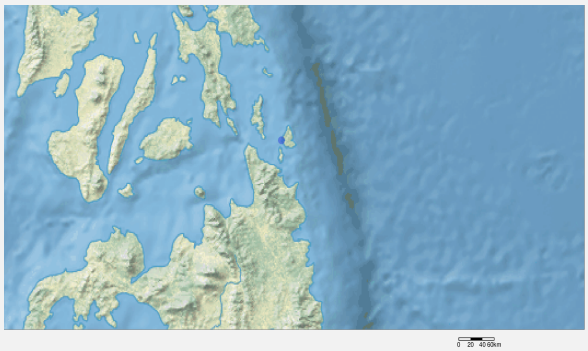
Ramsar Information Sheet

Published on 22 November 2024

Philippines

Del Carmen Mangrove Reserve (DCMR) in Siargao Island Protected Landscape and Seascape (SIPLAS)



Designation date	8 January 2024
Site number	2553
Coordinates	09°51'36"N 125°57'58"E
Area	8 654,36 ha

https://rsis.ramsar.org/ris/2553
Created by RSIS V.1.6 on - 22 November 2024

Color codes

Fields back-shaded in light blue relate to data and information required only for RIS updates.

Note that some fields concerning aspects of Part 3, the Ecological Character Description of the RIS (tinted in purple), are not expected to be completed as part of a standard RIS, but are included for completeness so as to provide the requested consistency between the RIS and the format of a 'full' Ecological Character Description, as adopted in Resolution X.15 (2008). If a Contracting Party does have information available that is relevant to these fields (for example from a national format Ecological Character Description) it may, if it wishes to, include information in these additional fields.

1 - Summary

Summary

The Del Carmen Mangrove Reserve in Siargao Island Protected Landscape and Seascape (DCMR in SIPLAS) is an essential community asset to the municipality of Del Carmen and to the entire Siargao Island. The mangroves in the Site cover approximately 4,871 hectares or 53.24% of the Island's total mangrove forest. Home to a diverse assemblages of organisms, several species of conservation importance are found at the Site. Among these are species that are globally threatened and/or endemic to the Philippines or the Mindanao region where the Site is located. These include the Philippine duck (Anas luzonica) and the southern rufous hornbill (Buceros mindanensis), and the two restricted-range species, namely the Mindanao hornbill (Penelopides affinis) and the yellowish bulbul (Hypsipetes everetti). Furthermore, the Site supports food production, local livelihood, and ecotourism activities, and protects nearby communities against storm surges.

2 - Data & location

2.1 - Formal data

2.1.1 - Name and address of the compiler of this RIS

Responsible compiler

Institution/agency	Protected Area Management Office-Siargao Island Protected Landscape and Seascape/ Department of Environment and Natural Resources
Postal address	DENR-PAMO SIPLAS Office Brgy. 12, Catabaan Dapa, Surigao del Norte 8417 Philippines

National Ramsar Administrative Authority

Institution/agency	Department of Environment and Natural Resources - Biodiversity Management Bureau
Postal address	Ninoy Aquino Parks and Wildlife Center North Avenue, Diliman, Quezon City 1100 Philippines

2.1.2 - Period of collection of data and information used to compile the RIS

From year	2019
To year	2020

2.1.3 - Name of the Ramsar Site

Official name (in English, French or Spanish)	Del Carmen Mangrove Reserve (DCMR) in Siargao Island Protected Landscape and Seascape (SIPLAS)
Unofficial name (optional)	Siargao Island Protected Landscape and Seascape (SIPLAS) - Del Carmen (Western portion of the Mangrove Forest)

2.2 - Site location

2.2.1 - Defining the Site boundaries

b) Digital map/image
<1 file(s) uploaded>

Former maps	0

Boundaries description

The Del Carmen Mangrove Reserve (DCMR) is situated within the Municipality of Del Carmen, about 33 nautical miles from Surigao City, the provincial capital of Surigao del Norte. It is bordered to the north by the Municipality of San Benito, to the east by the Municipality of Pilar, to the west by Hinatuan Passage, and to the south by the Municipality of Dapa and Bucas Grande.

The DCMR is within the boundary of the Siargao Islands Protected Landscape and Seascape (SIPLAS), a protected area in Surigao del Norte established through Republic Act (RA) 11038 or the Expanded National Integrated Protected Area System (ENIPAS) Act. This reserve spans across 14 barangays (or the smallest unit of government in the Philippines), namely, Del Carmen, San Jose, Cancohoy, Mabuhay, Katipunan, Esperanza, Sayak, Lobogon, Antipolo, Cabugao, Bitoon, San Fernando, Domoyog, Caub.

When delineating DCMR, the boundary intersects areas of timberland because the focus of Ramsar Site designation was the mangrove ecosystems specific to Del Carmen Municipality. The boundary also includes a 10-meter buffer zone seaward from the mangrove stands. This buffer provides an allowance for the management of the mangroves and encompasses adjacent wetland types, such as intertidal flats.

2.2.2 - General location

a) In which large administrative region does the site lie?	Del Carmen, Siargao Islands, Province of Surigao del Norte, Caraga Region
b) What is the nearest town or population centre?	Dapa, Surigao del Norte

2.2.3 - For wetlands on national boundaries only

a) Does the wetland extend onto the territory of one or more other countries?	Yes ○ No ◉
b) Is the site adjacent to another designated Ramsar Site on the territory of another Contracting Party?	Yes ○ No ◉

2.2.4 - Area of the Site

Official area, in hectares (ha): 8654.36

Area, in hectares (ha) as calculated from GIS boundaries: 8654.36

2.2.5 - Biogeography

Biogeographic regions

Regionalisation scheme(s)	Biogeographic region
Udvardy's Biogeographical Provinces	INDOMALAYAN Realm, Philippines Biogeographic Province

3 - Why is the Site important?

3.1 - Ramsar Criteria and their justification

<no data available>

☑ Criterion 2 : Rare species and threatened ecological communities

Optional text box to provide further information	The site is a sanctuary for globally threatened biodiversity including two (2) species of birds that are vulnerable and two (2) species that are endangered; one (1) flora and two (2) turtle species that are endangered; a grouper, and a giant clam species that are vulnerable; and a turtle and a crocodile species that are critically endangered. Furthermore, with reference to the DENR Administrative Order No. 2017-11 - a national technical policy entitled, "National List of Threatened Philippine Plants and Their Categories - there is one flora species listed as critically endangered; two (2) flora species and two (2) species of bird listed as endangered; and four (4) flora species and one (1) bird species listed as vulnerable.

☑ Criterion 3 : Biological diversity

Justification	The site is evidently biodiversity rich, hosting 158 plant species and 245 fauna species wherein eight percent of the flora and twenty percent of the fauna are endemic to the Philippines or to the Mindanao Region where the site is situated. Of the fauna, 91 species are birds, 24 are reptiles, nine (9) are amphibians, seven (7) are mammals, and seven (7) are insects. Seventy-eight (78) species of fish, 28 crustaceans, and one (1) bivalve were also recorded at the site.

