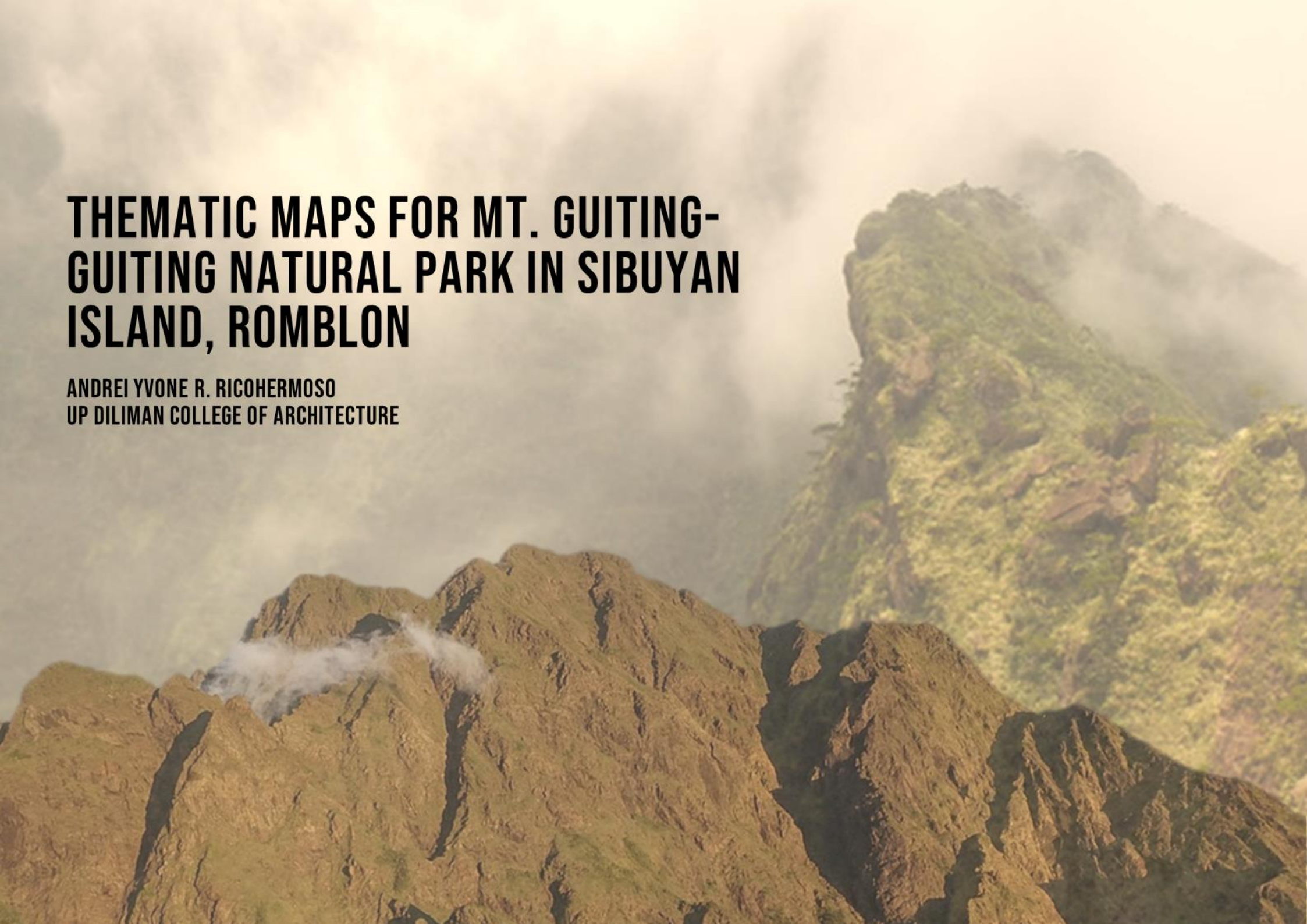




THEMATIC MAPS FOR MT. GUITING- GUITING NATURAL PARK IN SIBUYAN ISLAND, ROMBLON

**ANDREI YVONE R. RICOHERMOSO
UP DILIMAN COLLEGE OF ARCHITECTURE**

MT. GUITING-GUITING NATURAL PARK IN SIBUYAN ISLAND, ROMBLON

Majestic, towering, and formidable. Mt. Guiting-Guiting Natural Park is known to tourists and locals for its picturesque nature and pristine beauty, but it offers more than visual and ecotourism significance. Mt. Guiting-Guiting, the ‘saw-toothed’ core of Sibuyan Island in Romblon, is one of the few remaining biodiversity hotspots with complete terrestrial habitats on its precipitous slopes and series of jagged peaks. Mt. Guiting-Guiting Natural Park covers 15, 475,21 hectares with approximately 10,000 hectares of buffer zone, boasting a peak that stands at 2,058 meters above sea level. Because of its remarkable intact chain of undisturbed, biodiversity-rich ecosystems, often referred to as the Galapagos of Asia, it was proclaimed as a Protected Area on February 20 of 1996 through Presidential Proclamation No. 746. The main objective of its establishment as a natural park is to preserve its biological integrity through sustainable and community-based programs, to protect the endemic and existing flora and fauna within the area.

Mt. Guiting-Guiting Natural Park is a center of endemism. In total, there is an estimated record of 700 vascular plant species found within its forests, 54 of which are endemic to the island and 180 are endemic to the Philippine archipelago. The National Museum’s 1995 Forest Inventory of Mt. Guiting-Guiting, as the densest forest in the country, revealed an approximate number of 1,551 trees per hectare. It is also the only remaining mountain with a full range of forest gradients along its elevation gradients, ranging from summit heathland and grasslands, mossy forests, montane forests, lowland evergreen forests, and forests over ultrabasic rocks. The mountain’s fauna also boasts rare, endangered, and vulnerable species of mammals, birds, and reptiles. It is home to 130 bird species, including 102 breeding residents and three restricted-range species. The endangered Philippine Tube-nosed bat, along with five more endemic mammals, inhabits the island.

Mt. Guiting-Guiting’s thick forests support the life system of the island as a carbon sink and protection against soil erosion and flooding. It has a significant contribution to climate change mitigation and disaster risk reduction. The park’s geological composition is dominated by intrusive Sibuyan ultramafics, also including small areas of Romblon metamorphic rocks in its eastern and western extremities. Sibuyan contains deposits of manganese, gold, iron ore, nickel, jadeite, limestone (red and white) and silica quartz; based on the 1986 record of the Department of Agriculture.

The soils of Mt. Guiting Guiting Natural Park range from sandy clay-loam to metamorphic sandy and stony soil and loam, to underlain coarse sand and gravel. Mountain soils covers a total area of 149 kilometers. It is also an excellent source of water with waterfalls, springs, streams, lakes and rivers streamed towards different tributaries, irrigating farms, providing potable water, and for recreational purposes. The rivers draining the largest watersheds are Nailog-Dulangan-Cataja-Pato-o and Pawala both in Magdiwang, the Guinalan-Cambulayan-Lumbang River in Cajidiocan, and the Cantingas River. The Cantingas River of the park is recognized with a Presidential Award for being the cleanest inland body of water in the Philippines for five consecutive years (1995-1999) in Region IV-A.

Mt. Guiting-Guiting Natural Park is located in the center of the island, enveloped by three municipalities namely Magdiwang, Cajidiocan, and San Fernando. The natural park is a great heritage and blessing to its 50,000 inhabitants, supplying the needs of households within the island's 36 barangays. The number of residents in Sibuyan Island is relatively stable, with an annual mean increase of less than one percent. Most of them live along the coastal plains and in the lower slopes of Mt. Guiting-Guiting. 1.5 percent of this population includes the upland indigenous people, or 'tagabukid', who live in the municipalities of San Fernando and Cajidiocan.

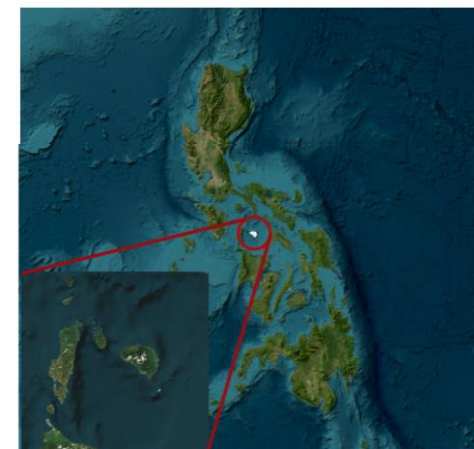
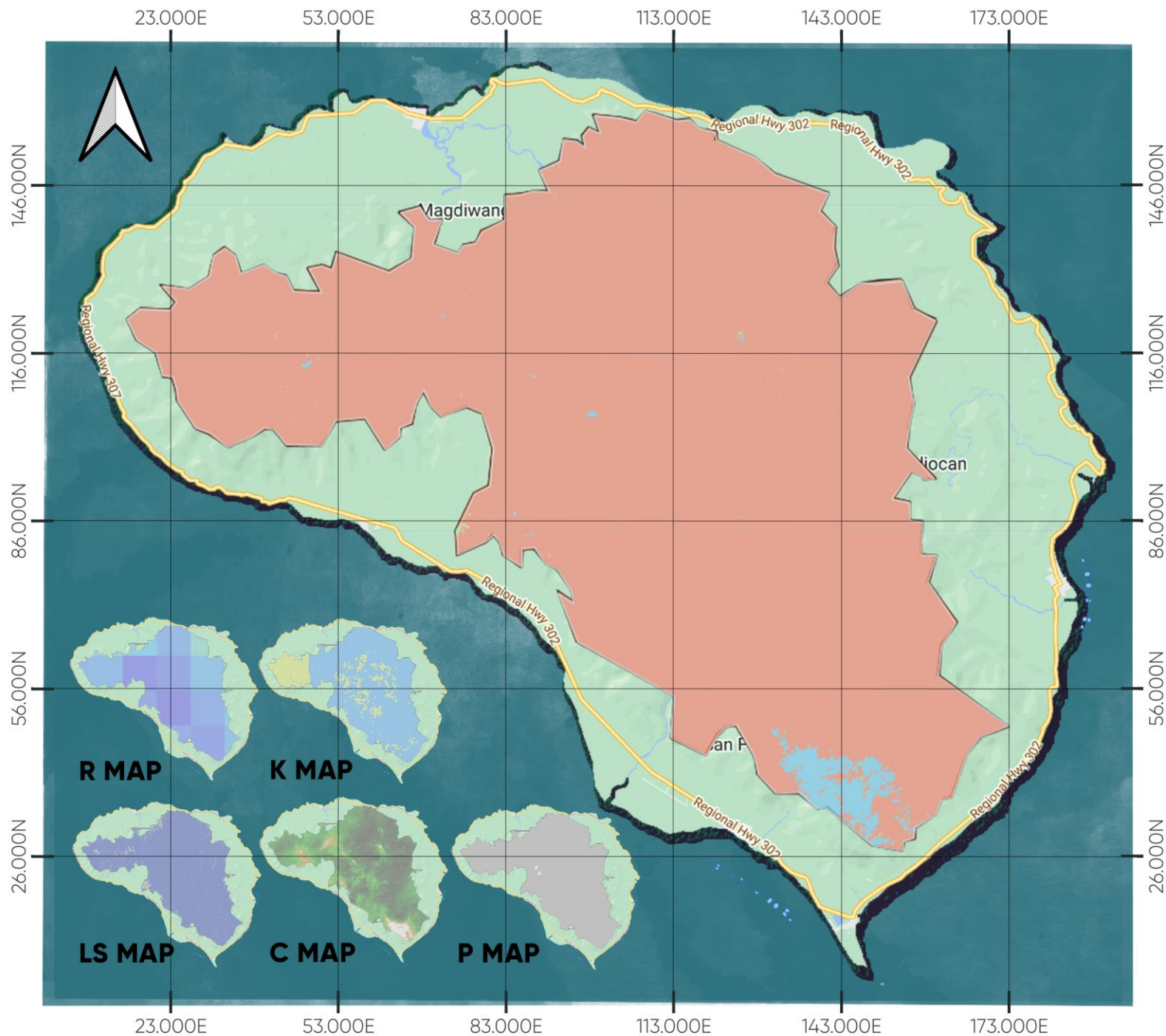
Livelihood within the island depends on near subsistence level in agriculture and in fishing. Most residents depend on the park's natural forests for timber and non-timber products such as rattan and vines, practicing illegal logging, which puts the forest under constant risk of overexploitation.

