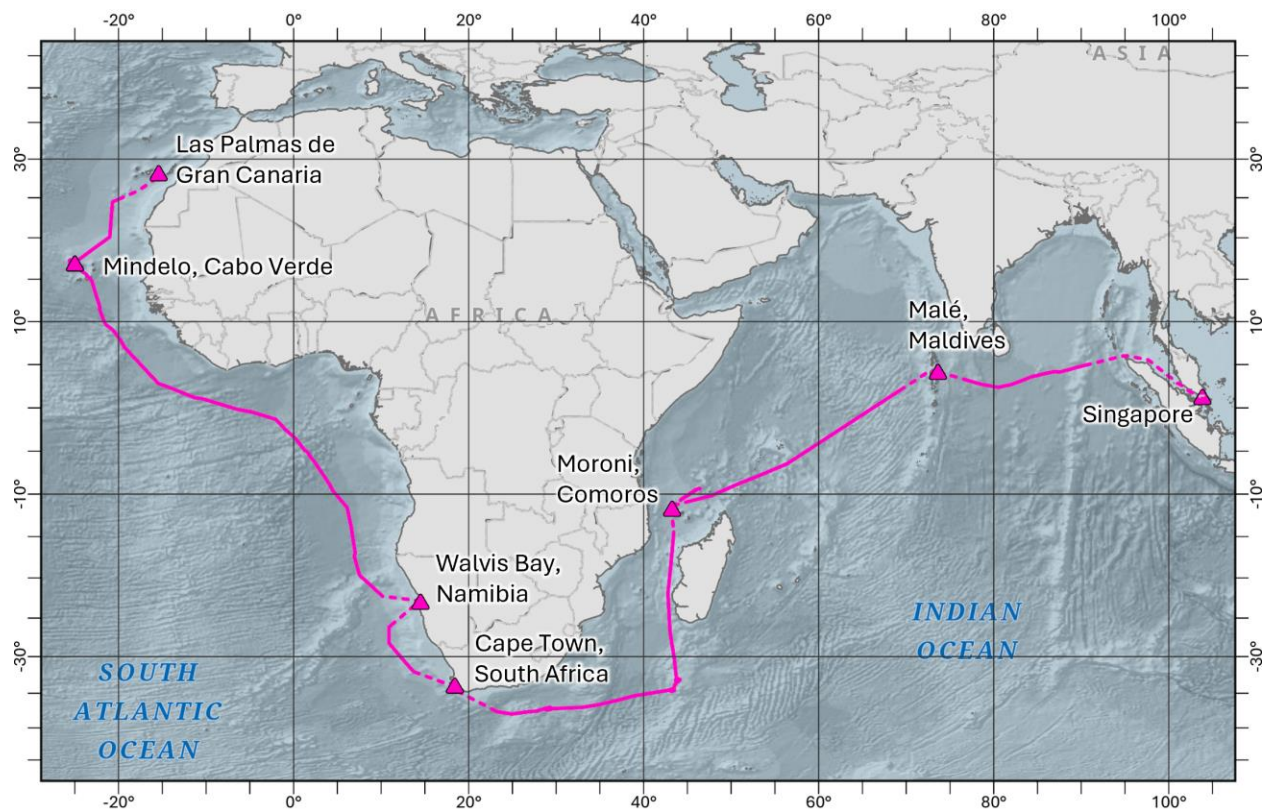


Figure 3. Route Map of 2025 Around Africa Expedition from January – April 2025 from Singapore to the Las Palmas de Gran Canaria. Labeled pink triangles represent port stop locations.