



Status of mangroves per province

State of the Mangroves in **PALAWAN**

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I. INTRODUCTION

Palawan is a narrow archipelago with 1,959 km of shoreline and 4,940,800 ha of marine area. It has 58,400 ha of mangrove forests and 980,000 ha of coral reefs. The province has 426 barangays, 354 of which are coastal (**Appendix C**). The province has a total population of 994,340 (NSO 2010). For the 15-year period, the average annual population growth rate was 2.66% for the entire province, and 3.24% for Puerto Princesa City, both of which are higher than the 1.9% national growth rate.

The coastal and marine areas of Palawan not only support a rich biodiversity and ecosystems, but also are the bases of the main economy of its residents. Fishing, seaweed farming, and motorboat operation for tourists are the primary sources of income among coastal residents. The marine area generates an estimated Php 1.2 billion per year of fisheries, which is twice that of land-based agriculture products. Its fishing grounds are among the top fisheries producers in the country and contribute 65% of fish consumed by Metro Manila residents. In addition, Palawan's mangroves are among the most biologically productive ecosystems and provide additional sources of income (e.g. from selling of fishes, prawns, crabs, and shellfish found thereat) for coastal residents. Despite the abundance of the resources, the coastal residents are still in need of livelihood support.

II. STATUS OF MANGROVES IN PALAWAN

The mangrove forests of Palawan accounts for 4.4% or 63,532 ha of its land cover (**Table 7**). Mangrove areas of the province have increased over the years: from 3.34% cover in 1992 (JAFTA 1992), 3.35% in 1998 (NAMRIA 1998), 4.0% in 2005 (PCSDS 2005), to 4.4% in 2010. Despite these, mangrove forests are still threatened by human activities. The "open access" mangrove forests in some areas are still exploited for construction materials, firewood, tanbark, charcoal, and for conversion into fishponds.

The baseline assessments and monitoring of mangrove forests in 20 municipalities of Palawan recorded a total of 24 mangrove species from 11 families. Species include *Acrostichum aureum*, *Aegiceras corniculatum*, *Aegiceras floridum*, *Avicennia alba*, *Avicennia marina*, *Bruguiera cylindrica*, *Bruguiera gymnorhiza*, *Bruguiera parviflora*, *Bruguiera sexangula*, *Camptostemon philippinense*, *Ceriops decandra*, *Ceriops tagal*, *Excoecaria agallocha*, *Heritiera littoralis*, *Lumnitzera littorea*, *Lumnitzera racemosa*, *Nypa fruticans*, *Osbornia octodonta*, *Rhizophora apiculata*, *Rhizophora mucronata*, *Rhizophora stylosa*, *Scyphiphora hydrophyllacea*, *Sonneratia alba*, and *Xylocarpus moluccensis*.

Table 7. Palawan State of the Environment Report 2015

Land cover	Area (ha)				% Land area	
	2005 (PCSD)	2010 (NAMRIA)	Change (ha)	Rate loss (ha/year)	2005	2010
Forest area	666,336	625,629	(40,707)	(8,141)	46.1	43.4
Mangrove forest	58,400	63,532	5,132	1,026	4.0	4.4
Grassland	55,727	36,023	(19,704)	(3,941)	3.9	2.5
Built-up	10,080	13,575	3,495	699	0.7	0.9
Agricultural land	194,066	275,037	80,971	16,194	13.4	19.1

References: PCSD-GIS (2005), NAMRIA (2010)

III. MANGROVE PROTECTION AND MANAGEMENT

The entire island of Palawan has been declared as a Mangrove Swamp Forest Reserve through PD No. 2152 on December 29, 1981. These mangrove areas contribute to coastal stability and security by reducing erosion, buffering wave action, and mitigating the effects of floods and tidal waves. In addition, Palawan also has 155 marine protected areas (MPAs) with a total reef area of 82,000 ha declared through municipal and barangay ordinances. These protected areas were established to conserve marine biodiversity and mitigate the threats to the coastal and marine ecosystems.

Created through Executive Order No. 15 series of 1994, the “*Pista ng Kalikasan sa Palawan*” Program was launched on June 19, 1994 to meet the required forest cover for the province and contribute to climate change mitigation. Municipal governments were mandated to conduct their own program/activities, particularly a yearly planting of endemic and exotic forest trees, mangroves, and other kinds of trees. The program initially concentrated in upland areas, but later shifted to mangroves. Mangroves were planted in Brgy. Tabon, Quezon (2013), Brgy. Magsaysay, Aborlan (2014), and Brgy. Minara, Roxas and Brgy. Punang in Sofronio Española (2015).