3.2 - Plant species whose presence relates to the international importance of the site

Phylum	Scientific name	Criterion 2	Criterion 3	Criterion 4	IUCN Red List	CITES Appendix I	Other status	Justification
Plantae								
TRACHEOPHYTA / LILIOPSIDA	*Benstonea copelandii*	☐	☑	☐	LC	☐		Endemic to the Philippines
TRACHEOPHYTA / MAGNOLIOPSIDA	*Casearia fuliginosa*	☐	☑	☐	LC	☐		Endemic to the Philippines
TRACHEOPHYTA / CYCADOPSIDA	*Cycas edentata*	☑	☐	☐	NT	☐	Vulnerable (DAO 2017-11)	
TRACHEOPHYTA / LILIOPSIDA	*Dendrobium dearei*	☐	☑	☐	NE	☐		Endemic to the Philippines
TRACHEOPHYTA / LILIOPSIDA	*Dendrobium escritorii*	☐	☑	☐	LC	☐		Endemic to the Philippines
TRACHEOPHYTA / LILIOPSIDA	*Dendrobium lunatum*	☐	☑	☐	LC	☐		Endemic to the Philippines
TRACHEOPHYTA / LILIOPSIDA	*Dendrobium secundum*	☐	☑	☐	LC	☐		Endemic to the Philippines
TRACHEOPHYTA / MAGNOLIOPSIDA	*Diospyros ferrea*	☑	☐	☐	DD	☐	Vulnerable (DAO 2017-11 National Red List)	
TRACHEOPHYTA / MAGNOLIOPSIDA	*Dischidia platyphylla*	☐	☑	☐	LC	☐		Endemic to the Philippines
TRACHEOPHYTA / POLYPODIOPSIDA	*Drynaria quercifolia*	☑	☐	☐	NE	☐	Vulnerable (DAO 2017-11 National Red List)	
TRACHEOPHYTA / MAGNOLIOPSIDA	*Glochidion woodii*	☐	☑	☐	LC	☐		Endemic to the Philippines;
TRACHEOPHYTA / MAGNOLIOPSIDA	*Hoya pubicalyx*	☐	☑	☐	LC	☐		Endemic to the Philippines;
TRACHEOPHYTA / MAGNOLIOPSIDA	*Ixora macrophylla*	☐	☑	☐	LC	☐		Endemic to the Philippines;
TRACHEOPHYTA / MAGNOLIOPSIDA	*Mesua navesii*	☐	☑	☐	LC	☐		Endemic to the Philippines
TRACHEOPHYTA / MAGNOLIOPSIDA	*Myrsine mindanaensis*	☐	☑	☐	LC	☐		Endemic to the Philippines
TRACHEOPHYTA / MAGNOLIOPSIDA	*Neonauclea formicaria*	☐	☑	☐	LC	☐		Endemic to the Philippines
TRACHEOPHYTA / MAGNOLIOPSIDA	*Nepenthes abgracilis*	☑	☐	☐	NE	☐	Critically Endangered (DAO 2017-11)	
TRACHEOPHYTA / MAGNOLIOPSIDA	*Pemphis acidula*	☑	☐	☐	LC	☐	Endangered (DAO 2017-11)	
TRACHEOPHYTA / MAGNOLIOPSIDA	*Pterocarpus indicus*	☑	☐	☐	EN	☐		
TRACHEOPHYTA / LILIOPSIDA	*Renanthera storiei*	☑	☐	☐	NE	☐	Endangered (DAO 2017-11 National Red List)	
TRACHEOPHYTA / LILIOPSIDA	*Sararanga philippinensis*	☑	☐	☐	NT	☐	Vulnerable (DAO 2017-11 National Red List)	

3.3 - Animal species whose presence relates to the international importance of the site

Phylum	Scientific name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
		2	4	6	9	3	5	7	8								
Others																	
ARTHROPODA / INSECTA	*Anthracites furvuseques*	☐	☐	☐	☐	☑	☐	☐	☐				NE	☐	☐		Endemic to the Philippines

Phylum	Scientific name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
		2	4	6	9	3	5	7	8								
CHORDATA / REPTILIA	*Boiga dendrophila latifasciata*	☐	☐	☐	☐	☑	☐	☐	☐				NE	☐	☐		Endemic to the Philippines
CHORDATA / MAMMALIA	*Carlito syrichta syrichta*	☐	☐	☐	☐	☑	☐	☐	☐				NE	☐	☐	Other threatened species (per DENR Administrative Order 2019-09)	Endemic to the Philippines;
CHORDATA / REPTILIA	*Chelonia mydas*	☑	☐	☐	☐	☐	☐	☐	☐				EN	☑	☑	Status: EN (IUCN); Appendix I (CITES); EN (DENR DAO	
CHORDATA / REPTILIA	*Chrysopelea paradisi variabilis*	☐	☐	☐	☐	☑	☐	☐	☐				NE	☐	☐		Endemic to the Philippines;
CHORDATA / REPTILIA	*Crocodylus porosus*	☑	☐	☐	☐	☐	☐	☐	☐				LC	☑	☐	Status: Appendix I (CITES); CR (DENR DAO)	
CHORDATA / REPTILIA	*Cuora amboinensis*	☑	☐	☐	☐	☐	☐	☐	☐				EN	☐	☐	[Status: EN (IUCN); Appendix II (CITES); OTS (DENR DAO)]	
CHORDATA / MAMMALIA	*Cynocephalus volans*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to Mindanao region of the Philippines;
CHORDATA / REPTILIA	*Cyrtodactylus mamanwa*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to Mindanao region of the Philippines;
CHORDATA / REPTILIA	*Dendrelaphis marenae*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines
CHORDATA / REPTILIA	*Dendrelaphis philippinensis*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines
CHORDATA / REPTILIA	*Draco bimaculatus*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines
CHORDATA / REPTILIA	*Draco cyanopterus*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to Mindanao region of the Philippines;
CHORDATA / REPTILIA	*Draco ornatus*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines
CHORDATA / REPTILIA	*Eretmochelys imbricata*	☑	☐	☐	☐	☐	☐	☐	☐				CR	☑	☑	Status: CR (IUCN); Appendix I (CITES); CR (DENR DAO)	
CHORDATA / REPTILIA	*Eutropis multicarinata borealis*	☐	☐	☐	☐	☑	☐	☐	☐				NE	☐	☐		Endemic (Subspecies);
CHORDATA / AMPHIBIA	*Fejervarya vittigera*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines;
CHORDATA / MAMMALIA	*Hipposideros coronatus*	☐	☐	☐	☐	☑	☐	☐	☐				DD	☐	☐		Endemic to the Philippines
CHORDATA / MAMMALIA	*Hipposideros pygmaeus*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines;
CHORDATA / REPTILIA	*Hydrosaurus pustulatus*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines;
CHORDATA / AMPHIBIA	*Kalophrynus sinensis*	☐	☐	☐	☐	☑	☐	☐	☐					☐	☐		Endemic to the Philippines; restricted in distribution to Mindanao PAIC
CHORDATA / AMPHIBIA	*Kaloula meridionalis*	☐	☐	☐	☐	☑	☐	☐	☐				NE	☐	☐		Endemic to the Philippines; restricted in distribution to Mindanao PAIC
CHORDATA / REPTILIA	*Lamprolepis smaragdina philippinica*	☐	☐	☐	☐	☑	☐	☐	☐				NE	☐	☐		Endemic to the Philippines (Subspecies);
CHORDATA / REPTILIA	*Lepidodactylus herrei*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines;
CHORDATA / AMPHIBIA	*Limnonectes leytensis*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines

Phylum	Scientific name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
		2	4	6	9	3	5	7	8								
CHORDATA / AMPHIBIA	*Limnonectes magnus*	☐	☐	☐	☐	☑	☐	☐	☐				NT	☐	☐		Endemic to the Philippines; restricted in distribution to Mindanao PAIC
CHORDATA / REPTILIA	*Lipinia pulchella*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines
CHORDATA / AMPHIBIA	*Megophrys stejnegeri*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines; restricted in distribution to Mindanao PAIC
CHORDATA / REPTILIA	*Oxyrhabdium modestum*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines;
ARTHROPODA / INSECTA	*Paranisitra leytensis*	☐	☐	☐	☐	☑	☐	☐	☐				NE	☐	☐		Endemic to the Philippines;
CHORDATA / AMPHIBIA	*Philautus leitensis*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines; restricted in distribution to Mindanao PAIC
CHORDATA / REPTILIA	*Pinoyscincus abdictus abdictus*	☐	☐	☐	☐	☑	☐	☐	☐				NE	☐	☐		Endemic to the Philippines;
CHORDATA / REPTILIA	*Pinoyscincus jagori jagori*	☐	☐	☐	☐	☑	☐	☐	☐				NE	☐	☐		Endemic to the Philippines;
CHORDATA / AMPHIBIA	*Platymantis guentheri*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines; restricted in distribution to Mindanao PAIC
CHORDATA / AMPHIBIA	*Pulchrana grandocula*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines; restricted in distribution to Mindanao PAIC
CHORDATA / MAMMALIA	*Rattus everetti*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines;
CHORDATA / MAMMALIA	*Rattus tawitawiensis*	☐	☐	☐	☐	☑	☐	☐	☐				DD	☐	☐		Tawi-tawi Island endemic so a probable new record; may also be a new species found only in Siargao Island;
CHORDATA / REPTILIA	*Sphenomorphus fasciatus*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines
CHORDATA / AMPHIBIA	*Staurois natator*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines; restricted in distribution to Mindanao PAIC
CHORDATA / MAMMALIA	*Sundasciurus philippinensis*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to Mindanao region of the Philippines;
CHORDATA / REPTILIA	*Varanus cumingi*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to Mindanao region of the Philippines;
Fish, Mollusc and Crustacea																	
CHORDATA / ACTINOPTERYGII	*Epinephelus fuscoguttatus*	☑	☐	☐	☐	☐	☐	☐	☐				VU	☐	☐		
MOLLUSCA / BIVALVIA	*Tridacna gigas*	☑	☐	☐	☐	☐	☐	☐	☐				VU	☐	☐		
Birds																	
CHORDATA / AVES	*Aethopyga bella*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines
CHORDATA / AVES	*Anas luzonica*	☑	☐	☐	☐	☑	☐	☐	☐				VU	☐	☐		Endemic to the Philippines;
CHORDATA / AVES	*Buceros mindanensis*	☑	☐	☐	☐	☑	☐	☐	☐				VU	☑	☐		Endemic to the Philippines;
CHORDATA / AVES	*Calidris tenuirostris*	☑	☐	☐	☐	☐	☐	☐	☐				EN	☐	☐	Migrant; Endangered (per DENR Administrative Order 2019-09)	
CHORDATA / AVES	*Centropus melanops*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines;

Phylum	Scientific name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
		2	4	6	9	3	5	7	8								
CHORDATA / AVES	*Centropus viridis*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines;
CHORDATA / AVES	*Collocalia marginata*	☐	☐	☐	☐	☑	☐	☐	☐				NE	☐	☐		Endemic to the Philippines;
CHORDATA / AVES	*Collocalia troglodytes*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines;
CHORDATA / AVES	*Copsychus mindanensis*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines;
CHORDATA / AVES	*Corvus enca*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines
CHORDATA / AVES	*Dicaeum australe*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines;
CHORDATA / AVES	*Dicaeum hypoleucum*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines;
CHORDATA / AVES	*Dicaeum trigonostigma*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines;
CHORDATA / AVES	*Hypsipetes everetti*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines;
CHORDATA / AVES	*Hypsipetes philippinus*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines;
CHORDATA / AVES	*Leptocoma sperata*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines;
CHORDATA / AVES	*Loriculus philippensis*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines;
CHORDATA / AVES	*Macronus striaticeps*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines;
CHORDATA / AVES	*Nisaetus philippensis*	☑	☐	☐	☐	☑	☐	☐	☐				EN	☐	☐		Endemic to the Philippines;
CHORDATA / AVES	*Oriolus steerii*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines
CHORDATA / AVES	*Orthotomus frontalis*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines;
CHORDATA / AVES	*Pachycephala philippinensis*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines
CHORDATA / AVES	*Penelopides affinis*	☑	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐	Endangered (per DENR Administrative Order 2019-09)	Endemic to the Philippines;
CHORDATA / AVES	*Ptilinopus leclancheri*	☐	☐	☐	☐	☑	☐	☐	☐				NE	☐	☐		Endemic to the Philippines;
CHORDATA / AVES	*Pycnonotus urostictus*	☐	☐	☐	☐	☑	☐	☐	☐				NE	☐	☐		Endemic to the Philippines;
CHORDATA / AVES	*Rhipidura nigritorquis*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines;
CHORDATA / AVES	*Sarcops calvus*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines
CHORDATA / AVES	*Spilornis holospilus*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines;
CHORDATA / AVES	*Streptopelia bitorquata dusumieri*	☑	☐	☐	☐	☐	☐	☐	☐				NE	☐	☐	Resident Endangered (per DENR Administrative Order 2019-09)	
CHORDATA / AVES	*Treron axillaris*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines
CHORDATA / AVES	*Treron vernans*	☑	☐	☐	☐	☐	☐	☐	☐				LC	☐	☐	Resident Vulnerable (per DENR Administrative Order 2019-09)	

Phylum	Scientific name	Species qualifies under criterion				Species contributes under criterion				Pop. Size	Period of pop. Est.	% occurrence 1)	IUCN Red List	CITES Appendix I	CMS Appendix I	Other Status	Justification
		2	4	6	9	3	5	7	8								
CHORDATA / AVES	*Zosterops everetti*	☐	☐	☐	☐	☑	☐	☐	☐				LC	☐	☐		Endemic to the Philippines;

1) Percentage of the total biogeographic population at the site

3.4 - Ecological communities whose presence relates to the international importance of the site

Name of ecological community	Community qualifies under Criterion 2?	Description	Justification
Pemphis acidula - Scyphiphora hydrophylacea - Pandanus tectorius - Pandanus affinis Forest	☐	Their respective monotypic zonations are exclusive to the lower limestone rock formations and beach shores.	Pemphis acidula and Pandanus affinis are classified as endangered and other threatened species by the Philippines' DENR and IUCN, respectively. The forest is known to house endangered and endemic animals.
Nypa fruticans - Avicennia officinalis Forest	☐	The community is found on the estuarine to mudflats environments. The mangrove palm, Nypa fruticans dominate the forest. Avicennia officinalis are found scattered within the zonations of N. fruticans	The Nypa fruticans stands are economically important to the locals. These are used for weaving, wine-making, and as ornaments. Aofficinalis are known to counter barnacle infestations due to their shedding. It is a nesting site for saltwater crocodiles.
Rhizophoraceae-Dischidia-Hoya-Ixora Forest	☐	The community is found along a muddy clay substrate mixed with large limestone rocks. The Rhizophora stands are together with epiphytic and shrub species, Dischidia platyphylla, Hoya pubicalyx, and other endemic orchid species.	This type of mangrove forest is located near the residential and terrestrial areas. The endemic species, Dischidia platyphylla, Hoya pubicalyx, and other orchid species like Dendrobium dearie, Dendrobium lunatum, Dendrobium secundum are also found.
Rhizophora mucronata - Rhizophora apiculata - Bruguiera gymnorhiza - Myrmecodia tuberosa Forest	☐	Rhizophora mucronata - Rhizophora apiculata - Bruguiera gymnorhiza - Myrmecodia tuberosa Forest are prominent in medium high tidal zones. These species formed observable and extensive monospecific zones in almost all the coastal barangays.	The community is characterized with various assemblages of endangered and endemic animals, nurseries of fish species, fruit flies, herpetological species and bird species.

