REPORT TO CONGRESS

JURISDICTIONAL CORAL REEF REPORT FOR THE COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS 2025

NOAA CORAL REEF CONSERVATION PROGRAM

Commonwealth of the Northern Mariana Islands
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January 1, 2026

The Honorable Brian Babin
Chair, Committee on Science, Technology, and Space
U.S. House of Representatives
Washington, DC 20515

Dear Mr. Chair:

Enclosed is our Report to Congress: Jurisdictional Coral Reef Report for the Commonwealth of the Northern Mariana Islands 2025. This report was mandated in Public Law No. 117-263, § 10001(a), 136 Stat. 2395, 3931 (2022).

This report responds to the Act's request by summarizing recent coral reef management and restoration activities undertaken in the jurisdiction, as well as current estimates of the direct and indirect economic activity supported by or associated with coral reef resources.

If you have further questions, please contact me at sylvan.o.igisomar@gmail.com or the CNMI Coral Reef Initiative Lead Biologist, Francisco Villagomez, at fvillagomez.cnmi.cri@gmail.com.

Sincerely,

Sylvan O. Igisomar
Secretary
Department of Lands and Natural Resources
Commonwealth of the Northern Mariana Islands

Enclosure:
Jurisdictional Coral Reef Report for Commonwealth of the Northern Mariana Islands 2025

About this report:

This report was developed pursuant to Public Law 117–263 § 10012, 136 Stat. 2395, 3952 (2022) as part of the United States Coral Reef Task Force duties under the reauthorization of the Coral Reef Conservation Act of 2000. This report was prepared by staff from the Commonwealth of the Northern Mariana Islands (CNMI) Coral Reef Initiative Program funded by cooperative agreement award NA23NOS4820134 and NA25NOSX482G0014-T1-01 from the National Oceanic and Atmospheric Administration's (NOAA) Coral Reef Conservation Program, U.S. Department of Commerce. The statements, findings, conclusions, and recommendations are those of the author(s) and do not necessarily reflect the views of NOAA, NOAA's Coral Reef Conservation Program, or the U.S. Department of Commerce.

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Cover Page:
A massive boulder coral, *Porites sp.*, found in the Commonwealth of the Northern Mariana Islands with dozens of colorful Christmas tree worms, *Spirobranchus* spp.

Executive Summary

The Commonwealth of the Northern Mariana Islands (CNMI), a U.S. territory in the western Pacific Ocean, is home to some of the most diverse coral reef ecosystems under the American flag. The CNMI's coral reef and seagrass ecosystems generate immense ecological, cultural, and economic benefits and are foundational to its long-term resilience. These ecosystems contribute approximately $114.8 million annually to the CNMI economy through fisheries, tourism, coastal protection, and other ecosystem services. As the federal government increasingly prioritizes the U.S. ocean economy, climate resilience, and natural infrastructure, the CNMI's reefs represent a high-return federal investment that directly supports American communities, economic security, and strategic interests in the Pacific.

The CNMI's reefs have sustained Indigenous Chamorro and Carolinian peoples for more than 3,500 years and remain essential to the economic stability, food security, and cultural identity of the CNMI's >50,000 residents. They are also integral to the broader national interest, providing natural infrastructure that protects U.S. communities, supports regional security, and strengthens America's presence in the Pacific.

Figure 1: A sleeping sea turtle rests among a diverse coral reef in Saipan, CNMI. Credit: CNMI Coral Reef Initiative Program, 2024.

The Value of Coral Reefs to the CNMI

The CNMI's reefs span approximately 63 square miles and support more than 200 coral species.

- Economic impact: Coral reef and seagrass ecosystem services contribute approximately $114.8 million annually to the CNMI economy[1]. Fisheries alone add $1.4 million annually in direct economic activity, while supplying critical nutrition and cultural resources for local families[2].
- Coastal protection: Coral reefs absorb wave energy during tropical storms and typhoons, preventing more than $13 million annually in damages on Saipan alone[3]. The CNMI's Executive Order 2025-001 formally recognizes coral reefs as critical natural infrastructure, aligning the CNMI's priorities with federal hazard mitigation and resilience frameworks.
- Cultural and community benefits: For Chamorro and Carolinian communities, fishing, seafaring, and reef stewardship are integral cultural practices. Coral reefs sustain diets, livelihoods, and traditions that strengthen community resilience.
- In short, the CNMI is a "large ocean state" with more than 99% of its jurisdiction composed of ocean waters and the health of its reefs directly determines the well-being and stability of its people[4].

Threats to Coral Reefs

Despite their resilience, the CNMI's reefs face mounting threats. Chronic and acute stressors compound one another, driving a decline in reef health and increasing risks to local communities.

- Climate stressors: Rising ocean temperatures have triggered mass coral bleaching events, including in 2017 and 2020. Ocean acidification further weakens reef-building corals.
- Extreme weather: The Marianas lie in one of the most active cyclone regions in the world. Typhoon Soudelor in 2015 and Typhoon Yutu in 2018 devastated coral reefs, infrastructure, and livelihoods, highlighting the need to integrate reefs into disaster recovery and resilience planning.

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[1] Eastern Research Group. 2019. Value of Ecosystem Services from Coral Reef and Seagrass Habitats in CNMI - Final Report. Bureau of Environmental and Coastal Quality. Division of Coastal Resources Management. https://dcrm.gov.mp/wp-content/uploads/crm/CNMI-Value-of-Ecosystem-Services-Coral-Reefs-and-Seagrass-09-27-19-FINAL.pdf

[2] Hospital, J. and Beavers, C. May 2014. Economic and Social Characteristics of Small Boat Fishing in the Commonwealth of the Northern Mariana Islands. Pacific Islands Fisheries Science Center, National Marine Fisheries Service, NOAA, Honolulu, HI 96818-5007. Pacific Islands Fisheries Science Center Administrative Report H-14-02, 58 p.+ Appendices. https://repository.library.noaa.gov/view/noaa/4773

[3] Storlazzi, C.D., Reguero, B.G., Cole, A.D., Lowe, E., Shope, J.B., Gibbs, A.E., Nickel, B.A., McCall, R.T., van Dongeren, A.R., and Beck, M.W. 2019. Rigorously valuing the role of U.S. coral reefs in coastal hazard risk reduction: U.S. Geological Survey Open-File Report 2019–1027, 42 p., https://doi.org/10.3133/ofr20191027.

[4] Palacios, A. "Executive Order 2025-001: To Establish Coral Reefs as Critical Natural Infrastructure in the Commonwealth of the Northern Mariana Islands." CNMI Office of the Governor, EO-2025-001, 14 November 2024. https://governor.cnmi.gov/gov_content/uploads/2024/11/EO-2025-001-To-establish-Coral-Reef-as-Critical-Natural-Infrastructure-in-the-CNMI.pdf

- Land-based pollution: Sediment runoff, wastewater discharge, and nutrient loading degrade water quality and increase coral disease risk.
- Overharvesting and invasive species: Unsustainable fishing of herbivorous species disrupts reef balance, while outbreaks of crown-of-thorns starfish (COTS) cause widespread coral mortality.
- Marine hazards: Vessel groundings and debris, such as the 2014 Paul Russ grounding and the long-standing wreck of the fishing vessel *Charito* (removed in 2024), have caused severe, localized reef destruction.

Without sustained local management capacity and consistent federal investment, these pressures risk triggering cascading ecological and socioeconomic consequences for the CNMI and the broader U.S. Pacific region.

Progress and Local Leadership

Coral reef management and conservation in the CNMI are now led by the CNMI Department of Lands and Natural Resources (DLNR), in coordination with other CNMI government agencies, local partners, academic institutions, and nongovernmental organizations (NGOs). Together, these entities implement programs under the CNMI Coral Reef Initiative (CRI) and related efforts.

Key accomplishments include:

- Long-term monitoring: For nearly two decades, the CRI has maintained 68 long-term reef monitoring sites, integrating advanced technologies like photogrammetry and artificial intelligence for coral and fish assessments.
- Restoration programs: Coral nurseries in Saipan lagoon are cultivating and outplanting species of ecological and cultural importance, enhancing reef resilience and coastal protection. Local NGOs are pioneering assisted breeding and resilience-based restoration methods.
- Community engagement: CNMI Government outreach programs including Eyes of the Reef and Ridge-to-Reef education train fishers, students, and community leaders to identify threats, adopt sustainable practices, and engage in stewardship.
- Regional collaboration: Through the Micronesia Challenge, CNMI has committed to conserving 50% of its marine resources and 30% of terrestrial resources, aligning local conservation with regional and global goals.

