



Port of Subic Bay

From Former U.S. Naval Base to a Climate-Resilient International Port Through Ridge-to-Reef Protection of Blue and Green Carbon Ecosystem



Subic Bay Ridge-to-Reef Blue and Green Carbon Conservation Program

Protecting Biodiversity, Strengthening Port Resilience,
and Advancing Carbon Neutrality Within a
Working International Port



3 FOREST BIODIVERSITY

- Biodiversity Protection
- Watershed Regulation
- Carbon Sequestration



2 MARINE ECOSYSTEM

- Habitat Conservation
- Fisheries Support
- Coastal Resilience



4 MANGROVES

- Blue Carbon Storage
- Coastal Protection
- Nursery Habitat



1 PORT OPERATIONS

- Trade & Connectivity
- Economic Growth
- Sustainable Operations

For decades, Subic Bay has been a model of transformation, evolving from a former military base into one of the Philippines' leading economic zones and international ports. As we continue to drive investment, trade, and economic growth, we remain guided by a simple principle: the long-term success of Subic Bay depends as much on protecting its natural environment as it does on developing its economy.

What makes Subic truly unique is that economic activity and ecological wealth coexist within the same landscape. Our ports, industries, communities, forests, rivers, mangroves, and coastal ecosystems are interconnected. The future of one is closely tied to the future of the other.

As Chairman of the Subic Bay Metropolitan Authority, I firmly believe that environmental stewardship is not merely a regulatory responsibility. It is a leadership responsibility. It is our obligation to ensure that progress today does not diminish the opportunities of future generations.

This belief continues to guide our decisions and priorities. Over the years, SBMA has remained committed to protecting the natural assets entrusted to us while creating an environment where commerce, industry, and innovation can flourish. We have sought to demonstrate that development does not have to come at the expense of nature, and that responsible growth is both achievable and necessary.

We are equally proud that this journey has been made possible through the collective efforts of many stakeholders—government agencies, private sector partners, local communities, indigenous peoples, environmental advocates, researchers, and dedicated SBMA personnel who share a common commitment to protecting Subic Bay.

As we look toward the future, SBMA remains committed to building a Freeport that is not only economically competitive, but also environmentally responsible, socially inclusive, and resilient for generations to come. We hope that the experience of Subic Bay demonstrates that sustainable development is not simply about balancing growth and conservation—it is about recognizing that lasting prosperity depends on both.

Together, we will continue working to ensure that Subic Bay remains a place where economic progress, environmental stewardship, and community well-being move forward as one.



ENGR. EDUARDO JOSE L. ALIÑO
CHAIRMAN & ADMINISTRATOR

The story of the Port of Subic Bay proves that transformation is possible. Once a former U.S. military base, it now stands as a thriving conservation haven where economic progress and environmental stewardship go hand in hand.

Through the protection of ridge-to-reef ecosystems and the preservation of blue and green carbon resources, Subic Bay demonstrates that resilient ports are built not only with infrastructure, but with a commitment to nature, sustainability, and future generations.

The Subic Bay Metropolitan Authority (SBMA) envisions Subic Bay as a premier green port—an environmentally sustainable, innovative, and globally competitive gateway that promotes responsible economic growth while safeguarding natural resources.

As a member of the IAPH, we are proud that the SBMA's mission is to build and operate a resilient port that serves the Philippines and the world by ensuring efficient, reliable, and sustainable maritime services, strengthening supply chain connectivity, fostering economic development, and adapting to the challenges of a rapidly changing global environment.



RONNIE R. YAMBAO
SENIOR DEPUTY
ADMINISTRATOR FOR
OPERATIONS

Balance has always been one of the fundamental principles of sustainable progress. When we achieve the right balance, we create harmony between competing priorities, strengthen resilience, and build a foundation for long-term growth.

For the Subic Bay Metropolitan Authority, balance means ensuring that economic development and environmental stewardship advance together. As one of the Philippines' leading international ports and economic zones, Subic Bay is home to thriving industries, global investments, vibrant communities, and critical port operations. At the same time, it is blessed with forests, watersheds, mangroves, and marine ecosystems that make it unlike any other port environment in the country.

The challenge before us is not choosing between development and conservation. It is finding the right balance between them.

We believe that a sustainable port is one that grows responsibly—one that protects the natural systems that support its long-term success. Healthy forests help protect watersheds. Healthy mangroves strengthen coastal resilience. Healthy ecosystems support biodiversity, reduce environmental risks, and help ensure that future generations can continue to benefit from the opportunities that Subic Bay provides today.

This belief has guided SBMA's commitment to environmental protection, biodiversity conservation, and sustainable port development. It is a commitment founded on the understanding that economic competitiveness and environmental responsibility are not opposing goals, but complementary ones.

As the challenges of climate change, resource pressures, and environmental degradation continue to grow, the importance of balance becomes even more evident. The decisions we make today will determine the kind of Freeport we leave behind tomorrow.

Our goal is simple: to ensure that Subic Bay remains a place where commerce thrives, communities prosper, and nature continues to flourish alongside development.

This is our shared responsibility. This is our commitment. And this is the future we are building together for Subic Bay.



AMETHYA L. KOVAL
SENIOR DEPUTY
ADMINISTRATOR FOR
REGULATORY

As we proudly present SBMA's journey toward the IAPH Sustainability Awards, we celebrate not only our achievements but also our shared commitment to building a port that serves both people and the planet.

At SBMA, we believe that a truly resilient port is one that grows responsibly—balancing economic progress with environmental stewardship. Our efforts to protect and restore blue carbon ecosystems such as mangroves and coastal habitats, alongside our initiatives to conserve green spaces, reflect our vision of a future where development and sustainability go hand in hand.

These ecosystems do more than capture carbon. They protect our coastlines, support biodiversity, strengthen climate resilience, and sustain the communities that depend on them. Every tree planted, every mangrove restored, and every environmental program implemented is a step toward a healthier and more sustainable Subic Bay.

The IAPH Sustainability Awards provide an opportunity to share our story with the global port community, but more importantly, they remind us that sustainability is a continuing journey. This recognition belongs to every employee, partner, stakeholder, and community member who has contributed to making SBMA a model of environmental leadership.

Together, we are proving that ports can be powerful engines of growth while remaining dedicated guardians of nature. Let us continue to innovate, collaborate, and inspire others as we build a resilient, inclusive, and sustainable future for Subic Bay and beyond.

“At SBMA, sustainability is not just an initiative—it is our commitment to future generations. Through resilient port operations and the protection of our blue and green carbon ecosystems, we are creating lasting value for people, communities, and the environment.”



ROSSELL L. ABUYO
OFFICER-IN-CHARGE
ECOLOGY DEPARTMENT

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Executive Summary

Port of Subic Bay Ridge-to-Reef Blue and Green Carbon Conservation Program

Managing Nature as Critical Infrastructure for a Climate-Resilient International Port

Once home to the largest United States naval base in Asia, Subic Bay underwent a remarkable transformation following the withdrawal of U.S. forces in 1992. Through the establishment of the Subic Bay Freeport Zone under Republic Act No. 7227 and the leadership of the Subic Bay Metropolitan Authority (SBMA), the former military installation was successfully converted into a thriving center for trade, logistics, tourism, manufacturing, and investment. Today, the Port of Subic Bay stands as one of the Philippines' most successful military base conversion projects, leveraging its strategic location, deep-water harbor, and world-class infrastructure to attract more than USD 11 billion in cumulative investments while serving as a major gateway for regional and international commerce.

What makes Subic Bay truly unique, however, is not only its economic transformation but the landscape in which that transformation has taken place. Unlike most international ports, the Subic Bay Freeport operates within a living ecosystem where approximately 10,000 hectares of protected forest, 61.63 hectares of mangrove ecosystems, interconnected watersheds, and more than 1,700 hectares of marine conservation areas exist alongside industries, communities, and port infrastructure. The resilience of the port is therefore inseparable from the health of the natural systems that surround it.

Recognizing that climate change, biodiversity loss, and environmental degradation present growing operational risks to ports worldwide, SBMA adopted the Ridge-to-Reef Blue and Green Carbon Conservation Program—an integrated environmental strategy that manages forests, watersheds, mangroves, and marine ecosystems as critical natural infrastructure supporting biodiversity conservation, climate resilience, and sustainable port operations.

Rather than implementing isolated conservation projects, SBMA applies a landscape-scale approach that recognizes the ecological connectivity between upland forests, freshwater systems, coastal habitats, and the marine environment. Through science-based biodiversity monitoring, Blue and Green Carbon assessments, long-term ecosystem restoration, and collaborative stewardship with Indigenous communities and multi-sector partners, the program has transformed environmental protection into a measurable and evidence-based management system.

