

IMA NEWS

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*Dr. Ava Maxam
Director of the Institute of Marine Affairs*

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Dr. Kahlil Hassanali, Senior Research Officer, IMA, in negotiations at the fifth session of the Intergovernmental Conference on Marine Biodiversity

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The Wait is Over: A New Era for Our Oceans Begins

After nearly 20 years of global discussions, debates, and negotiations, something historic has finally happened an agreement to protect the parts of the ocean that belong to all of us has officially come into force.

On Saturday 17th January 2026, the Agreement under the United Nations Conventions on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction, commonly referred to as the Biodiversity Beyond National Jurisdiction (BBNJ) Agreement, became a legally binding international Treaty. It might seem complex, but at its heart, it is about something simple: protecting the vast areas of the ocean that lie beyond any one country's control. These "high seas" make up about two-thirds of the world's ocean. They don't belong to any single nation but they are vital to everyone.

Why Should You Care?

It is easy to think of the ocean as something distant especially the parts far beyond our shores. But the truth is, what happens out there affects all of us here at home.

The ocean helps regulate our climate, supports fisheries that feed millions, and holds incredible biodiversity much of which we are only just beginning to understand.

Without proper management, these areas are at risk from overfishing, pollution, and emerging industries such as deep-sea mining.

The BBNJ Agreement is a major step towards improving ocean governance.

What Does the Agreement Actually Do?

In practical terms, this Treaty creates a framework for how countries can work together to manage and protect the high seas. Some of its key goals include:

- Protecting marine life by establishing marine protected areas in international waters
- Ensuring fair access to the benefits of marine genetic resources (compounds used in medicine)
- Supporting global conservation targets, including protecting 30% of the world's land and sea by 2030
- Strengthening science and cooperation by sharing knowledge, technology, and resources among countries

In short, it is about balance using the ocean responsibly while ensuring it remains healthy for future generations.

Where Does Trinidad and Tobago Fit In?

While Trinidad and Tobago has not yet signed on to the agreement, the country continues to participate in international discussions on ocean governance.

Locally, the IMA is already doing important work that aligns with the spirit of the treaty. Through initiatives such as the PROCARIBE+ Marine Spatial Planning (MSP) Project, the IMA is helping to guide how our marine spaces are used ensuring that conservation, development, and livelihoods can coexist.

So, What Is Marine Spatial Planning?

Think of Marine Spatial Planning (MSP) similar to zoning but for the ocean.

Just as terrestrial zoning organises land for housing, agriculture, and industry use, similarly MSP provides a framework to manage and organise maritime activities. This framework reduces conflicts, such as those between fishing activities and shipping activities, while protecting sensitive ecosystems, and ensuring that marine resources are used sustainably.

The BBNJ Agreement supports this approach through what are called Area-Based Management Tools, which is essentially the systems required to manage marine planning work in real and practical ways.

A Turning Point for the Ocean

This Agreement represents more than just policy, it is a shared commitment. It is a recognition that the ocean is not limitless, and its protection requires global cooperation.

For small island states the health of the ocean is deeply connected to our way of life, our economy, and our future.

The wait may have been long but this moment marks the dawn of a new chapter - one where the world comes together to safeguard what we all depend on.



The IMA Celebrates Women and Girls in STEM

Aleisha Dennie, in collaboration with IMA research staff

Every year on February 11, the world observes the International Day for Women and Girls in Science, which serves as a significant reminder of the progress we have achieved, and the long journey still ahead or how far there is still to go. Globally, women make up just over a quarter of the STEM workforce, and about a third of graduates in these fields.

At the IMA, that global statistic feels very different on the ground.

Across laboratories, coastlines, and communities, women at the IMA are not only participating in science they are leading it.

Shaping How We Use Our Marine Space

From policy to planning, women are helping to guide how Trinidad and Tobago understands and manages its marine environment.

Researchers including Ms. Ruqayyah Thompson are at the forefront of regional initiatives such as the PROCARIBE+ Multisectoral Marine Spatial Planning Project, which is working toward a comprehensive plan for nearly 3,000 km² of national waters in the Gulf of Paria.