These efforts demonstrate CNMI's commitment to reef stewardship, but progress is constrained by limited staffing and sustained capacity, unstable funding, and gaps in enforcement capacity.

Resource Needs and Congressional Priorities

To ensure the CNMI's reefs continue to provide food security, economic stability, cultural continuity, and storm protection for U.S. communities, Congressional support is critical. The CNMI respectfully requests the following actions from Congress:

1. Provide sustained, multi-year federal funding to support local reef management, monitoring, enforcement, restoration, and education programs. Predictable funding enables workforce retention, long-term planning, and cost-effective outcomes that reduce reliance on emergency disaster spending.
2. Recognize coral reefs as natural infrastructure across federal agencies, including FEMA, NOAA, and the Department of the Interior, allowing reef restoration and protection to be incorporated into hazard mitigation, disaster recovery, and infrastructure investments.
3. Invest in local capacity and workforce development, including scientific training, applied research, and facilities that allow CNMI agencies and residents to lead conservation and restoration efforts.
4. Strengthening interagency coordination, including continued support for the U.S. Coral Reef Task Force to align federal and territorial priorities and ensure accountability and efficient use of federal funds.

Summary Conclusion

The CNMI's coral reefs are not only environmental assets but also national security assets. They safeguard American lives, fisheries, and property, sustain island economies, preserve Indigenous cultural practices, and advance U.S. leadership and investment in the Pacific region.

Congressional investment in CNMI's reefs is an investment in climate resilience, food security, cultural preservation, and national security. By strengthening reef conservation and restoration today, we preserve heritage, and protect both ecosystems and U.S. communities in the Pacific tomorrow.

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1. Introduction

The Commonwealth of the Northern Mariana Islands (CNMI) is home to a diverse array of Pacific Island peoples, including the Indigenous Chamorro and Carolinian communities. For over 3,500 years since at least 1500 B.C., the Indigenous Chamorro people have thrived in these islands (Carson and Hung, 2017). Located in the western Pacific Ocean, the CNMI, comprising 14 volcanic and raised limestone islands, spans approximately 600 km from north to south with a total land area of 477 km^2 and a marine exclusive economic zone area of 758,121 km^2. This makes the CNMI a "large ocean state", with ~99% of the total area ocean, and ~1% of the total area of the CNMI land.

Beneath the waters surrounding these islands lie coral reefs that have been growing and developing for millennia. Over 200 species of corals can be found in these waters, covering an estimated total area of 163 km^2 (Eastern Research Group, 2019) and growing from just below the surface to beyond depths of 150 m (NOAA PIFSC, 2010). Many of the reef-building corals are unique to the Marianas archipelago and to the Pacific Islands region. Valued not only for their beauty and cultural significance, coral reefs provide over $21 million in coastal protection for the island of Saipan alone (Storlazzi et al., 2019), and serve as critical habitat for many reef species that are important to subsistence and commercial fisheries.

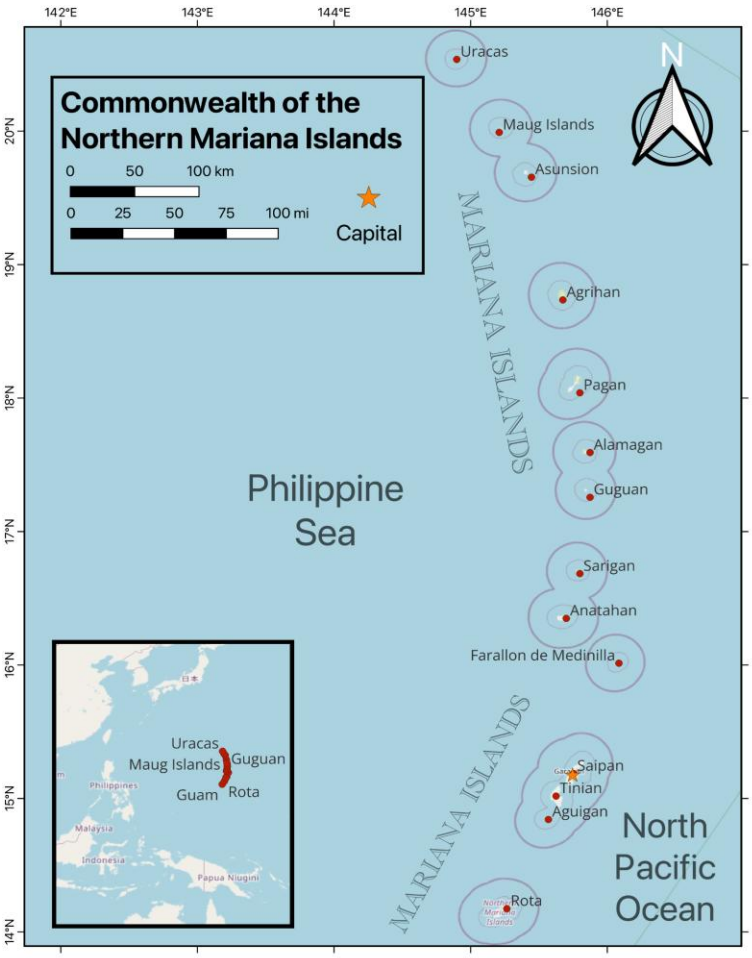

Figure 2: Map of the Commonwealth of the Northern Mariana Islands. QGIS 3.42 (2025).

Beyond their ecological function, the ocean and its responsible management that is sustainable is crucial to the economic stability of the CNMI, a higher quality of life, and the perpetuation of cultural practices, especially those tied to fishing and traditional seafaring. Economic stability in the CNMI is profoundly linked to its marine environment. First, the marine resources are foundational to the CNMI's primary industry–tourism–supporting local businesses and generating substantial revenue for these small islands. van Beukering et al. (2006) reported that over half of tourism activities in the CNMI were

directly related to coral reefs, and the Marianas Visitors Authority Strategic Plan Toward Sustainable Tourism Industry 2021-2031 report noted one of the main purposes for repeat visitors was diving. Furthermore, the health of these resources is critical to food security, as coastal fisheries provide essential protein and support local subsistence practices (Hospital and Beavers, 2014). Finally, the CNMI's strategic location and its reliance on the surrounding ocean for shipping trade routes and military readiness activities underscore the inseparable connection between marine resources and national security interests. All these factors emphasize the deep cultural and economic security provided by the CNMI's marine resources.

Thus, negative cascading effects to ecosystem groups can occur if coral reef health continues to decline due to human and natural-induced stressors (i.e., changes to ocean chemistry and increased ocean temperatures caused by carbon and methane emissions, eroding coastlines and infrastructure, nuisance flooding, non-point source pollution, unsustainable harvesting of marine resources, etc.). Land-based sources of pollution and nutrient loading, for example, have historically and seasonally influenced the marine environment, both positively and negatively. To contextualize the urgency of these threats, it is necessary to examine the vital economic and community benefits that are currently at risk.

2. Economic & Community Benefits of Coral Reefs

Fisheries in the CNMI consist of pelagic, reef, and bottom fishing, with dependence on coral reef fisheries being significant. Nearly a third of commercial fish landings for reef and bottom fishing comprise 36% and 6% of the market on average, respectively (Van Ee et al., 2024). Given the CNMI's remote location, coral reef fisheries are a critical component of the local economy, contributing approximately $1.42 million, with much of this income supporting residents who rely on fish for sustenance. More broadly, commercial and subsistence fishing are essential to food security, providing a critical source of protein and nutrients. This reliance is particularly important given the region's limited land-based agriculture; approximately 28% of fish catch were consumed at home, while 38% of catch were given to friends and family (Hospital and Beavers, 2014). To manage and value these resources, the Division of Fish and Wildlife (DFW) conducts comprehensive surveys, including underwater visual censuses (UVCs) and creel surveys, to gather catch, effort, and economic data. This information, along with monitoring by programs like CNMI Coral Reef Initiative (CRI) informs estimates on the

Figure 3: A vibrant haul of reef fish, parrotfish, unicornfishes, and a few slipper and spiny lobsters, fresh from the waters of Rota, Commonwealth of the Northern Mariana Islands.

status and total ecosystem contribution of fisheries, which is part of the overall $114.8 million value of coral reefs and seagrasses to the CNMI economy (Eastern Research Group, 2019).