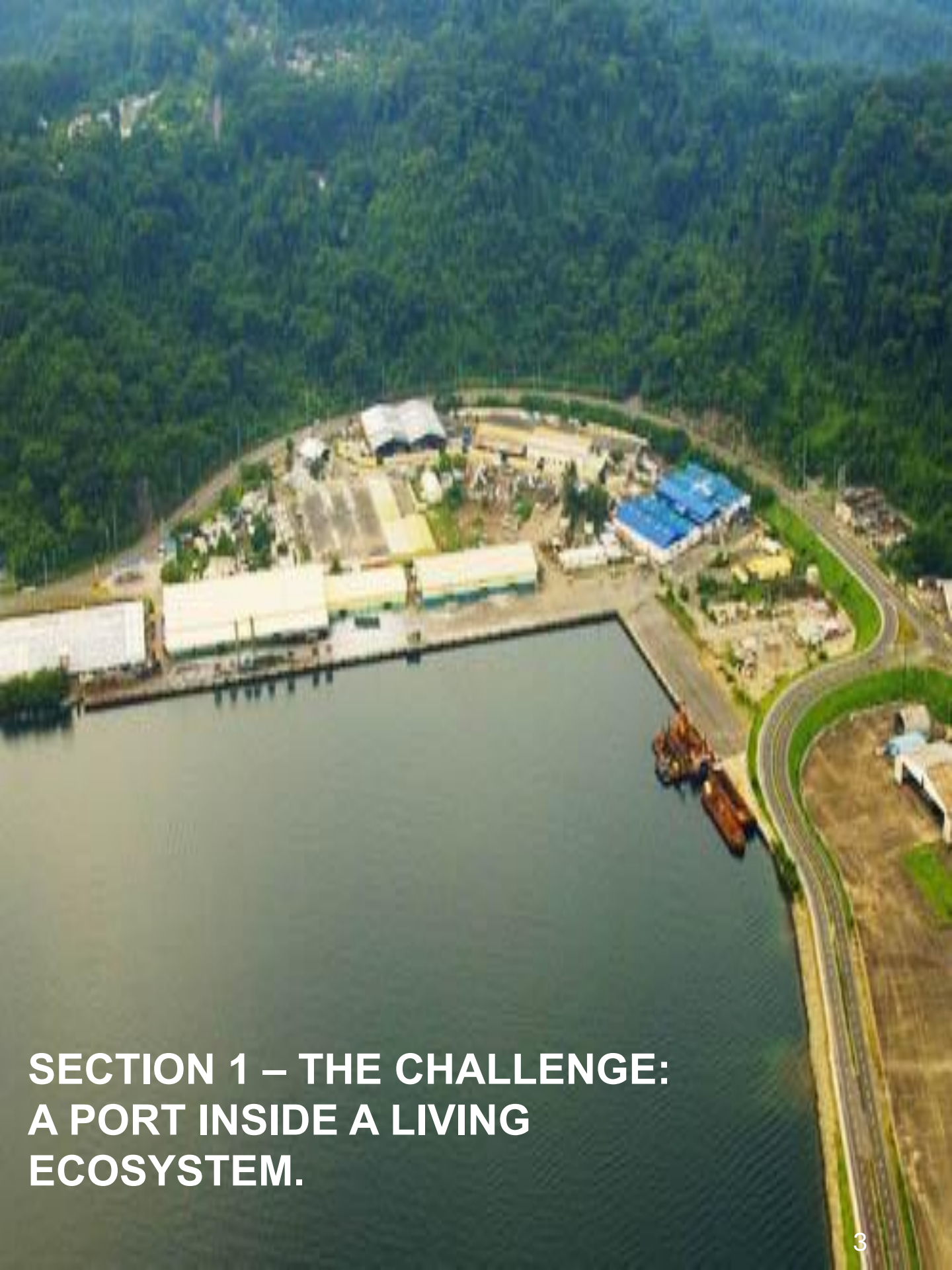
Scientific assessments have established baseline information on ecosystem health, biodiversity, biomass, carbon stocks, and carbon sequestration across both forest and mangrove ecosystems. These measurements provide the foundation for adaptive management while demonstrating that healthy ecosystems deliver benefits far beyond carbon storage. They regulate watersheds, reduce erosion and sedimentation, stabilize shorelines, strengthen coastal resilience, conserve biodiversity, and maintain the environmental conditions necessary for sustainable port operations.

The long-term success of the program has been made possible through strong institutional leadership, a comprehensive environmental policy framework, and nearly three decades of partnership with the Pastolan Aeta community, whose traditional ecological knowledge and stewardship have become integral to forest conservation and ecological restoration. Together with private-sector organizations, academic institutions, and local stakeholders, these partnerships demonstrate that environmental stewardship is most effective when science, governance, and community participation work together.

Today, the Ridge-to-Reef Blue and Green Carbon Conservation Program represents more than a conservation initiative. It demonstrates how an international port can integrate biodiversity conservation, climate resilience, and sustainable development into a single management framework. By treating forests, watersheds, mangroves, and marine ecosystems as critical natural infrastructure, SBMA has shown that environmental stewardship is not separate from economic progress—it is fundamental to the long-term resilience and competitiveness of a modern port.

The experience of the Port of Subic Bay offers a practical and replicable model for ports around the world. It demonstrates that the future of sustainable ports will depend not only on engineered infrastructure, but also on the protection, scientific management, and long-term stewardship of the natural ecosystems that sustain them.





SECTION 1 – THE CHALLENGE: A PORT INSIDE A LIVING ECOSYSTEM.

SECTION 1

The Challenge: A Port Inside a Living Ecosystem

Protecting the Natural Systems That Sustain Port Operations

International ports are increasingly confronted by the combined impacts of climate change, biodiversity loss, and environmental degradation. Rising sea levels, stronger storms, flooding, coastal erosion, sedimentation, and declining ecosystem health are no longer environmental concerns alone—they have become operational risks that directly affect port infrastructure, navigation, supply chains, and long-term economic resilience.

For many ports, these risks are addressed primarily through engineered infrastructure such as seawalls, flood control systems, dredging, and shoreline protection. While these investments remain essential, they often address the symptoms rather than the underlying ecological processes that influence the health and resilience of coastal environments.

The Port of Subic Bay presents a different challenge.

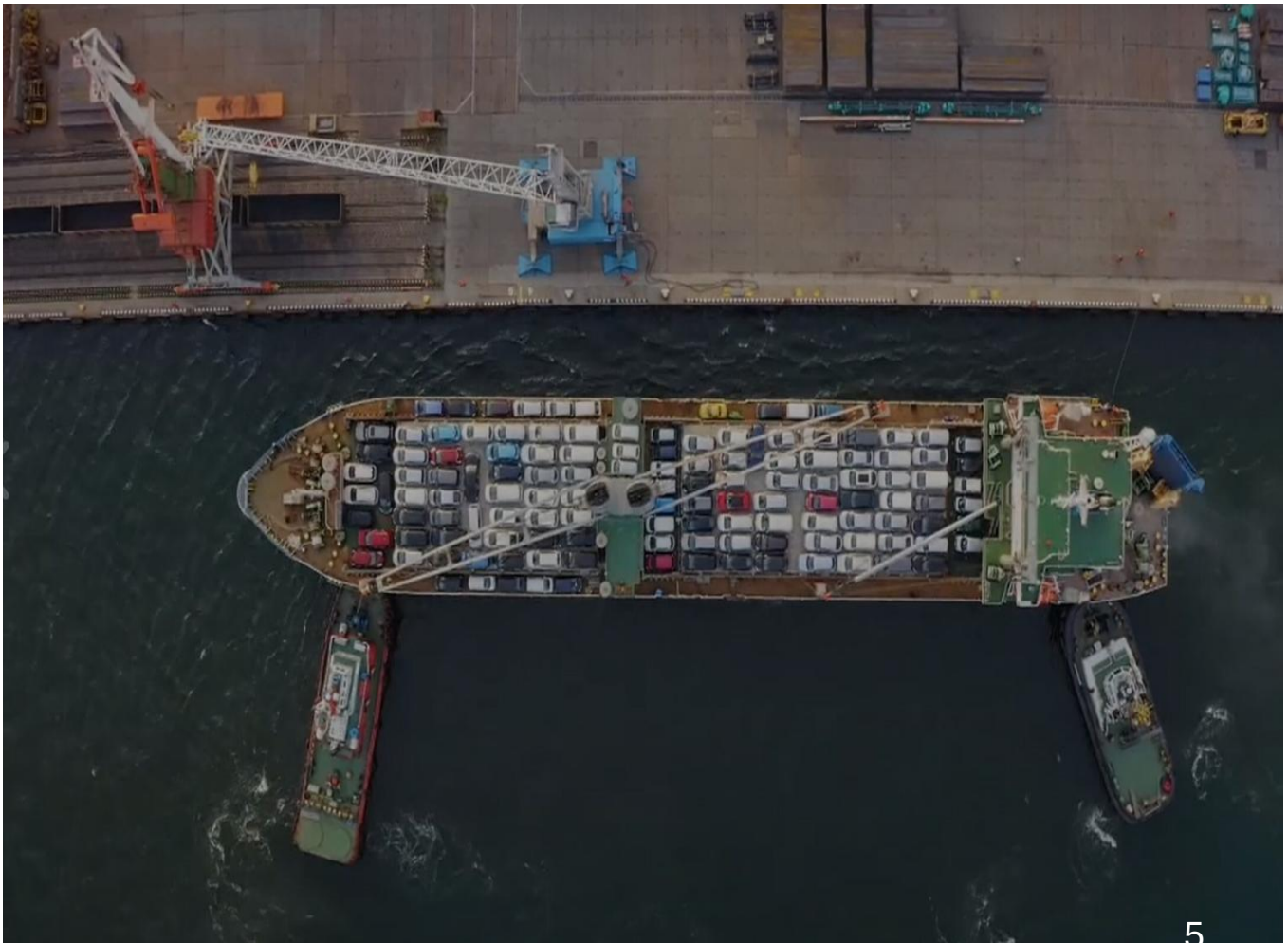
Unlike most international ports that operate within highly urbanized coastal areas, the Subic Bay Freeport is situated within a living landscape where forests, watersheds, rivers, mangrove forests, marine habitats, communities, and port facilities exist as one interconnected system. Approximately 10,000 hectares of protected forest, 61.63 hectares of mangrove ecosystems, interconnected watersheds, and marine conservation areas surround and support one of the Philippines' busiest international ports.

These ecosystems provide essential environmental services that extend far beyond biodiversity conservation. Forested watersheds regulate rainfall, reduce soil erosion, and limit sediment transport into rivers and coastal waters. Mangrove forests stabilize shorelines, buffer storm surges, trap sediments, improve water quality, and provide nursery habitats for marine life. Together, these natural systems help reduce flooding, protect coastal infrastructure, maintain navigable waters, and strengthen the long-term resilience of port operations.

The challenge for SBMA was therefore not simply how to conserve forests or restore mangroves. The challenge was how to manage an internationally competitive port while protecting the natural systems upon which that port ultimately depends.