Supporting this work are efforts to build awareness and accessibility. As Curator of the Marine Reference Collection, Ms. Alana Jute plays a key role in marine

biodiversity education, alongside community-based initiatives ranging from sea turtle conservation to stakeholder engagement and data sharing.

Science in Action Along Our Coastlines

Out in the field, women scientists and technical staff are helping to monitor and understand Trinidad and Tobago's ever-changing coastal environment.

Through the Coastal Monitoring Project, professionals such as Ms. Isabelle Chen conduct field observations and drone-based shoreline assessments work that directly informs how we respond to erosion, development, and ecosystem changes.

Within the Geomatics Unit, a team including Ms. Nikia Gooding, Ms. Rayna Sookdeo, Ms. Malissa Moses, Ms. Julie McVorrán, and Ms. Anastacia Auguste applies advanced tools such as LiDAR-equipped drones, satellite imagery, and laser scanning to capture geospatial data that aids resource management. Their work supports everything from oil spill response to tracking sargassum influxes and mapping blue carbon ecosystems—quietly powering some of the country's most important environmental decisions.

From Fisheries to Food Security

In Fisheries and Aquaculture, women are tackling challenges that connect directly to both livelihoods and sustainability.

Dr. Farahnaz Solomon, Ms. Bria De Costa-Francis, Ms. Jerusha King, and Ms. Rosemarie Kishore contribute to projects spanning invasive species management, fisheries biology, and mariculture development. In Tobago, Dr. Solomon leads the Lionfish Fishpot Fishery Project, turning an ecological threat into an economic opportunity.

As Senior Research Officer within the Fisheries and Aquaculture Department, Ms. Kishore has contributed extensively to fisheries research through studies on fish age and growth using otolith analysis, helping to improve understanding of commercially important species and fish population dynamics. Her work has also included research on invasive species such as the green mussel, which has since become naturalized in Trinidad and Tobago's marine environment.

Their work also extends beneath the surface supporting SCUBA-based surveys, laboratory research, and initiatives such as MARIN and PROCARIBE, including reproductive assessments that advance oyster mariculture in Trinidad and Tobago.

Restoring Ecosystems, Working with Communities

Beyond research, women at the IMA are deeply involved in restoration and outreach.

The Marine Resilience Tobago (MARIN Tobago) project, a five-year programme funded by BP, focuses on coral and seagrass restoration while building meaningful community partnerships.

A predominantly women-led team including Dr. Anjani Ganase, Dr. Rahanna Juman, Ms. Hannah Lochan, Dr. Farahnaz Solomon, Ms. Lanya Fanovich-Mohammed, and Ms. Kathryn Audroing has successfully reared coral larvae, collected seagrass seeds, and carried out extensive community surveys across Tobago.

In 2025, Dr. Ganase also published *Coral Reefs of Trinidad and Tobago* (2nd Edition), contributing valuable insight into the country's marine ecosystems and its management. Supporting this work, Ms. Kristen Clarke continues to advance seagrass biodiversity research through her role in blue carbon assessment.

Monitoring Our Marine Environment

Within the Environmental Quality Programme, long-standing contributions continue to shape national understanding of marine health.

Ms. Wendy Nelson, a Senior Research Officer with over 20 years of service, has led research on trace metals, sediment quality, and pollutant accumulation work that feeds directly into environmental policy and monitoring. Her leadership includes a national nearshore sediment quality research cruise and participation in regional initiatives such as the Prevention of Marine Litter in the Caribbean Sea (PROMAR) project.

Alongside Ms. Nelson, Ms. Aleisha Dennie contributes expertise in biochemistry, biotechnology, and analytical chemistry, supporting nutrient and heavy metal analysis for regional monitoring programmes. Her work extends to international collaboration, including representation in the Global Eutrophication Monitoring Pilot Project

and coordination of Harmful Algal Bloom research at the Institute.

