2003

Mangrove community structure survey

Salayo, Nerissa D.

Aquaculture Department, Southeast Asian Fisheries Development Center


http://hdl.handle.net/10862/1629

Downloaded from http://repository.seafdec.org.ph, SEAFDEC/AQD’s Institutional Repository
Carles is one of the major sources of marine and aquacultured fish in Iloilo province, producing 80,300 mt in 2002. The municipality is located in the northeast tip of Panay Island (see map). The territorial waters of Carles take a large portion of the Visayan Sea and its coast has 1,539 hectares of fishponds.

The importance of mangroves in capture fisheries, aquaculture and the lives of coastal residents manifests in the activities of the Northern Iloilo Mangrove Rehabilitation Program mainly funded by the Japan Bank for International Cooperation (JBIC). This program is managed by the Sub-Project Site Management Office (SUSIMO) of the Department of Environment and Natural Resources (DENR) with the active participation of its beneficiary, the MACABATA-ARM Inc. (which stands for Manlot, Cabilao, Bancal, Tarong Association for the Rehabilitation of Mangroves Inc.), a people’s organization registered with the Securities and Exchange Commission on January 2001 with 366 members. As per DENR-JBIC project agreement, the mangrove rehabilitation project covers 53.1 hectares that is now replanted with Rhizophora mucronata.

With this on-going rehabilitation and involvement of the local people, baseline information on the characteristics of the mangrove community and the people living in the coast need to be established - one of them is an assessment of the mangrove community structure of the project site. This information is useful for further studies, including valuation of resources, and the estimation of the costs and benefits from rehabilitation and conservation of mangroves. These studies comprise the SEAFDEC/AQD-JIRCAS socio-economics project on sustainable aquaculture systems.

The seven mangrove-fringed coastal barangays of Carles were chosen as study site. On April 2003, the authors of this article conducted a mangrove community structure survey (MCSS) in 13 selected sites in five mainland barangays and two island barangays in Carles (see map). The MCSS aims to qualitatively describe the species composition, community structure and plant biomass of mangrove forest.

Below is a photo-essay of field activities involved in MCSS following the methods of English et al. (1994).

**Highlights**

The 13 sample sites for the MCSS shown on the map on this page altogether listed 18 mangrove species dominated by Avicennia marina, locally called 'miapi'. Other major species are Sonneratia alba, Ceriops decandra, and Bruguiera cylindrica (table at right).

Rhizophora mucronata (photos at right), the species being planted to rehabilitate mangroves in Carles, was only moderately found during the survey, as were A. rumphiana and Camptostemon philippinensis.

Species locally known as dungon, bantigi, nilad/sagasa, piagaw and tawalis were least found during the survey.

A site in Brgy Cabilao Grande recorded the highest species diversity with impressive 14 species sighted, including Aegiceras floridum, Osbornia octodonta, and Pemphis acidula that are rarely found in Panay.
Mangrove species identified during the mangrove community structure survey (MCSS) in Carles, Iloilo, April 2003

<table>
<thead>
<tr>
<th>Local name (Ilonggo)</th>
<th>Scientific name</th>
</tr>
</thead>
<tbody>
<tr>
<td>saging-saging</td>
<td>Aegiceras floridum</td>
</tr>
<tr>
<td>miapi</td>
<td>Avicennia marina</td>
</tr>
<tr>
<td>bungalow</td>
<td>Avicennia officinalis</td>
</tr>
<tr>
<td>pototan</td>
<td>Avicennia rumphiana</td>
</tr>
<tr>
<td>baras-baras</td>
<td>Bruguiera cylindrica</td>
</tr>
<tr>
<td>gapas-gapas</td>
<td>Camptostemon philippinensis</td>
</tr>
<tr>
<td>tungog</td>
<td>Ceriops decandra</td>
</tr>
<tr>
<td>alipata</td>
<td>Excoecaria agallocha</td>
</tr>
<tr>
<td>dungen</td>
<td>Heritiera littoralis</td>
</tr>
<tr>
<td>tabao</td>
<td>Lumnitzera racemosa</td>
</tr>
<tr>
<td>tawalis</td>
<td>Osbornia octodonta</td>
</tr>
<tr>
<td>bantigi</td>
<td>Pemphis acidula</td>
</tr>
<tr>
<td>bakhaw-lalaki</td>
<td>Rhizophora apiculata</td>
</tr>
<tr>
<td>bakhaw-babae</td>
<td>Rhizophora mucronata</td>
</tr>
<tr>
<td>pagatpat</td>
<td>Sonneratia alba</td>
</tr>
<tr>
<td>nilad/sagasa</td>
<td>Scyphiphora hydrophyllacea</td>
</tr>
<tr>
<td>piagaw</td>
<td>Xylocarpus mekongensis</td>
</tr>
</tbody>
</table>

Sites located between inlets and fishpond dikes recorded high species diversity, for example, the above mentioned site in Brgy Cabilao Grande and two other sites in Brgy Tupaz and in Brgy Manlot.