Beyond direct harvest and consumption, the economic vitality of the CNMI's tourism sector is intrinsically linked to the health of its coral reefs. The value of coral reef tourism is estimated at over $65 million, with foreign tourism accounting for up to 64% of that economic value (Eastern Research Group, 2019). Research shows that high-value tourism sites are characterized by greater coral diversity and low macroalgae cover; these characteristics are correlated with opportunities for growing local dive and snorkel operations (Maynard et al., 2012). Furthermore, investments in coral restoration projects have been shown to successfully drive ecotourism, provide educational opportunities, and enhance the image of businesses (Robie, 2024). Sustaining the CNMI's tourism economy relies directly on the long-term health and collaborative management of these valuable marine resources.

Finally, in addition to supporting key economic sectors, the CNMI's coral reefs provide essential coastal protection, a benefit with significant economic value that is increasingly at risk from coastal development. These reefs provide critical services such as wave attenuation, absorbing energy from storms and typhoons, mitigating their destructive impact (Arkema et al., 2013). This ecosystem service is estimated to be worth $21 million per year, accounting for 18.5% of the total estimated value of the CNMI's reefs (Eastern Research Group, 2019). For example, a 2019 study found that these reefs could prevent $5.7 million in avoided building damages and $8.2 million in avoided economic losses in Saipan and Tinian alone (Storlazzi et al., 2019). Despite these considerable benefits, increasing coastal development puts these valuable natural defenses under significant pressure. Protecting these vital marine resources is crucial for both environmental resilience and economic security in the face of growing coastal pressures.

3. U.S. Coral Reef Task Force

The U.S. Coral Reef Task Force (USCRTF) was established in 1998 to align U.S. efforts to preserve and protect coral reef ecosystems with the efforts of Pacific island nations. The USCRTF includes members from thirteen federal agencies, seven U.S. states, territories, commonwealths, and three Freely Associated States. Safeguarding U.S. and jurisdictional coral reefs to protect economies, cultures, food sources, and coastal security of the people who depend upon these resources is the main goal of the USCRTF. The CNMI has been an active participant in the USCRTF's biannual meetings, which are held in Washington, D.C. each spring and in a member jurisdiction each fall.

Figure 4: USCRTF Members and participants at the 49th USCRTF Business Meeting held at the Crowne Plaza Nov. 14, 2024 in Saipan, CNMI. Credit: CNMI Office of the Governor, 2024. Link: https://governor.cnmi.gov/news/press-releases/strengthening-coral-conservation-at-49th-uscrtf-meeting/

These meetings provide a platform for sharing updates of ongoing local coral reef initiatives, discussions, and encouraging public participation in conservation efforts. The USCRTF has been an instrumental force in aligning both local and national priorities. Notable examples include the incorporation of coral restoration into local and national priorities.

The 49th U.S. Coral Reef Task Force Meeting, was held in Saipan, CNMI in November of 2024 and convened over 200 participants. By hosting the meeting locally, the CNMI provided federal decision-makers with direct, first-hand exposure to “ridge-to-reef” management challenges and successes unique to the archipelago. This physical presence allowed local managers to leverage the event as a catalyst for multi-agency site visits and technical exchanges, effectively aligning national resource allocations with the CNMI’s specific ecological needs. This event the importance of continued and diversified funding federal, territorial, local sources. These funds are viewed not merely as short-term grants, but as sustained investments required to maintain the long-term monitoring and restoration efforts that the CNMI’s economy and safety rely upon.

During the meeting, Governor Arnold I. Palacios made history by solidifying the CNMI’s commitment to safeguarding these vital ecosystems by signing CNMI Executive Order 2025-001, which declares coral reefs as critical natural infrastructure. This order enables the CNMI to join other USCRTF members in directing funding and resources towards safeguarding them.

Figure 5: CNMI Governor Arnold I. Palacios holds up the newly signed E.O. 2025-001 at the 49th USCRTF Business Meeting held at the Crowne Plaza Nov. 14, 2024 in Saipan, CNMI. Credit: CNMI Office of the Governor, 2024. Link: https://governor.cnmi.gov/news/press-releases/strengthening-coral-conservation-at-49th-uscrtf-meeting/

4. Coral Reef Management

4.1. Coral Reef Initiative Program (CRI)

Established in the early 2000s under the Division of Environmental Quality's Water Quality Section, the CNMI Coral Reef Initiative has evolved into a cornerstone of regional marine conservation. Following its strategic integration into the Division of Coastal Resources Management in 2004, the CRI's mandate expanded its focus beyond water quality to include watershed health, seagrass and mangrove conservation, and community outreach and citizen science programs. As of October 2025, the CRI Program migrated to the Department of Lands and Natural Resources (DLNR) to accommodate the program's significant growth and its expanded role in addressing coral reef disturbances like coral restoration and marine biosecurity. This transition marks a new chapter, positioning the program within the CNMI's primary lands and natural resources management agency to better address its evolving priorities.

4.2. CNMI Long-term Coral Reef Monitoring Program

For over 20 years, the Long-term Marine Monitoring and Response program has built local capacity to monitor the health across the CNMI's coral reefs. The program surveys 68 long-term monitoring sites every two years with sites across Saipan (48), Tinian (5),

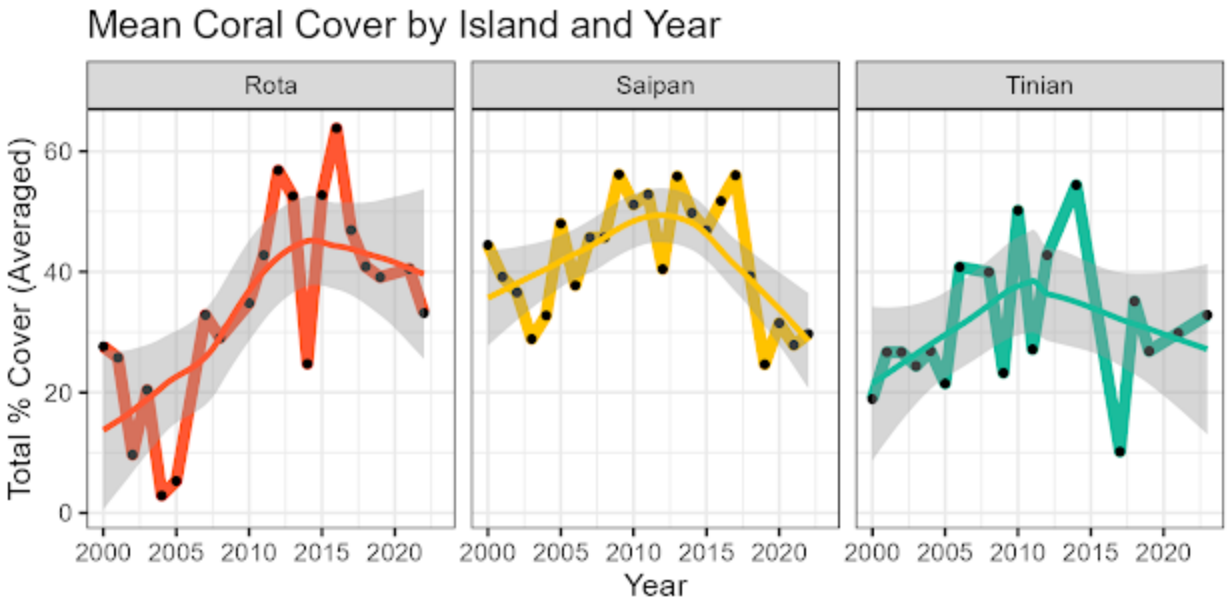

Figure 6: Estimated coral cover change across Saipan, Tinian, and Rota from 2000-2022 based on the Coral Reef Initiative's long-term marine monitoring data.

Aguigan (2), and Rota (13). Survey sites in the northern islands have been established for the island of Pagan (17), but have only been sampled opportunistically in 2014 and 2021 due to funding shortages. The program tracks key ecological indicators including coral, fish, algae, seagrasses, and invertebrates within marine protected areas, areas of particular concern, and priority watersheds. These ecological indicators are then compiled into the bi-annual State of the Reef Reports, which are then used to guide resilience-based management decisions and priorities.

In response to declining coral cover from human activities, persistent coral bleaching events, and crown-of-thorns starfish (COTS) outbreaks, the program is evolving. Efforts are expanding to support coral restoration, integrate resilience-based management, and fill critical data and capacity gaps. Efforts include:

- supporting coral nurseries,
- outplanting,
- rapid assessments during disturbance events,
- monitoring for marine invasive and nuisance species, and
- collecting baseline data of high priority reef sites.

Figure 7: A large school of Yellowfin Goatfish (Mulloidichthys vanicolensis) swims through a survey as a diver lays a photoquadrat along a transect line.