The average mangrove density in Palawan improved from 1,428 to 2,779 trees per hectare from 2004 to 2014 (Fig. 7); thus, from inadequate to adequate stocks. Notably, forest cover remained adequate in the municipalities of Araceli, Cuyo, Dumaran, Quezon, and Roxas and improved from inadequate to adequate in Bataraza, Magsaysay, and Narra. However, forest cover remained at inadequate densities or logged-over in all other municipalities during the same period.

IV. SUMMARY AND RECOMMENDATIONS

1. Laws related to mangrove forest conservation must be strictly enforced.
2. Coastal residents should be given alternative livelihoods that do not rely on mangroves.
3. Continuous mangrove reforestation should be done to increase the mangrove forest cover of Palawan.

V. REFERENCES

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Palawan Marine Protected Area (MPA) Network Framework Plan (2013–2017). Province and Municipalities of Palawan and the City of Puerto Princesa with assistance from USAID through the CTSP Project and Palawan Council for Sustainable Development.

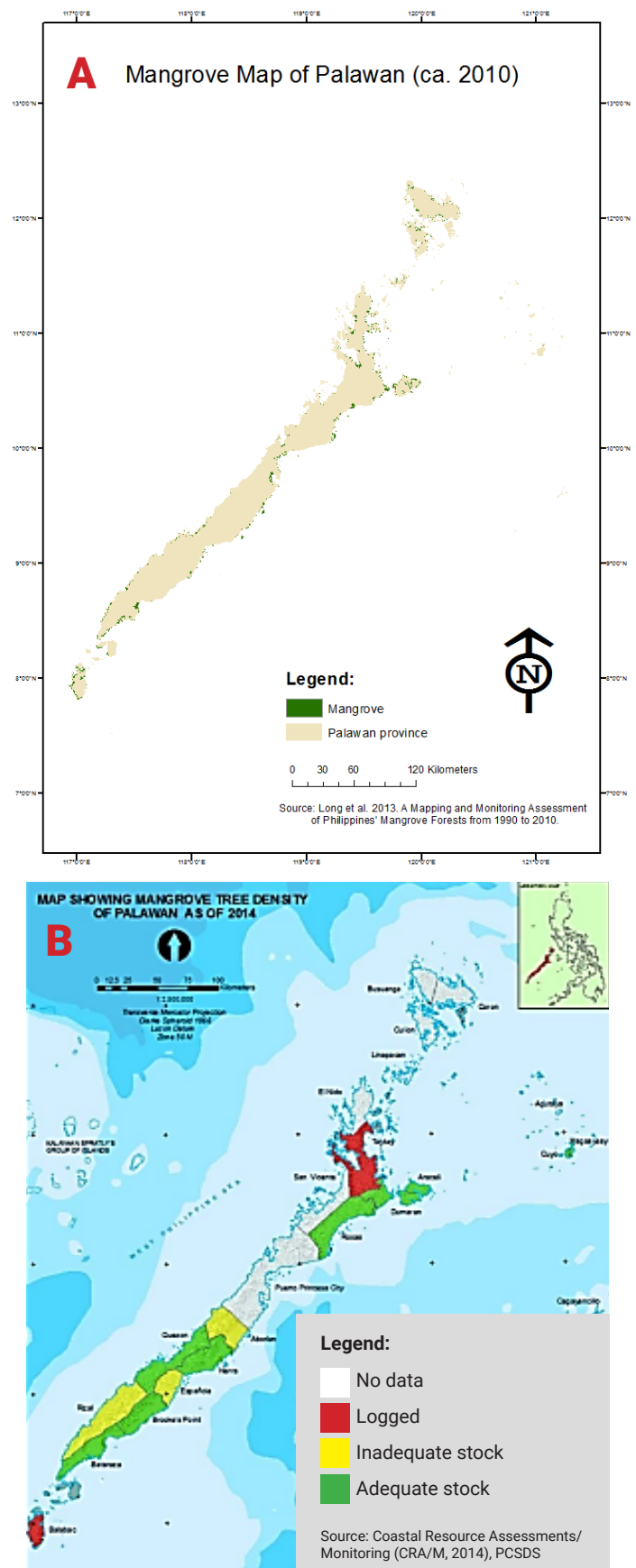


Figure 7. Maps of (A) mangrove distribution and (B) mangrove tree densities and conditions in Palawan.