Rather than treating environmental protection as a separate regulatory function, SBMA recognized that the resilience of its port is inseparable from the health of the surrounding ecosystems. This realization became the foundation for a new approach to port sustainability—one that views forests, watersheds, mangroves, and marine ecosystems not merely as protected areas, but as **critical natural infrastructure** supporting climate resilience, biodiversity conservation, and sustainable economic growth.

This challenge laid the foundation for the **Ridge-to-Reef Blue and Green Carbon Conservation Program**, an integrated environmental strategy that protects the entire ecological corridor—from the upland forests of the Subic Watershed Forest Reserve to the mangrove-lined coast and marine ecosystems that sustain the Port of Subic Bay.



SECTION 2 – THE RIDGE-TO-REEF SOLUTION



SECTION 2

The Ridge-to-Reef Solution

Managing Nature as Critical Port Infrastructure

Traditional port resilience has largely focused on engineered infrastructure such as seawalls, drainage systems, flood control facilities, and shoreline protection. While these remain essential, SBMA recognized that the long-term resilience of the Port of Subic Bay also depends on the health of the natural ecosystems surrounding the Freeport.

Through the **Ridge-to-Reef Blue and Green Carbon Conservation Program**, SBMA manages forests, watersheds, mangroves, and marine ecosystems as interconnected **natural infrastructure** that protects biodiversity while strengthening climate resilience and supporting sustainable port operations.

The program is built upon five interconnected pillars that guide environmental management across the Freeport.

1. Integrated Ridge-to-Reef Ecosystem Management

SBMA manages forests, watersheds, rivers, mangroves, and marine ecosystems as one interconnected ecological corridor rather than as separate conservation areas. This landscape-scale approach protects the natural processes that sustain biodiversity, regulate water, and support resilient port operations.

2. Nature as Critical Port Infrastructure

Forests, mangroves, and watersheds are managed as functional infrastructure that provides measurable environmental services, including flood mitigation, erosion control, sediment management, shoreline protection, water regulation, and climate adaptation. These ecosystems complement engineered infrastructure by reducing environmental risks that could affect port operations.

3. Science-Based Blue and Green Carbon Management

SBMA applies scientific monitoring to measure biodiversity, biomass, carbon stocks, and carbon sequestration across its forest and mangrove ecosystems. These assessments provide measurable evidence of ecosystem performance and establish the foundation for long-term environmental management and climate resilience planning.

4. Institutional Governance and Environmental Stewardship

Environmental protection is embedded within SBMA's governance through dedicated policies, scientific research protocols, marine conservation regulations, tree protection guidelines, and long-term institutional leadership by the Ecology Center. This ensures that ecosystem conservation remains integrated into Freeport planning and daily port operations.

5. Community and Indigenous Partnership

The Ridge-to-Reef Program is strengthened through partnerships with the Pastolan Aeta community, private-sector organizations, academic institutions, and other stakeholders. By combining indigenous knowledge with scientific management, SBMA demonstrates that lasting conservation depends on shared stewardship and community participation.

Together, these five pillars transform environmental protection from a regulatory responsibility into a strategic approach that strengthens biodiversity conservation, climate resilience, and the long-term sustainability of the Port of Subic Bay.

A Working International Port Conserving Blue and Green Carbon Ecosystems

KEY MESSAGES

- ✓ Port operations coexist with biodiversity protection
- ✓ Approximately **61.63 hectares** of mangrove forests protected
- ✓ Approximately **10,000 hectares** of forest ecosystem protected
- ✓ Community-based conservation programs
- ✓ Adopt-A-Mangrove Program
- ✓ Private sector participation
- ✓ Indigenous stewardship
- ✓ Blue carbon conservation
- ✓ Biodiversity enhancement
- ✓ Climate resilience
- ✓ Long-term institutional commitment
- ✓ Integration into SBMA-CNx Carbon Neutrality Program



1 FOREST ECOSYSTEM

- Approximately 10,000 hectares protected
- Watershed protection and biodiversity conservation



2 MARINE ECOSYSTEM

- Blue carbon conservation
- Fisheries support
- Biodiversity enhancement
- Climate resilience



3 MANGROVE ECOSYSTEM

- Approximately 61.63 hectares of mangrove forests protected
- Blue carbon storage
- Coastal protection



4 PORT OPERATIONS

- Climate-resilient port operations
- Protected coastal infrastructure
- Sustainable trade and connectivity



COMMUNITY-BASED CONSERVATION
Working together for a sustainable future



PRIVATE SECTOR PARTICIPATION
Partnerships for positive impact

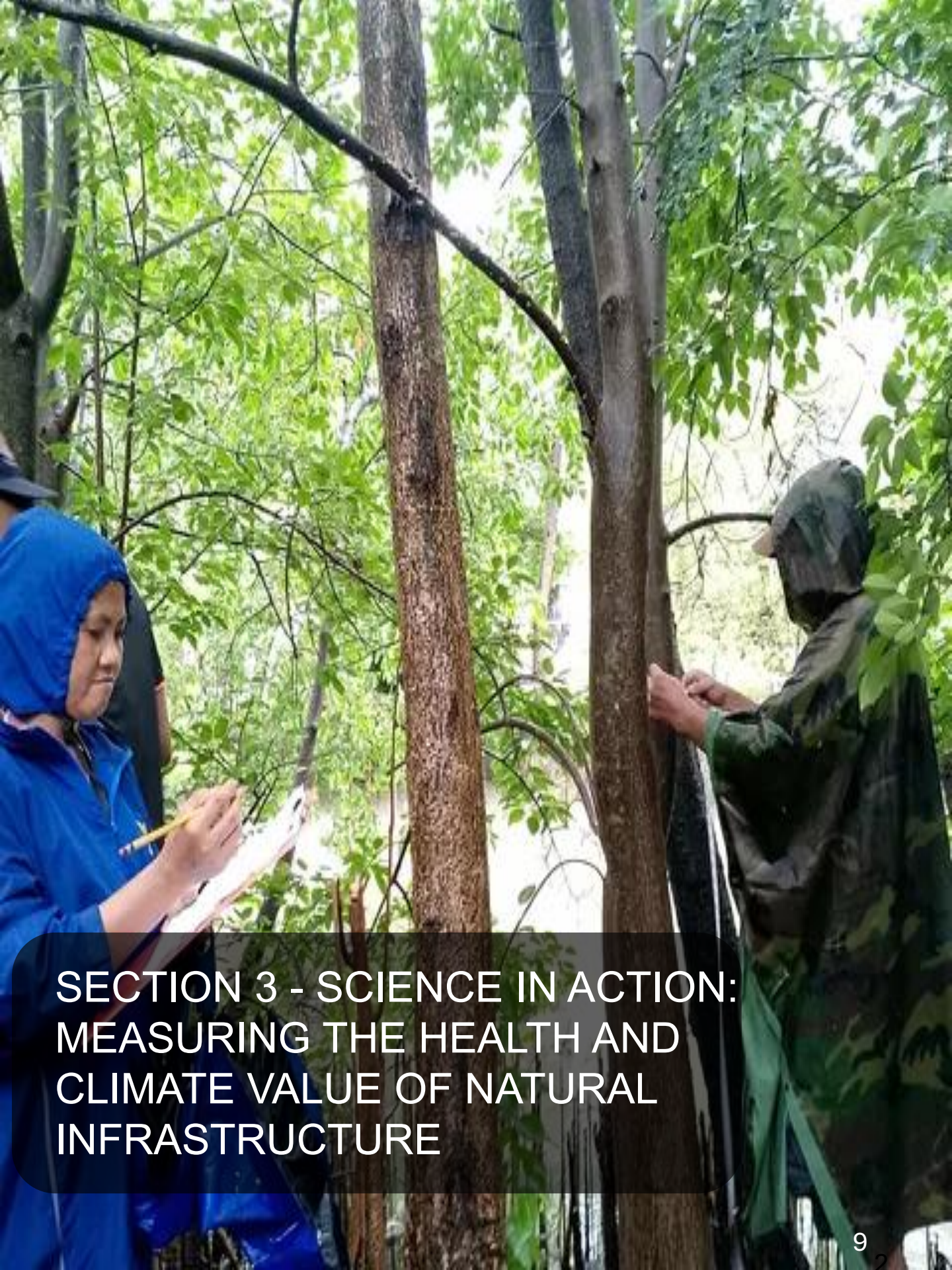


INDIGENOUS STEWARDSHIP
Preserving traditions, protecting nature



INTEGRATION INTO SBMA-CNx CARBON NEUTRALITY PROGRAM
Committed to a low-carbon, climate-resilient future