Leadership That Guides the Way Forward

At the leadership level, women continue to shape the direction of marine science and policy in Trinidad and Tobago.

Dr. Rahanna Juman, Deputy Director of the IMA, brings together scientific and legal expertise developed over more than three decades. Her work in marine governance includes chairing the National Sargassum Task Force and contributing to the IOCARIBE initiatives at the regional level.

Appointed in September 2023, Dr. Ava Maxam, Director of the IMA, continues to spearhead and guide the Institute's growth into a data-driven centre of excellence. With a background in oceanography and nearly 20 years of management experience, her leadership continues to strengthen research, partnerships, and national capacity in the face of evolving environmental challenges.

A Collective Effort

Behind every project and field exercise is a wider network of support. The contributions of research secretaries Ms. Lisa Chadee and Mrs. Ramona O'Brian, along with many other dedicated staff members, remain essential to the Institute's work.

Together, the women of the IMA reflect more than participation in STEM—they represent leadership, expertise, and a growing influence that continues to shape the future of marine science in Trinidad and Tobago.

Among those contributing to this work are:

Lisa Chadee, Kamini Ramkhelawan, Dawn Caesar, Shelly Ann Lynch, Arlene Johnson, Krystal Ganaselal, Alana Bachan, Marcia Powell, Jameela Karim-Dowlat, Nekeisha Christopher, Kimberlee Green, Andrea Peters-Robinson, Nisa Joseph-Browne, Amelia Williams, Tracey Guevara, Reena Ramdass, Trisha Constantine, Nialah Johnetty, Jordelle Benjamin, Anisha Alexis, Payaree Mattoo, Lorraine Barrow, Patrice Letren, Christine Thomas-Dookie, Kerrie Griffith and Nanyamkah Thomas.



World Water Day 2026: Flowing Toward Sustainability

On March 22, the IMA joined the global community in observing World Water Day a reminder of something we often take for granted, yet cannot live without.

Water shapes every aspect of our lives. From the rivers and aquifers that supply our homes, to the coastal ecosystems that support livelihoods and protect our shores, it remains central to both our well-being and our development.

At the IMA, this connection continues to guide our work. Through research, environmental monitoring, and innovation, the Institute supports the sustainable management of water resources in Trinidad and Tobago. This includes efforts to better understand coastal systems, protect marine ecosystems, and contribute to national and regional initiatives that are aligned to the United Nations Sustainable Development Goal No. 6 - ensuring access to clean water and sanitation for all.

World Water Day also serves as a moment to reflect on the challenges ahead. Climate change, pollution,

and increasing demand continue to place pressure on our water resources. How we respond individually and collectively—will shape the resilience of our communities and ecosystems in the years to come.

There are a few simple truths worth holding onto. Water is essential to life, and every drop matters. Access to safe, clean water is not a privilege, but a fundamental human right. And as our climate continues to change, the need for smarter, more sustainable water management becomes even more urgent.

Addressing these challenges requires more than policy alone. It calls for awareness, responsibility, and action at every level from institutions to communities, and from households to individuals.

As we reflect on World Water Day 2026, we are reminded that protecting our water resources is a shared responsibility. The choices we make today will shape the availability and quality of water for generations to come.

IMA Takes Coral Restoration Work to the Regional Stage

coral restoration efforts using larval-based propagation strategies in Tobago



Research Officer, Ms. Hannah Lochan, Keynote speaker at 78th Gulf and Caribbean Fisheries Institute (GCFI78) in Cartagena, Colombia

The IMA recently brought Trinidad and Tobago's coral restoration efforts into the regional spotlight, as Research Officer, Ms. Hannah Lochan represented the country at the 78th Gulf and Caribbean Fisheries Institute (GCFI78) in Cartagena, Colombia.

More than just a conference, GCFI serves as a key regional platform for shaping how countries manage and protect their marine resources. It brings together scientists, policymakers, and environmental practitioners from across the region to share ideas, strengthen partnerships, and tackle some of the most pressing challenges facing our oceans.