Optional text box to provide further information

The dominant species in the surveyed areas of the Del Carmen Mangrove Forest include Rhizophora mucronata, R. apiculata, Nypa fructicans, Myrmecodia tuberosa, Avicennia officinalis, and Xylocarpus granatum. The site provides economic and ecological value to the nearby communities, from recreational tourism to natural protection against calamities (Cortez, 2020).

4 - What is the Site like? (Ecological character description)

4.1 - Ecological character

The Del Carmen Mangrove Reserve in Siargao Island Protected Landscape and Seascape (DCMR-SIPLAS) features shallow marine waters, sandy/shingle shores, intertidal flats, lagoons, and mangroves. The reserve plays a critical role in habitat connectivity by linking the mangrove forest to adjacent upland forests and seagrass beds, which facilitates movement for mangrove-associated and lowland forest birds. The mangrove-fringed lagoons and intertidal flats, although not yet delineated in terms of extent, provide foraging grounds for waders and shorebirds. Plus, the reserve does not only cater to waterbirds but also to a wide array of aquatic and terrestrial species, including 126 plant and 124 animal species, in addition to those listed in Tables 3.2 and 3.3.

Ecologically, the reserve is situated in a Type II climate zone with high annual rainfall and experiences a pronounced wet season during the northeast monsoon (December to February). The temperature ranges from 23.6 to 31.3 degrees Celsius, and it averages one tropical cyclone per year. The water is alkaline (pH > 7.4) and euhaline/eusaline (30-40g/l salinity). The reserve's coastal location is along Sitio Sta. Cruz - Barangay Del Carmen, Surigao del Norte, situated within the broader context of the region's river and coastal systems.

DCMR-SIPLAS also offers economic and ecological benefits to nearby communities, including recreational tourism and natural protection against calamities. The Del Carmen Mangrove Reserve in Siargao Island Protected Landscape and Seascape (DCMR-SIPLAS) features shallow marine waters, sandy/shingle shores, intertidal flats, lagoons, and mangroves. It plays a crucial role in habitat connectivity, linking mangrove forests to adjacent upland forests and seagrass beds, facilitating movement for mangrove-associated and lowland forest birds. The mangrove-fringed lagoons and intertidal flats, though not yet fully delineated, provide essential foraging grounds for waders and shorebirds. The reserve supports a diverse range of species, including 126 plant and 124 animal species in addition to those listed in Tables 3.2 and 3.3.

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DCMR-SIPLAS offers significant economic and ecological benefits, serving over 900 residents and approximately 2,982 visitors who benefit from its ecosystem services, including sustenance (i.e. food), recreational tourism, and natural protection against calamities. Locally, sustainable fishing practices such as hook-and-line, fish traps, single gill nets, and crab and shrimp traps are common. Cage aquaculture and fish corrals are used for managing fish populations, while spearfishing, night dive fishing, and gleaning activities are also practiced. The Del Carmen Municipality celebrates its mangroves through various activities and festivals, including the "Bakhaw (Mangrove) Festival," the "Siargao It Up Program," and the "Siargao International Marathon - Run for the Mangroves," all of which promote mangrove conservation and environmental awareness.

4.2 - What wetland type(s) are in the site?

Marine or coastal wetlands

Wetland types (code and name)	Local name	Ranking of extent (1: greatest - 4: least)	Area (ha) of wetland type	Justification of Criterion 1
A: Permanent shallow marine waters		2		
E: Sand, shingle or pebble shores		4		
G: Intertidal mud, sand or salt flats		3		
I: Intertidal forested wetlands	Del Carmen Mangrove Forest	1	4871	
J: Coastal brackish / saline lagoons		4		

(ECD) Habitat connectivity	The mangrove forest of Del Carmen is situated adjacent to the upland forest of two barangays. It is also adjacent to the seagrass beds of five barangays.

4.3 - Biological components

4.3.1 - Plant species

Other noteworthy plant species

Phylum	Scientific name	Position in range / endemism / other
TRACHEOPHYTA/MAGNOLIOPSIDA	*Abrus precatorius*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Acalypha amentacea*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Acanthus ebracteatus ebracteatus*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Acanthus volubilis*	
TRACHEOPHYTA/POLYPODIOPSIDA	*Acrostichum aureum*	
TRACHEOPHYTA/POLYPODIOPSIDA	*Acrostichum speciosum*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Aegiceras corniculatum*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Ageratum conyzoides*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Allophylus cobbe*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Alphitonia excelsa*	
TRACHEOPHYTA/LILIOPSIDA	*Alpinia elegans*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Ardisia squamulosa*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Avicennia marina marina*	
TRACHEOPHYTA/LILIOPSIDA	*Benstonea affinis*	

Phylum	Scientific name	Position in range / endemism / other
TRACHEOPHYTA/MAGNOLIOPSIDA	*Blumea balsamifera*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Bruguiera gymnorhiza*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Buchanania arborescens*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Calophyllum brasiliense*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Cananga odorata*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Canarium asperum*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Capsicum annuum*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Carica papaya*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Casearia grewiifolia*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Ceriops tagal*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Chionanthus ramiflorus*	
TRACHEOPHYTA/LILIOPSIDA	*Chloris barbata*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Cnestis palala*	
TRACHEOPHYTA/LILIOPSIDA	*Cocos nucifera*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Commersonia bartramia*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Cordia subcordata*	
TRACHEOPHYTA/LILIOPSIDA	*Crinum asiaticum*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Cyanthillium cinereum*	
TRACHEOPHYTA/LILIOPSIDA	*Cynodon dactylon*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Dalbergia pinnata*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Dasymaschalon clusiflorum*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Decaisnina cumingii*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Decaspermum parviflorum*	
TRACHEOPHYTA/LILIOPSIDA	*Dendrobium merrillii*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Dendrolobium umbellatum*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Derris trifoliata*	
TRACHEOPHYTA/LILIOPSIDA	*Digitaria setigera*	
TRACHEOPHYTA/LILIOPSIDA	*Dinochloa luconiae*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Diplodiscus paniculatus*	
TRACHEOPHYTA/LILIOPSIDA	*Dracaena angustifolia*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Eclipta prostrata*	
TRACHEOPHYTA/LILIOPSIDA	*Eleusine indica*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Euphorbia hirta*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Excoecaria agallocha*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Ficus nota*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Ficus pedunculosa*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Ficus pseudopalma*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Ficus septica*	
TRACHEOPHYTA/LILIOPSIDA	*Flagellaria indica*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Gardenia mutabilis*	
TRACHEOPHYTA/GNETOPSIDA	*Gnetum gnemon*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Guettarda speciosa*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Guioa diplopetala*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Hedyotis pruinosa*	
TRACHEOPHYTA/LILIOPSIDA	*Hellenia speciosa*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Heritiera littoralis*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Hippobroma longiflora*	
TRACHEOPHYTA/LILIOPSIDA	*Homalomena philippinensis*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Hydnophytum formicarum*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Ipomoea batatas*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Leea guineensis*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Lumnitzera littorea*	
TRACHEOPHYTA/POLYPODIOPSIDA	*Lygodium circinnatum*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Macaranga tanarius*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Medinilla quadrifolia*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Medinilla teysmanni*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Melastoma malabathricum*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Melicope frutescens*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Melochia umbellata*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Melothria pendula*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Memecylon ovatum*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Mikania natalensis*	