For its significant impact on their survival, the local government units of San Fernando, Magdiwang, and Cajidiocan initiated the conservation program for Mt. Guiting-Guiting, specifically to address the effects of long-term unsustainable harvesting and insufficient forest management. Their initial objectives were to develop a strategic framework for management planning and an initiative toward strengthening the Protected Area Management Board (PAMB) for Mt. Guiting-Guiting Natural Park. However, it was only in 1994 that the boundary of the protected area was established through the efforts of barangay captains, local non-government organizations, the private sector, and the MAGCAISA Foundation Inc. Sibuyan Island was included in the National Integrated Protected Areas System (NIPAS) through the National Integrated Protected Areas Program (NIPAP) of the Department of Environment and Natural Resources (DENR).

The overall management goal for Mt. Guiting-Guiting Natural Park is to maintain the natural integrity of its biodiversity, forest ecosystems, and natural resources. This also includes the conservation of species within the protected area, the preservation of catchments' functions, and the establishment of sustainable resource use through the community-based protected area management system (CBPAMS) towards quality living in Sibuyan Island.

The Management of Mt. Guiting-Guiting Natural Park is as crucial as it is beneficial for its socio-economic, ecotourism, and environmental significance. It is more than its jagged peaks or biological diversity and forestry, for it is the central source of survival of Sibuyan locals.

Reference: Center for Environmental Law and Policy Advocacy, Inc. (2022). *Protected Area Management Plan (PAMP) of Mt. Guiting-Guiting Natural Park (MGGNP), Sibuyan, Romblon (2022-2032)*. Department of Environment and Natural Resources Provincial Environment and Natural Resources Office (DENR PENRO) Romblon.



KEY MAP

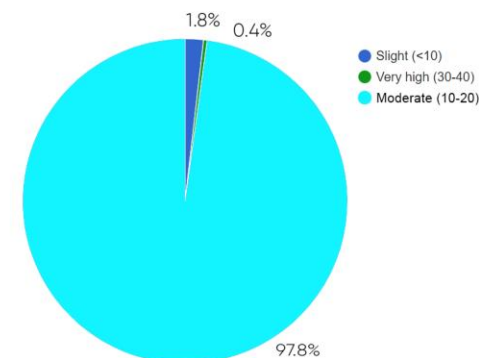
1:7500000 M

LEGEND:

— Mt. Guiting Guiting Natural Park Boundary

Soil Loss (t/hac/year)

- Slight (<10)
- Moderate (10-20)
- High (20-30)
- Very high (30-40)
- Severe (>40)



Mean Soil Loss:

3443.606104399242 t/hac/yr

Data Source:

Google Earth Engine Datasets

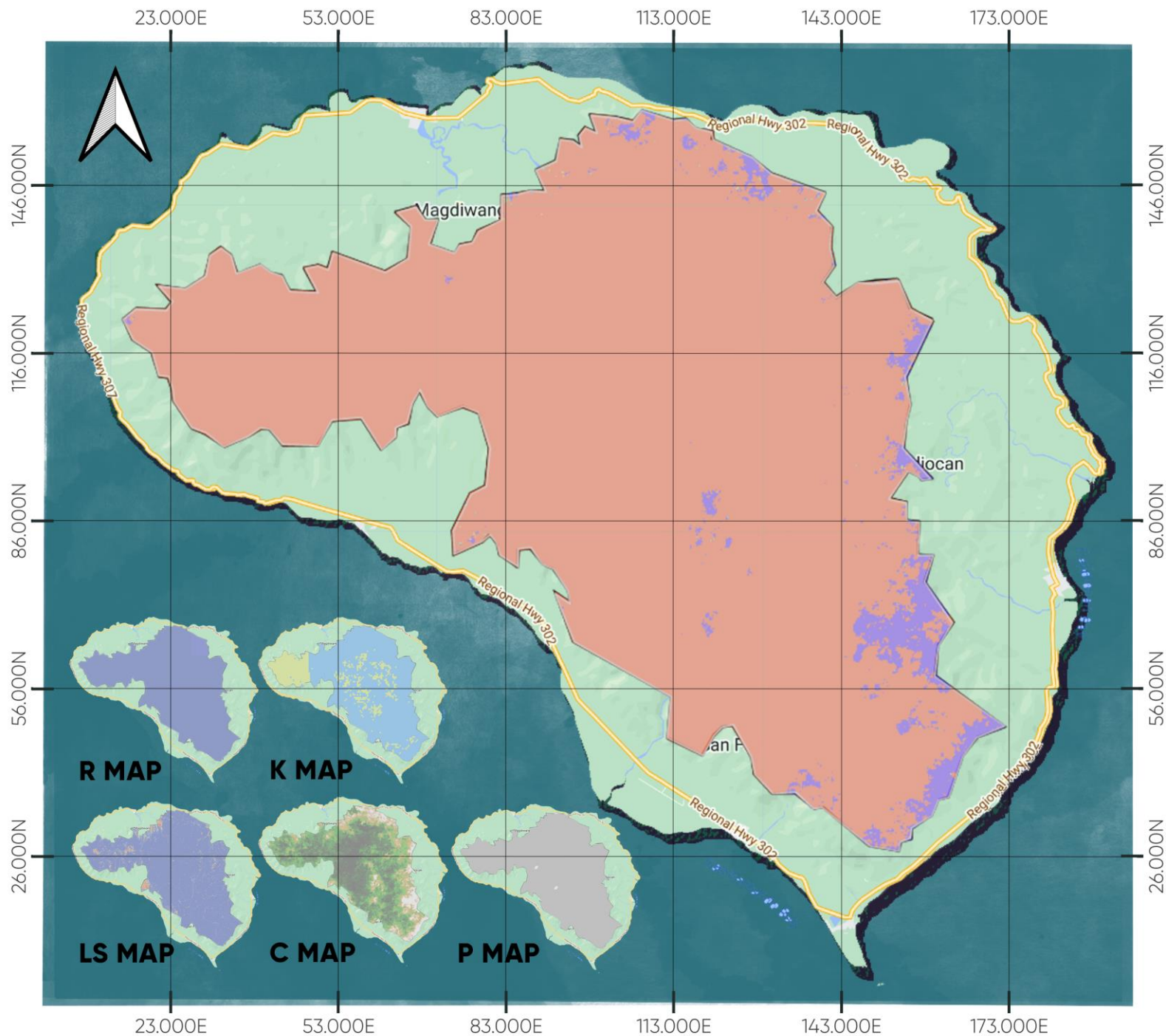
Prepared by:

Andrei Yvone R. Ricohermoso
III - B Landscape Architecture
UP Diliman College of Architecture
December 2022

2015 RUSLE SOIL LOSS SUSCEPTIBILITY

MT. GUITING-GUITING NATURAL PARK IN SIBUYAN ISLAND, ROMBLON





2016 RUSLE SOIL LOSS SUSCEPTIBILITY

MT. GUITING-GUITING NATURAL PARK IN SIBUYAN ISLAND, ROMBLON



KEY MAP

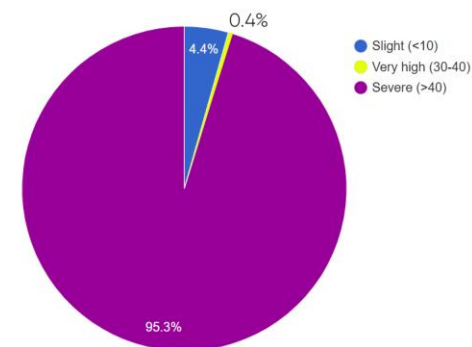
1:7500000 M

LEGEND:

— Mt. Guiting Guiting Natural Park Boundary

Soil Loss (t/hac/year)

- Slight (<10)
- Moderate (10-20)
- High (20-30)
- Very high (30-40)
- Severe (>40)



Mean Soil Loss:

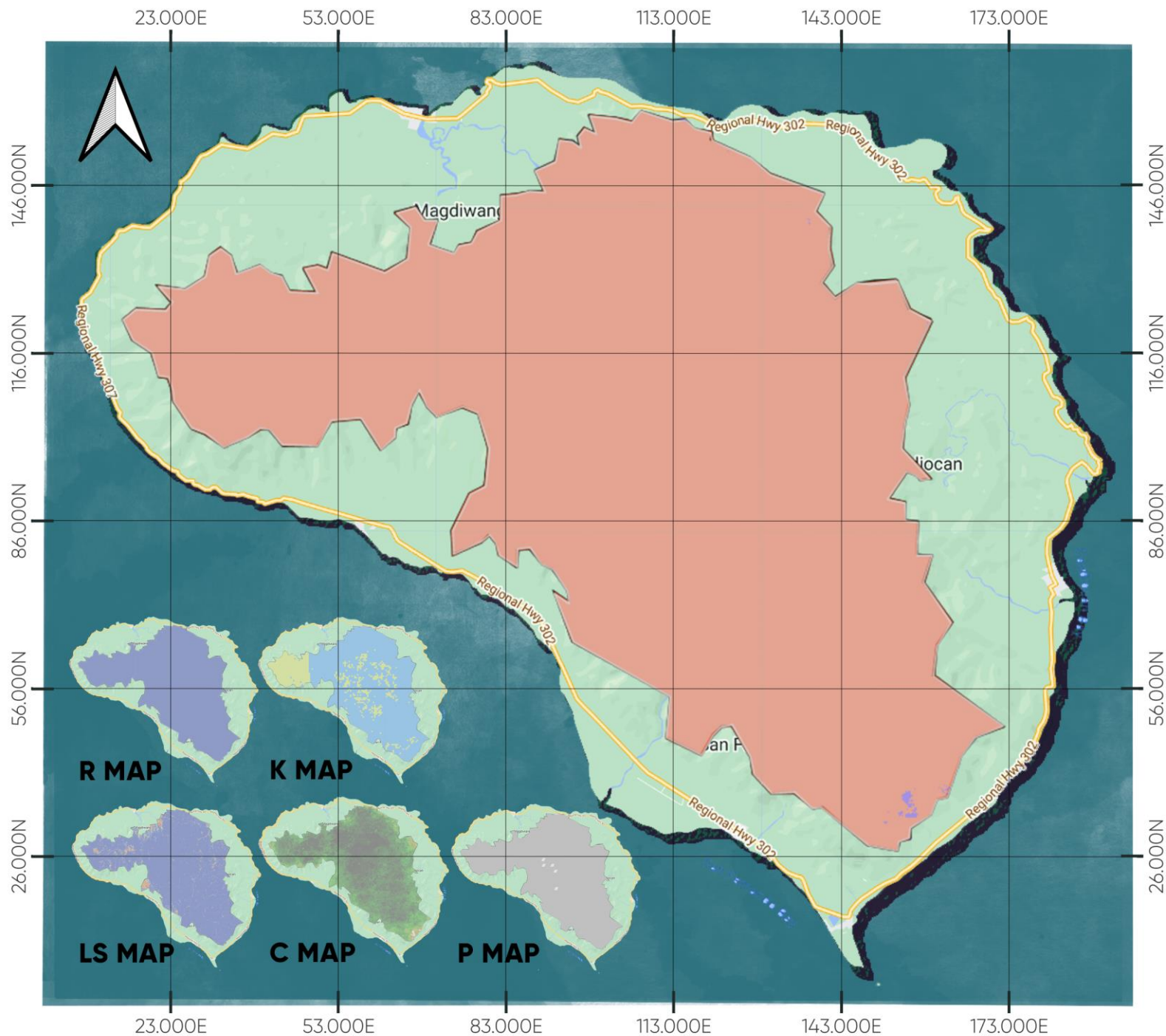
4313.665364630196 t/hac/yr

Data Source:

Google Earth Engine Datasets

Prepared by:

Andrei Yvone R. Ricohermoso
III - B Landscape Architecture
UP Diliman College of Architecture
December 2022



KEY MAP

1:7500000 M

LEGEND:

— Mt. Guiting Guiting Natural Park Boundary

Soil Loss (t/hac/year)

- Slight (<10)
- Moderate (10-20)
- High (20-30)
- Very high (30-40)
- Severe (>40)

Mean Soil Loss:

6068.363337735145 t/hac/yr

Data Source:

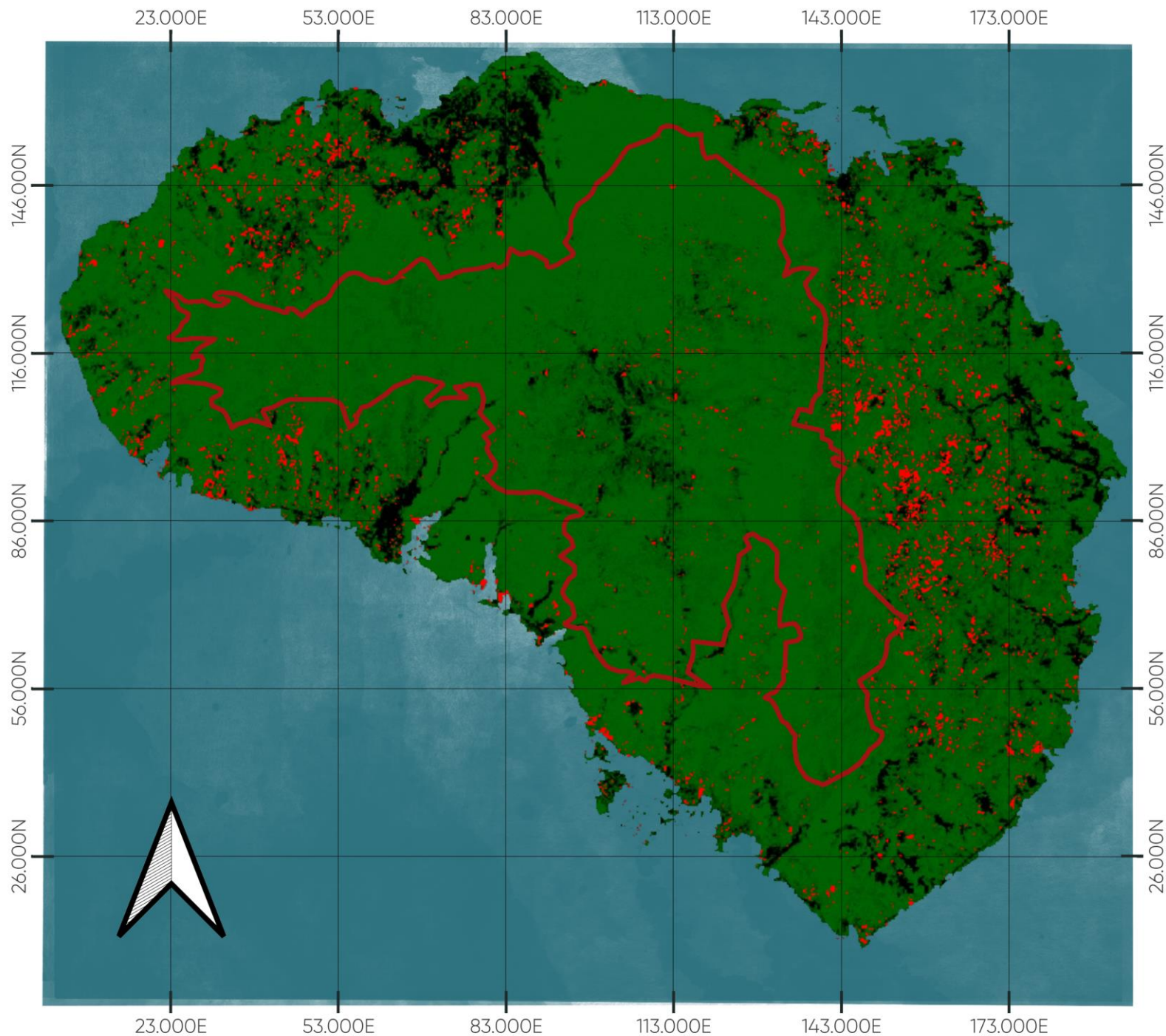
Google Earth Engine Datasets

Prepared by:

Andrei Yvone R. Ricohermoso
 III - B Landscape Architecture
 UP Diliman College of Architecture
 December 2022

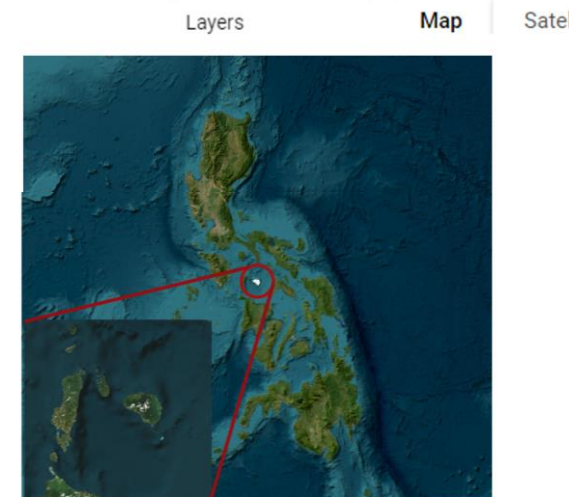
2017 RUSLE SOIL LOSS SUSCEPTIBILITY

MT. GUITING-GUITING NATURAL PARK IN SIBUYAN ISLAND, ROMBLON



ANNUAL FOREST LOSS AND GAIN 2015-2017

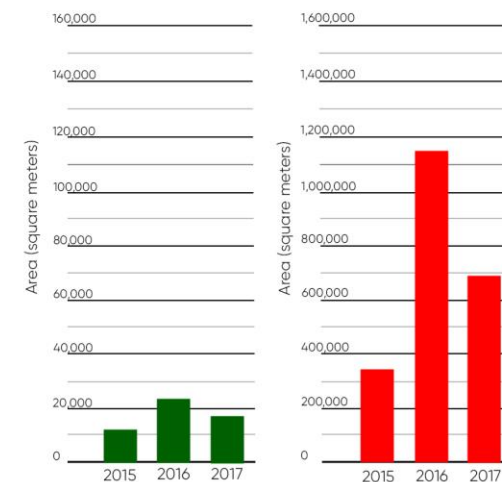
MT. GUITING-GUITING NATURAL PARK IN SIBUYAN ISLAND, ROMBLON



KEY MAP 1:7500000 M

LEGEND:

- Mt. Guiting Guiting Natural Park Boundary
- Forest Gain
- Forest Loss

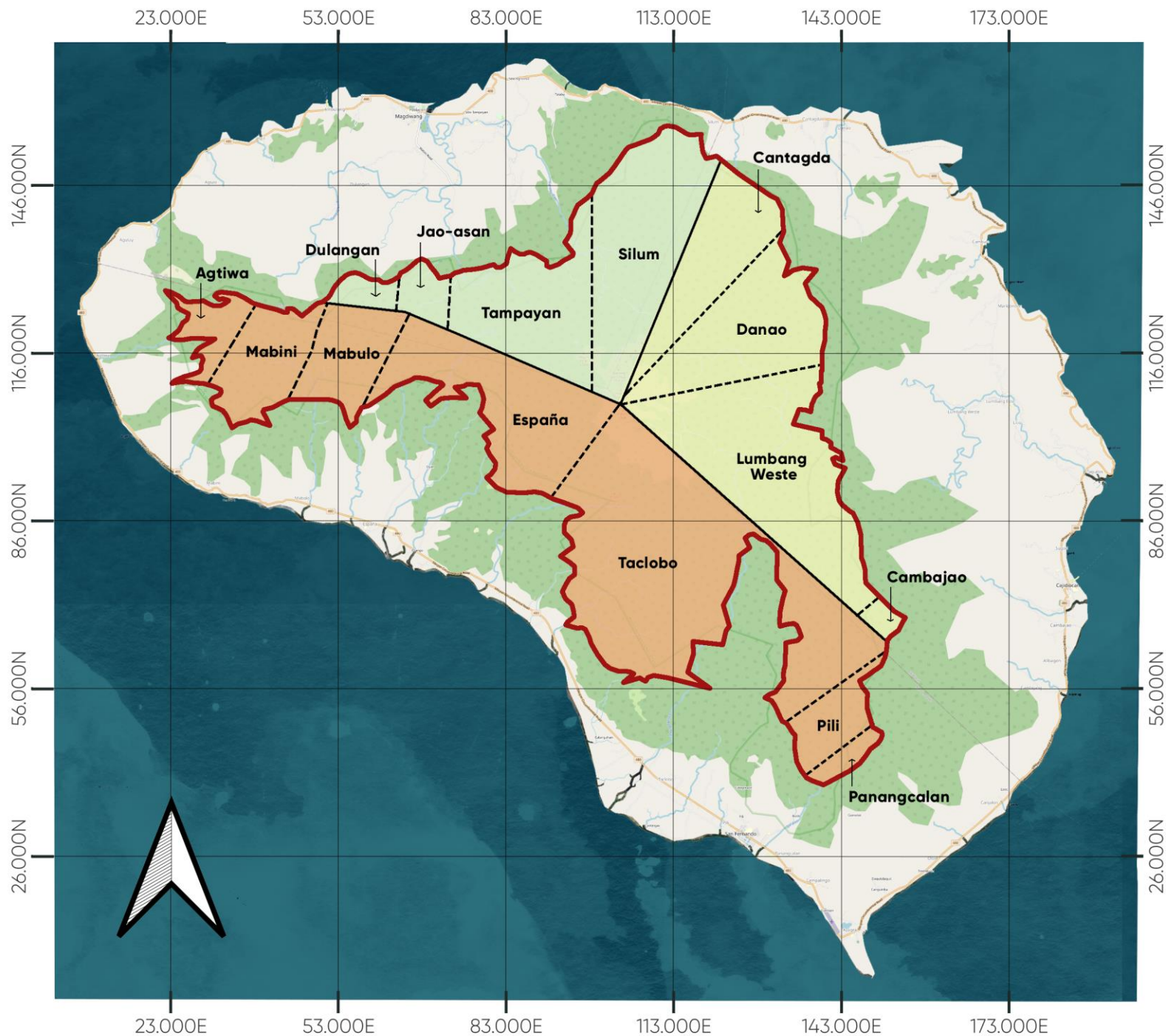


Data Source:

Hansen Global Forest Change v1.7 (2000-2019)

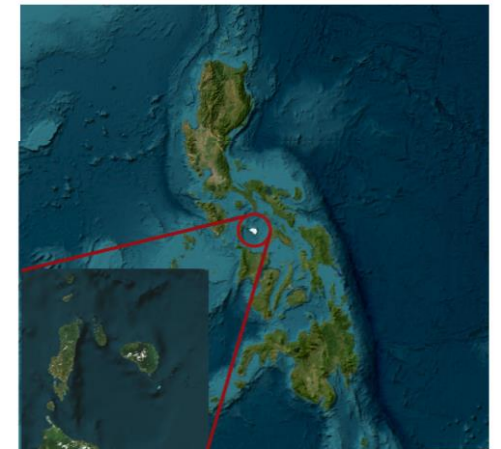
Prepared by:

Andrei Yvone R. Ricohermoso
III - B Landscape Architecture
UP Diliman College of Architecture
December 2022



ADMINISTRATIVE BOUNDARIES MAP

MT. GUITING-GUITING NATURAL PARK IN SIBUYAN ISLAND, ROMBLON



KEY MAP

1:7500000 M

LEGEND:

- Mt. Guiting Guiting Natural Park Boundary
- Municipal Boundary
- Barangay Boundary
- Magdiwang
- Cajidiocan
- San Fernando

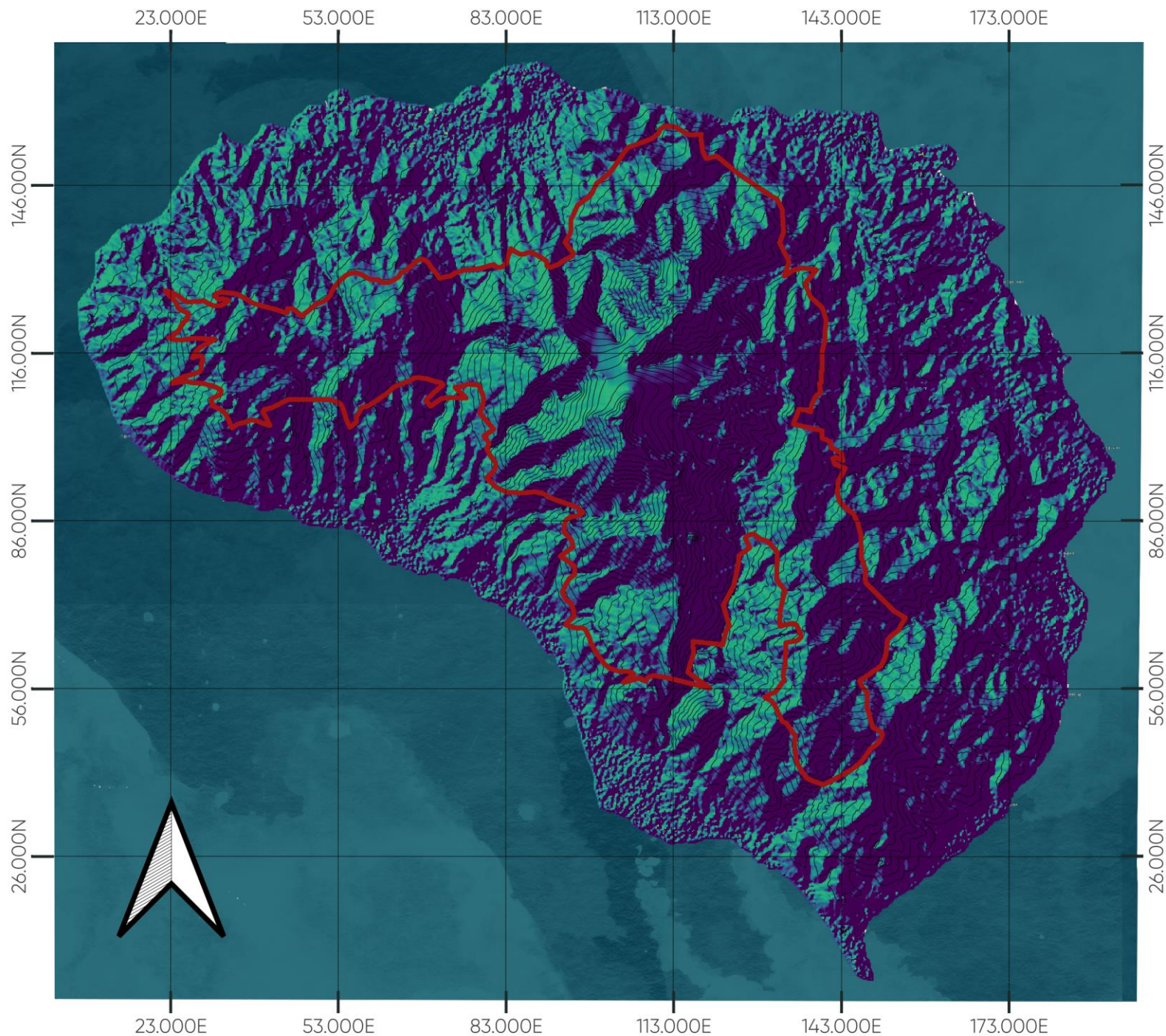
Data Source:

PAMP of MGGNP, Sibuyan, Romblon
(2022-2032)

p. 8 Figure 1. Administrative boundary
map of Sibuyan Island

Prepared by:

Andrei Yvone R. Ricohermoso
III - B Landscape Architecture
UP Diliman College of Architecture
December 2022



HILLSHADE MAP

MT. GUITING-GUITING NATURAL PARK IN SIBUYAN ISLAND, ROMBLON



KEY MAP

1:7500000 M

LEGEND:

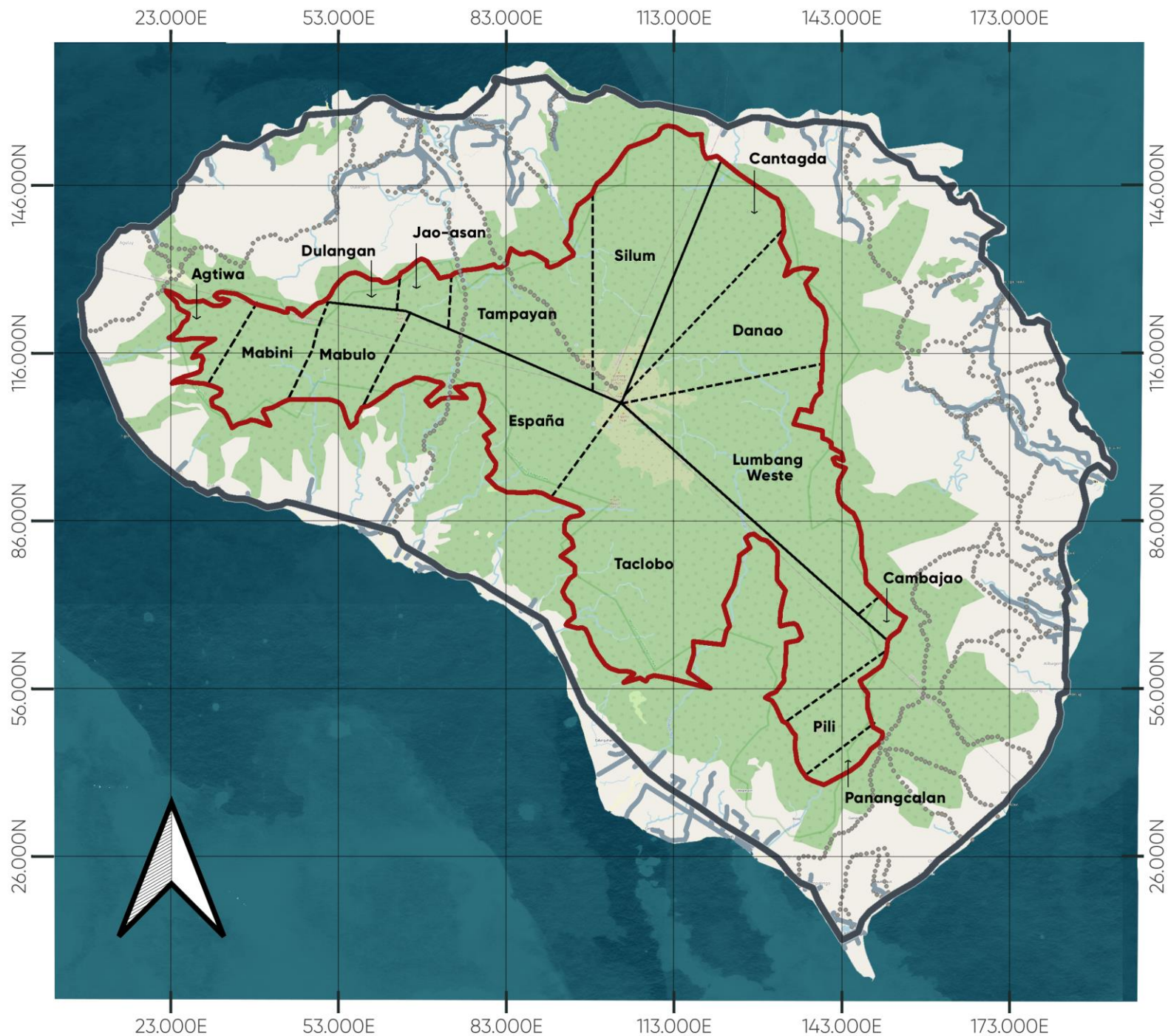


Data Source:

QGIS Hillshade
OpenTopoMap

Prepared by:

Andrei Yvone R. Ricohermoso
III - B Landscape Architecture
UP Diliman College of Architecture
December 2022



ROAD NETWORK MAP

MT. GUITING-GUITING NATURAL PARK IN SIBUYAN ISLAND, ROMBLON



KEY MAP

1:7500000 M

LEGEND:

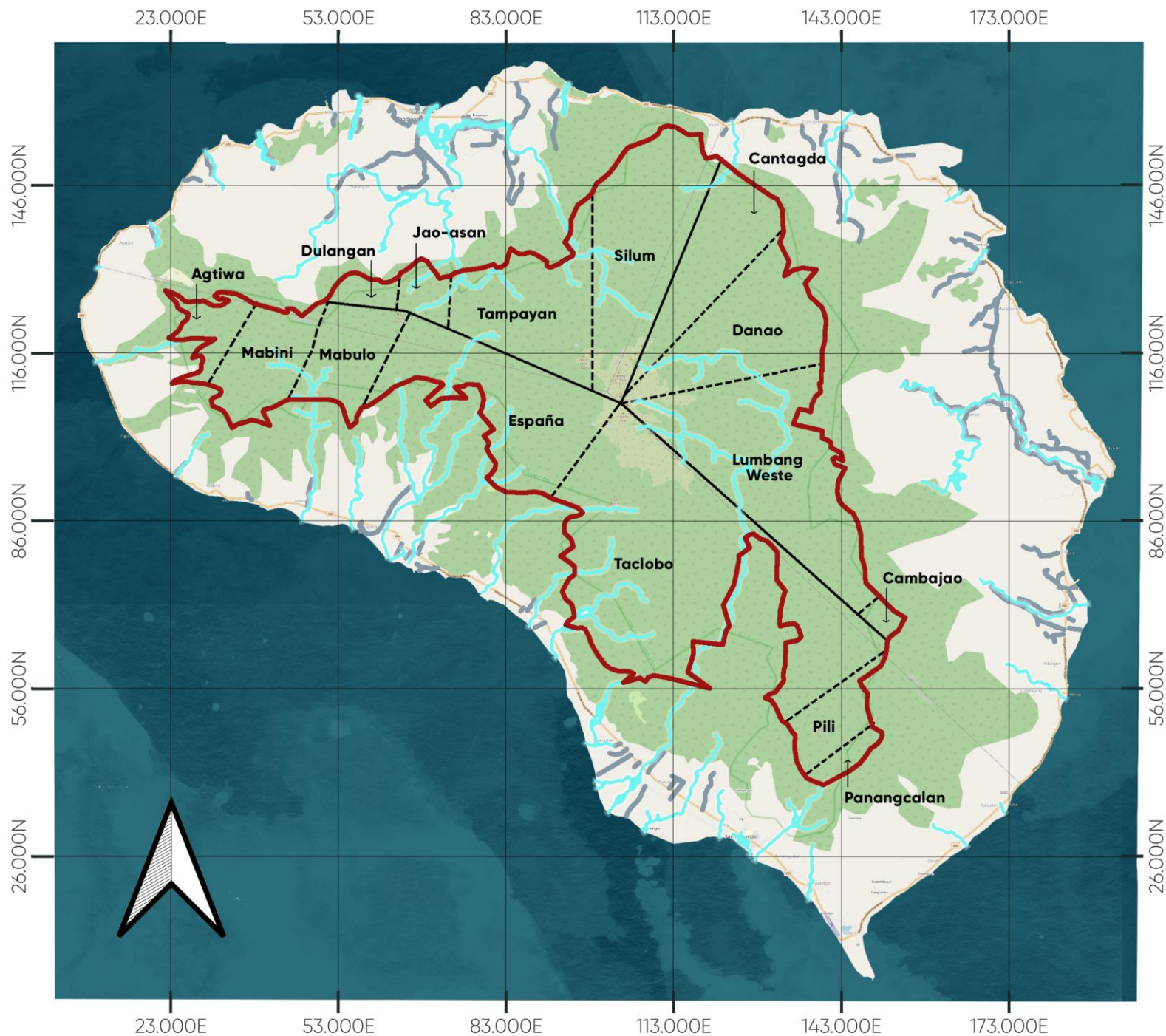
- Mt. Guiting Guiting Natural Park Boundary
- Primary Road
(Sibuyan Circumferential Road)
- Secondary Roads
- Foot Paths/Trails
- Municipal Boundary
- Barangay Boundary

Data Source:

PAMP of MGGNP, Sibuyan, Romblon
(2022-2032)
p. 12 Figure 3 Geology Map of
Sibuyan Island.
OpenStreetMap

Prepared by:

Andrei Yvone R. Ricohermoso
III - B Landscape Architecture
UP Diliman College of Architecture
December 2022



KEY MAP

1:7500000 M

LEGEND:

- Mt. Guiting Guiting Natural Park Boundary
- Waterbodies - Rivers
- Municipal Boundary
- Barangay Boundary

Data Source:

PAMP of MGGNP, Sibuyan, Romblon
(2022-2032)
p. 14 Figure 4 Drainage Map of
Sibuyan Island.
OpenStreetMap

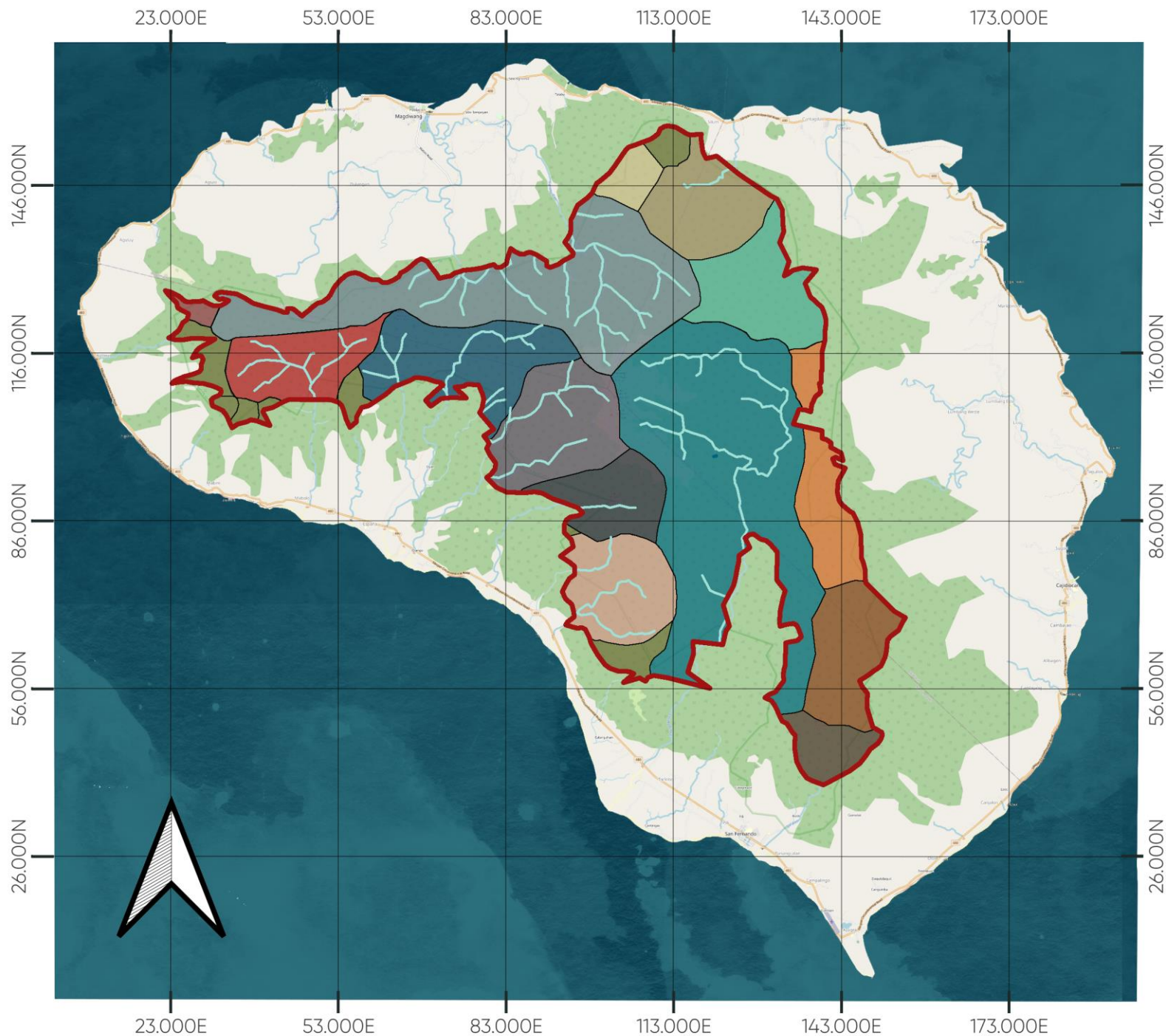
Prepared by:

Andrei Yvone R. Ricohermoso
III - B Landscape Architecture
UP Diliman College of Architecture
December 2022

WATERBODIES MAP

MT. GUITING-GUITING NATURAL PARK IN SIBUYAN ISLAND, ROMBLON





KEY MAP

1:7500000 M

LEGEND:

- Mt. Guiting Guiting Natural Park Boundary
- Major Rivers
- Agbalit River Watershed
- Agutay River Watershed
- Binaya-an River Watershed
- Cambajao River Watershed
- Campalalong River Watershed
- Canloay-Cambalo River Watershed
- Cantingas River Watershed
- Guinalan-Cambulayan-Lumbang River Watershed
- Ipil River (San Fernando) Watershed
- Ilailog-Dulangan-Cataja-Pawala-Pato-o Watershed
- Olango River Watershed
- Punog River Watershed
- Talaba River Watershed
- Talaba-Sinacaban River Watershed
- Minor Water Catchment

Data Source:

Regla Andy, MGGNP Management
Figure 4 River Catchments

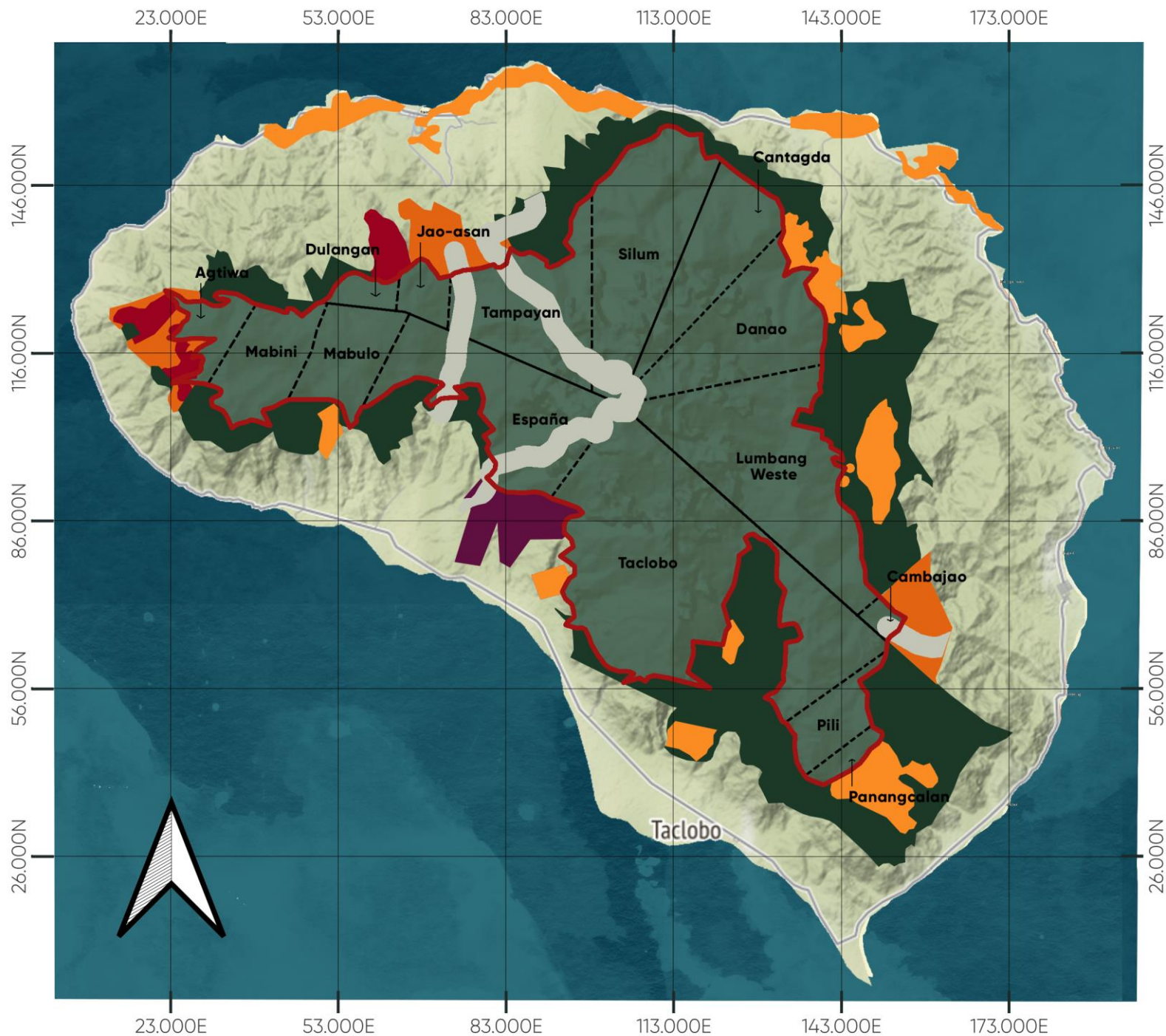
Prepared by:

Andrei Yvone R. Ricohermoso
III - B Landscape Architecture
UP Diliman College of Architecture
December 2022

RIVER CATCHMENTS/WATERSHED MAP

MT. GUITING-GUITING NATURAL PARK IN SIBUYAN ISLAND, ROMBLON





MANAGEMENT ZONES MAP

MT. GUITING-GUITING NATURAL PARK IN SIBUYAN ISLAND, ROMBLON



KEY MAP

1:7500000 M

LEGEND:

- Mt. Guiting Guiting Natural Park Boundary
- Municipal Boundary
- Barangay Boundary
- Strict Protection Zone
- Buffer Zone/Multiple Use
- Recreation Zone
- DENR Projects
- Priority CBFM Areas
- Restoration Area
- CBFM Area

Data Source:

Andy Regla (2022).
Figure 10 Management Zones
of Sibuyan Island

Prepared by:

Andrei Yvone R. Ricohermoso
III - B Landscape Architecture
UP Diliman College of Architecture
December 2022



LAND COVER MAP

MT. GUITING-GUITING NATURAL PARK IN SIBUYAN ISLAND, ROMBLON



KEY MAP

1:7500000 M

LEGEND:

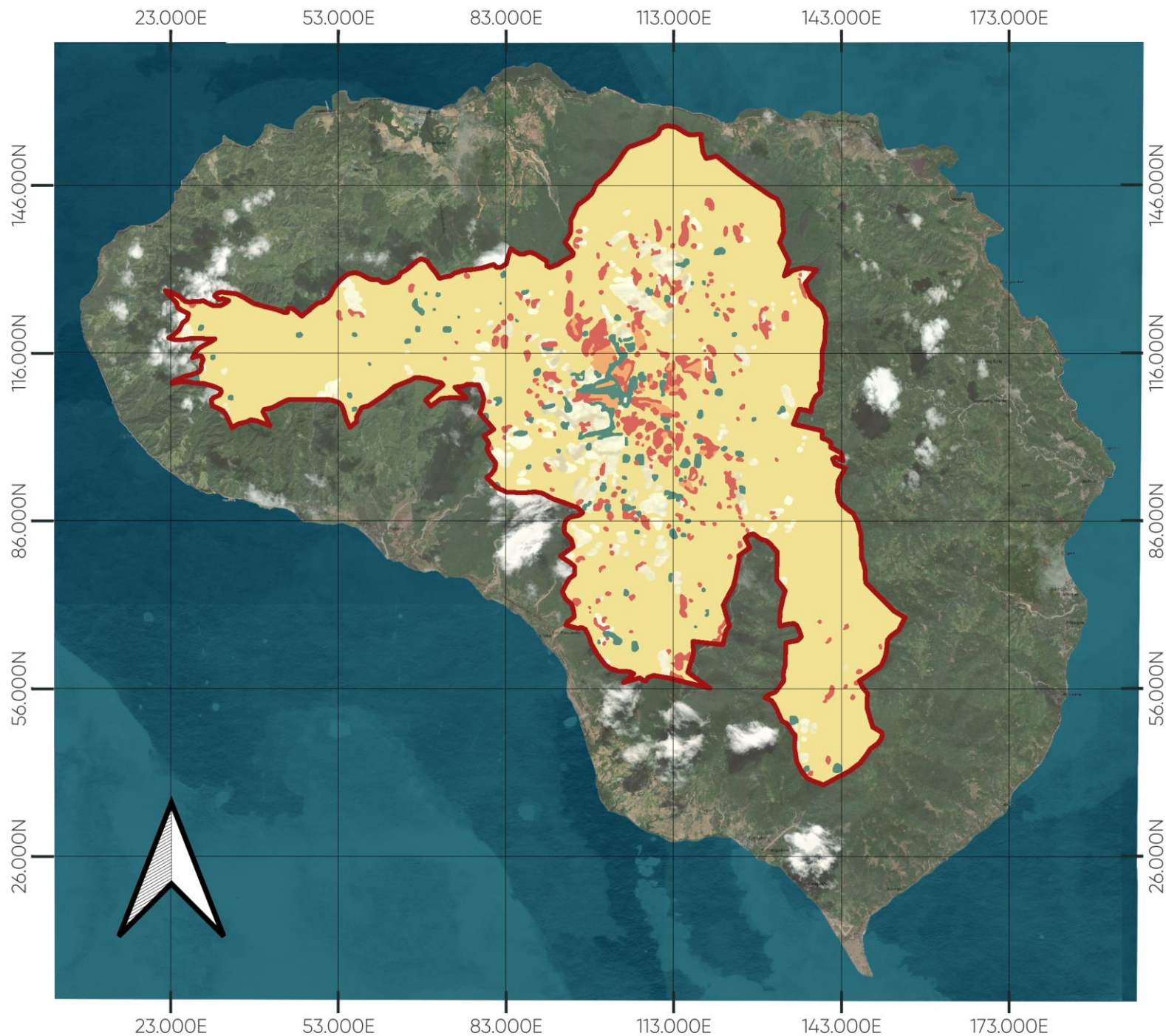
- Mt. Guiting Guiting Natural Park Boundary
- Montane Forest
- Primary Lowland Forest
- Secondary Lowland Forest
- Bare/Rocky Land
- Others

Data Source:

PAMP of MGGNP, Sibuyan, Romblon
(2022-2032)
p. 28 Figure 6 Land Cover Map of
Sibuyan Island

Prepared by:

Andrei Yvone R. Ricohermoso
III - B Landscape Architecture
UP Diliman College of Architecture
December 2022



FOREST COVER CHANGE MAP

MT. GUITING-GUITING NATURAL PARK IN SIBUYAN ISLAND, ROMBLON



KEY MAP

1:7500000 M

LEGEND:

- Mt. Guiting Guiting Natural Park Boundary
- Non-Forest to Forest
- Forest to Non-Forest
- Forest to Forest
- Non-Forest to Non-Forest
- Municipalities

Data Source:

Tumaneng, Monzon, Pales, & De Alban (2015).

Potential use of synthetic aperture radar in detecting forest degradation in the protected areas of the Philippines: a case study of Sibuyan island.