Against this backdrop, Ms. Lochan presented preliminary findings from coral restoration work taking place in northeast Tobago under the Marine Resilience Initiative, Tobago (MARIN). The project focuses on improving reef resilience in the face of climate change and other environmental pressures - an issue that directly affects coastal protection, fisheries, and tourism in Trinidad and Tobago.

Her contribution placed local research within a wider regional conversation on ocean health, data sharing, and innovation, which aligned to the central focus of this year's theme: "Partnering for the Oceans: Merging Ocean, Climate and Biodiversity Efforts Through Regional Marine Data and Innovation."

Beyond her presentation, Ms. Lochan also participated in key side events led by Intergovernmental Oceanographic Commission for the Caribbean and Adjacent Region (IOCARIBE) and the United Nations (UN) Ocean Decade. These discussions are helping to shape major upcoming initiatives, including the Island States Ocean Summit and the next UN Ocean Decade Conference in Brazil in 2026.

Importantly, her engagement ensured that perspectives from Trinidad and Tobago, particularly around adaptive management, community involvement, and the need for strong policy support, were part of these regional and international conversations.

Participation in forums such as GCFI not only facilitates sharing research, but also ensures that the country remains connected to emerging ideas, funding opportunities, and collaborative efforts that can strengthen how we manage our marine environment at home.

Ms. Lochan's participation was supported by the Marine Institute of Ireland through the Our Shared Ocean Programme.



Travel grant recipients funded by the Marine Institute of Ireland

IMA Helps Shape the Future of Blue Carbon Science in the Caribbean



Hamish Asmath, GIS Officer at the IMA (seated far right) participates in a panel discussion at the International Blue Carbon and Wetlands Conference.

What if some of our most powerful tools for fighting climate change were already right along our coastlines?

Mangroves, seagrass beds and wetlands often overlooked are among the most effective natural systems for storing carbon. Protecting them isn't just about conservation, it's about climate resilience, coastal protection, and long-term sustainability for countries such as Trinidad and Tobago.

This was the focus of the International Blue Carbon and Wetlands Conference (IBCWC), held from February 2–3, 2026, at the Radisson Hotel Trinidad, where the IMA played an active role in shaping regional discussions.

Representing the Institute were Dr. Rahanna Juman, Deputy Director (Research); Hamish Asmath, GIS Officer; and Nikia Gooding, Remote Sensing Officer. Each contributed to conversations that influence how the Caribbean measures, manages, and finances its coastal ecosystems.

The conference brought together scientists, policymakers, conservation practitioners, and climate financiers from across Latin America and the Caribbean. More than just a knowledge-sharing event, it marked a key step forward in how countries in the region approach blue carbon, particularly in building systems to measure and monitor carbon stored in coastal environments.

Dr. Juman chaired a central session focused on bridging science, policy, and practice in an area that remains critical for turning research into real-world action. Discussions highlighted the need for stronger regional collaboration, increased access to financing, and better integration of science into decision-making.

Nikia Gooding, Remote Sensing Officer at the IMA, conducting field measurements in a mangrove ecosystem to support blue carbon research and environmental monitoring.

On the technical side, Mr. Asmath presented on integrating new monitoring methodologies into existing frameworks—work that supports more accurate and transparent reporting of carbon data. This is essential not only for scientific credibility, but also for unlocking climate financing opportunities tied to carbon markets and environmental programmes.

The session, chaired by Ms. Gooding, further explored how countries can improve consistency and rigor in how blue carbon is measured across the region an important step toward ensuring that Caribbean nations can fully participate in global climate initiatives.

For Trinidad and Tobago, participation in these forums goes beyond representation. It ensures that the country remains part of the evolving conversation around climate solutions, while building the knowledge and partnerships needed to better protect and manage its own coastal ecosystems.

As global attention turns increasingly toward nature-based solutions, the work being done in blue carbon is becoming more relevant than ever and the IMA continues to play a role in helping to move that work forward.





Nariva swamp Trinidad

Wetlands: A Timeless Legacy We Cannot Afford to Lose

Dr. Rahanna Juman, Deputy Director / Wetlands Ecologist

They feed us, protect us from storms, shape our culture, and quietly support our economy yet they are disappearing faster than almost any other ecosystem on Earth.