Phylum	Scientific name	Position in range / endemism / other
TRACHEOPHYTA/MAGNOLIOPSIDA	*Morinda citrifolia*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Muntingia calabura*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Murraya paniculata*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Mussaenda philippica*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Myrmecodia tuberosa*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Neolitsea villosa*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Neonauclea calycina*	
TRACHEOPHYTA/LILIOPSIDA	*Nypa fruticans*	
TRACHEOPHYTA/LILIOPSIDA	*Pandanus odorifer*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Passiflora foetida*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Phyla nodiflora*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Phyllanthus albus*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Phyllanthus amarus*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Phyllanthus littoralis*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Pipturus arborescens*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Polyscias nodosa*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Pongamia pinnata*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Portulaca oleracea*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Premna serratifolia*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Pterocarpus dalbergioides*	
TRACHEOPHYTA/POLYPODIOPSIDA	*Pyrrosia lanceolata*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Radermachera gigantea*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Rhizophora apiculata*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Rhizophora mucronata*	
TRACHEOPHYTA/LILIOPSIDA	*Saccharum spontaneum*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Scaevola sericea*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Schefflera elliptica*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Scolopia luzonensis*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Scoparia dulcis*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Scyphiphora hydrophylacea*	
TRACHEOPHYTA/LYCOPODIOPSIDA	*Selaginella delicatula*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Sesuvium portulacastrum*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Sida rhombifolia*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Sonneratia alba*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Sonneratia caseolaris*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Spermacoce ocymoides*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Sphagneticola trilobata*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Stachytarpheta jamaicensis*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Sterculia ceramica*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Syzygium confertum*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Syzygium leucoxylon*	
TRACHEOPHYTA/LILIOPSIDA	*Tacca palmata*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Terminalia catappa*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Timonius finlaysonianus*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Tristellateia australasiae*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Utania volubilis*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Volkameria inermis*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Wikstroemia indica*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Wollastonia biflora*	
TRACHEOPHYTA/MAGNOLIOPSIDA	*Xylocarpus granatum*	

Invasive alien plant species

Phylum	Scientific name	Impacts
TRACHEOPHYTA/MAGNOLIOPSIDA	*Chromolaena odorata*	Potential
TRACHEOPHYTA/LILIOPSIDA	*Imperata cylindrica*	Potential
TRACHEOPHYTA/MAGNOLIOPSIDA	*Leucaena leucocephala*	Potential
TRACHEOPHYTA/MAGNOLIOPSIDA	*Sieruela rutidosperma*	Potential

4.3.2 - Animal species

Other noteworthy animal species

Phylum	Scientific name	Pop. size	Period of pop. est.	%occurrence	Position in range /endemism/other
CHORDATA/ACTINOPTERYGII	*Acentrogobius janthinopterus*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Amblyglyphidodon curacao*				Contributes to the biodiversity richness of the site
ARTHROPODA/MALACOSTRACA	*Atergatis integerrimus*				Contributes to the biodiversity richness of the site
ARTHROPODA/MALACOSTRACA	*Austruca triangularis*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Balistoides viridescens*				Contributes to the biodiversity richness of the site
ARTHROPODA/MALACOSTRACA	*Baptozius vinosus*				Contributes to the biodiversity richness of the site
CHORDATA/REPTILIA	*Bronchocela cristatella*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Caranx papuensis*				Contributes to the biodiversity richness of the site
ARTHROPODA/MALACOSTRACA	*Cardisoma carnifex*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Cephalopholis boenak*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Cephalopholis microprion*				Contributes to the biodiversity richness of the site
CHORDATA/REPTILIA	*Cerberus schneiderii*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Chaetodon ephippium*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Chaetodon melannotus*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Chaetodon octofasciatus*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Chaetodontoplus mesoleucus*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Cheilinus trilobatus*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Cheilodipterus isostigmus*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Chlorurus bowersi*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Choerodon anchorago*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Cirrhilabrus cyanopleura*				Contributes to the biodiversity richness of the site
ARTHROPODA/MALACOSTRACA	*Coenobita perlatus*				Contributes to the biodiversity richness of the site

Phylum	Scientific name	Pop. size	Period of pop. est.	%occurrence	Position in range /endemism/other
CHORDATA/ACTINOPTERYGII	*Crenimugil seheli*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Ctenochaetus binotatus*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Ctenochaetus striatus*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Diodon liturosus*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Dischistodus prosopotaenia*				Contributes to the biodiversity richness of the site
ARTHROPODA/MALACOSTRACA	*Discoplax hirtipes*				Contributes to the biodiversity richness of the site
CHORDATA/REPTILIA	*Emoia atrocostata atrocostata*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Epinephelus coioides*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Epinephelus corallicola*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Epinephelus quoyanus*				Contributes to the biodiversity richness of the site
ARTHROPODA/MALACOSTRACA	*Epixanthus dentatus*				Contributes to the biodiversity richness of the site
CHORDATA/REPTILIA	*Eretmochelys imbricata imbricata*				Contributes to the biodiversity richness of the site
ARTHROPODA/MALACOSTRACA	*Eriphia smithii*				Contributes to the biodiversity richness of the site
ARTHROPODA/MALACOSTRACA	*Etisus laevimanus*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Exyrias puntang*				Contributes to the biodiversity richness of the site
CHORDATA/AMPHIBIA	*Fejervarya moodiei*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Fibramia amboinensis*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Fibramia lateralis*				Contributes to the biodiversity richness of the site
CHORDATA/REPTILIA	*Gehyra mutilata*				Contributes to the biodiversity richness of the site
ARTHROPODA/MALACOSTRACA	*Gelasimus jocelynae*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Gerres filamentosus*				Contributes to the biodiversity richness of the site
ARTHROPODA/MALACOSTRACA	*Grapsus albolineatus*				Contributes to the biodiversity richness of the site

Phylum	Scientific name	Pop. size	Period of pop. est.	%occurrence	Position in range /endemism/other
CHORDATA/ACTINOPTERYGII	*Gymnothorax javanicus*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Halichoeres chloropterus*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Halichoeres leucurus*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Halichoeres marginatus*				Contributes to the biodiversity richness of the site
CHORDATA/REPTILIA	*Hemidactylus frenatus*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Hemiglyphidodon plagiometopon*				Contributes to the biodiversity richness of the site
ARTHROPODA/INSECTA	*Hemithyrsocera silbergliedi*				Contributes to the biodiversity richness of the site
CHORDATA/AMPHIBIA	*Kurixalus appendiculatus*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Labracinus cyclophthalmus*				Contributes to the biodiversity richness of the site
ARTHROPODA/MALACOSTRACA	*Leptodius sanguineus*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Leptoscarus vaigiensis*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Lethrinus erythropterus*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Lutjanus argentimaculatus*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Lutjanus fulviflamma*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Lutjanus monostigma*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Lutjanus russellii*				Contributes to the biodiversity richness of the site
CHORDATA/REPTILIA	*Lycodon capucinus*				Contributes to the biodiversity richness of the site
ARTHROPODA/MALACOSTRACA	*Macrobrachium australe*				Contributes to the biodiversity richness of the site
ARTHROPODA/MALACOSTRACA	*Macrobrachium equidens*				Contributes to the biodiversity richness of the site
CHORDATA/REPTILIA	*Malayopython reticulatus*				Contributes to the biodiversity richness of the site
ARTHROPODA/INSECTA	*Melanozosteria nitida*				Contributes to the biodiversity richness of the site
ARTHROPODA/MALACOSTRACA	*Metapenaeus monoceros*				Contributes to the biodiversity richness of the site