For long-term monitoring, the program has historically collected and analyzed photo quadrat data using CPCe (Coral Point Count with Excel extensions),

which is a computer-based program used for determining coral cover. However, the CRI program is transitioning to implement the use of artificial intelligence programs such as Coral Net to expedite the data analysis and habitat identification for each of our sites. Over the years, this long-term data has shown a steady decline in coral cover and an increase in turf algae across the southern islands (Perez et al., 2021). This can be attributed to the severe heat stress the CNMI has experienced during the summer periods over the last decade, which has led to significant coral bleaching (see Coral Reef Watch).

The Marine Monitoring Team (MMT) has recently incorporated photogrammetry to capture larger areas of the reef more efficiently. This technique generates detailed 3D models and orthomosaics, which allows the program to extract a wide range of coral demographics, including rugosity, coral density, and recruitment patterns, as well as track the extent of bleaching, disease, and invasive species. Beginning in 2026, and in coordination with the Department of the Interior's Office of Insular, International, and Ocean Affairs Coral Reef and Natural Resources Program, this method will also be used to monitor and manage marine invasive and nuisance species.

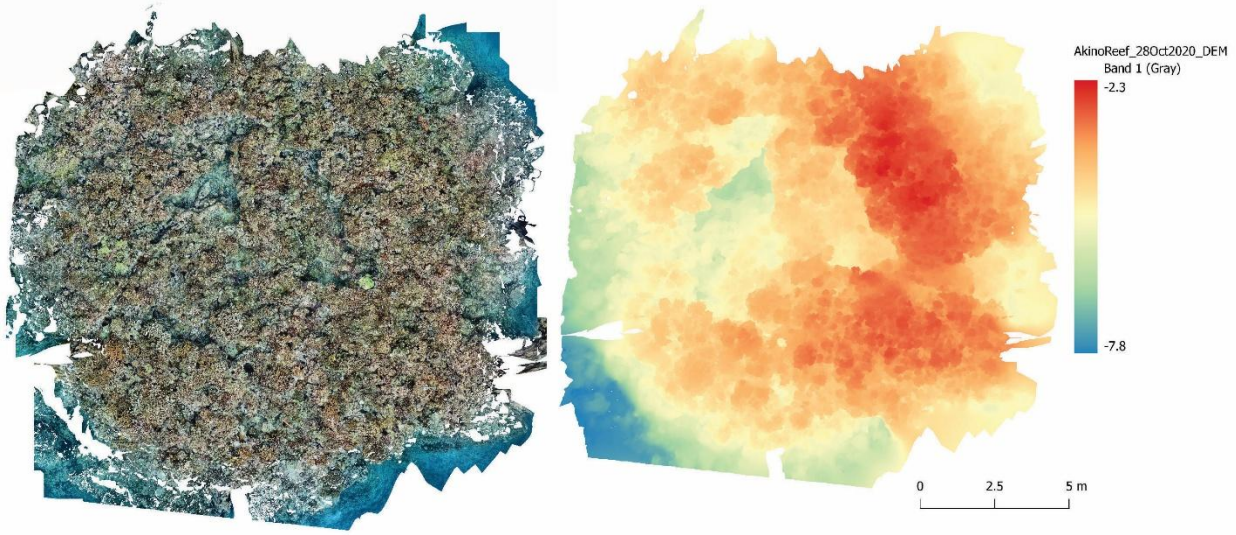

Figure 8: An orthomosaic of Akino Reef, Saipan, CNMI captured in 2020 (left) and a digital elevation model of the reef in meters (right).

4.3. CNMI Reef Flat Monitoring Programs

4.3.1. DEQ-NCCA Reef Flat Monitoring Program

The CNMI's coastal waters are subject to rigorous monitoring through a collaborative framework led by the CNMI Division of Environmental Quality (DEQ) in partnership with the U.S. Environmental Protection Agency (EPA). A driving force behind this effort is the reef flat survey initiative, established in 2010 as part of the National Coastal Condition Assessment (NCCA). This program provides long-term datasets on reef flat conditions through standardized surveys conducted every five years (Bearden et al., 2014), which provides a critical baseline for assessing the condition of the CNMI's nearshore ecosystems.

Surveys are conducted across 50 strategic sampling locations to evaluate a suite of ecological indicators, including water column attributes, nutrient chemistry, microbiology, and biological assessments of the floral and fauna. By integrating these indicators, the program can effectively quantify the impacts of environmental stressors on the marine ecosystem. To characterize these conditions, the program utilizes three independent assessment indices: the Water Quality index (WQI) for tropical islands, the CNMI Water Quality Standards, and a locally developed Benthic Integrity Index. Together, these assessments provide a high-resolution snapshot of water quality and facilitate the identification of long-term environmental trends through repeated surveys. This systematic approach ensures that coastal managers have the data needed to make informed decisions about the protection of the CNMI's vital marine ecosystems.

4.3.2. DEQ Annual Reef Flat Monitoring

The DEQ Water Quality Surveillance and Non-Point Source (WQS/NPS) branch conducts annual reef flat monitoring to supplement the National Coastal Condition Assessment (NCCA) survey, which is conducted every five years. The WQS/NPS branch has participated in the 2010, 2015, and 2020 NCCA assessments and is scheduled to participate in the 2025 assessment. For each survey, 16 sites on Saipan, Tinian, and Rota were randomly selected for testing. To capture seasonal variations, the WQS/NPS branch continues to collaborate with the CRI's Marine Monitoring Team to conduct annual monitoring at these sites, ensuring a consistent and comprehensive dataset for tracking environmental changes.

5. Current Research Capacity and Infrastructure

The Long-Term Marine Monitoring and Response Program's (LTMMRP) research capacity is primarily carried out by the Marine Monitoring Team (MMT), which is composed of seven staff, with additional support from the Bureau of Environmental and Coastal Quality (BECQ), CNMI's Division of Fish and Wildlife, and local nongovernmental organizations. This collaborative staffing model ensures the program has the necessary human resources and expertise to monitor changes in coral, fish, algae, and other marine organisms across a variety of habitats. The data collected provides important information for local management strategies and contributes to the goals of the USCRTF Status and Trends Report and the Global Coral Reef Monitoring Network (GCRMN), among others.

The program's objectives reflect its central role in supporting a research-based management framework:

- Expanding capacity to support coral reef restoration through monitoring, analysis, and technical assistance;
- Collecting and analyzing long-term biodiversity and ecosystem health data to track trends and emerging threats; and
- Using research outputs to inform and adapt resilience-based management strategies in the CNMI.

Long-term data collection has built a unique research asset—a centralized ecological database maintained by LTMMRP staff. This database serves as a critical asset for management and research, providing the data needed to evaluate environmental and anthropogenic causes of ecosystem decline. Its management and archiving on both the BECQ server and NOAA's National Centers for Environmental Information (NCEI) demonstrates a strategic effort to ensure data continuity and accessibility for local, regional, and national partners.

However, sustaining this research capacity has become increasingly difficult. Since 2013, the CNMI has faced repeated large-scale bleaching events, outbreaks of nuisance species, and coral disease, which all require rapid research and management responses. At the same time, staff turnover has severely affected institutional knowledge and technical expertise. As of 2023, only one of the original MMT staff members remained. This loss of institutional knowledge every few years threatens the continuity of long-term data collection and undermines the research infrastructure needed for science-based decision-making.

6. Impacts to CNMI Coral Reefs over the Years

The *Coral Reef Management Priorities 2019-2029* guidance document highlights a variety of threats that impact the CNMI's operational readiness. In alignment with the March 2025 Presidential Executive Order, Achieving Efficiency through State and Local Preparedness, the CNMI recognizes that environmental and anthropogenic pressures–such as land-based pollution and unsustainable development–function as "preparedness vulnerabilities". Acute disturbances, including crown-of-thorn starfish (COTS) outbreaks and coral bleaching, pose a major risk to our natural coastal defenses. Addressing these threats is a primary vehicle for increasing the CNMI's efficiency, as health ecosystems serve as the first line of defense against costly disaster scenarios.

Over the last decade, significant incidents have underscored the need for enhanced local preparedness to maintain territorial efficiency. For example, the 2014 mass mortality of culturally and economically important *hiyok* (Blue-lined Surgeonfish) across Saipan and Tinian highlighted the "efficiency gaps" in our local resource monitoring. Under the 2025 Executive Order's framework, maintaining healthy reef systems and robust diagnostic capabilities is no longer a conservation goal, but a critical priority for local preparedness. By stabilizing these biological assets, the CNMI ensures that its local food resources remain resilient, preventing sudden "shocks that necessitate inefficient and expensive emergency relief measures.

