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Coral reef consisting of Porites Rus. Photo courtesy of Karim Primov, University of Guam.

Exploring Our Islands' Environments

I Tasi - The Ocean

Coral reefs are some of the most productive <u>ecosystems</u> on the planet, and have sustained and protected the people of the Marianas throughout our history. Not only do they support the growth of healthy fish populations that have fed our people, but they also serve key roles as wave breaks to protect coastlines from erosion.

However, over the past few decades, Guam's coral reefs have been in decline. Overfishing and damage to fragile corals from small water crafts have contributed to the destruction of this vital environment. Additionally, the island's growing population also creates a strain on sewage treatment facilities and the storm-water system, which in turn creates more sediment and nutrients from sewage to sweep into the reefs and harm coral development. These, paired with a global rise in sea temperature add further strain on corals, causing zooxanthellae, a small organism that provides up to 95% of energy to the coral, to be expelled in a phenomenon called coral bleaching. In 2013, 85% of coral species on the island exhibited some sign of coral bleaching.

Important work is being done locally to preserve and restore Guam's coral reefs, and scientists are testing techniques to help

Continued from page 1

the reefs recover. One method is the establishment of coral nurseries. When an area is affected by coral bleaching, a coral nursery can be created to grow healthy coral in a controlled environment to be planted back in the affected areas. Scientists study the best conditions for coral to thrive in coral nurseries, examining environmental details including the best light, water flow, depth, and protection from damage and predators. You can learn more about coral nurseries and other efforts to restore Guam's reefs by clicking <u>here</u>!

I Tano - The Land

The diverse geophysical landscapes of the Marianas archipelago invite us to travel back through time to learn about how our islands were formed. The southern islands of the archipelago are raised limestone platforms, resting atop a volcanic edifice, while the northern islands are entirely volcanic. Historically, the islands of Pagan, Agrihan, Asuncion, Farallón de Pájaros, Guguan, and Anatahan were all volcanically active. The southern islands of Saipan, Tinian, Rota, and Guam share the same geologic history.

Approximately 43 million years ago, underwater volcanic eruptions formed the islands' base. On top of the volcanic base, shallowwater corals settled. The growing island rose and sank on the ocean due to tectonic activity, and over time, coral reefs and the skeletal fragments of marine organisms changed through contact with fresh water and air. These skeletons and shells eventually were turned into layers of limestone rock. Those layers created a record of geologic events that in turn created the islands that we now know today. 3

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In Guam, the northern part of our island is composed of a 600-foot uplifted limestone plateau while the southern half features mountainous topography of old limestone remnants, sitting atop uplifting volcanic rock. Learn more about the unique geology of the Marianas Islands on Guampedia by clicking <u>here</u>!

- (1) Coeral bleaching. Courtesy of DR Burdick.
- (2) Pagat cliff. Courtesy of Kerri Ann Borja. (3) Litekvan/Ritidian. Courtesy of Mike Carsol
- (3) Litekyan/Ritidian. Courtesy of Mike Carson. (4) Southern Guam. Courtesy of Leevin Camacho.

Guampedia Currents Celebrating CHamoru/Chamorro Nobenas



Children being led in prayer. Courtesy of Paul Corano/MARC.

As the season of Easter comes to an end for our islands' Christian communities, it is an opportune time to ponder the <u>legacy of Catholicism</u> in the Mariana Islands and how it has been woven into CHamoru/ Chamorro cultural traditions. Like many indigenous cultures around the world, CHamorus/Chamorros have adapted Catholicism to fit their own needs. One of the most notable CHamoru/Chamorro-Catholic traditions can be seen in many local families' devotion to a <u>nobena</u>.

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Page

Guampedia Newsletter, Lumuhu 2025

The nobena is practiced as either public and private devotions for the nine days preceding the feast day of the Mystery, saint, or aspect of Mary or Jesus being honored. Some popular nobenas include the Nobenan I Niño Jesus, Nobenan I Sagrada Familia, Nobenan San Antonion Padua. They are led by a <u>techa</u> (prayer leader) in settings of the home, chapels, churches, or other communal spaces in the village. Specific women and/or

families would make a promesa (promise), either bestowed on them or taken up by their own accord, in which they vow to say a particular nobena every year. While the purpose of the nobena is to make a particular request through the intercession of the honoree for whom the nobena is named, many families view this as a way of also honoring their ancestors who kept this promesa throughout periods of war, disease, prosperity, and growth. This promesa serves as a reminder of the devotion the indigenous people of the Marianas would have had to their ancestors in the centuries before Spanish missionization.

Originally spoken in Spanish, as introduced by early missionaries, current *nobenas* have been, and continue to be spoken in CHamoru/ Chamorro as a result of the translations of <u>Pale' Ramon Maria</u> <u>de Vera</u>, a Spanish missionary stationed on Guam in 1915. During

WWII memorial service prayer. Courtesy of MARC

the 26 years that he spent on the island, de Vera devoted his time to learning the CHamoru/Chamorro language, translating Catholic traditions, and writing them down in the most prolific publication of CHamoru/Chamorro literature at the time. To this day, these *nobenas* serve as vital language time capsules that have preserved the knowledge of deep CHamoru/Chamorro words that have either been lost or forgotten to time.

This new section on Guampedia is intended to make learning and perpetuating the unique CHamoru/ Chamorro tradition of *nobenas* accessible for all, in hopes of inspiring families to revitalize or make their own *promesa*. In this section you will find e-publications of popular *nobenas*, recordings of each day of specific *nobenas*, recordings and lyrics of hymns sung during the *nobena*, and articles describing their history in our island communities. Click here to view this newest section!

NOBENAN

San Fransiskon Asis

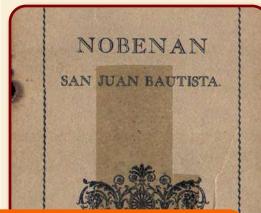
AN MATAITAI GI ARA-COELI GIYA ROMA,

YA HAPOLA GI FINO HAYA SI

Pale Roman Maria de Bera, M. Cap.

Misioneron Kapuchino

Manahuyong talo.



Click on these images to view the Nobena Booklet

NOBENAN I SAGRÅDA FAMILIA NOVENA TO THE HOLY FAMILY

JESUS MARIA JOSE JESUS MARY JOSEPH

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Tinige' Påle' Roman Maria de Vera MISIONERON KAPUCHINO (1941) By Father Roman Maria de Vera CAPUCHIN MISSIONARY (1941)

> Nina' lamaolek as Påle' Eric Forbes (2023)