Phylum	Scientific name	Pop. size	Period of pop. est.	%occurrence	Position in range /endemism/other
ARTHROPODA/MALACOSTRACA	*Metasesarma obesum*				Contributes to the biodiversity richness of the site
ARTHROPODA/MALACOSTRACA	*Metopograpsus latifrons*				Contributes to the biodiversity richness of the site
ARTHROPODA/MALACOSTRACA	*Metopograpsus thukuhar*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Myripristis adusta*				Contributes to the biodiversity richness of the site
ARTHROPODA/INSECTA	*Nauphoeta cinerea*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Nectamia fusca*				Contributes to the biodiversity richness of the site
ARTHROPODA/MALACOSTRACA	*Nematopalaemon tenuipes*				Contributes to the biodiversity richness of the site
ARTHROPODA/INSECTA	*Odontomachus simillimus*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Ostorhinchus sealei*				Contributes to the biodiversity richness of the site
ARTHROPODA/MALACOSTRACA	*Parasesarma affine*				Contributes to the biodiversity richness of the site
ARTHROPODA/MALACOSTRACA	*Parasesarma bidens*				Contributes to the biodiversity richness of the site
ARTHROPODA/MALACOSTRACA	*Parasesarma pictum*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Parupeneus indicus*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Pentapodus trivittatus*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Plectorhinchus chaetodonoides*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Plectorhinchus gibbosus*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Plectorhinchus lineatus*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Plotosus lineatus*				Contributes to the biodiversity richness of the site
CHORDATA/AMPHIBIA	*Polypedates leucomystax*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Pomacentrus alexanderae*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Pomacentrus amboinensis*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Pomacentrus brachialis*				Contributes to the biodiversity richness of the site

Phylum	Scientific name	Pop. size	Period of pop. est.	%occurrence	Position in range /endemism/other
CHORDATA/ACTINOPTERYGII	*Pomacentrus coelestis*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Pomacentrus lepidogenys*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Pomacentrus vaiuli*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Pristicon trimaculatus*				Contributes to the biodiversity richness of the site
CHORDATA/REPTILIA	*Psammodynastes pulverulentus*				Contributes to the biodiversity richness of the site
CHORDATA/MAMMALIA	*Pteropus hypomelanus*				Contributes to the biodiversity richness of the site
ARTHROPODA/INSECTA	*Pycnoscelus indicus*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Rhinecanthus aculeatus*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Sargocentron caudimaculatum*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Sargocentron rubrum*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Scarus flavipectoralis*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Scarus hypselopterus*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Scarus rivulatus*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Scarus vetula*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Scatophagus argus*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Scolopsis ciliata*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Scolopsis lineata*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Scolopsis margaritifera*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Scorpaenodes guamensis*				Contributes to the biodiversity richness of the site
ARTHROPODA/MALACOSTRACA	*Scylla serrata*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Siganus fuscescens*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Siganus guttatus*				Contributes to the biodiversity richness of the site

Phylum	Scientific name	Pop. size	Period of pop. est.	%occurrence	Position in range /endemism/other
CHORDATA/ACTINOPTERYGII	*Siganus lineatus*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Siganus virgatus*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Sphaeramia orbicularis*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Sphyraena barracuda*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Stegastes fasciolatus*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Strongylura incisa*				Contributes to the biodiversity richness of the site
ARTHROPODA/MALACOSTRACA	*Sundathelphusa philippina*				Contributes to the biodiversity richness of the site
ARTHROPODA/MALACOSTRACA	*Thalamita crenata*				Contributes to the biodiversity richness of the site
ARTHROPODA/MALACOSTRACA	*Thalassina anomala*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Toxotes jaculatrix*				Contributes to the biodiversity richness of the site
ARTHROPODA/MALACOSTRACA	*Tubuca coarctata*				Contributes to the biodiversity richness of the site
ARTHROPODA/MALACOSTRACA	*Venitus latreillei*				Contributes to the biodiversity richness of the site
CHORDATA/ACTINOPTERYGII	*Yarica hyalosoma*				Contributes to the biodiversity richness of the site

Invasive alien animal species

Phylum	Scientific name	Impacts
CHORDATA/MAMMALIA	*Felis catus*	Potential
CHORDATA/MAMMALIA	*Rattus tanezumi*	Potential
CHORDATA/AMPHIBIA	*Rhinella marina*	Potential

Optional text box to provide further information

Moran et al. also mentioned that Crocodylus mindorensis (Philippine crocodile; status: CR) is also present in the island based on secondary reports but was not observed during their assessment. We also did not include it since the report also noted that this crocodile was introduced in a nearby freshwater marsh in 2013 so it might not be native to the mangroves of Del Carmen.

4.4 - Physical components

4.4.1 - Climate

Climatic region	Subregion
A: Tropical humid climate	Am: Tropical monsoonal (Short dry season; heavy monsoonal rains in other months)

The entire SIPLAS is classified in the Type II climate based on the Modified Coronas Classification. This is characterized by the absence of a dry period but with a very pronounced wet season during the northeast monsoon season (December to February) with a very high average annual rainfall of 3,556.4 mm. The island receives the highest amount of rainfall during December while June is the driest month. Temperature ranges from 23.6 to 31.3 degrees Centigrade. It experiences an average of one tropical cyclone per year (LCCA 2018-2022).

4.4.2 - Geomorphic setting

a) Minimum elevation above sea level (in metres): 71

Entire river basin ☐
Upper part of river basin ☐
Middle part of river basin ☐
Lower part of river basin ☐
More than one river basin ☐
Not in river basin ☐
Coastal ☑

Please name the river basin or basins. If the site lies in a sub-basin, please also name the larger river basin. For a coastal/marine site, please name the sea or ocean.

Along the coast of Sitio Sta. Cruz - Barangay Del Carmen (Poblacion), Del Carmen, Surigao del Norte

4.4.3 - Soil

Mineral ☐
Organic ☐
No available information ☑

Are soil types subject to change as a result of changing hydrological conditions (e.g., increased salinity or acidification)? Yes ○ No ◉

4.4.4 - Water regime

Water permanence

Presence?	
Usually permanent water present	No change

Source of water that maintains character of the site

Presence?	Predominant water source	
Marine water	☑	No change

Water destination

Presence?	
Marine	No change

Stability of water regime

Presence?	
Water levels fluctuating (including tidal)	No change

4.4.5 - Sediment regime

Significant erosion of sediments occurs on the site ☐
Significant accretion or deposition of sediments occurs on the site ☐
Significant transportation of sediments occurs on or through the site ☑
Sediment regime is highly variable, either seasonally or inter-annually ☐
Sediment regime unknown ☐

(ECD) Water temperature: 29-30 Degree Celsius

4.4.6 - Water pH

Acid (pH<5.5) ☐
Circumneutral (pH: 5.5-7.4) ☐
Alkaline (pH>7.4) ☑
Unknown ☐

Please provide further information on pH (optional):

Data was taken from the terminal report of the study “Project WaPaQ: WAter PArameter Quality Monitoring to Determine the Effects of Anthropogenic Activities on Selected Sites in the Del Carmen Mangrove Forests in Siargao Island” with the implementation period of March 1, 2022 to May 31, 2023.