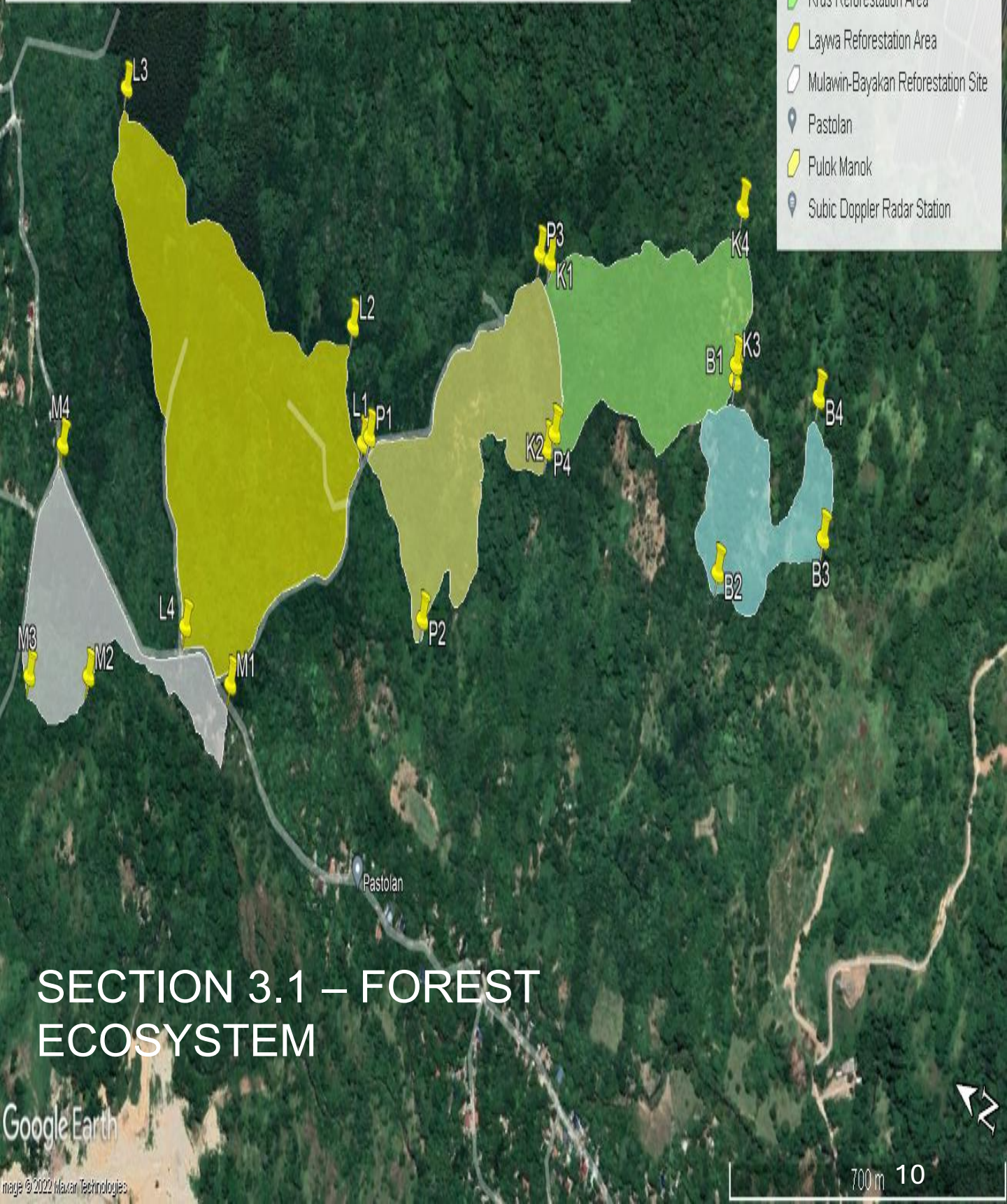
SECTION 3 - SCIENCE IN ACTION: MEASURING THE HEALTH AND CLIMATE VALUE OF NATURAL INFRASTRUCTURE

Current Reforestation Sites

Cartographic representation of the reforestation sites being maintained and managed by the PFCG as of September 2022

Legend

- Bisay Reforestation Site
- Krus Reforestation Area
- Laywa Reforestation Area
- Mulawin-Bayakan Reforestation Site
- Pastolan
- Pulok Manok
- Subic Doppler Radar Station



SECTION 3.1 – FOREST ECOSYSTEM

3.1 Forest Ecosystems

Protecting the Green Infrastructure that Sustains Port Resilience

The approximately **10,000-hectare forest ecosystem** surrounding the Subic Bay Freeport forms the upper portion of SBMA's Ridge-to-Reef Blue and Green Carbon Conservation Program. More than a protected landscape, this forest functions as **green infrastructure**, providing essential ecosystem services that support biodiversity conservation, watershed protection, climate resilience, and the long-term sustainability of the Port of Subic Bay.

Unlike conventional infrastructure that is engineered and built, healthy forest ecosystems perform critical natural functions that cannot easily be replicated through engineering alone. They regulate rainfall, stabilize slopes, reduce soil erosion, improve water infiltration, and minimize the transport of sediments into rivers and coastal waters. These natural processes protect downstream mangrove ecosystems, maintain water quality, reduce flooding, and strengthen the environmental conditions necessary for safe and resilient port operations.

Recognizing the importance of these ecosystem services, the SBMA Ecology Center has adopted a **science-based approach to forest management**, where conservation decisions are supported by regular biodiversity assessments, forest inventories, biomass measurements, and carbon stock assessments. This approach enables SBMA to monitor changes in ecosystem condition, evaluate conservation effectiveness, and establish measurable environmental baselines for long-term management.

The **2025 Forest Status Assessment** confirmed the ecological significance of the Subic Bay forest, documenting **373 individual trees**, **67 tree species**, and **26 plant families** within the monitored plots. The assessment classified the forest as having **very high biodiversity**, with the continued presence of native dipterocarp species and vulnerable wildlife that depend on mature forest habitats. These findings demonstrate that the forest continues to function as a healthy and resilient ecosystem capable of supporting biodiversity while providing essential environmental services.

Scientific monitoring also established baseline measurements for **forest biomass, carbon stocks, and carbon sequestration**, confirming the forest's role as a significant **green carbon ecosystem**. These data provide the foundation for monitoring long-term changes in ecosystem health while strengthening SBMA's capacity to integrate biodiversity conservation with climate resilience and natural capital management.

Measuring Success Through Landscape Recovery

One of the strongest indicators of the effectiveness of SBMA's long-term conservation strategy is the visible recovery of forest cover within its reforestation sites. Satellite imagery captured between **2005 and 2021** demonstrates the gradual transformation of previously degraded areas into continuous forest canopy, providing clear visual evidence that sustained ecological restoration has resulted in measurable landscape recovery.

Rather than evaluating success solely by the number of trees planted, SBMA measures success by the restoration of a functioning forest ecosystem. Over time, reforestation, natural regeneration, and continuous site protection have increased forest cover, improved habitat connectivity, strengthened watershed functions, and enhanced the ecological integrity of the Ridge-to-Reef corridor.

The regenerated forest now contributes to reduced soil erosion, improved slope stability, greater water retention, enhanced carbon sequestration, and better protection of downstream rivers, mangroves, and coastal environments. These improvements illustrate how long-term ecological restoration directly strengthens the resilience of the Port of Subic Bay by protecting the natural systems that support maritime operations and surrounding communities.



Figure 3.1. Progressive regeneration of the Mt. Sta. Rita Reforestation Sites (2005–2021), demonstrating the successful recovery of forest cover through sustained protection, ecological restoration, and long-term stewardship under the SBMA Ridge-to-Reef Blue and Green Carbon Conservation Program.

Through long-term protection, scientific monitoring, ecological restoration, and indigenous stewardship, SBMA demonstrates that forest conservation is more than an environmental initiative—it is a strategic investment in natural infrastructure. By protecting the forests that sustain watersheds, regulate hydrological processes, and strengthen downstream coastal ecosystems, SBMA enhances biodiversity conservation while reinforcing the resilience and sustainability of one of the Philippines' leading international ports.

Science at a Glance: Forest Ecosystem

Forest Ecosystem Indicator	2025 Status
Protected Forest Landscape	~10,000 hectares
Trees Surveyed	373
Tree Species Recorded	67
Plant Families Identified	26
Biodiversity Classification	Very High
Carbon Stock Assessment	Completed
Reforestation Monitoring	2005–2021 Satellite Verified
Indicator Species	Golden-crowned Flying Fox, Blue-naped Parrot
Key Ecosystem Services	Watershed Protection, Flood Mitigation, Sediment Control, Carbon Sequestration



SECTION 3.2 – MANGROVE ECOSYSTEM

3.2 Mangrove Ecosystems

Protecting the Blue Infrastructure that Strengthens Coastal Resilience

The mangrove ecosystems of the Subic Bay Freeport form the coastal component of SBMA's Ridge-to-Reef Blue and Green Carbon Conservation Program. Positioned between land and sea, these ecosystems serve as **critical blue infrastructure**, protecting coastlines while supporting biodiversity, climate resilience, and the long-term sustainability of port operations.

Mangroves provide essential ecosystem services that benefit both the environment and the port. Their extensive root systems stabilize shorelines, reduce coastal erosion, dissipate wave energy during storms, trap sediments carried from upstream watersheds, improve water quality, and provide nursery habitats for fish and other marine life. These natural processes help maintain healthy coastal ecosystems while reducing environmental risks to port facilities and surrounding communities.

To ensure these ecosystems remain healthy and resilient, the SBMA Ecology Center implements a **science-based monitoring program** that regularly assesses biodiversity, ecosystem condition, biomass, and blue carbon. This enables SBMA to move beyond traditional conservation activities by measuring ecosystem performance and establishing long-term environmental baselines for adaptive management.

The monitoring program confirms that the mangrove forests continue to support a diverse and ecologically stable coastal ecosystem while functioning as an important **blue carbon reservoir**. Beyond storing carbon, healthy mangroves strengthen shoreline protection, improve coastal water quality, support marine biodiversity, and increase the resilience of the Port of Subic Bay against the impacts of climate change.

Through continuous scientific monitoring, ecosystem restoration, and long-term protection, SBMA demonstrates that mangrove ecosystems are not simply coastal habitats—they are **strategic natural infrastructure** that safeguards biodiversity, strengthens climate resilience, and supports the sustainable operation of one of the Philippines' leading international ports.

Science at a Glance: Mangrove Ecosystem

Mangrove Ecosystem Indicator

2025 Status

Protected Mangrove Area	61.63 hectares
Mangrove Species	17
Botanical Families	7
Biodiversity Condition	Stable Community Structure
Shannon Diversity Index	2.324
Biomass Density	523.114 t/ha
Carbon Stock Density	102.947 tC/ha
Estimated Carbon Sequestered	377.816 tCO ₂ e
Annual Monitoring Program	Established

Key Ecosystem Services

Shoreline Protection, Storm Surge Buffering,
Sediment Control, Fisheries Habitat, Blue
Carbon Storage

Mangroves of the Subic Bay Freeport Zone





SECTION 3.3 – BLUE AND GREEN CARBON

3.3 Blue and Green Carbon

Transforming Ecosystem Conservation into Measurable Climate Action

The Ridge-to-Reef Blue and Green Carbon Conservation Program extends beyond protecting forests and mangroves. It recognizes these ecosystems as **natural carbon infrastructure** that actively contribute to climate change mitigation while strengthening the resilience of the Port of Subic Bay.

