Silliman University Marine Laboratory: A Commitment to Marine Research

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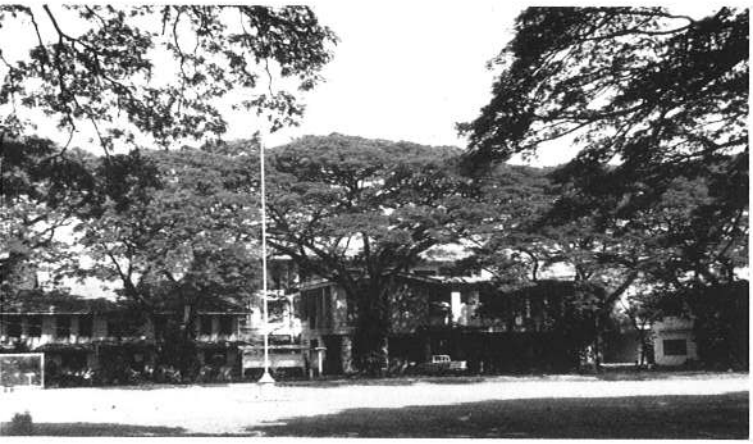


Left: SU campus. *Right:* SU Marine laboratory.

It started in 1975 as a 200-m^2 concrete one-storey building at the edge of Silliman Beach, 2 km north of the main Silliman University campus in Dumaguete, near the south end of Negros island, central Philippines. The idea was conceived by several people in the Department of Biology and the Division of Research, Extension and Development of the University to foster marine research, especially in the Central Visayas area. The plan was to develop a self-supporting research entity that could run with minimum support from the University.

Now, the Silliman University Marine Laboratory (SU Marilab) consists of three buildings: one completed in 1975, which is the Marine Laboratory proper, and which houses reference specimens, tanks and aquaria, working areas with sinks and a supply of fresh- and seawater; a former soybean factory building turned into a dive shop, which houses gear, compressors, outdoor tanks and aquaria; and an old building converted into library, office and working spaces. There are five existing field stations on nearby islands: four on Sumilon Island, one on Apo Island; another station is planned for Stella Maris Island.

The Marine Laboratory proper was constructed partly from a grant by the United Church of Canada.

The field stations, mostly of bamboo, serve as island research stations. They were built with funds from the Asia Foundation, concerned environmentalists and friends of Silliman University.

The Marilab is equipped with an electric pump taking seawater from two offshore collecting tanks, enabling researchers to work with live animals for spawning, rearing, physiological and behavioral studies.

Inside SU Marine laboratory.

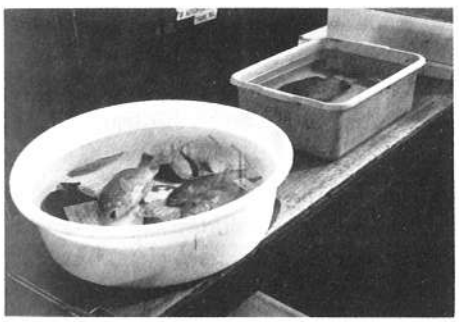
Transport facilities (boats and jeeps) are also available for research and extension activities. However, to help pay for maintenance and various research activities, these facilities are rented out to the users. Marine transport facilities include 30-, 15-, 10- and 8-person capacity motorized outrigger *bancas* constructed from grants including one from the Filipinas Foundation, Inc. A 2-man capacity non-motorized *banca* was donated by Mr. and Mrs. Barry Burgan, Peace Corps Volunteers.

Some equipment has been acquired from research grants. Items include a dissolved oxygen meter, bathymetric equipment, thermometers, camera lucida, scuba gear and printing equipment. Other equipment was donated by the Smithsonian Institution, USAID, *Alpha Helix*, Japanese *Nautilus* researchers, Gustavos Adolphus College, Westmar College, the regional Science Teaching Center and private individuals like Dr. Ernani Meñez of the Smithsonian Institution and Dr. John Arnold of Kewalo Marine Laboratory. These include salinometers, undersea mapping equipment, air compressors, pH meter, refrigerated aquarium, various tools and glassware.