4.4.7 - Water salinity

Fresh (<0.5 g/l) ☐
Mixohaline (brackish)/Mixosaline (0.5-30 g/l) ☐
Euhaline/Eusaline (30-40 g/l) ☑

Hyperhaline/Hypersaline (>40 g/l) ☐

Unknown ☐

Please provide further information on salinity (optional):

Data was taken from the terminal report of the study “Project WaPaQ: WAter PArameter Quality Monitoring to Determine the Effects of Anthropogenic Activities on Selected Sites in the Del Carmen Mangrove Forests in Siargao Island” with the implementation period of March 1, 2022 to May 31, 2023.

4.4.8 - Dissolved or suspended nutrients in water

Eutrophic ☐

Mesotrophic ☐

Oligotrophic ☐

Dystrophic ☐

Unknown ☑

4.4.9 - Features of the surrounding area which may affect the Site

Please describe whether, and if so how, the landscape and ecological characteristics in the area surrounding the Ramsar Site differ from the site itself: i) broadly similar ◉ ii) significantly different ○

4.5 - Ecosystem services

4.5.1 - Ecosystem services/benefits

Provisioning Services

Ecosystem service	Examples	Importance/Extent/Significance
Food for humans	Sustenance for humans (e.g., fish, molluscs, grains)	High
Wetland non-food products	Other	Medium

Regulating Services

Ecosystem service	Examples	Importance/Extent/Significance
Maintenance of hydrological regimes	Groundwater recharge and discharge	High
Erosion protection	Soil, sediment and nutrient retention	High
Pollution control and detoxification	Water purification/waste treatment or dilution	High
Climate regulation	Local climate regulation/buffering of change	High
Climate regulation	Regulation of greenhouse gases, temperature, precipitation and other climactic processes	High
Biological control of pests and disease	Support of predators of agricultural pests (e.g., birds feeding on locusts)	High
Hazard reduction	Flood control, flood storage	High
Hazard reduction	Coastal shoreline and river bank stabilization and storm protection	High

Cultural Services

Ecosystem service	Examples	Importance/Extent/Significance
Recreation and tourism	Water sports and activities	High
Spiritual and inspirational	Spiritual and religious values	High
Scientific and educational	Educational activities and opportunities	High
Scientific and educational	Important knowledge systems, importance for research (scientific reference area or site)	High
Scientific and educational	Major scientific study site	High

Supporting Services

Ecosystem service	Examples	Importance/Extent/Significance
Biodiversity	Supports a variety of all life forms including plants, animals and microorganizms, the genes they contain, and the ecosystems of which they form a part	High
Soil formation	Sediment retention	High
Soil formation	Accumulation of organic matter	High
Nutrient cycling	Storage, recycling, processing and acquisition of nutrients	High
Nutrient cycling	Carbon storage/sequestration	High
Pollination	Support for pollinators	High

Within the site: more than 900

Outside the site: 2982

Have studies or assessments been made of the economic valuation of ecosystem services provided by this Ramsar Site? Yes ○ No ◉ Unknown ○

4.5.2 - Social and cultural values

i) the site provides a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland ☑

Description if applicable

Several traditional fishing methods that are considered sustainable are practiced by the localities of Del Carmen Municipality. These include the use of hook and line, fish traps, single gill nets, and crab and shrimp traps. They also engage in cage aquaculture, particularly for confining/growing certain types of fish such as groupers and rabbitfishes. Others also install fish corrals to trap pelagic fishes that forage in mangrove areas. Spearfishing and night dive fishing are also practiced by the majority of the local communities. Gleaning activities are also performed as one of the traditional methods of gathering/collecting various kinds of seashells.

ii) the site has exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland ☐

iii) the ecological character of the wetland depends on its interaction with local communities or indigenous peoples ☑

Description if applicable

The Municipality of Del Carmen has various activities and festivals that celebrate its mangroves and their ecological services. One is the "Bakhaw (Mangrove) Festival," an annual celebration that serves as a reminder of the importance of the mangrove forest that its people need to protect and preserve. Another awareness campaign that highlights the values of mangroves in Del Carmen is the "Siargao It Up Program" of the municipality in partnership with the Metro Pacific Investments Corporation. The program engages junior environmental scouts and promotes marathons for the mangroves and coastal clean-up activities. Another annual activity organized by the municipality together with Runrio Events, Inc. and Open Space Media is the "Siargao International Marathon - Run for the Mangroves," a fundraising campaign whose proceeds go to mangrove rehabilitation efforts in Del Carmen.

iv) relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland ☑

4.6 - Ecological processes

<no data available>

5 - How is the Site managed? (Conservation and management)

5.1 - Land tenure and responsibilities (Managers)

5.1.1 - Land tenure/ownership

Public ownership

Category	Within the Ramsar Site	In the surrounding area
National/Federal government	☑	☐

Provide further information on the land tenure / ownership regime (optional):

Del Carmen Mangrove Reserve is within the Siargao Island Protected Landscape and Seascape that is established as a protected area within the classification of a National Park pursuant to RA 11038 or the Expanded National Integrated Protected Areas System (ENIPAS) Act.

5.1.2 - Management authority

Please list the local office / offices of any agency or organization responsible for managing the site:	Pursuant to RA 7586 or the National Integrated Protected Areas System (NIPAS) Act as amended by RA 11038 or the Expanded NIPAS Act, the respective Protected Area Management Board (PAMB) organized in the area shall oversee its management. The Siargao Island Protected Landscape and Seascape (SIPLAS) PAMB is chaired by the Regional Executive Director of the Department of Environment and Natural Resources (DENR) Caraga Region. The site is co-managed by SIPLAS-PAMB and the local government unit of Del Carmen and is further supervised by the DENR-Protected Area Management Office.
Provide the name and/or title of the person or people with responsibility for the wetland:	Nonito M. Tamayo, CESO III, Regional Executive Director, DENR-Caraga Region; Alfredo M. Coro, Municipal Mayor, Del Carmen Local Government Unit
Postal address:	DENR Regional Office, Brgy. Ambago, Butuan City, 8600 Agusan del Norte, Philippines; and Municipal Hall of LGU Del Carmen Km. 2, Del Carmen Municipality, 8418 Surigao del Norte, Philippines
E-mail address:	lgudelcarmen@gmail.com

5.2 - Ecological character threats and responses (Management)

5.2.1 - Factors (actual or likely) adversely affecting the Site's ecological character

Human settlements (non agricultural)

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Housing and urban areas	Medium impact	High impact	☑	☑
Commercial and industrial areas	High impact	High impact	☑	☑
Tourism and recreation areas	High impact	High impact	☑	☑
Unspecified development	High impact	High impact	☑	☑

Water regulation

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Drainage	High impact	High impact	☐	☑
Dredging	unknown impact	High impact	☐	☑

Agriculture and aquaculture

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Annual and perennial non-timber crops	Medium impact	Medium impact	☐	☑
Marine and freshwater aquaculture	Medium impact	Medium impact	☐	☑

Transportation and service corridors

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Shipping lanes	Medium impact	Medium impact	☑	☐
Aircraft flight paths	High impact	High impact	☑	☑

Biological resource use

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Fishing and harvesting aquatic resources	Low impact	Medium impact	☑	☐

Human intrusions and disturbance

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Recreational and tourism activities	Low impact	Low impact	☑	☐

Natural system modifications

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Vegetation clearance/ land conversion	High impact	High impact	☑	☑

Invasive and other problematic species and genes

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Invasive non-native/ alien species	Low impact	Medium impact	☐	☑

Pollution

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Household sewage, urban waste water	High impact	High impact	☐	☑
Agricultural and forestry effluents	Medium impact	Medium impact	☐	☑
Garbage and solid waste	High impact	High impact	☐	☑

Geological events

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Earthquakes/tsunamis	Low impact	Low impact	☑	☑

