

## **Dugongs community initiated dugong conservation in Cape San Agustin**

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### **ABSTRACT**

The dugong conservation project in Cape San Agustin started about a year ago focused on community monitoring, visual sighting & photography of dugong. The result recorded the active time of day dugong are sighted, numbers, activities as well death, stranding and recovery efforts. Dugong were tracked across Cape San Agustin from Pujada. Associated information was gathered from the Samal-Talikud islands and Malita Bay in Davao Gulf about 100 kilometers away towards the Celebes Sea. Sightings were also noted within a 100-kilometer zone between Baganga Bay and Hinatuan Bays towards the eastern Pacific seaboard since 2004. Both sightings, strandings, deaths and recovery efforts were similarly reported in all these areas. These areas have a potential link with the southern Mindanao-Sulu-Celebes Sea area of dugong, marine mammals and endangered wildlife community.

**KEYWORDS : GMAI, PCRA, Barangay, DHS, MPA, CRM, PFARO**

### **INTRODUCTION**

Dugong stranding and deaths were first known in Hinatuan Bay, Surigao del Sur in 2003 among local NGO-CERD and fishermen's people's organizations working on Hinatuan Bay Coastal Resource Management. It was made popular and famous by local Volunteer Service Organization marine biologist volunteer Mr. Rowan documenting and writing several articles about dugong deaths and strandings in Hinatuan Bay during his 2 years of assignment. This led us towards conducting our own survey, tracking and mapping potential dugong population, sightings and foraging areas. About 5 municipalities within Lianga and Hinatuan Bays in Surigao del Sur were surveyed on their potential for dugong conservation including sea turtles and other endangered marine mammals and wildlife. A remnant of a dugong skull with tusk was found in the boundary municipality of Lingig with Davao Oriental. Dozens of carapace of sea turtles were uncovered and also kept by local fishermen. Dugong conservation in Hinatuan Bay appeared to be followed through by local CERD team and partner's people's organization effectively. Thus we continue our search towards Davao Oriental in Pujada Bay where recent Participatory Coastal Resource Assessment (PCRA) and documentation of dugong had been established in 2004.

### **MATERIALS AND METHODS**

The project started about a year ago documenting and recording dugong sightings and cases of stranding in

Pujada Bay towards Cape San Agustin near Davao Gulf. The 3 villages or barangay of Mati located towards Cape San Agustin, are about 100 kilometers away from nearest town center and with an estimated 30 kilometers inaccessible forested and mountainous coastline. Mt. Hamiguitan is declared a protected area famous for pygmy forest, typically stunted Philippine pines including huge *agoho*. Mt. Kabuaya has also 7 thousand hectares proclaimed as a wildlife sanctuary for the Philippine eagle. Pujada Bay is a proclaimed protected landscape and seascape with an inactive protected area management board.

Macamabul, Kabuaya and Luban were finally chosen as a focus area for observation, monitoring and documentation between December 2005 to September 2006, a 10-month period. About 25 local monitors equipped with local bancas were selected mostly from among spear and artisanal fishermen and provided with log-books and automatic underwater cameras. Date and time of day of logs were noted, as well as observations on sighting or activity of dugong and the numbers of dugong sighted at a time. We used a four wheel utility vehicle combined with walking along the coastline, making parallel surveys and information gathering of dugong and other endangered marine wildlife sightings, strandings or catches and deaths. These were undertaken adjacent to the 3 barangay communities towards Cape San Agustin Peninsula in Governor Generoso.