In addition to biological events, the CNMI's natural infrastructure resilience has been challenged by maritime disturbances. The 2014 grounding of the 16,000-ton M/V *Paul Russ*, along with the typhoon-related groundings of the F/V *Lady Carolina* and the *Grand Mariana* in 2015 and 2018, represent massive logistical and administrative bottlenecks. Furthermore, severe coral bleaching events between 2013 and 2017 caused significant coral mortality, weakening the natural barriers that protect our

shorelines. Collectively, these incidents demonstrate that addressing reef health is an act of fiscal stewardship. By restoring the resilience of Saipan's reef ecosystems, the CNMI fulfills the federal mandate for efficiency by leveraging nature-based solutions to ensure the CNMI is better prepared to withstand and recover from climatic shocks without exhausting administrative capacity.

7. Coral Reef Restoration Activities

7.1. Coral Reef Restoration

The CNMI has an established coral restoration program guided by local and national management priorities (see CNMI Coral Reef Management Priorities 2019-2029). The program aims to protect live coral, biodiversity, and the function of reef ecosystems from current and future threats. It also provides a safe place to harbor corals from mitigation projects. In 2021, an ocean-based coral nursery was installed in the Saipan lagoon within the Mañagaha Marine Protected Area by the CNMI government. The nursery's goals are to preserve corals of opportunity (e.g., corals that need to be moved from mitigation projects, damaged corals from vessel groundings, etc.), enhance reef function for coastal protection, and support biodiversity for local fisheries.

Figure 9: A SCUBA diver inspecting corals on a coral "tree" during routine maintenance cleaning. Credit: CNMI Coral Reef Initiative Program, n.d

The nursery consists of eight tree structures and two tables, all actively holding coral fragments. The program has plans to expand the nursery to meet grant requirements, with additional structures and new species to be included. Between 2021 and 2022, nine species of corals were permitted for collection and restoration purposes. These

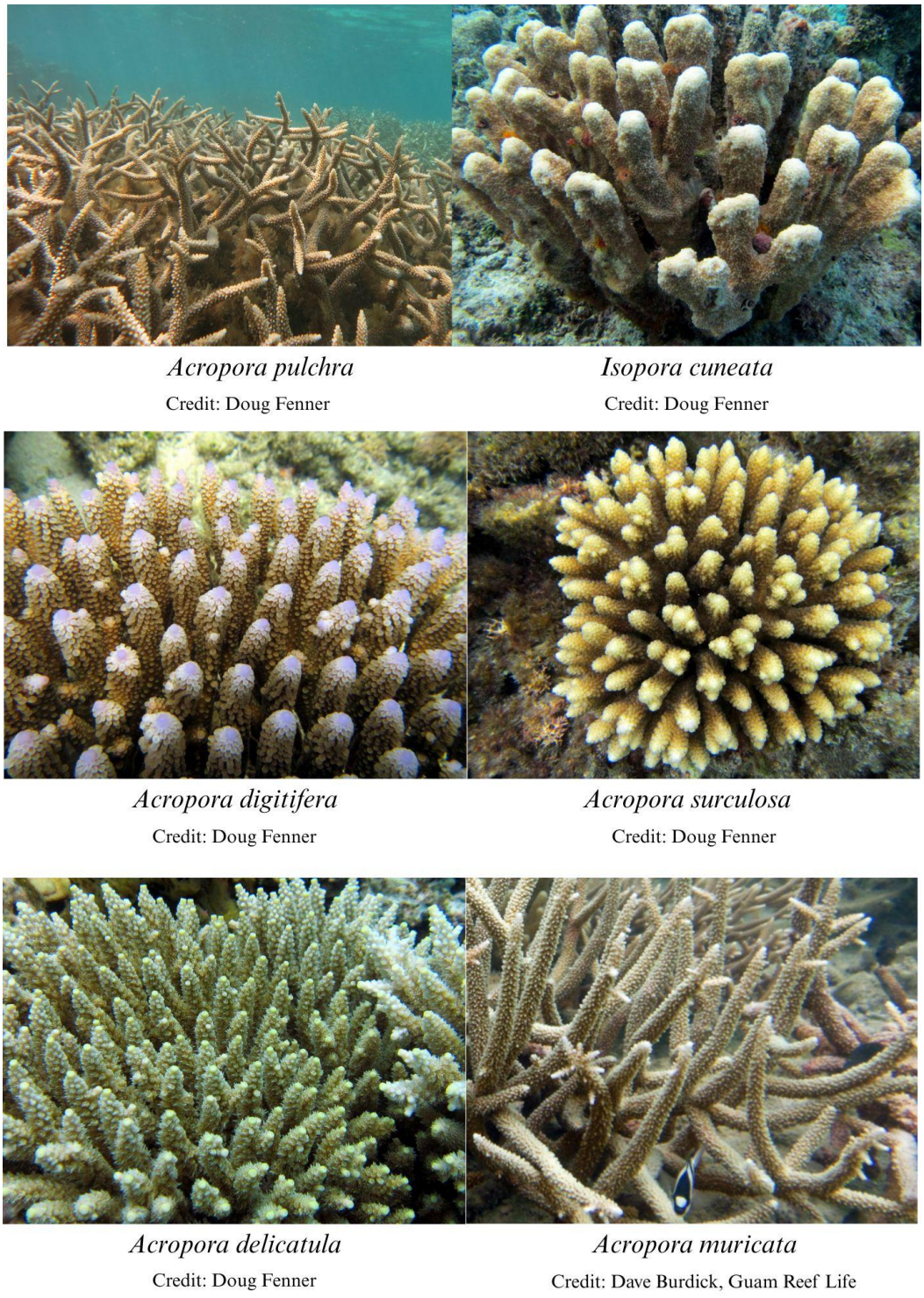

Figure 10: Six of the nine coral reef species collected for the CNMI government coral nursery.

species include *Acropora pulchra, Acropora digitifera, Acropora muricata, Acropora surculosa, Acropora delicatula, Isopora cuneata, Pavona danai, Porites sp., and Stylophora pistillata.* Furthermore, the program has collected other coral species as part of mitigation efforts from development projects, such as the 2024 upgrades to Berth 103 of the Saipan Commercial Port.

The restoration process involves selecting parent colonies based on visual health of the colony and taking finger size fragments, which are tagged and transported to the nursery. Parent colonies are then monitored for healing. Once the fragments have doubled or tripled in size, they are fragmented again for outplanting to natural reef sites.