The Marilab is also equipped with scuba equipment including three air compressors.

The library contains mostly reprints, books and journals on research undertaken by Marilab personnel. Some books were purchased from Marilab earnings but most were donated by institutions and individuals, such as Dr. Ernani Meñez of the Smithsonian Institution and Dr. Richard Whitaker of Wistar Institute of Anatomy and Biology. Reprints were mostly acquired through requests and exchanges with authors.

Expertise is available in the fields of corals, coral reef fishery, fish, algae and seagrasses, river and lake studies and molluscs. At present the Marilab has nine researchers, including a visiting professor, who are also involved in extension activities. Six of them teach part-time at the university. Support personnel include a part-time secretary, a boat captain, a dive master, two crew members and three laboratory and beach maintenance men. Additional crew members are hired on a daily basis as needed.



Reef-fish specimens on display at a refresher-seminar, SU Marilab.

Above: Offshore seawater collecting tank.
Below: One of Marilab's research vessels.

Research Areas

There are six major areas of research activity:

- Environmental studies, mostly at industrial sites.
- Ecological and toxicological studies of algae, various invertebrates and rabbitfish.
- Basic biological and productivity studies, covering a range of subject matter from hard coral growth to seagrass productivity and turtle research.
- Aquaculture of rabbitfish.
- Stock assessment of nearby fisheries.
- Artificial reefs and marine parks. Marilab administers several offshore sanctuaries and marine parks.

Publications

Much of the earlier Marilab research appeared in a special issue of the Silliman Journal, Volume 26, Nos. 2 and 3, 1979. More recent contributions have mostly been published in the issues of Kalikasan, the Philippine Journal of Biology.

Funding Agencies

Most of Marilab's research activities have been funded by various institutions, including the Philippine Council for Agriculture and Resources Research and Development, National Research Council of the Philippines, United Church of Canada, United Board for Christian Higher Education in Asia, Ministry of Natural Resources, Asia Foundation, Filipinas Foundation, Inc., University of Rome, University of the Philippines Marine Sciences Center, Sycip Plantation, Inc., Silliman University Research Center and the Provincial Government of Negros Oriental. The total research budget was ₱93,000 in 1975-1977, while that for 1983-84 is expected to reach at least ₱350,000. (US$1 = ₱10)

Brackishwater ponds at the SU Marilab site.

Instruction

The University offers a B.S. degree major in Biology (with concentration in Marine Biology). Courses offered in relation to this degree include: Introduction to Marine Algology, Introduction to Marine Ichthyology, Topics in Marine Biology, Invertebrate Zoology and Ecology. The M.S. (major in Biology) degree is offered. Graduate courses include: Introduction to Marine Biology and Marine Benthic Communities. Graduate students are given opportunities to conduct research in the Marilab. The Marilab also services a portion of the instructional needs of students from other universities and colleges.

Extension

The University's extension thrust is towards developing ecological awareness, interest in environmental conservation, and increased and sustained food production. In all its extension activities, official *barangay* and municipal leadership structures have been utilized as entry points with students as volunteers. Fish sanctuaries have been established at Sumilon, Apo and Stella Maris Islands.

Marilab is actively conducting educational campaigns at the *barangay* and school children level on such areas as coral reef protection, marine sanctuaries, industrial pollution and marine resources management.

The laboratory has developed artificial reefs for four coastal communities. A guide in their dialect has been produced. Marilab has developed the technology for sea-cage culture of rabbitfishes, translated into the dialect, and is developing the technology for mass culture of siganids. It is also researching alternative food sources, such as land crabs and algae. Marilab has also promoted the establishment of fish and bird sanctuaries and marine parks. •