Through science-based assessments, SBMA has established baseline measurements for both its **green carbon ecosystems** (forests) and **blue carbon ecosystems** (mangroves). These assessments quantify biomass, carbon stocks, and carbon sequestration, transforming ecosystem conservation from a traditional environmental program into one supported by measurable scientific evidence.

By understanding the carbon value of its natural assets, SBMA is able to monitor ecosystem performance, evaluate the effectiveness of conservation initiatives, and support evidence-based decision-making for long-term environmental management. This scientific approach also creates the foundation for future natural capital accounting, ecosystem valuation, and climate resilience planning.

More importantly, Blue and Green Carbon demonstrates that healthy ecosystems deliver multiple benefits simultaneously. The same forests and mangroves that store atmospheric carbon also protect watersheds, stabilize coastlines, reduce flooding and erosion, improve biodiversity, and strengthen the environmental conditions necessary for sustainable port operations.

For SBMA, carbon accounting is therefore not the primary objective of conservation—it is a tool for understanding, measuring, and demonstrating the climate value of ecosystems that are already providing essential services to the Freeport.

The integration of Blue and Green Carbon into the Ridge-to-Reef Program represents an important step toward managing nature as infrastructure, where environmental protection is supported by scientific measurement and where conservation outcomes can be monitored, evaluated, and continuously improved.

Science at a Glance: Blue and Green Carbon

Climate Indicator	Status
Forest Carbon Baseline	Established
Mangrove Carbon Baseline	Established
Green Carbon Assessment	Completed
Blue Carbon Assessment	Completed
Biomass Assessment	Completed
Carbon Stock Assessment	Completed
Carbon Sequestration Assessment	Completed
Long-term Monitoring Program	Active

Photos of the 2025 Subic Bay Forest diversity Monitoring

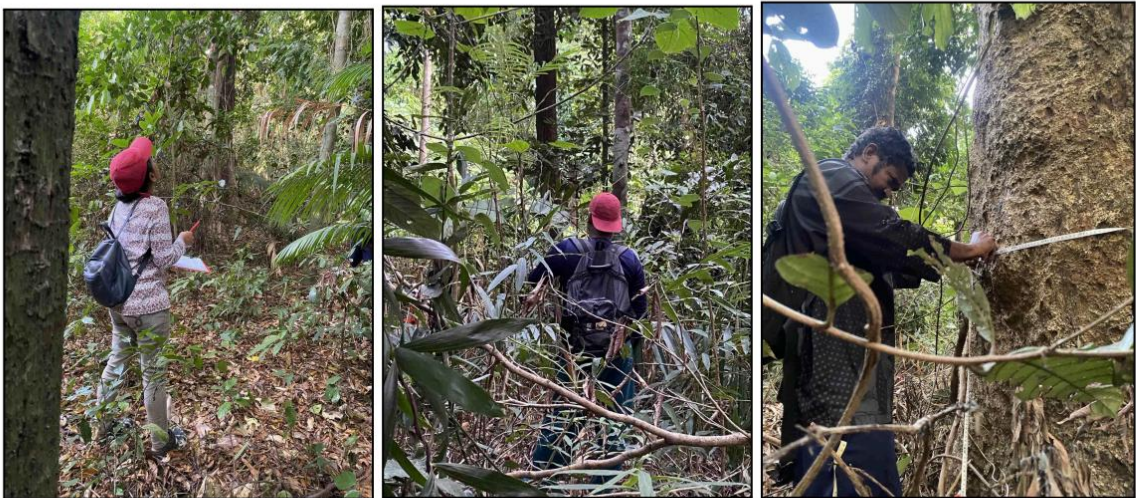
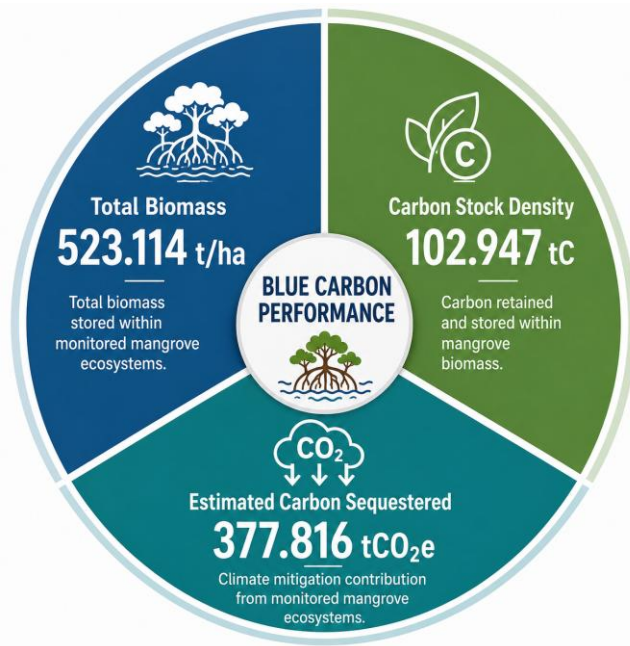


Plate 1. (Left) MSG personnel, Ms. Joceylyn Pabayan, estimating the merchantable height of the tree, (center) Mr. Michael Blanco holding the transect meter, and (right) Mr. Roland Abraham measuring the girth of the tree to calculate its DBH during the March 21, 2025 monitoring of Apaliin Forest

BLUE CARBON PERFORMANCE



HIGHEST PERFORMING BLUE CARBON SITES Boton B

Highest Biomass Density

- 181.378 t/ha Biomass
- 131.320 tCO₂e Sequestered

Characteristics:

- Riverine mangrove ecosystem
- Minimal anthropogenic disturbance
- High ecological integrity

Malawaan

Second Highest Biomass Density

- 105.505 t/ha Biomass
- 76.176 tCO₂e Sequestered

Characteristics:

- Riverine mangrove ecosystem
- Strong biodiversity performance
- High carbon storage potential

ECOSYSTEM SERVICES PROVIDED

Subic Bay Mangroves: Nature-Based Solutions for a Sustainable Port and Coastal Communities



CLIMATE REGULATION

- ✓ Carbon Storage
- ✓ Carbon Sequestration
- ✓ Climate Change Mitigation



Mangroves capture and store carbon to help mitigate climate change.



COASTAL PROTECTION

- ✓ Storm Surge Attenuation
- ✓ Coastal Erosion Control
- ✓ Sediment Retention
- ✓ Shoreline Stabilization



Mangroves act as natural barriers, protecting coastlines and port facilities from storms, waves, and erosion.



BIODIVERSITY CONSERVATION

- ✓ Habitat Protection
- ✓ Nursery Grounds for Marine Species
- ✓ Species Connectivity
- ✓ Ecosystem Resilience



Mangroves provide vital habitat and nursery areas that support marine life and maintain healthy ecosystems.



**HEALTHY MANGROVES.
HEALTHY ENVIRONMENT.**

THE FOUNDATION OF A RESILIENT COAST,
A THRIVING BIODIVERSITY, AND A SUSTAINABLE PORT.



SBMA FOREST CARBON PERFORMANCE

2025 FOREST STATUS ASSESSMENT

The 2025 Forest Status Assessment confirms that the Subic Bay Freeport Forest serves as a significant carbon sink, storing 243,663 kg of carbon and sequestering 894,244 kg of CO₂ within the assessed sites.



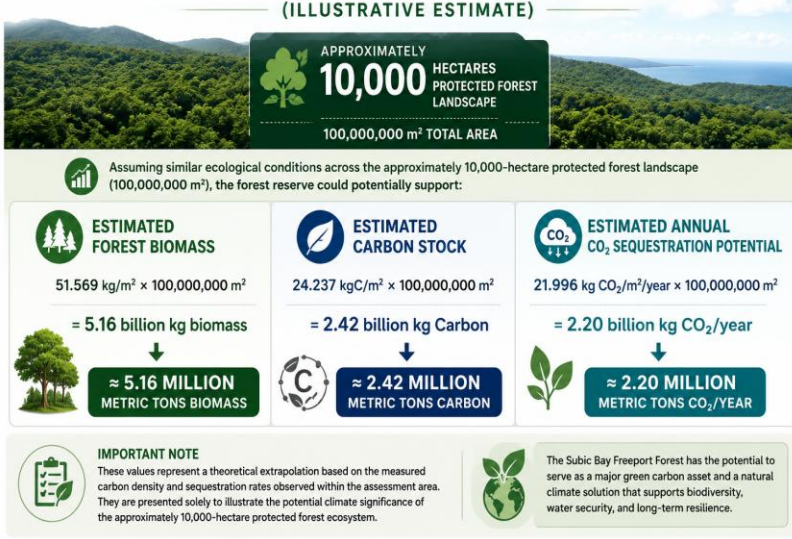
The Subic Bay Freeport Forest should remain protected and continuously monitored to maintain and enhance its function as a long-term carbon sink for future generations.

Scaling Forest Carbon Benefits Across the Subic Bay Forest Landscape

The 2025 Forest Status Assessment established a scientific baseline for understanding the carbon sequestration potential of the Subic Bay Freeport Forest. The reported biomass, carbon stock, and carbon sequestration values presented in this assessment were derived from field measurements conducted within the assessed study area (1 hectare) and should be interpreted as site-based measurements rather than representing the entire forest ecosystem.

LANDSCAPE-LEVEL CARBON POTENTIAL

(ILLUSTRATIVE ESTIMATE)



However, considering that the Subic Bay Freeport and Subic Watershed Forest Reserve collectively protect approximately **10,000 hectares of forest ecosystem**, the assessment provides important insights into the potential climate value of the broader landscape.

Using the measured biomass density, carbon density, and sequestration rates observed within the study area as indicative values, the wider forest ecosystem demonstrates the potential to function as a significant long-term green carbon asset.

SECTION 3.4 – FROM CONSERVATION TO PORT ASSET MANAGEMENT



3.4 From Conservation to Port Asset Management

Managing Nature as Critical Infrastructure

The scientific assessments presented in this chapter demonstrate that the forests and mangrove ecosystems of Subic Bay are healthy, measurable, and capable of delivering significant environmental benefits. More importantly, they provide SBMA with the information needed to manage these ecosystems as strategic assets rather than simply protected areas.