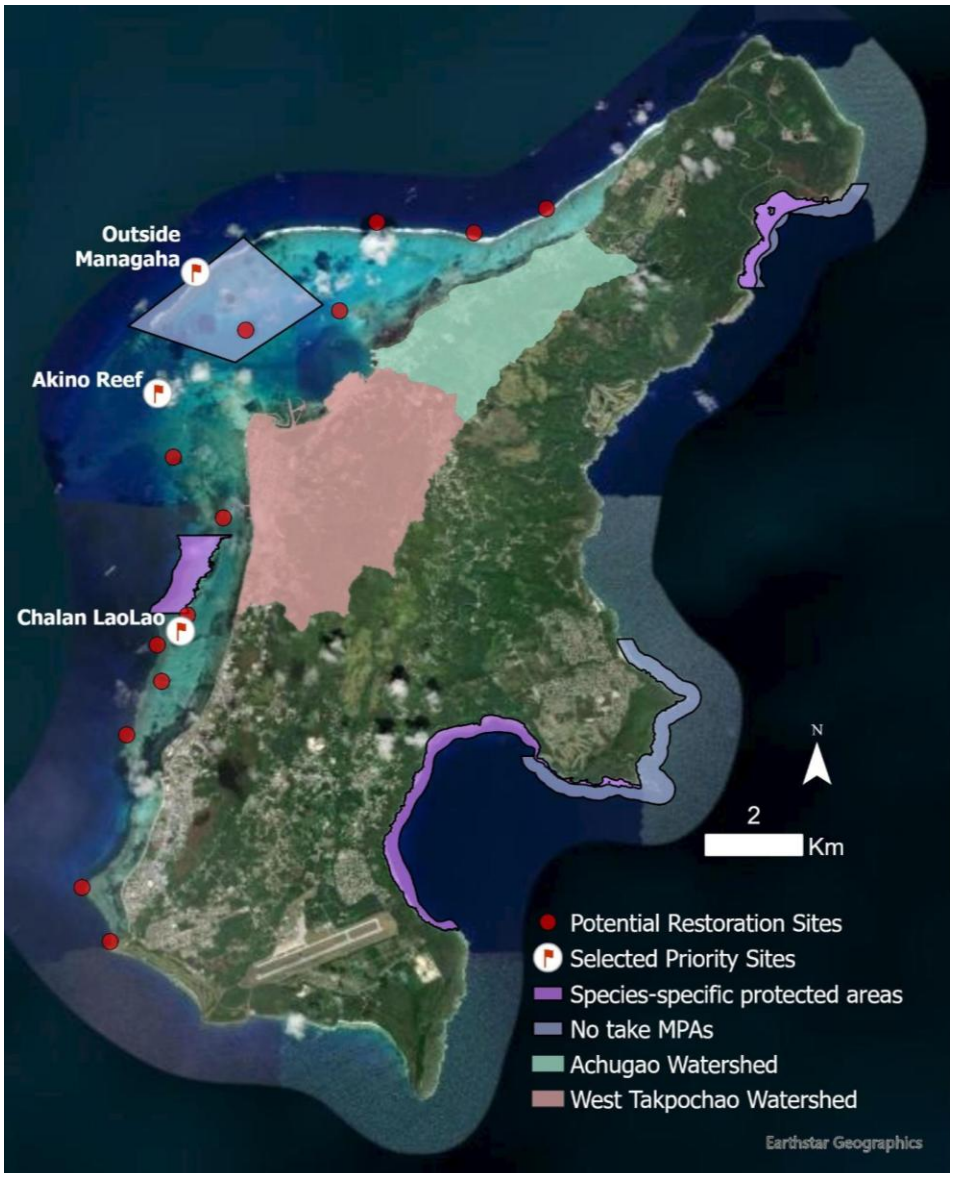

Figure 11: Map of restoration sites located in the western side of Saipan. From the Draft Action Plan for Coral Reef Restoration in Commonwealth of the Northern Mariana Islands 2021 (https://www.ncei.noaa.gov/data/oceans/coris/library/NOAA/CRCP/NMFS/OHC/Projects//31238/Watson2021_CNMI Restoration_ActionPlan.pdf

Despite its progress, the program faces significant staffing challenges. In 2021, the Coral Restoration Team had three full-time members and received assistance from other partners. By 2023, two staff resigned, leaving a single individual to manage and plan future activities. Though the process has been slow, this program was maintained with the support of the Marine Monitoring Team and the hiring of the Restoration Coordinator in 2023.

7.2. Restoration efforts by nongovernment organizations (NGOs)

Initial coral restoration efforts in the CNMI started with Johnston Applied Marine Sciences (JAMS), an independent marine conservation and research organization based in Saipan, CNMI. The organization has been working to restore climate-resilient coral populations and reef ecosystems to improve resilience of the island communities that depend on healthy reefs. JAMS is developing new tools to increase coral thermal tolerance and adaptive capacity, including conducting assisted breeding and using traditional culturing methods. The organization's nursery currently holds thousands of coral colonies of at least 11 species across 40 tree structures and 5 tables, with over 200 outplants and 10,000 settled recruits, as well as the ESA-listed coral *Acropora globiceps*.

7.3. Building Coastal Resilience

The Northern Mariana Islands are located in one of the most active regions for tropical cyclones, which bring intense winds, torrential rain, high waves, and storm surges. These weather events pose a significant threat to lives, property, and coastal ecosystems (East-West Center, 2021). Fortunately, natural habitats like coral reefs, mangroves, native beach strand, and seagrass beds provide crucial protection. They offer significant wave attenuation services during strong weather events, reducing the risk from storm surge and coastal erosion, which in turn lowers the potential for nuisance flooding that threatens critical infrastructure and residential areas.

To strengthen these natural defenses, the CNMI is actively seeking new funding sources, such as the NFWF Coral Reef Stewardship Fund and the DOI-OIA's Coral Reef and Natural Resources Fund. This effort is complemented by the formal declaration of coral reefs as critical natural infrastructure through Executive Order 2025-001. This key step may allow coral reef restoration to be supported as a broader hazard mitigation strategy with funding from entities like FEMA, aligning with the CNMI's 2020-2030 Comprehensive Sustainable Development Plan.

A Storm Response Plan was developed by CRI for its government coral nursery. Staff have been trained on how to prepare for and respond to marine invasives and other disturbances by aligning its Early Detection and Rapid Response Plans with existing biosecurity programs. This preparation is crucial, as tropical cyclones can accelerate coastal erosion and habitat loss, ground vessels, and introduce excess nutrients and debris into the marine environment.

*Figure 12: (**Top left**) Cover page of the 2025 Division of Coastal Resources Management's Coral Reef Initiative (DCRM CRI) Tide Chart Calendar featuring winning entries from the 2024 Annual Art Challenge.*

*The following two are the winning art entries for the 2022 CNMI Art Challenge for the 2023 Tide Chart Calendar- (**top right**) 10th grader, Quimari Duenas, of Mount Carmel School 2022; (**bottom right**) Mingge Wu, 8th grade Dandan Middle School.*

*(**Bottom left**) 2024 flyer for the DCRM Summer Internship. (**Center left**) Ryan Jun, 8th grade Saipan Community School, 2024 Annual CNMI Coral Reef Initiative Art Challenge for the 2025 CNMI Tide Chart Calendar.*

8. Outreach And Education Activities

8.1. Community involvement

CRI partners with a broad network of community collaborators, including government agencies, local fishers, nongovernmental organizations (NGOs), and businesses, to support coral reef conservation. CRI uses a community-driven approach that is strengthened by these partnerships, which ensure the protection of the CNMI's coral reefs for future generations.

CRI employs a variety of methods to engage with diverse audiences and gather input. It holds public meetings, town halls, and workshops with specific stakeholders to address challenges collaboratively. To collect broader feedback, the program distributes surveys online, in schools, and at community events.

To promote inclusive participation, CRI provides outreach materials in multiple languages, including English, Chamorro, and Carolinian. Information is shared through social media and community events, and programs like school initiatives, youth organizations, and internships offer students and residents hands-on opportunities to contribute to conservation efforts.

In addition to these outreach efforts, CRI engages the community through creative programs. It hosts annual school-wide art challenges where winning submissions are featured in tide calendars. The program also offers annual summer internships, hosting 15 to 20 early career college students to build local capacity in the environmental field. These initiatives provide hands-on opportunities for students and residents to contribute to conservation efforts.

8.2. Education and Outreach Programs

The CRI has developed a variety of education and outreach programs to increase public awareness and promote long-term conservation. Key community-driven initiatives such as:

- Eyes of the Reef (EOTR) Community Training targeting fisherfolk, beachgoers, and marine sports operators,
- Ridge to Reef Eco Camp targeting middle schoolers, and
- the CRI Internship Program which engages high school and college students.

The EOTR Program, in particular, trains local fishers, divers, and community members to recognize and report coral reef threats such as bleaching, disease, and fish kills. By integrating traditional fishing knowledge with scientific monitoring, EOTR fosters early detection of reef stress and strengthens community stewardship. Through ongoing outreach and training, including the expansion of EOTR and the continuation of

Figure 13: The Marine Monitoring Team and Susan L. Williams National Coral Reef Management Fellow along with Eyes of the Reef attendees who comprised dive operators and community members on Rota, Commonwealth of the Northern Mariana Islands (2025)

internships and training opportunities, communities are adopting more reef-friendly practices and taking greater ownership in protecting fisheries and coral ecosystems for future generations.

9. Watershed Management and Restoration

Land-based sources of pollution, particularly sediment runoff, is a primary driver of coral reef ecosystem degradation in the CNMI. Conservation targets in the CNMI such as benthic habitat, food fish, water quality, etc. are heavily affected by land-based sources of pollution containing bacteria from human and animal waste, sediments from unpaved roads, or run-off from impervious structures (Mattos, 2013). The CRI program took action to address these issues by creating several community programs. Key initiatives include the Watershed Warriors program and the Ridge-to-Reef Eco camps, which were both designed to engage with the community directly. Additionally, CRI

Figure 14: Community members revegetating the Talakhaya Watershed in Rota to reduce soil erosion and runoff from entering nearby coastal waters. Credit: BECQ, n.d

developed revegetation programs in partnership with key organizations, including the Division of Agriculture's Forestry section and the Mariana Islands Nature Alliance. The Mariana Islands Nature Alliance contributed its Tasi Watch Ranger and Community Tree Planting program to the effort. The goal of these programs was to educate students and community members about CNMI watersheds so that they can share what they learned with their family and friends to inspire them to help reduce watershed pollution at home and plant native trees in priority watersheds.