Climate change and severe weather

Factors adversely affecting site	Actual threat	Potential threat	Within the site	In the surrounding area
Habitat shifting and alteration	unknown impact	Medium impact	☑	☐
Droughts	unknown impact	Medium impact	☑	☐
Temperature extremes	unknown impact	Medium impact	☑	☐
Storms and flooding	unknown impact	Medium impact	☑	☐

5.2.2 - Legal conservation status

National legal designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
Legislated Protected Area	Siargao Island Protected Landscape and Seascape (SIPLAS) per RA 7586 otherwise known as the National Integrated Protected Areas System Act as amended by RA 11038 or the Expanded NIPAS Act		whole

Non-statutory designations

Designation type	Name of area	Online information url	Overlap with Ramsar Site
Other non-statutory designation	Best Mangrove Award in the Philippines by the Marine Protected Areas (MPA) Support Network Para El Mar Awards and Recognition in 2019	https://mindanaogoldstardaily.com/archives/104313	whole
Other non-statutory designation	Important Bird Area (IBA)	http://datazone.birdlife.org/site/factsheet/siargao-island-iba-philippines	whole
Other non-statutory designation	Key Biodiversity Area	https://www.philchm.ph/database/ kba-database/	whole

5.2.3 - IUCN protected areas categories (2008)

Ia Strict Nature Reserve ☐

Ib Wilderness Area: protected area managed mainly for wilderness protection ☐

II National Park: protected area managed mainly for ecosystem protection and recreation ☑

III Natural Monument: protected area managed mainly for conservation of specific natural features ☐

IV Habitat/Species Management Area: protected area managed mainly for conservation through management intervention ☑

V Protected Landscape/Seascape: protected area managed mainly for landscape/seascape conservation and recreation ☑

VI Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems ☑

5.2.4 - Key conservation measures

Legal protection

Measures	Status
Legal protection	Implemented

Habitat

Measures	Status
Habitat manipulation/enhancement	Implemented

Species

Measures	Status
Threatened/rare species management programmes	Implemented

Human Activities

Measures	Status
Research	Implemented
Regulation/management of recreational activities	Implemented
Fisheries management/regulation	Implemented
Harvest controls/poaching enforcement	Implemented
Regulation/management of wastes	Implemented
Communication, education, and participation and awareness activities	Implemented

Other:

Include Shore it Up and Siargao Mangrove International Marathon

5.2.5 - Management planning

Is there a site-specific management plan for the site? Yes

Has a management effectiveness assessment been undertaken for the site? Yes ○ No ◉

If the site is a formal transboundary site as indicated in section Data and location > Site location, are there shared management planning processes with another Contracting Party? Yes ○ No ◉

Please indicate if a Ramsar centre, other educational or visitor facility, or an educational or visitor programme is associated with the site:

The site has Mangrove Protection Information Centers (MPIC) that cater the tourists or researchers who have an interest in studying the Del Carmen Mangrove Forests.

5.2.6 - Planning for restoration

Is there a site-specific restoration plan? Yes, there is a plan

Further information

Mangrove planting activity is part of the mangrove conservation plan in Del Carmen which is annually conducted by LGU Del Carmen during the World Wetlands Day, Earth Day, Environment Month and International Day of the Mangrove participated by the different government agencies, NGOs, local communities, and other stakeholders. Furthermore, Del Carmen is included as priority sites in the mangrove restoration programs such as National Greening Program (NGP) and Mangrove and Beach Forest Development Program (MBFDP) funded by the DENR. The identified People's Organizations in Del Carmen serve as partners in protection and conservation of the mangrove forest. Furthermore, the Local Government Unit of Del Carmen had implemented Ordinances that supports the protection of their extensive mangrove forest with the following ordinances:

Municipal Ordinance 052 series of 2020: An Ordinance Declaring Coastal Clean-up and or/ Tree Planting Activity during the National/International Environmental Celebrations

Municipal Ordinance 077-A series of 2021: Resolution Adopting and Approving Mangrove Management Plan of the Municipality of Del Carmen, Siargao Island, Province of Surigao del Norte, A Collaborative Effort of LGU- Del Carmen, DENR SIPLAS and PENRO Office Surigao del Norte

5.2.7 - Monitoring implemented or proposed

Monitoring	Status
Water quality	Implemented

A Non-Government Office named Sentro para sa Ikauunlad ng Katutubong Agham at Teknolohiya (SIKAT) has been annually conducting water quality sampling and monitoring in SIPLAS particularly in Del Carmen Mangrove Forests since 2014.

6 - Additional material

6.1 - Additional reports and documents

6.1.1 - Bibliographical references

Moran, Cecilia B. et al. 2021. Assessment, Inventory and Biological Field Surveys of Flora and Fauna of the Mangrove Forests in Del Carmen Siargao Island. National Research Council of the Philippines. Unpublished.

LGU Del Carmen DENR Del Carmen Mangrove Management Plan CY 2019-2022 of the Municipality of Del Carmen, Province of Surigao del Norte. MLGU Del Carmen SB Resolution No. 077-A series of 2021

LGU Del Carmen. 2016-2025. Municipality of Del Carmen Ten Year Ecological Solid Waste Management Plan.

LGU Del Carmen 2021-2030: Del Carmen Tourism and Economic Plan

Emil Robles, Kate Lim, And Clyde Jago-On, 2019: Exploring the Archaeology of Siargao

Del Carmen Municipal Ordinance No. 052 s. of 2020. “An ordinance declaring a coastal clean-up and/or tree planting activity during the national/international environmental celebrations.”

Del Carmen Municipal Ordinance No. 083 series of 2021. “An ordinance declaring a portion of the Marine Waters of Del Carmen along Barangay Cabugao, this Municipality as Marine Protected Area.”

Del Carmen Municipal Ordinance No. 031 series of 2018. “An ordinance prohibiting and regulating the use of single-use bags and commodities, which includes but not limited to plastic, polystyrene, cornstarch based products, that end up as residual waste and promoting the use of eco bags and other environment friendly practices as an alternative.”

Sentro para sa Ikauunlad ng Katutubong Agham at Teknolohiya (SIKAT) and Municipal Fisheries and Aquatic Resources Management Council (MFARMC). Multi-Year Water Parameter Monitoring in the Mangrove Assessment Sites in Del Carmen. 2014-2020.

6.1.2 - Additional reports and documents

i. taxonomic lists of plant and animal species occurring in the site (see section 4.3)
<1 file(s) uploaded>

ii. a detailed Ecological Character Description (ECD) (in a national format)
<no file available>

iii. a description of the site in a national or regional wetland inventory
<no file available>

iv. relevant Article 3.2 reports
<1 file(s) uploaded>

v. site management plan
<1 file(s) uploaded>

vi. other published literature
<6 file(s) uploaded>

6.1.3 - Photograph(s) of the Site

Please provide at least one photograph of the site:

(A, B) Poblacion boardwalk and view deck overlooking the contiguous coastal forests and mangroves of Domoyog and Esperanza, which are vital roosting sites for the (C) Pied Imperial Pigeon, or (D) taking a boat tour through the vast network of channels that course between the mangeroves (Photo by JC (*Juan Carlos Gonzalez, 24-11-2019*)

Del Carmen Mangrove Forest (*Danilo Tandang, 24-11-2019*)

Aerial view of the contiguous Del Carmen Mangrove Forest (*Erwin Mascariñas , 01-06-2022*)

6.1.4 - Designation letter and related data

Designation letter
<1 file(s) uploaded>

Date of Designation: 2024-01-08