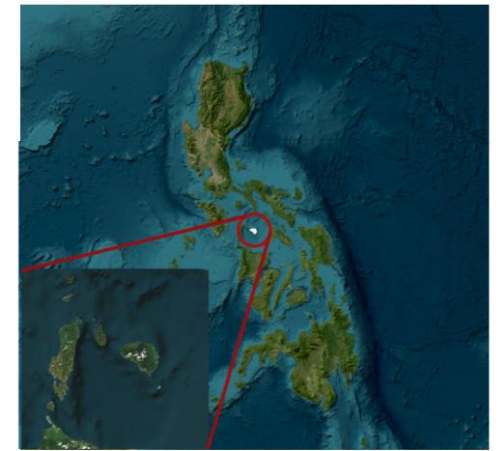
Prepared by:

Andrei Yvone R. Ricohermoso
III - B Landscape Architecture
UP Diliman College of Architecture
December 2022



GEOLOGICAL MAP

MT. GUITING-GUITING NATURAL PARK IN SIBUYAN ISLAND, ROMBLON



KEY MAP

1:7500000 M

LEGEND:

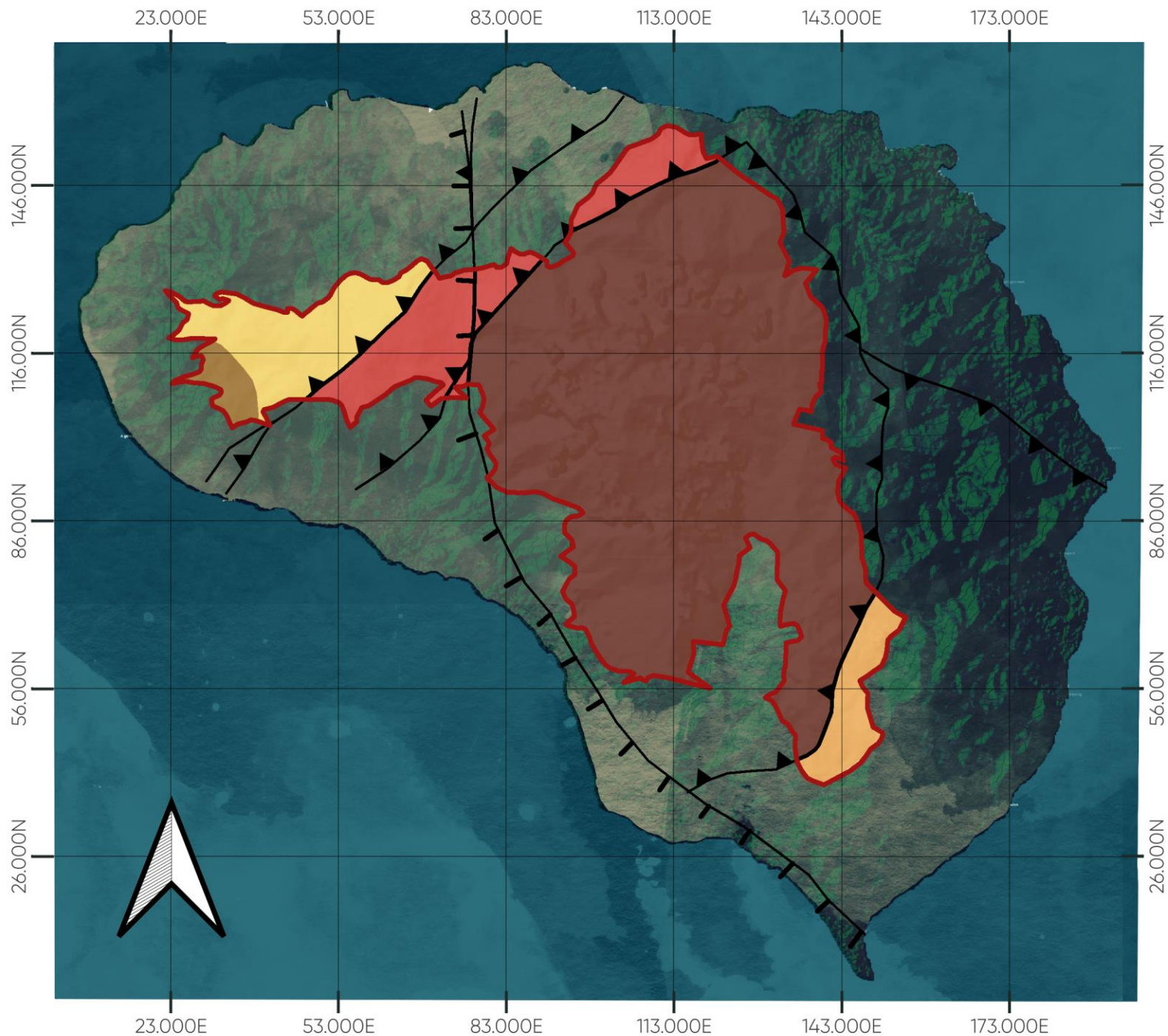
- Mt. Guiting Guiting Natural Park Boundary
- Dioritic Hills, High Relief
- Dioritic Mountain
- Meta-Volcanic Hills, High Relief
- Ultrabasic Hills, High Relief
- Ultrabasic Mountain

Data Source:

PAMP of MGGNP, Sibuyan, Romblon
(2022-2032)
p. 12 Figure 3. Geology map of
Sibuyan Island

Prepared by:

Andrei Yvone R. Ricohermoso
III - B Landscape Architecture
UP Diliman College of Architecture
December 2022



MAJOR TECTONIC ELEMENTS MAP

MT. GUITING-GUITING NATURAL PARK IN SIBUYAN ISLAND, ROMBLON



KEY MAP

1:7500000 M

LEGEND:

- Mt. Guiting Guiting Natural Park Boundary
 - Ultramafics
 - Gabbro
 - Volcanics
 - Romblon Metamorphics
 - Calatrava Intrusives
 - ▲ Thrust Fault
 - TTTT Normal Fault
- } Sibuyan Ophiolite

Data Source:

Payot, Arai, Tamura, Ishimaru, & Rodolfo Jr. (2010).
Unusual ultra-depleted dunite from Sibuyan Island (the Philippines): A residue for ultra-depleted MORB?

Prepared by:

Andrei Yvone R. Ricohermoso
III - B Landscape Architecture
UP Diliman College of Architecture
December 2022



ACTIVE FAULTS MAP

MT. GUITING-GUITING NATURAL PARK IN SIBUYAN ISLAND, ROMBLON



KEY MAP

1:7500000 M

LEGEND:

- Mt. Guiting Guiting Natural Park Boundary
- Mt. Guiting Guiting Natural Park
- ▲▲▲ Thrust Fault
- |||| Normal Fault
- Active Fault - Trace is certain
- Active Fault - Trace is concealed

Data Source:

Payot, Arai, Tamura, Ishimaru, & Rodolfo Jr. (2010).
Unusual ultra-depleted dunite from Sibuyan Island (the Philippines): A residue for ultra-depleted MORB?

DOST PHIVOLCS (2018).
Active Faults Map
Province of Romblon

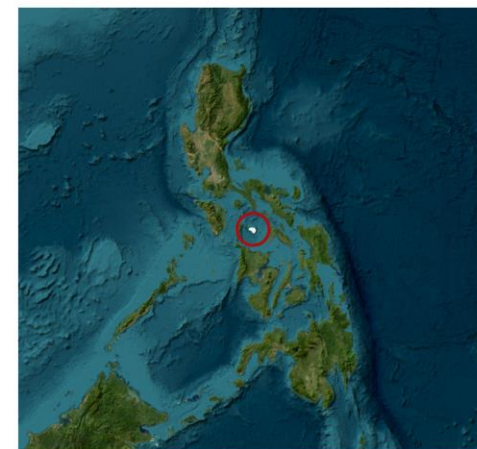
Prepared by:

Andrei Yvone R. Ricohermoso
III - B Landscape Architecture
UP Diliman College of Architecture
December 2022



LIQUEFACTION HAZARD MAP

MT. GUITING-GUITING NATURAL PARK IN SIBUYAN ISLAND, ROMBLON



KEY MAP

1:7500000 M

LEGEND:

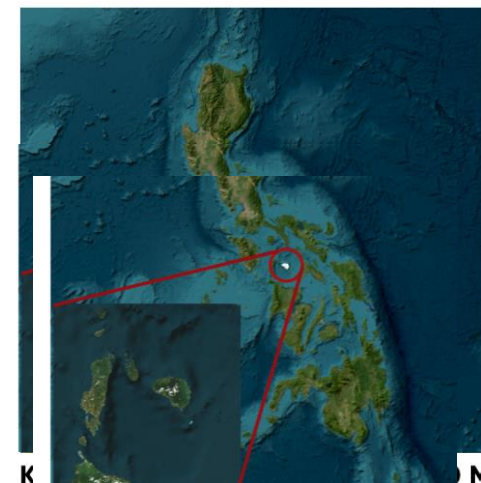
- Mt. Guiting Guiting Natural Park Boundary
- Mt. Guiting Guiting Natural Park
- Liquefaction Prone Areas

Data Source:

DOST PHIVOLCS (2020).
Liquefaction Hazard Map
Province of Romblon

Prepared by:

Andrei Yvone R. Ricohermoso
III - B Landscape Architecture
UP Diliman College of Architecture
December 2022



LEGEND:

- Mt. Guiting Guiting Natural Park Boundary
- Primary Road
(Sibuyan Circumferential Road)
- Secondary Roads
- Hiking Trails
- ▲ Mountain Peaks
- ▲ Trail Camps
- 📍 Start/End Point

Data Source:

OpenStreetMap
Stamen Terrain

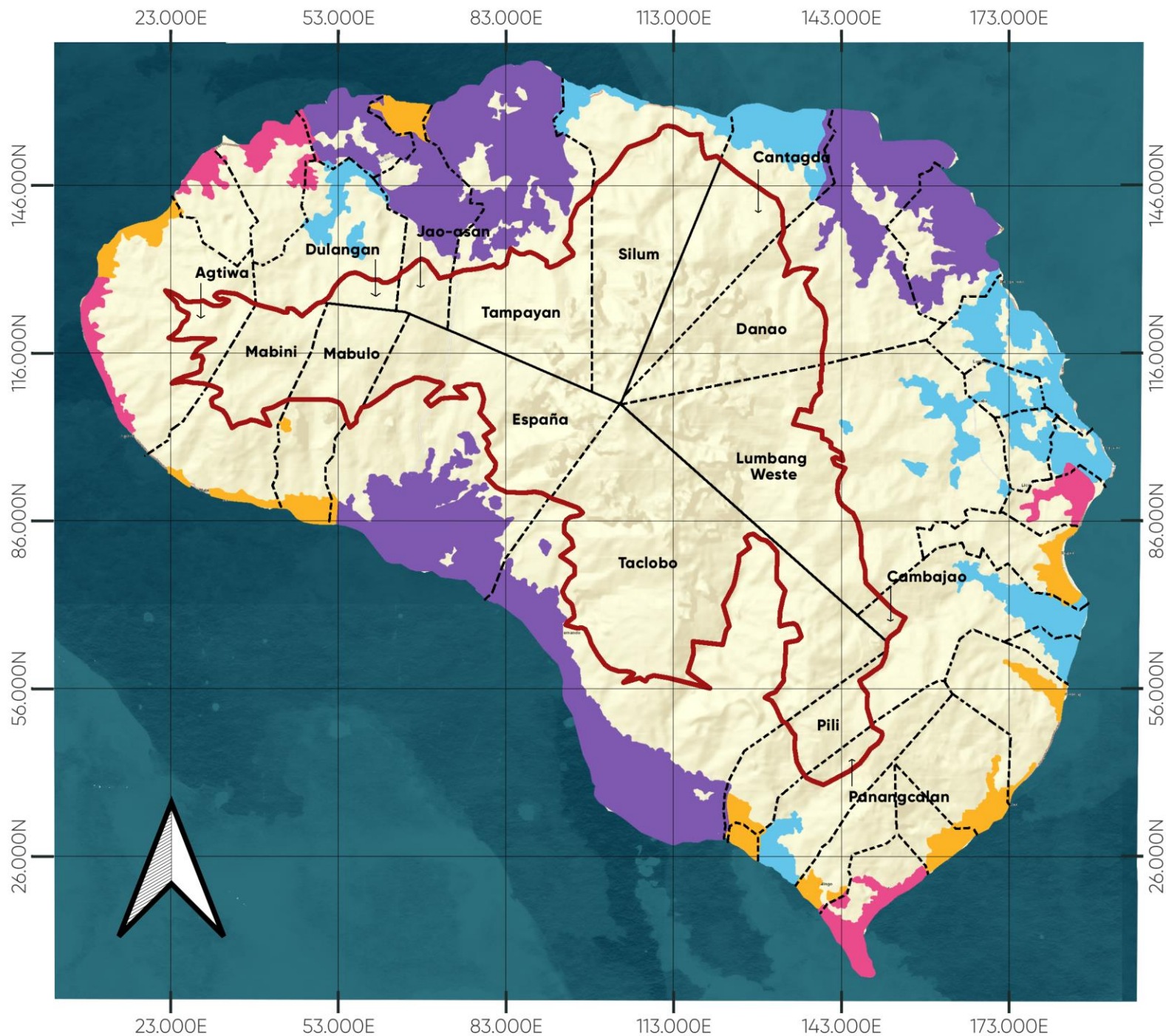
Prepared by:

Andrei Yvone R. Ricohermoso
III - B Landscape Architecture
UP Diliman College of Architecture
December 2022

MOUNTAINEERING MAP

MT. GUITING-GUITING NATURAL PARK IN SIBUYAN ISLAND, ROMBLON





KEY MAP

1:7500000 M

LEGEND:

- Mt. Guiting Guiting Natural Park Boundary
- Municipal Boundary
- Barangay Boundary
- < 300
- 300-599
- 680-999
- >1000

Population density calculated according to barangay lang areas.

Areas shown are characterized by slopes of less than 18%

Data Source:

PAMP of MGGNP, Sibuyan, Romblon (2022-2032)

p. 31 Figure 7 Population Density Map of Sibuyan Island.

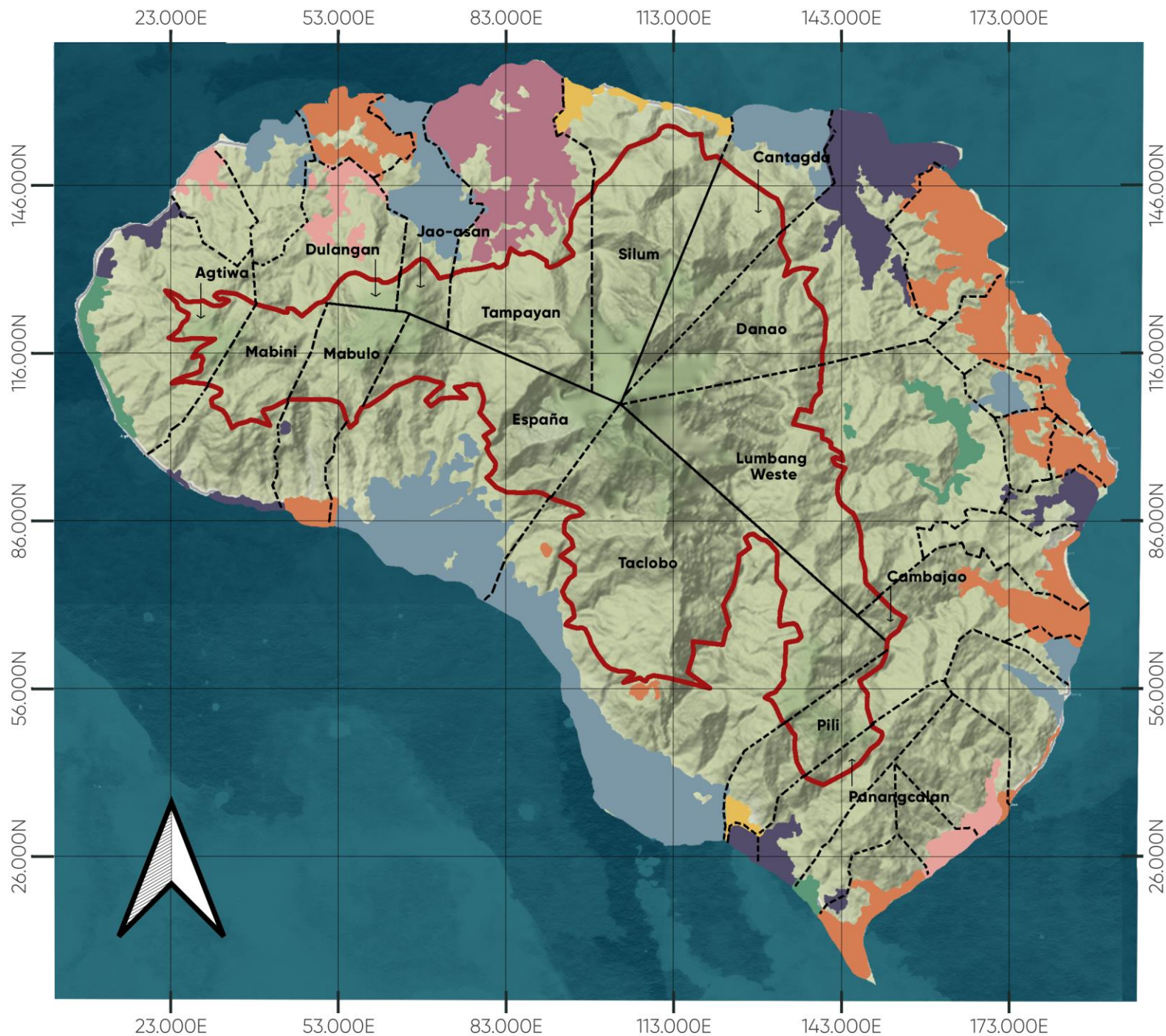
Prepared by:

Andrei Yvone R. Ricohermoso
III - B Landscape Architecture
UP Diliman College of Architecture
December 2022

POPULATION DENSITY MAP

MT. GUITING-GUITING NATURAL PARK IN SIBUYAN ISLAND, ROMBLON





AVERAGE ANNUAL POPULATION GROWTH RATE MAP
MT. GUITING-GUITING NATURAL PARK IN SIBUYAN ISLAND, ROMBLON



KEY MAP 1:7500000 M

LEGEND:

- Mt. Guiting Guiting Natural Park Boundary
- Municipal Boundary
- Barangay Boundary
- 3.90%
- 3.10-3.90%
- 2.10-3.00%
- 1.10-2.00%
- 0.00-1.00%
- <(-1.00)%
- 0.00-(-1.00)%

Areas shown are characterized by slopes of less than 18%

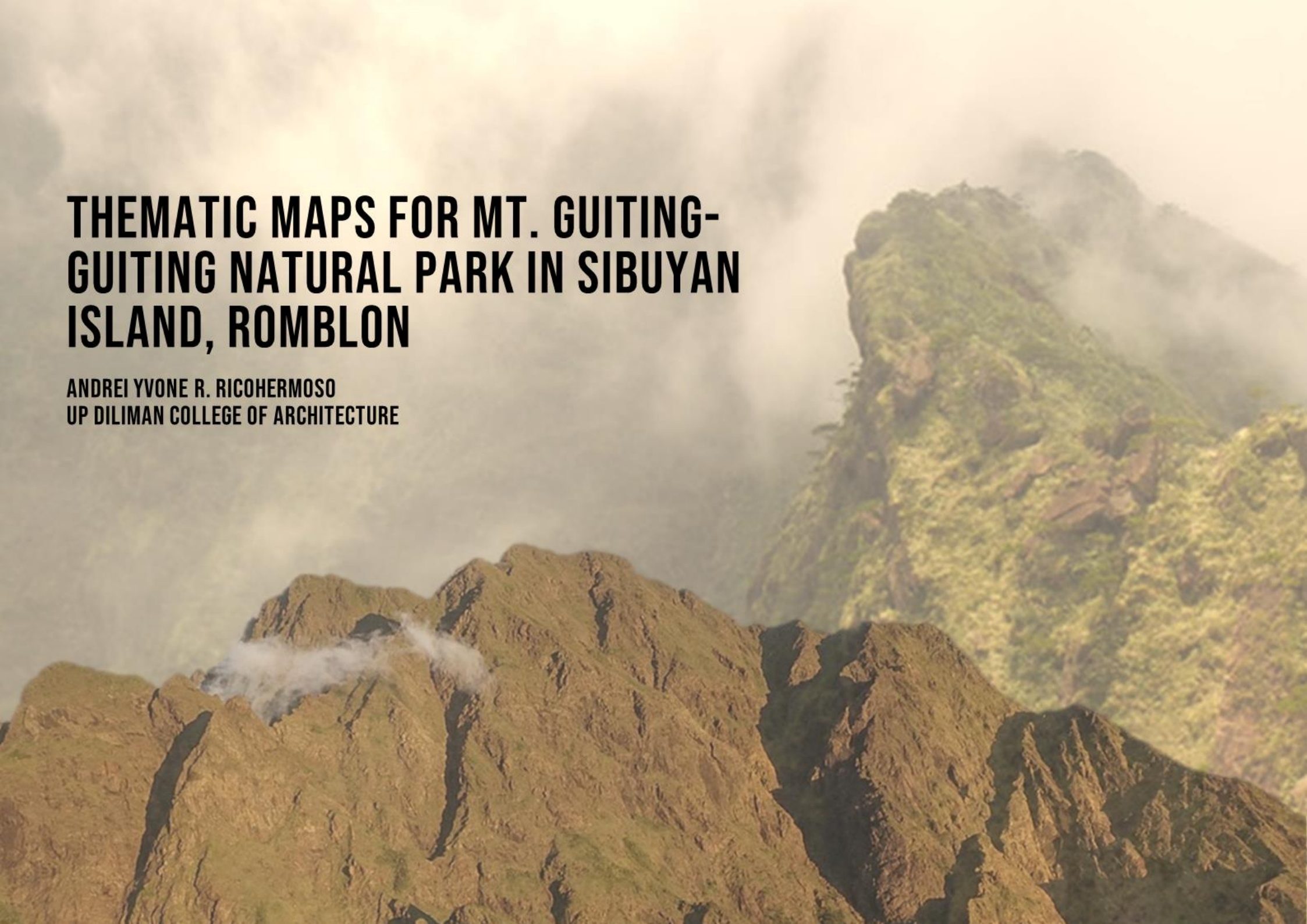
Data Source:

PAMP of MGGNP, Sibuyan, Romblon (2022-2032)

p. 32 Figure 8 Average Annual Population Growth Rate Map of Sibuyan Island.

Prepared by:

Andrei Yvone R. Ricohermoso
III - B Landscape Architecture
UP Diliman College of Architecture
December 2022



THEMATIC MAPS FOR MT. GUITING- GUITING NATURAL PARK IN SIBUYAN ISLAND, ROMBLON

**ANDREI YVONE R. RICOHERMOSO
UP DILIMAN COLLEGE OF ARCHITECTURE**