Previously, the program also established rain gardens at flood prone areas including several elementary schools. These gardens serve as a natural catchment system, filtering and slowing runoff before it can enter the ocean. This dual approach of educating the community and implementing physical solutions on land is crucial for protecting the CNMI's vital marine ecosystems.

10. Micronesia Challenge and Conservation Efforts

The CNMI's efforts to conserve its coral reef ecosystems are strongly supported by its commitment to the Micronesia Challenge. This regional initiative, championed by the Republic of Palau, Federated States of Micronesia, Republic of Marshall Islands, Guam, and the Commonwealth of the Northern Mariana Islands, aims to conserve 50% of their marine resources and 30% of their terrestrial resources. The CNMI has contributed to this goal through the establishment of marine protected areas (MPAs) on each of its three southern islands (i.e., Saipan, Tinian, and Rota), creating approximately 5.013 mi^2 of protected marine habitat (Moretti, 2007).

Figure 15: An illegal gillnet found entangled in corals within the Saipan Lagoon. In 2003, the Commonwealth of the Northern Mariana Islands (CNMI) banned the use of gillnet fishing. However, the CNMI Division of Fish & Wildlife has allowed its use under special conditions for certain cultural events.

The CNMI has a long history of conservation, beginning with the establishment of its first no-take marine preserve, the Rota Sasanhaya Fish Reserve in 1994. Other key protected areas followed including the Mañagaha Marine Conservation Area, Bird Island Marine Sanctuary, and Forbidden Island Marine Sanctuary. The Commonwealth has also implemented various fishing regulations to address unsustainable practices, such as a CNMI-wide gillnet fishing ban and prohibitions on SCUBA spearfishing and the use of explosives and poisons. More recently, size

regulations and a mandatory reporting system for commercial fish landings have been established to better manage fish stocks.

Despite these significant conservation achievements, the long-term effectiveness of these protected areas and regulations is at risk. A critical barrier to success is the dire lack of funding for enforcement, management, and outreach. Without a consistent and sufficient financial commitment from federal grants and local funding, the CNMI's conservation progress remains vulnerable.

11. Mangrove Conservation

Mangroves represent a globally vital ecosystem, providing a multitude of ecological and economic services, including habitat for fisheries and endangered species, carbon sequestration, and shoreline protection. A recent valuation study in the CNMI estimated the value of local mangroves at over $90,000 per hectare per year (Wolfs Company,

Figure 16: 2025 DCRM Summer Interns with Pacific Coastal Research Planning - Forestry section planting mangroves at American Memorial Park in Garapan, Saipan.

2019). Despite this immense value, less than 20 hectares of mangrove forest remain in the CNMI, located exclusively on the western coastline of Saipan. The decline of these forests is largely attributed to widespread historical disturbance from colonial development, wartime activities, and contemporary residential and industrial waste dumping (Skeele and Younis, 2020).

The CNMI has committed to restoring its vital mangrove ecosystems. This is a collaborative effort with the Coral Reef and Natural Resources Initiative, the National Fish and Wildlife Foundation (NFWF), and key partners like the Department of Land and Natural Resources (DLNR), and nongovernmental organizations. These partnerships are critical for restoring and enhancing not only existing mangrove stands but also for protecting related coastal ecosystems, such as Saipan Lagoon, by using the natural sediment-trapping abilities of mangroves to reduce runoff and protect coral reefs.

A significant success of this initiative has been the establishment of a temporary mangrove nursery that is currently managed by Pacific Coastal Research Planning (PCRP). Through this nursery, the project has successfully acquired and begun propagating three mangrove species (i.e., *Rhizophora murconata*, *R. apiculata*, and *Lumnitzera littorea*) that were previously extirpated from the CNMI. This re-introduction is vital for enhancing local biodiversity and re-establishing a more resilient, naturally-succeeding ecosystem.

With continued funding, mangroves will be propagated and outplanted along the shoreline from the Garapan to Achugao watersheds, including American Memorial Park. This effort is designed to foster a sense of local ownership and stewardship by directly involving the community in the restoration process. By empowering community members to become active participants in conservation, these initiatives ensure the long-term success and sustainability of the CNMI's coastal ecosystems and the invaluable services they provide.

12. Response and Mitigation of Marine Threats

The CNMI has recently addressed significant threats to its marine environment, including the removal of derelict vessels and the management of crown-of-thorns starfish (COTS) outbreaks. A long-standing hazard was the fishing vessel *Charito*, a 97-foot steel commercial longliner grounded by Typhoon Winnie in 1997. For over three decades, the vessel was a community hazard, environmental liability, and an eyesore near the DFW Boat Ramp on Saipan (PCRP, 2025). On August 26, 2024, the vessel was completely removed by the Pacific Coastal and Research Planning (PCRP) and its partners, an effort funded by the National Fish and Wildlife Foundation’s Hurricane Response Marine Debris Removal Fund.

In addition to man-made debris, marine ecosystems face threats from natural disturbances such as COTS, *Terpios* sponge outbreaks, and seasonal runoff and flooding influencing these cycles. Numerous COTS sightings have been reported from the southern most parts of the CNMI chain up to the island of Pagan. Additionally, the coral-killing sponge, *Terpios hoshinata*, has been reported in Tinian and Saipan. These events underscore the importance of targeted and timely response efforts, whether for removing physical hazards or managing biological threats, to protect and restore the health of the CNMI’s marine ecosystems.

Figure 17: Grounded fishing vessel, Charito, at the Lower Base Boat Ramp, Saipan Commonwealth of the Northern Mariana Islands. The Charito was grounded in 1997 by Typhoon Winnie and was removed in 2024 by Pacific Coastal Research and Planning. Credit: Rob Jordan, KOA EHS, ca 2023.

13. Planning For Novel Threats

Effective conservation requires a proactive approach to identifying and mitigating a range of emerging and chronic threats. The CNMI's marine ecosystems face increasing pressures from both local stressors and global anthropogenic stressors. To protect these vital resources, a forward-looking strategy that incorporates early detection, data-driven analysis, and adaptive management is essential.

13.1. Invasive and Nuisance Species

A key component of biosecurity planning is the active surveillance of invasive and nuisance species and disease. This includes monitoring for new introductions and assessing the expansion of those already established (e.g., outbreaks of crown-of thorns starfish (COTS), the spread of Stony Coral Tissue Loss Disease, or the arrival of high-risk species like the pulse soft coral *Unomia stolonifera*, the striped eel catfish *Plotosus lineatus*, and the encrusting sponge *Terpios hoshinata*).

Figure 18: Coral-killing sponge, Terpios hoshinata, found at Tinian's Puntan Diablo, September 2025.

Figure 19: A Crown-of-Thorns Seastar (COTS) observed during a long-term marine monitoring survey in Rota, Commonwealth of the Northern Mariana Islands.

The potential introduction of a new species, such as *Unomia*, poses a significant threat to native coral reefs. While its presence may not yet be confirmed within the CNMI's waters, particularly with the buildup of military activities in both Guam and Tinian, a comprehensive biosecurity plan must include protocols for its early detection and rapid response. This effort is currently being led in conjunction with the CNMI Coral Reef Initiative and the Invasive Species Program. This requires ongoing surveillance, targeted surveys, and the establishment of a network for immediate reporting to prevent its spread.

13.2. Coral Bleaching and Response

A primary and urgent threat to coral reefs in the CNMI is coral bleaching. The CNMI has experienced significant bleaching events in recent years (Perez et al., 2021), which have resulted in widespread coral mortality and weakened the resilience of its marine ecosystems. The increasing frequency and intensity of these events pose a direct threat to the Commonwealth's natural marine defenses and its economy.

To prepare for and respond to these threats, the CNMI has developed a comprehensive Coral Bleaching Response Plan. This proactive plan provides a clear framework for local government agencies, nongovernmental organizations, and community partners to coordinate efforts during bleaching events. The plan outlines protocols for monitoring reef health, collecting and reporting data, and activating rapid response teams to identify and address areas of severe bleaching. This coordinated approach is essential for mitigating the impacts of bleaching and strengthening the long-term resilience of the CNMI's coral reefs.

14. Knowledge Gaps and Research Needs

The continued decline in coral cover across the CNMI underscores the importance of maintaining robust monitoring efforts. The consistent collection of data on the condition of CNMI's marine communities is an essential component for understanding how these ecosystems respond to and recover from stressors. Yet, ongoing institutional challenges have revealed critical knowledge gaps and research needs within the program.

14.1. Marine Biosecurity Baselines

The biosecurity of the CNMI's marine ecosystems is threatened by a wide range of impacts, including marine disturbances such as vessel groundings, coral diseases, and invasive and nuisance species. While the CNMI government departments are mandated to manage these issues, there are significant barriers that hinder effective response and management.