Traditionally, forests and mangroves have been viewed as environmental resources that require protection primarily for regulatory compliance and biodiversity conservation. The Ridge-to-Reef Blue and Green Carbon Conservation Program adopts a different perspective. By establishing scientific baselines for biodiversity, ecosystem condition, biomass, and carbon stocks, SBMA is able to understand not only the ecological condition of these ecosystems but also the environmental services they provide to the Freeport.

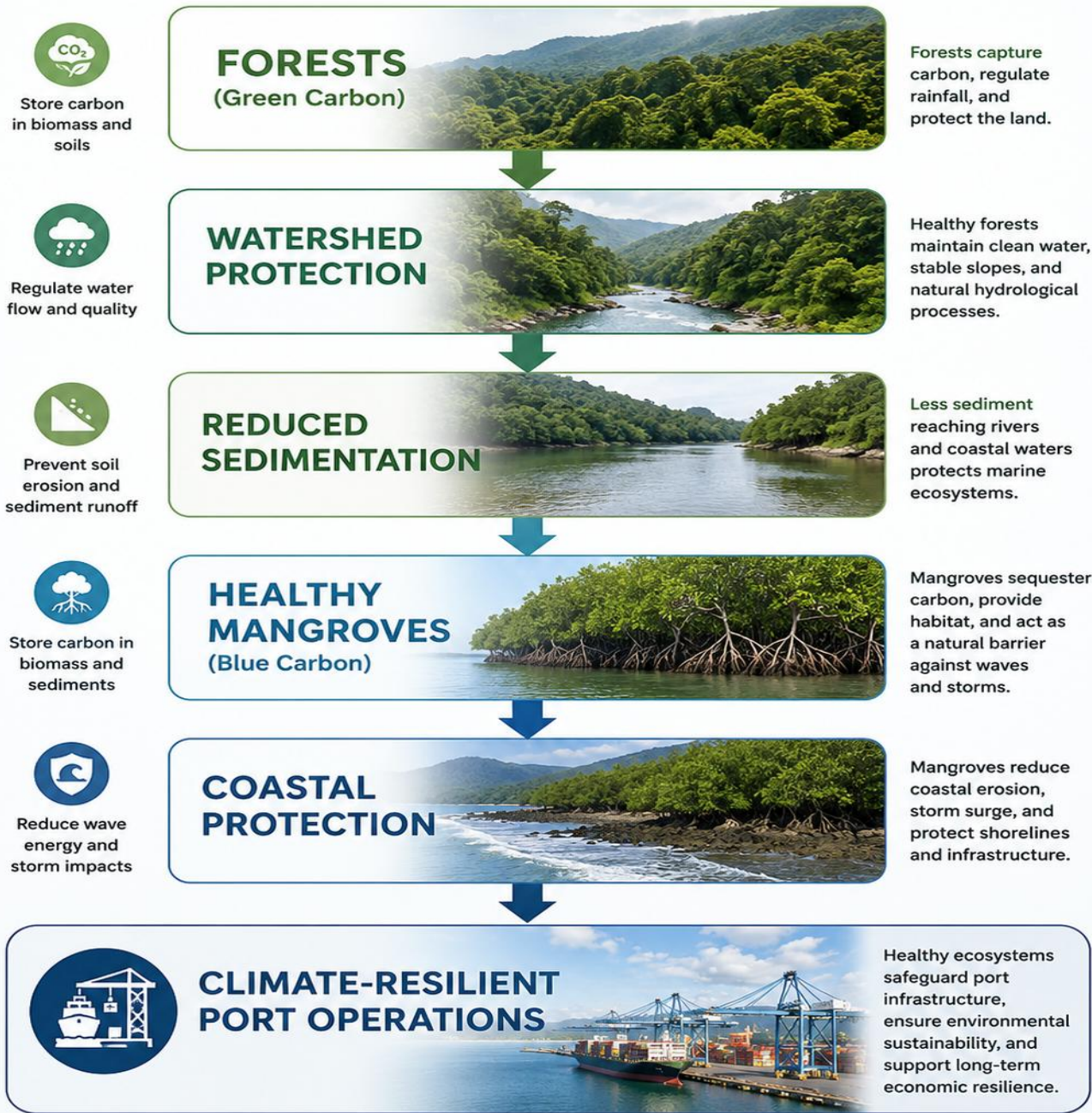
This shift from **conservation to asset management** changes the role of nature in port development. Healthy forests become essential components of watershed management. Healthy mangroves become natural coastal protection systems. Carbon assessments become indicators of ecosystem performance. Biodiversity monitoring becomes an early warning system that helps guide long-term environmental management.

Rather than reacting to environmental degradation after it occurs, SBMA is building the capacity to monitor ecosystem condition, identify emerging risks, and make informed management decisions based on scientific evidence. This approach enables environmental protection to become an integral part of strategic planning for a resilient and sustainable international port.

The Ridge-to-Reef Program therefore demonstrates that conservation is not simply about protecting nature—it is about managing natural assets that continuously provide environmental, operational, and climate benefits to the Port of Subic Bay. By integrating ecological science into decision-making, SBMA is transforming biodiversity conservation into an essential component of modern port management.

The relationship between forests, watersheds, mangroves, and port resilience is illustrated below. Rather than functioning as isolated ecosystems, each component of the Ridge-to-Reef corridor supports the next, creating a continuous chain of environmental services that ultimately protect the Port of Subic Bay.

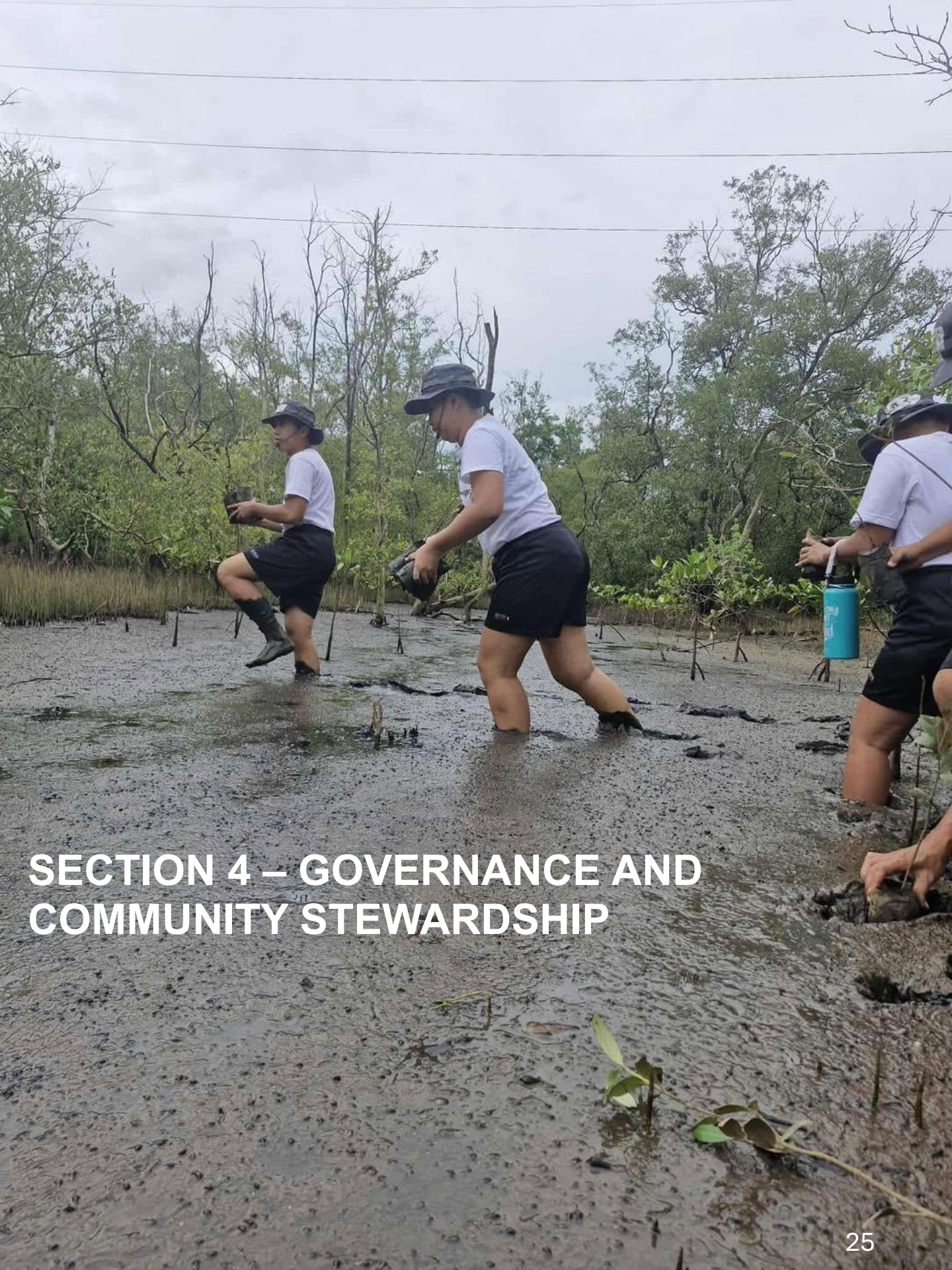
THE RIDGE-TO-REEF CONNECTION
Nature as Infrastructure. Carbon as Value. Resilience as Our Future.



ONE ECOSYSTEM. MANY BENEFITS.

Protect Nature. Build Resilience. Secure Our Future.