The site in Brgy Tarong (right, top) is distinguished by the abundance of *A. marina* seedlings even though the mature trees are dying. This at least indicates the likelihood of replacements if at least a few seedlings survive.

Other interesting sites include those which are characterized by a wide strip of mangroves like the intertidal area in Brgy Pantalan with big *S. alba* and *A. marina* trees; and naturally-growing *R. mucronata* trees and saplings (right, middle).

The site at the mouth of a river, in tidal streams along fishpond dikes, in Brgy Tupaz is a 20 m-wide mangrove belt (right, bottom) that is also characterized by naturally growing *R. mucronata* trees and saplings.

There are other mangrove species found in the survey area but not listed in the sample quadrats. These include *R. stylosa*, *Xylocarpus granatum*, and *Nypa fruticans* or nipa that is commonly used as roofing. Mangrove associate species that are locally called 'roma', 'dapdap', 'bancal' and 'talisay' are also often abundant in back mangal areas. They were not within the quadrats in the 13 sample sites.
plant biology such as the origin and evolution of plastids and mitochondria, again, using marine algae as models. In addition, the group has initiated a project on the genetic structure of kelp populations in the English channel, a topic that bridges knowledge in genetics with oceanography.

Dr Kloareg is also the head of a joint laboratory in St. Malo, France, where he is able to pursue the development and use of oligosaccharides as an alternative approach to disease control in both marine and agricultural crops. Dr Kloareg considers phycopathology a new science in mariculture.

Novel fish products from Lake Buluan

Ever heard of Paksiw na Bangus in cans? No? How about Tilapia Escabeche, Spicy Tilapia, Sweet and Sour Tilapia, and Tilapia in Oil all conveniently canned and ready to eat? If you are not into canned stuff how about Tilapia Chicharon, Bangus Chicharon, Tilapia Chorizo and Bangus Chorizo? All these products and more were on display at the booth of the EGM Agri Food Industries (EGMAFI) of Buluan, Maguindanao during the recently concluded 7th Meeting of the BIMP-EAGA Working Group on Fisheries Cooperation held in Puerto Princesa City. The other EGMAFI products displayed were Tilapia Fillet, Bangus Fillet, Tilapia Belly, Bangus Belly, Bangus Chicharon, Bangus Tocino and Tilapia Tocino. Samples for tasting laid out at the booth were crowd drawers.

The fresh fish used for the products were all grown in the fertile waters of Lake Buluan without any artificial fertilizers, chemicals, pesticides and antibiotics enabling the company to promote the processed fish as "Organic Products for a Healthier You!" Furthermore all the products are Halal certified. This means the products have been prepared in adherence to approved Islamic standards and can be sold in all Muslim countries.

That this is so is not surprising since the founder of the company is a Maguindanao who also happens to be the mayor of the municipality of Buluan. Mayor Esmael Mangudadatu is a young and amiable entrepreneur who is fondly called Mayor "Toto" by his constituency. According to the company brochure, EGMAFI is obliged and committed to produce all kinds of Halal products. The company was established in 1990 in Barangay Maslabing, Maguindanao in the Autonomous Region of Muslim Mindanao (ARMM). Its primary concern initially was the raising of bangus and tilapia in cages and pens in Lake Buluan. It is only recently that it branched out into processing to widen its market. According to Bureau of Fisheries and Aquatic Resources (BFAR) Region XII Director Sani Macabalog, EGMAFI set up its processing plant in General Santos City with technical assistance from BEAR. - WG YAP

ACKNOWLEDGEMENTS

The authors thank Dr. Jurgenne Primavera, Mr. Cesar Andrada, MACABATA-ARM Inc members, Mr. Antonio Latoza Jr, and all SUSIMO-DENR staff in Carles for the insightful conversations about mangroves; Mr Edgardo Ledesma for the map; and the Japan International Research Center for Agricultural Sciences (JIRCAS) for financial support.

REFERENCES