Currently, the CNMI lacks the foundational infrastructure and capacity to effectively address these threats. There is an urgent need for baseline data, technical training, and tools to effectively detect, monitor, and respond to emerging issues. Specifically, the absence of comparative ecological baselines and specialized expertise in technologies like eDNA and photogrammetry limits the ability to identify new invasions and the spread of disease early and accurately. Fortunately, the CNMI has been taking active steps to include staff in regional training, learning exchanges, and workshops in order to address this need.

The lack of a centralized data library or visual documentation, such as orthomosaics, of high-risk marine sites across Saipan, Tinian, and Rota is a critical gap. These resources are essential for detecting both physical and biological changes, including coral degradation or shifts in benthic cover.

Without targeted investment in training and technology, the CNMI remains highly vulnerable to the ecological, economic, and public health impacts of these biosecurity threats. Addressing these deficiencies is not only critical for informing future biosecurity policy and fully implementing the CNMI Conservation Genetics Strategic Action Plan 2020–2030, but it is also vital for protecting sectors like fisheries and tourism that are fundamental to local food security and economic health.

14.2. Staff Training and Safety

There is a critical need to improve the safety, consistency, and reproducibility of marine monitoring surveys conducted by the MMT team. The frequent turnover of staff has led to a significant loss of institutional knowledge, particularly regarding the precise locations of long-term survey sites. This absence of historical context jeopardizes the comparability of data over time.

To address this, current survey methods require a comprehensive revision to incorporate standardized protocols that ensure reliable, repeatable results, such as those developed by NOAA for benthic and fish surveys. Additionally, targeted training on data collection, reporting, and the practical implementation of these protocols is essential to build and sustain local capacity. Without formalized training and ongoing support, survey quality and data integrity will remain vulnerable to staff changes, limiting the effectiveness of long-term marine resource management and monitoring efforts.

14.3. Baseline Water Quality Knowledge

The CNMI faces a critical gap in its coral reef protection efforts due to the loss capacity in positions related to water quality management. The absence of roles like the Watershed Coordinator represents a significant setback in coral reef conservation efforts. Historically, data collected under such positions was essential for guiding the implementation and monitoring of stormwater controls and best management practices (BMPs) in priority watersheds. This connection between land and sea is essential for understanding how land-based sources of pollution, such as sediment and nutrient runoff, translate into ecological impacts like coral smothering, algal blooms, and decreased reef resilience. Without this integration, the ability to use water quality data to inform adaptive management, assess the effectiveness of BMPs, and track progress toward CNMI's sediment and nutrient reduction targets is severely limited.

14.4. Workforce Development and Capacity Building

The success of the CNMI's coral reef conservation and management efforts hinges on building and sustaining a highly skilled local workforce. Investments in capacity building, such as the Susan L. Williams National Coral Reef Management Fellowship program, have been critical in expanding the Commonwealth's ability to manage and protect its valuable coral reef resources. The CRI Internship Program, funded by NOAA, has also proven to be highly successful, with over 40 interns in the past 10 years completing their degrees, gaining employment in the environmental field, or continuing their education in environmental science related majors. Many of these individuals now serve in key roles within local government, nongovernmental organizations, and research programs, demonstrating a significant return on investment in early-career mentorship and training.

To build on this foundation of success, the CNMI urgently requires more opportunities, including dedicated scholarship programs and expanded funding sources to support higher education in natural resource management (NRM) and related fields. Sustained, long-term funding for internships, scholarships, fellowships, and professional development is essential to strengthen local capacity and retain a skilled workforce. These critical investments ensure the continuity of technical expertise, prepare the next generation of resource managers, and empower local experts to lead, innovate, and respond effectively to address climate stressors and other challenges facing the CNMI's coral reef ecosystems.

15. Recent Legislation

The 2014 grounding of the M/V *Paul Russ* vessel served as a catalyst for the CNMI to strengthen its coral reef protections. This incident urged legislators, policy makers, and local natural resource agencies to take action, which tangibly resulted in the 2017 Coral Reef Protection Act, or Public Law 20-79. Signed into law in 2018, this legislation delegated the Department of Lands and Natural Resources (DLNR) as the enforcement authority for coral reef protections, established a fee schedule for violations, and allowed DLNR to collect monetary damages from vessel groundings and destructive anchoring and fishing practices. The law also created the Coral Restoration Fund to hold these monetary damages and prohibited the unpermitted taking of threatened

species. To ensure its full implementation, the CNMI CRI Program is hiring a CRI Policy Planner who will be crafting regulations pertaining to PL20-79 and a 2026-2028 Coral Management Fellow, who will be assisting in policy creation and community outreach.

In 2020, another significant step was taken with the signing of Public Law 21-20. This legislation prohibits the import, sale, and distribution of non-reef-safe sunscreen in the CNMI without a prescription. This law provides another way to protect coral reefs from human-induced stressors and nonpoint source pollutants.

Most recently in 2024, Governor Arnold I. Palacios made history by signing Executive Order 2025-001 recognizing the CNMI's coral reefs as critical natural infrastructure. This historic moment is paving the way for their integration into the CNMI's disaster preparedness, recovery, and mitigation plans. It demonstrates continued political support for coral restoration and response to marine disturbances in order to safeguard the CNMI's economy and way of life.

Beyond this, the CNMI has further bolstered its regulatory framework with the development of mandatory data reporting for commercial fish landings and commercial fish size regulations. These policies reflect a growing commitment to informed resource management and ensure the long-term sustainability of the CNMI's valuable marine ecosystems.

16. Resource Needs

The CNMI's coral reefs are more than just environmental assets; they are the foundation of the Commonwealth's food security, a pillar of its tourism economy, and a vital line of defense for its communities. Sustained federal support is essential for these reefs to remain a source of food security, economic stability, and cultural continuity. This support is also necessary to ensure the reefs continue protecting U.S. communities from storm damage. Congressional investment in the CNMI's reefs should focus on key priorities, starting with sustained federal funding. Stable, multi-year funding streams are needed to support critical coral reef monitoring, enforcement, restoration, and education programs, as a continued reliance on short-term grants undermines long-term planning and

Figure 20: The Commonwealth of the Northern Mariana Islands' Coral Reef Initiative and Fisheries staff with Principal Deputy Assistant Secretary Insular and International Affairs William Hague at Obyan Beach, Saipan, to showcase the island's coral reef resources.

the ability to build durable conservation programs.

Furthermore, federal recognition of reefs as natural infrastructure by agencies such as FEMA, the Department of the Interior (DOI), and NOAA is crucial. This will allow disaster recovery and resilience projects to formally incorporate reef restoration alongside built infrastructure, thereby enhancing coastal protection. Additionally, support for workforce development, local scientific training, and expanded research facilities is vital. This investment will strengthen the CNMI's ability to lead its own conservation and restoration programs, building a local and self-sufficient capacity for environmental stewardship. Finally, continued support for the U.S. Coral Reef Task Force is critical to aligning federal and territorial priorities, allowing for the sharing of best practices and ensuring accountability across various agencies working in the Pacific.

Ultimately, the CNMI's coral reefs are not only environmental assets but also national security assets. They safeguard American lives and property, sustain island economies, preserve Indigenous cultural practices, and advance U.S. leadership in the Pacific. Therefore, congressional investment in the CNMI's reefs is an investment in these assets.

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APPENDIX

Appendix 1: CNMI/Statewide Coral Reef and Associated Ecosystems/Species Habitat Plans

AGENCY	ECOSYSTEM	TITLE	YEAR(S)
DFW	Coral reef	Coral Reef Management Plan	2024
DFW	Wildlife	State Wildlife Action Plan	2025- 2035
BECQ DLNR	Coral Reef	Coral Reef Management Priorities	2019- 2029
DCRM	Laolao Bay	Laolao Bay Conservation Action Plan	2009
DCRM	Coral Reef	CNMI Bleaching Response Plan	2023
DCRM	Wildlife; Nuisance Species	Crown-of-Thorns Outbreak Response Plan	2022
DCRM	Coral Reef	Coral Reef Restoration Action Plan	2021
OPD	Sustainable Development	Comprehensive Sustainable Development Plan	2021- 2030
BECQ	Watershed: Laolao Bay	Laolao Bay Watershed Plan	2021
BECQ	Watershed: Achugao	Achugao Watershed Plan	2020- 2030
BECQ DLNR	Watershed: Garapan	Garapan Watershed Conservation Action Plan	2013