Figure 3.4 From Ridge to Reef: Nature Working as Critical Port Infrastructure



**SECTION 4 – GOVERNANCE AND
COMMUNITY STEWARDSHIP**

CHAPTER 4

Governance and Stewardship

Building Long-Term Commitment to Ridge-to-Reef Conservation

The success of the Ridge-to-Reef Blue and Green Carbon Conservation Program is not solely the result of healthy ecosystems or scientific monitoring. It is made possible through long-term institutional commitment, enabling policies, and the active participation of communities and stakeholders. Recognizing that ecosystem conservation requires continuity beyond individual projects and leadership transitions, the Subic Bay Metropolitan Authority has embedded environmental stewardship within its governance framework. Through dedicated environmental policies, science-based management, Indigenous stewardship, and multi-sector partnerships, SBMA has established a collaborative model that enables long-term protection of forests, mangroves, and coastal ecosystems while supporting sustainable port development.

4.1 Institutional Commitment and Policy Framework

Embedding Environmental Stewardship into Port Governance

One of the defining strengths of the Ridge-to-Reef Blue and Green Carbon Conservation Program is that it is supported by a strong institutional framework rather than being implemented as a stand-alone conservation project. For more than two decades, SBMA has integrated environmental stewardship into the governance of the Freeport through the leadership of the **Ecology Center**, which serves as the principal authority for environmental protection, biodiversity conservation, scientific research, natural resource management, and environmental compliance. This institutional commitment ensures that ecosystem conservation remains a core consideration in Freeport planning, port operations, and infrastructure development.

The program is reinforced through a comprehensive policy framework that provides long-term protection for terrestrial and marine ecosystems. These include guidelines governing scientific research, marine conservation regulations, tree protection policies, mangrove conservation measures, and environmental permitting systems that ensure development activities remain compatible with ecosystem protection. By embedding environmental management within institutional policies and regulatory processes, SBMA has created a governance model where conservation is integrated into everyday decision-making rather than treated as a separate environmental initiative. This long-term institutional commitment provides continuity, accountability, and adaptive management that will enable the Ridge-to-Reef Program to evolve alongside future environmental and operational challenges.

4.2 Indigenous Stewardship

Conserving Nature Through Indigenous Partnership

A distinguishing feature of the Ridge-to-Reef Blue and Green Carbon Conservation Program is the long-standing partnership between SBMA and the **Pastolan Aeta community**, whose traditional knowledge and stewardship have become integral to the protection of the Freeport's forests and mangrove ecosystems.

For nearly three decades, members of the **Pastolan Forest Conservation Group (PFCG)** have worked alongside the SBMA Ecology Center in reforestation, forest protection, biodiversity monitoring, mangrove conservation, nursery management, and environmental education. Their contribution extends beyond field implementation; it reflects a shared responsibility for protecting the natural systems that sustain both biodiversity and the Port of Subic Bay.

This partnership demonstrates that successful conservation depends not only on sound science and effective governance but also on empowering communities with deep cultural and ecological connections to the landscape. By combining Indigenous knowledge with scientific management, SBMA has strengthened ecosystem protection while generating social benefits through livelihood opportunities, skills development, gender inclusion, and the preservation of traditional ecological knowledge.

The continued participation of the Pastolan Aeta community illustrates how Indigenous stewardship can become a cornerstone of resilient environmental governance and provides a replicable model for ports seeking to integrate local communities into long-term conservation programs.



4.3 Community and Private Sector Partnership

Building Shared Responsibility for Conservation

The Ridge-to-Reef Blue and Green Carbon Conservation Program recognizes that long-term environmental protection cannot be achieved by government alone. Effective conservation requires the participation of businesses, academic institutions, civil society organizations, and local communities working toward a common environmental vision.

SBMA has therefore cultivated partnerships that encourage shared responsibility for protecting forests, mangroves, and coastal ecosystems. Programs such as the **Adopt-a-Mangrove Initiative** enable organizations to actively participate in ecosystem restoration and long-term stewardship, while collaborations with research institutions strengthen biodiversity monitoring, ecological assessments, and scientific knowledge that support adaptive management.

These partnerships extend the impact of the Ridge-to-Reef Program beyond regulatory compliance by fostering environmental awareness, encouraging volunteerism, and creating opportunities for the private sector to contribute directly to the protection of natural capital. Through collaboration, SBMA has transformed conservation into a shared responsibility where environmental stewardship supports not only biodiversity but also the long-term resilience and sustainability of the Port of Subic Bay.

Rotary Club of Downtown Olongapo replants Subic Freeport mangrove

SUBIC BAY FREEPORT — Members of the Rotary Club of Downtown Olongapo (RCDO), along with various government, private and people's organizations in the Subic Bay area, replanted mangrove areas here early this month to help conserve the ecosystem in this free port.

Around 70 participants trooped to the Tribosa Mangrove Forest to help plant 100 mangrove propagules provided by the Subic Bay Metropolitan Authority's Ecology Center.

SBMA and BJMP Partner for Mangrove Conservation in Subic Bay

BY JANIMONOW | MARCH 22, 2026



Subic Bay Metropolitan Authority (SBMA) Chairman and Administrator Eduardo Jose L. Aliño and Bureau of Jail Management and Penology-Regional Office 3 (BJMPRO3) Director, Jail Chief Superintendent (JCSupt) Paulino H. Moreno Jr. show the memorandum of agreement (MOA) they signed for the Adopt-a-Mangrove Program on March 12, 2026 at the SBMA corporate boardroom.

SBMA Subic Protected Areas

Write a description for your map.

Legend

- Baloy Beach
- Feature 1
- Kanawan Hanging Bridge
- Mount Natib
- Punta Belle Resort
- SBMA
- SBMA Beach
- Sinagtala Farm Resort
- Zoobic Safari

SECTION 5 – RESULTS,
REPLICABILITY AND LESSONS
FOR THE WORLD

5.1 Measurable Results

The Ridge-to-Reef Blue and Green Carbon Conservation Program has transformed environmental stewardship within the Port of Subic Bay from traditional conservation activities into a science-based management system that protects biodiversity while strengthening the resilience of port operations.

Through long-term institutional commitment, scientific monitoring, Indigenous stewardship, and collaborative partnerships, SBMA has established measurable baselines for forest and mangrove ecosystems, strengthened biodiversity conservation, and demonstrated the climate value of its natural assets through Blue and Green Carbon assessments.

Today, the program protects one of Central Luzon's largest remaining forest landscapes, conserves critical mangrove ecosystems, engages Indigenous communities in long-term stewardship, and integrates ecological science into environmental decision-making. Together, these achievements demonstrate that conservation can generate measurable environmental outcomes while supporting sustainable economic development within an active international port.

Ecosystem Protected

Indicator	Achievement
Protected Forest Ecosystem	~10,000 ha
Protected Mangrove Ecosystem	61.63 ha
Marine Conservation Areas	1,700+ ha
Active Reforestation Sites	59.48 ha
Trees Inventoried	29,088

Biodiversity Conservation

Indicator	Achievement
Forest Species Recorded	67
Mangrove Species Recorded	17
Plant Families Identified	26 (Forest) / 7 (Mangrove)
Forest Biodiversity Status	Very High
Mangrove Ecosystem Condition	Stable Community Structure

Climate Action

Indicator	Status
Forest Carbon Baseline	✓ Established
Blue Carbon Baseline	✓ Established
Biomass Assessment	✓ Completed
Carbon Stock Assessment	✓ Completed
Carbon Sequestration Assessment	✓ Completed
Annual Ecosystem Monitoring	✓ Institutionalized

Port Resilience

	Contribution
Nature-Based Service	
Watershed Protection	✓ Flood mitigation
Forest Protection	✓ Reduced soil erosion
Mangrove Conservation	✓ Shoreline stabilization
Healthy Coastal Ecosystems	✓ Better water quality
Ridge-to-Reef Connectivity	✓ Climate-resilient port operations

Community Stewardship

Indicator	Achievement
Pastolan Aeta Forest Stewards	88
Women Participants	63
Men Participants	25
Indigenous Partnership	Since 1996
Adopt-a-Mangrove Program	Active

Governance and Science

Indicator	Status
Ecology Center Environmental Authority	✓ Active
Scientific Research Framework	✓ Implemented
Marine Conservation Regulations	✓ Implemented
Tree & Mangrove Protection Policies	✓ Implemented
Science-Based Monitoring	✓ Continuous

5.2 A Replicable Model for Ports Worldwide

Although every port operates within a different environmental, economic, and regulatory context, the principles underpinning SBMA's Ridge-to-Reef Blue and Green Carbon Conservation Program can be adapted by ports around the world.

The experience of Subic Bay demonstrates that biodiversity conservation and port development are not competing priorities. Instead, healthy ecosystems can be managed as strategic assets that strengthen climate resilience, reduce environmental risks, and support long-term operational sustainability.

Rather than prescribing a single conservation model, the Ridge-to-Reef approach offers a practical framework that ports can adapt according to their own ecological conditions. Ports with forests, wetlands, mangroves, estuaries, rivers, or other coastal ecosystems can integrate these natural assets into infrastructure planning, climate adaptation, and environmental governance.

The success of the program demonstrates that effective environmental management depends not only on protecting ecosystems but also on understanding their value, measuring their condition, and incorporating them into long-term decision-making.

The Ridge-to-Reef Framework for Ports

Principle	Application for Other Ports
Protect ecosystems as natural infrastructure	Recognize forests, wetlands, and mangroves as assets supporting resilient port operations.
Apply science-based monitoring	Establish biodiversity and carbon baselines to guide management decisions.
Integrate conservation into governance	Embed ecosystem protection within port policies and operational planning.
Build partnerships	Engage Indigenous peoples, communities, academia, and the private sector in long-term stewardship.
Measure environmental performance	Monitor ecological indicators to continuously improve resilience and sustainability.

5.3 Lessons for the World

The experience of the Port of Subic Bay offers several important lessons for ports seeking to strengthen climate resilience and environmental sustainability.

First, resilient ports are not built solely through engineered infrastructure. Healthy forests, watersheds, mangroves, and coastal ecosystems perform essential functions that protect port operations and surrounding communities.

Second, effective conservation begins with measurement. Scientific assessments of biodiversity, ecosystem condition, and Blue and Green Carbon provide the evidence needed to guide long-term environmental management and informed decision-making.