Wetlands, often overlooked and undervalued, remain some of the most powerful natural systems we have. While World Wetlands Day was observed on February 2, the message it carries extends far beyond a single day. It is a reminder that these landscapes of water and life are not only ecological assets, but cultural foundations deeply woven into human history.

This year's theme, "Wetlands and Traditional Knowledge: Celebrating Cultural Heritage," highlights a relationship that has sustained people for generations. Long before modern science, communities understood wetlands reading seasonal cycles, observing species behaviour, and developing ways to use resources without exhausting them. That knowledge, passed down over time, still holds value today.

Wetlands take many forms. They include rivers, marshes and swamps, as well as coastal systems including mangroves, seagrass beds, lagoons and coral reefs. Together, they support rich biodiversity and provide services that are essential to daily life, often in ways we don't immediately see.

They help reduce flooding, buffer coastlines from storm surges, and stabilise shorelines. They support fisheries, recycle nutrients, and play a role in climate regulation. Globally, wetlands generate trillions of dollars in benefits each year, yet they continue to be lost at an alarming rate due to development and degradation.

Beyond their ecological value, wetlands are deeply connected to how people live.

Across the world, they have shaped settlement patterns, food systems and traditions. From the floodplains of ancient civilizations to rice-growing regions across Asia, wetlands have long supported human survival. Even today, more than half of the global population depends on crops linked to wetland systems, while over a billion people rely on fish from these environments as a primary source of protein.

Here at home in Trinidad and Tobago, that connection is just as real.

Wetlands support the livelihoods of crab catchers, oyster harvesters, fishers and tour guides. They are part of our daily lives, our economy, and our identity. The Godineau Swamp, Caroni Swamp, Nariva Swamp and Bon Accord Lagoon are not only ecological spaces, they are social and cultural ones as well.

They influence what we eat, how we celebrate, and how we pass knowledge from one generation to the next. From dishes namely crab and callaloo and curry crab and dumpling, to artistic expressions such as Peter Minshall's Mancrab, wetlands continue to shape our national story. They also serve as informal classrooms, where lived experience and tradition carry lessons that science alone cannot replace.

At the same time, their loss carries consequences.

When wetlands are degraded, we don't just lose biodiversity we lose protection from natural hazards, sources of income, and pieces of cultural heritage. Traditional knowledge systems, built over generations, begin to fade alongside the ecosystems they depend on.

Protecting wetlands, therefore, is not only an environmental priority it is a social and cultural one.

The IMA continues to work alongside communities to conserve and, where necessary, restore wetlands across Trinidad and Tobago. This includes recognising the value of both scientific research and local knowledge in shaping how these ecosystems are managed.

Wetlands are more than areas of water and vegetation. They are living systems that support life, livelihoods and identity.

They are, in every sense, a legacy one that we cannot afford to lose.



Flamingos at Caroni swamp, Trinidad



Rhizophora mangle Red Mangrove, Caroni swamp

Hunter retrieving crabs between dense mangrove roots (credit Enrico Marone)





Detecting Hidden Threats: Strengthening Harmful Algal Bloom Monitoring

IMA research staff Israel Eugene (L) and Aleisha Dennie (R) carry out fish dissections during hands-on biotoxin analysis training at the Harmful Algal Blooms Workshop.

In December 2025, the IMA took an important step toward strengthening Trinidad and Tobago's ability to respond to a growing environmental and public health threat that concern harmful algal blooms (HABs).

Often invisible to the naked eye, these microscopic organisms form the base of marine food webs. But under certain conditions, some species can multiply rapidly and produce toxins that affect fish, contaminate seafood, and pose risks to human health.