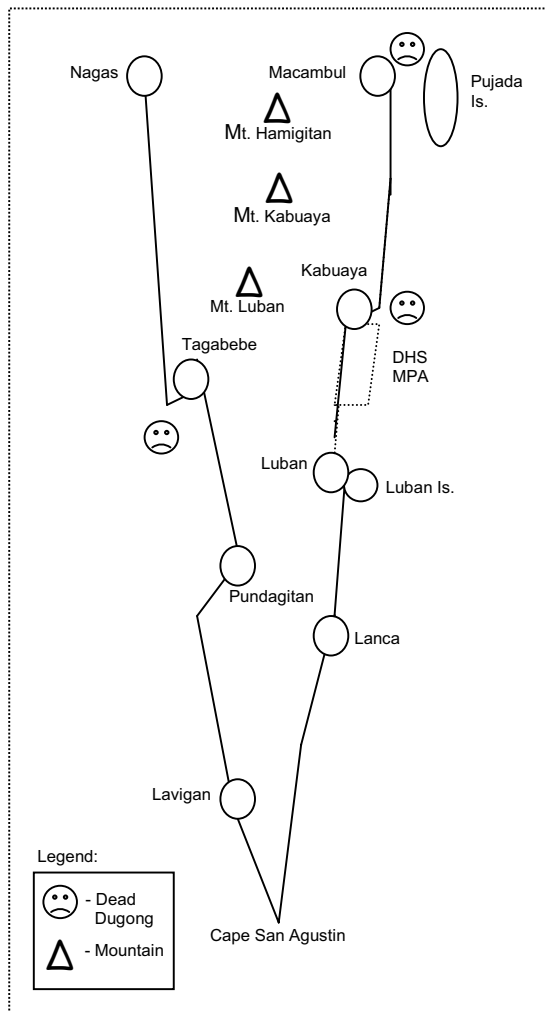


Fig. 1. Sketch map of Cape San Agustin

## RESULTS

About 37 sightings were noted within the 50-kilometer coastline covering the 3 fishing villages or barangay. Surveillance in the past 7 months (December 2005 to June 2006) by local fishermen-monitors through visual sightings, observations and photos with underwater camera recorded 12 sightings in Kabuaya, 4 in Luban and 6 in Macambul. From July to September 2006, there were an additional 5 sightings in Kabuaya, 7 in Luban and 3 in Macambul. A 6-7 ft carcass of a dead dugong was retrieved last August 7, 2006 in Kabuaya. One clear underwater photo was taken of a live dugong last July 8, 2006 in Kabuaya. Coastal surveys revealed several sightings of dugong in Lavigan, Cape San Agustin including one accidentally caught by net and slaughtered last June in Tagabebe, Governor Generoso

Most of the sightings were observed early morning from 8 to 10 am and early in the afternoon

between 2 to 4 pm. Common sightings of dugong in groups of 2 or 3 were recorded with few solitary or more than 3 in number. Endangered Philippine eagle (*Pithecophaga jefferyi*) and a colony of flying fox (*Acerodon jubatus*) were found in Mt. Kabuaya and Luban island respectively. We discovered also large and small mining exploration, road building, lumbering and new settlements in this narrow mountain peninsula. Mt. Hamiguitan is declared a protected area famous for pygmy forest, typically stunted Philippine pines including huge *agoho*. Mt. Kabuaya has also 7 thousand hectares proclaimed as a wildlife sanctuary for the Philippine eagle. Pujada Bay is a proclaimed protected landscape and seascape with an inactive protected area management board.

Foraging areas were surveyed through manta-tow involving same local fishermen utilizing small engine motorboats. Feeding tracks and foraging areas were located and four communities of seagrass beds were mapped and sketched. Some areas were located as deep as 80 to 100 feet in barangay Luban and Kabuaya towards Cape San Agustin. Randomly scattered coral reefs and seagrasses with coral reefs well established in shallow areas preceding sea grass outwards is peculiar in the area. However, the 30 kilometer inaccessible coastline towards Macambul and Pujada Islands was not included. Other observations include *diadema*, *padina*, *sargassum*, branching coral, sea urchins, sea cucumber, starfish, sea grapes, sea turtles, jelly fish and abundant sting ray. Reports and sightings of manta rays, sharks, dolphins and pygmy killer whales were noted. Indiscriminate poaching of sea turtles, manta rays, dolphins and sharks were reported by some fishermen. Occasional sightings of sperm whale were reported and local authorities documented a dead unidentified 8-meter whale in Cateel Bay to the north.

## DISCUSSION

Three cases of stranding and deaths of dugong were documented and one was recorded each month of June, July and August. Two cases appear to be caused by natural injuries from reefs and boulders with one accidentally caught by net and slaughtered. The 6-month period from March to August experienced an extended strong easterly wind from the Pacific, La Nina and a series of tropical storm systems and storm surge and rough sea conditions. This may have caused severe degradation and erosion of shallow seagrass foraging areas depriving young calf and weak from food. A series of strong tropical cyclones and storm surges hitting southern Mindanao were experienced from June (2 times) to August (8 times) this year. These had weakened and disoriented them in their search for food towards shallow reefs and

coastal boulders, causing injuries and death. Unverified reports on baby dugong stranded and pushed back to the water by local fishermen needs confirmation.

#### **FINDINGS**

Local taboo and practices traditionally protected dugong from harm, however accidental catch in nets and fish pens are recurring. A 75-hectare (1.5 X .5 kilometer) dugong habitat sanctuary (DHS) was established in barangay Kabuya assisted by GMAI and funded by IUCN-NL. It is intended also as marine protected area (MPA) to protect artisanal fishermen from encroaching with “compressor divers” and other illegal fishing activities. Planned DHS on other barangay are underway but need tedious consultation process. Demand for MPA’s was also expressed by a neighboring municipality of Governor Generoso in Cape San Agustin towards Davao Gulf. Active law enforcement initiative in Governor Generoso triggered provincial fishery aquatic resource office (PFARO) to train local fishery guardians from selected villagers and provided them with fire power. Tourism promotion on whale, dugong & wildlife watching was explored and training on home stay arrangements was provided by the provincial tourism agency. Local community initiatives in rescuing and recovering live stranded dugong and whales had been popularly reported. These need support for technical rescue and recovery techniques, appropriate equipments, capacity building and institutional mechanism.

#### **THREATS AND WEAKNESSES**

High fuel cost and shifting tuna population towards the Pacific made them establish a sub-port in Macambul near Cape San Agustin in Pujada Bay bringing their flotilla of fishing, supply and carrier boats with hundreds of crews, families and fish trucks. This further aggravates local fishery conditions complicated by local stormy weather, rough seas and storm surge conditions.

Remote location, inaccessibility, lack of transportation and communication equipment and absence of support of professional conservators from local government, research institutions and conservation groups hindered progress and effective dugong conservation activities. GMAI relied mostly on neophyte staff and volunteers and occasional consultant resource persons during assessment and training. Local community capacity building, provision of surveillance, monitoring, patrol rescue and recovery equipments and wide ecosystem support and cooperation is much needed to mitigate

dugong casualties and related fishing and poaching of marine mammals.

#### **ACKNOWLEDGMENTS**

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