Third, long-term environmental success depends on institutional commitment. Strong governance, enabling policies, and dedicated environmental leadership ensure that conservation continues beyond individual projects or changes in administration.

Fourth, meaningful conservation requires partnership. Indigenous communities, local stakeholders, researchers, and the private sector each contribute unique knowledge and resources that strengthen environmental stewardship.

Finally, ports should view nature not simply as land surrounding the harbor, but as critical infrastructure that supports resilience, sustainability, and long-term economic competitiveness.

PROGRAM MILESTONES

RIDGE-TO-REEF CONSERVATION PROGRAM AT A GLANCE

SBMA

SUBIC BAY METROPOLITAN AUTHORITY
SUBIC BAY FREEPORT ZONE

Our journey of protecting natural capital, advancing carbon neutrality, empowering communities, and integrating environmental stewardship into daily port operations.



FOUNDATION PHASE

2002

- Subic Bay Protected Area Management Plan approved.
- Marine Conservation Rules established.
- Scientific Research Governance Framework established.

2003

- Tree Protection and Mangrove Protection Guidelines implemented.



CONSERVATION EXPANSION

2015

- Private-sector-supported mangrove restoration initiatives launched.

2022

- PIDS identifies opportunities for ecosystem accounting, biodiversity monitoring, natural capital valuation, and indigenous participation.

KEY DEVELOPMENTS



Pastolan Aeta Forest Conservation Group established (since 1996).



4 Licensed Aeta Ambala Divers supporting marine monitoring.



Reforestation sites managed: 59.48 ha.



SCIENCE-BASED CONSERVATION PHASE

2023

- Strengthened biodiversity monitoring initiatives.

2024

- Expansion of environmental monitoring and ecosystem assessment programs.

2025

- Mangrove biodiversity and carbon stock baseline completed.
- Forest biodiversity and carbon stock assessment completed.
- Blue carbon accounting initiated.
- Carbon stock baselines established.
- Mt. Sta. Rita reforestation achievements documented.
- **Public Declaration of going Carbon neutral.**
- **Shore Power Project Bidding initiated.**

2026

- Adopt-A-Mangrove Program expanded.
- SBMA-CNx Carbon Neutrality Framework initiated.
- Climate resilience and natural capital integration strengthened.



FUTURE LEADERSHIP PHASE

SCIENCE-BASED ENVIRONMENTAL MONITORING



Marine Sampling & Water Quality Monitoring – Active



Air Emissions Testing (Substation) – Active



Biodiversity Assessments – Active



Forest & Blue Carbon Monitoring – Active



Carbon Baseline Development – Active



SUSTAINABLE PORT OPERATIONS



Environmental Clearance System – Operational



Bunkering, Ballast Water & Waste Oversight – Active



Near-Zero Emission RTG Cranes – 4 Units



LED Lighting Upgrades – 144 Fixtures



Solar Streetlights (NSD Compound) – 54 Units



High-Mast LED Floodlights – 12 Towers



Port Digitalization Systems – Operational (TAFS, ETAPS, AEDS, E-APS, E-LRS)



Strengthen nature-based solutions for climate resilience



Advance carbon neutrality roadmap toward 2040



Empower communities and indigenous stewardship



Enhance port resilience and environmental performance



Lead sustainable port development in the region

SBMA COMPLEMENTS ECOSYSTEM CONSERVATION WITH **SCIENCE-BASED ENVIRONMENTAL MONITORING**, INCLUDING MARINE SAMPLING, AIR EMISSIONS TESTING, BIODIVERSITY ASSESSMENTS, AND CARBON STOCK MONITORING, ENSURING THAT ENVIRONMENTAL PROTECTION REMAINS **INTEGRATED INTO DAILY PORT OPERATIONS.**

CONTRIBUTING TO THE SUSTAINABLE DEVELOPMENT GOALS



SECTION 6 – CONTRIBUTION TO THE UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS (SDGs)

13 CLIMATE
ACTION



Strengthening climate
resilience and advancing
toward carbon neutrality

14 LIFE
BELOW WATER



Conserving marine
ecosystems and protecting
coastal and blue carbon
habitats

15 LIFE
ON LAND



Protecting forest ecosystems
and biodiversity on land and
promoting ecosystem
restoration

11 SUSTAINABLE CITIES
AND COMMUNITIES



Enhancing community
resilience through ecosystem
protection and sustainable
port development

17 PARTNERSHIPS
FOR THE GOALS



Building partnerships for
conservation, innovation,
and sustainable
development

5 GENDER
EQUALITY



Promoting inclusive
participation and
empowering women in
conservation



SBMA integrates biodiversity conservation, climate action, community inclusion, and sustainable port operations to build a resilient and sustainable future.

SECTION 6 – CONTRIBUTION TO THE UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS (SDGs)

Advancing Global Sustainability Through Port-Led Conservation

The Port of Subic Bay Ridge-to-Reef Blue and Green Carbon Conservation Program directly contributes to multiple United Nations Sustainable Development Goals (SDGs) by integrating biodiversity conservation, climate resilience, community inclusion, and sustainable port development into a unified environmental strategy.

Rather than implementing isolated environmental projects, SBMA has adopted a landscape-scale approach that recognizes forests, watersheds, mangroves, marine ecosystems, and communities as interconnected components of long-term sustainability and resilience.

SDG 5 – Gender Equality

The Mt. Sta. Rita Reforestation Program actively supports gender-inclusive participation. Among the 88 Pastolan Aeta forest stewards engaged in conservation activities:

1. 63 are women
2. 25 are men

This demonstrates how biodiversity conservation can also support inclusive community development and women's participation in environmental stewardship.

SDG 11 – Sustainable Cities and Communities

The program supports community resilience through:

1. Flood mitigation
2. Watershed protection
3. Coastal protection
4. Climate adaptation
5. Ecosystem-based disaster risk reduction
6. Indigenous and community participation

Healthy ecosystems contribute directly to safer and more resilient communities surrounding the Freeport.

SDG 13 – Climate Action

SBMA Port of Subic Bay contributes to climate mitigation and adaptation through:

1. Protection of approximately 10,000 hectares of forest ecosystems
2. Protection of 61.63 hectares of mangrove ecosystems
3. Forest and mangrove carbon stock assessments
4. Blue carbon and green carbon accounting
5. Development of the SBMA-CNx Carbon Neutrality Framework
6. Future decarbonization initiatives including shore power infrastructure

These initiatives strengthen climate resilience while establishing a foundation for long-term carbon neutrality.

SDG 14 – Life Below Water

SBMA Port of Subic Bay protects marine biodiversity through:

1. Marine Conservation Areas covering over 1,700 hectares
2. Mangrove ecosystem protection
3. Coastal habitat conservation
4. Fisheries nursery habitat protection
5. Water quality enhancement
6. Shoreline stabilization and sediment control

The Ridge-to-Reef approach recognizes that healthy marine ecosystems are essential for both biodiversity conservation and sustainable port operations.

SDG 15 – Life on Land

SBMA Port of Subic Bay contributes to terrestrial biodiversity conservation through:

1. Protection of approximately 10,000 hectares of forest ecosystems
2. Mt. Sta. Rita Reforestation Program
3. Tree Protection Guidelines
4. Biodiversity monitoring and species inventory programs
5. Protection of vulnerable and threatened species
6. Long-term ecological monitoring

These efforts help preserve one of Central Luzon's remaining old-growth forest landscapes.

SDG 17 – Partnerships for the Goals

SBMA Port of Subic Bay has established partnerships involving:

1. Indigenous communities
2. Private-sector organizations
3. Academic institutions
4. Government agencies
5. Community groups
6. Conservation stakeholders

Programs such as Adopt-A-Mangrove and community-based reforestation demonstrate the importance of collaborative environmental stewardship.

Delivering Local Impact While Contributing to Global Goals

Through its Ridge-to-Reef Conservation Program, SBMA Port of Subic Bay demonstrates how a working international port can contribute to global sustainability objectives while simultaneously strengthening biodiversity conservation, climate resilience, community well-being, and economic competitiveness.

FINAL MESSAGE

The Ridge-to-Reef Blue and Green Carbon Conservation Program demonstrates that the future of sustainable ports will not be defined solely by larger terminals, deeper harbors, or more advanced technology. It will also be shaped by how effectively ports protect and manage the natural ecosystems that sustain them.

By treating forests, watersheds, mangroves, and marine ecosystems as critical natural infrastructure, the Port of Subic Bay has demonstrated that environmental stewardship can strengthen climate resilience, safeguard biodiversity, and support sustainable economic growth. This experience offers a practical and replicable model for ports around the world seeking to build a more resilient and sustainable future.





SUBIC BAY
METROPOLITAN AUTHORITY

ONE PORT. ONE NATURE.
ONE FUTURE.
RIDGE TO REEF. RESILIENT BY NATURE.



Port of Subic Bay
Ridge-to-Reef Blue and Green Carbon
Conservation Program

 ~10,000 ha PROTECTED FOREST	 61.63 ha PROTECTED MANGROVES	 1,700+ ha MARINE CONSERVATION AREAS	 29,088 TREES INVENTORIED	 88 INDIGENOUS FOREST STEWARDS	 100% SCIENCE-BASED MONITORING
 NATURE AS CRITICAL PORT INFRASTRUCTURE	 SCIENCE-BASED MONITORING & MANAGEMENT	 INDIGENOUS & COMMUNITY STEWARDSHIP FOR NEARLY THREE DECADES	 MULTI-SECTOR PARTNERSHIP FOR LONG-TERM IMPACT	 A REPLICABLE MODEL FOR PORTS WORLDWIDE	



IMPACT STATEMENT: The Port of Subic Bay demonstrates that forests, watersheds, mangroves, and marine ecosystems are critical natural infrastructure. Through science-based management, strong governance, and community stewardship, SBMA has shown that investing in nature strengthens climate resilience, safeguards biodiversity, and supports the long-term sustainability of an international port.

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