To better detect and manage these threats, IMA staff participated in specialised training led by international experts Dr. Lisbet Diaz and Dr. Christopher Loeffler. Training was facilitated through the International Atomic Energy Agency (IAEA). The training brought together members of the Environmental Quality Programme and the Fisheries and Aquaculture Programme, equipping them with advanced skills in Fluorescence Receptor Binding Assay (f-RBA) techniques - cutting-edge methods used to identify and analyse biotoxins produced by harmful algae.

Research Officers Dr. Farahnaz Solomon, Ms. Aleisha Dennie, Messrs. Israel Eugene and Joash Mohammed

received hands-on experience in precision fish dissection, toxin extraction, and biotoxin analyses. These are not just laboratory skills, they represent essential tools for understanding how toxins move through marine ecosystems and ultimately into seafood on which people depend.

Building this level of local expertise means that Trinidad and Tobago is better equipped to detect harmful algal blooms early, respond more effectively, and reduce potential impacts on fisheries, coastal communities and public health.

It also strengthens the country's ability to monitor changing ocean conditions, particularly as climate variability continues to influence the frequency and intensity of these events.

By investing in scientific capacity, the IMA is helping to ensure that marine resources remain safe, sustainable, and resilient supporting not only ecosystems, but the people and livelihoods that depend on them.



Tracking Pollution Enhancing Laboratory Detection Capabilities

Dr. Yan Aminott of IFREMER (R) guided IMA Researchers and Technicians through key steps in Gel Permeation Chromatography (GPC) data analysis during the national training course

How do we know if the seafood we eat is safe or if our marine environment has been affected by pollution?

Behind the scenes, that responsibility often rests with scientists working in laboratories that are equipped to detect contaminants beyond the reach of the naked eye.

In January 2026, the IMA took a significant step in strengthening this capability through specialised training in advanced laboratory techniques used to detect pollutants in marine environments.

The training, supported by the International Atomic Energy Agency (IAEA), focused on the use of Gel Permeation Chromatography (GPC) a method that helps scientists isolate and identify harmful substances in water, sediments, and marine organisms such as fish, shrimp and oysters.

While the name may sound technical, the purpose is straightforward: improving the accuracy of how we detect pollution and monitor environmental health.

Members of the Environmental Quality Programme's technical team received both theoretical and hands-on training, guided by international expert Dr. Yan Aminott of IFREMER, a leading marine science research

institute in France. The sessions covered everything from preparing samples to operating and maintaining specialised equipment, ensuring that results are reliable while adhering to international standards.

This kind of training strengthens the IMA's ability to test for substances such as hydrocarbons pollutants often associated with oil and industrial activity. Detecting these compounds is critical for understanding the impact of oil spills, monitoring seafood safety, and assessing the overall health of marine ecosystems.

For the public, this work may not always be visible, but its impact is far-reaching.

It helps ensure that seafood is safe to consume, supports environmental decision-making, and contributes to the protection of coastal areas that communities rely on for recreation and livelihoods.

By building local expertise and improving laboratory capacity, the IMA is better equipped to respond to environmental challenges and safeguard the country's marine resources.



Inspiring the Next Generation of Marine Scientists

Students and teachers of Signal Hill Secondary School, Tobago with IMA staff and Director, Dr. Ava Maxam during their tour of the IMA facilities

What does a future marine scientist look like? It might just be a student stepping into a laboratory for the first time.

Earlier this year, the IMA welcomed thirteen (13) Form 6 Environmental Science students from Signal Hill Secondary School in Tobago for an interactive tour of its laboratories.

Accompanied by their teachers, Ms. Trotman-Steede and Mr. Charles, the students gained a first-hand at the practical application of marine and environmental science, from the scientific equipment used to the various research projects currently underway.

For many, it was a chance to connect what they learn in the classroom to real-world applications, and to see that careers in science are not as distant as they may seem.

At the end of the tour, Dr. Ava Maxam, Director of the IMA, met with the students and spoke about the wide range of opportunities available in marine science and related fields encouraging them to think beyond traditional career paths and consider their role in protecting the environment.

These moments can make a lasting difference. They turn curiosity into possibility and empower young people to see the ocean not just a surrounding space, but an environment they can actively study, understand, and protect.

The IMA extends its thanks to staff from the Research Departments who facilitated the sessions and shared insight into their work and experiences.



Looking closer, learning more, a young explorer dives into benthic life



Mr. Salinas James, EQP, explains the process of analysing heavy metals in marine samples to students during their laboratory tour

Career Day at Monkey Town Primary School

Ms. Krystal Ganaselal displays a specimen from IMA's Marine Reference Collection to students from Monkey Town Primary School



As part of its ongoing outreach efforts, IMA participated in Career Day at Monkey Town Primary School on 16 January 2026, bringing science and conservation to life for young learners.

Dr. Sadiyyah Ali, former staff of Oceanography and Coastal Processes (OCP) – and Mr. Chad James, Research Technician in the Environmental Quality Programme (EQP), together with Ms. Krystal Ganaselal, Information Officer/Public Relations Officer in the Information Centre (IC), led engaging and educational sessions that opened students' eyes to the wonders of the marine environment. Through interactive discussions,

students explored marine ecosystems, the importance of environmental conservation and the wide range of careers in marine science.

By connecting students with real-life scientists and conservationists, the session aimed to spark curiosity, inspire future career paths, and nurture the next generation of environmental stewards.

up next...

THE BLUE CORNER

FROM OCEAN DEPTHS TO DEEP SPACE— WHY EXPLORATION STILL MATTERS

As Artemis II prepares to take humans around the Moon, IMA scientists continue exploring the unknown right here on Earth—studying our oceans, coasts, and ecosystems.



Coastal Monitoring



Marine Research



Data & Technology



Exploring the Unknown

THE BLUE CORNER

From Ocean Depths to Deep Space Why Exploration Still Matters

Humanity is heading back to the Moon but in many ways, we're still discovering our own planet.

In April 2026, Artemis II will carry four astronauts on a 10-day journey around the Moon and back to Earth. It will be the first time since 1972 that humans travel beyond low-Earth orbit - a major step toward future lunar landings.

The mission isn't just about going to the Moon. It's about testing systems that keep people alive in extreme environments, life support, navigation, communication, and the ability to operate far from immediate help.

Astronauts Reid Wiseman, Victor Glover, Christina Koch, and Jeremy Hansen will travel over 695,000 miles, looping around the far side of the Moon using a "free-return trajectory", a path that allows them to swing around the Moon and return safely to Earth. At one point, they will lose communication with Earth for about 40 minutes.

It's a reminder of just how challenging exploration can be.

So what does this have to do with us?

While space may seem far removed from everyday life in Trinidad and Tobago, the reality is that exploration whether in space or in the ocean relies on many of the same ideas. These ideas include the following:

- **Understanding unknown environments.**
- **Collecting and interpreting data.**
- **Using technology to make informed decisions.**

At the IMA that same spirit of exploration plays out much closer to home.

Mapping the seafloor, monitoring coastal change, studying marine ecosystems, and tracking environmental shifts all require precision, innovation, and the ability to work in conditions where visibility is limited and variables are constantly changing. Similar to space missions, much of this work depends on reliable data, advanced tools, and careful planning.

Even the concept of operating in isolation isn't so different. Just as astronauts must function independently in space, so too marine scientists often work in environments where immediate support isn't always available whether offshore, underwater, or in remote coastal areas.

Exploring What We Don't Fully See

One of the most interesting parallels is this:

We know more about the surface of the Moon than we do about large parts of our own ocean.

The Artemis II mission will capture new images and data from the Moon's far side areas rarely seen up close. In a similar way, ongoing marine research continues to reveal new insights about underwater ecosystems, many of which remain largely unexplored.

Looking Ahead

Artemis II is a step toward returning humans to the Moon, including future missions that aim to land the first woman and first person of colour on its surface.

But it also serves as a reminder that exploration isn't only about going farther - it's about understanding better.

Whether looking up at the Moon or out across our coastlines, the goal is the same: to learn, to adapt, and to make decisions that shape the future.

And sometimes, the greatest discoveries aren't just in space but right here in the waters around us.

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