

**MANAGING SCIENTIFIC DATA AND SUCCESSFUL LIBRARY PARTNERSHIPS:
SHARING OF MARINE DATA FROM OCEANOGRAPHIC SURVEYS
THROUGH A PROPOSED LIBRARY NETWORK WITHIN THE WESTPAC REGION
(Part: Southeast Asia)**

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Abstract

The Western Pacific region is of vast social and economic importance with over 70% of the population living in and relying economically on coastal areas, and with approximately 54% of the world's GDP generated from this region. This region also has the greatest global concentration of coastal marine biodiversity, with more than 75% of all known coral species, 53% of the world's coral reefs, more than 3,000 fish species, and the greatest extent of mangrove forests of any region in the world. Collaborative research and programs have been conducted by scientists, institutes, and countries in the Western Pacific on oceanography, environment, marine biodiversity, conservation and health of ocean ecosystems. Data collected and analyzed in these initiatives have contributed to further understanding of the oceanographic, biological and geological characteristics of an ocean or sea. These works provide a valuable tool, figures, historical data and foundations for sustainable fisheries programs in the future. This paper aims to present various international marine research programs and initiatives between Westpac countries and the availability of scientific reports and publications. The inventory of publications will include cooperative studies, oceanographic and marine scientific research expeditions and joint surveys of Southeast Asia and its ecosystems (biodiversity, species composition etc.) and conservation. Availability of these publications and scientific reports will be checked in different libraries, websites and institutional repositories. These documents and publications require the support and cooperation of libraries and institutions. Identification of significant works and publications for possible inclusion in the Aquatic Commons and Database of IOC/IODE will be explored.

Keywords: Data, collaborative research, Western Pacific, Westpac countries, oceanography, marine biodiversity.

Historic Oceanography in Pacific Ocean [1, 2, 3]

Oceanography may be one of the newest fields of science, but its roots extend back tens of thousands of years to when people began to venture from their coastal villages in rafts. About 30,000 years ago, human cultures along the western coastlines of the Pacific Ocean - in the area between what is now

Australia and China - started to migrate eastward across the great expanse of the Pacific Ocean. Over 25,000 years, these people, called Polynesians, eventually colonized the islands of the south and western Pacific, from New Guinea in the west to Fiji and Samoa to the east. Then they moved onward to Tahiti and finally Easter Island in the eastern South Pacific. How did the Polynesians manage to travel across thousands of miles of ocean without compasses, sextants, clocks, or other tools of modern navigation? Their migration was truly one of the great achievements of early seafaring cultures, and it marks the start of oceanographic observations by people who lived in harmony with the ocean. And today we admire and call them "Polynesian Seafarers - Masters of the Ocean Currents."

Ferdinand Magellan (1480-1521) became the first European to cross the Pacific Ocean from Spain in 1519. The Pacific attracted Captain James Cook (1728-1779), who commanded one of the most famous voyages of discovery of this time that began in 1768 when HMS Endeavour left Portsmouth, England. For over 10 years Cook led three world-encircling expeditions and mapped many countries, including Australia, New Zealand and the Hawaiian Islands.

Modern oceanography in this region began with the HMS Challenger Expedition that took place between 1872 and 1876. It was the first expedition organized specifically to gather data on a wide range of oceanic features, including ocean temperatures, seawater chemistry, currents, marine life, and the geology of the seafloor. Among the Challenger Expedition's discoveries was one of the deepest parts of the ocean - the Marianas Trench (off the coast of Guam) in the Western Pacific, where the seafloor is 26,850 feet, or more than 4 miles deep (8,200 meters). The deepest section of the Marianas Trench was later measured at more than 10,000 meters and is known as the Challenger Deep.

The Dutch Siboga Expedition (1899-1900) viewed as a whole was perhaps the most significant and productive scientific cruise to the Western Pacific Ocean prior to the mid 20th century. It served as an example for all modern marine scientists and hydrographers of how the combined skills of scientists and hydrographers can come together in a great endeavor.

Today the Western Pacific Region is home to approximately 1.8 billion people, more than 1/4 of the world's population. It stretches over a vast area, from China in the north and west, to New Zealand in the south, and French Polynesia in the east (37 countries and areas).

The Western Pacific region is of vast social and economic importance with over 70% of the population living in and relying economically on coastal areas, and with approximately 54% of the world's GDP generated from this region. It also has the greatest global concentration of coastal marine biodiversity with 75% of the world's coral species, 40% of the world's coral reef fish, six of the world's seven marine turtle species, and the greatest area of mangrove forests in the world.

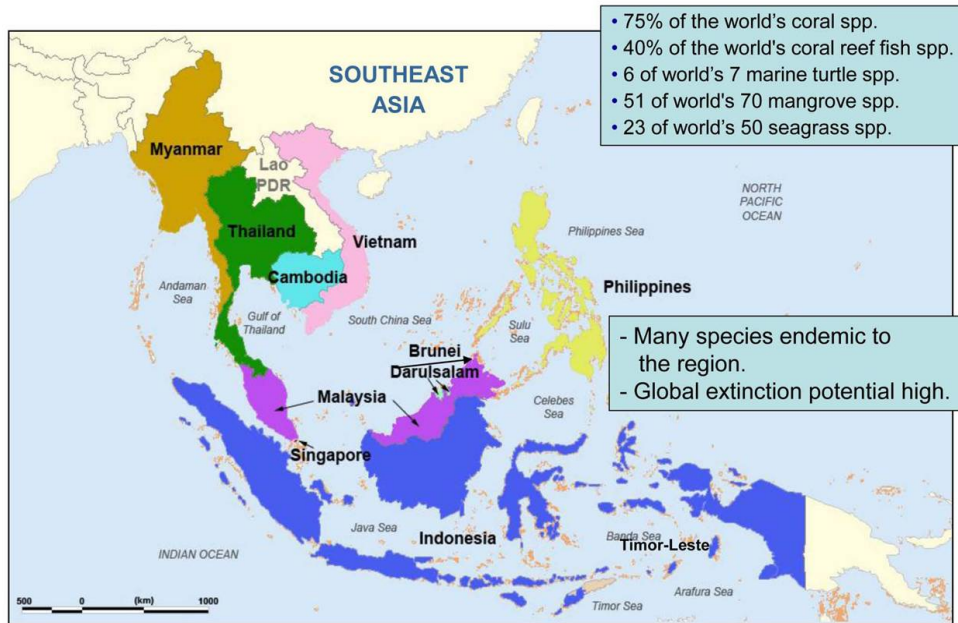


Figure 1. Map generated from ReefBase (<http://www.reefbase.org>)

It is a global hotspot for marine biodiversity with a wide variety of physical - chemical - biological conditions. In addition, this region is today quickly changing because of issues of society and the environment, such as population growth, over fishing, climate change, etc. Within the Western Pacific, there are more than 70 agencies, organizations and universities active in marine research and 36 marine libraries. Marine scientists have evaluated the importance of the marine ecosystems in this region. Cooperation in marine science for the purpose of marine environmental protection, marine biodiversity, seafood security and health of ocean ecosystems has been achieved through various international organizations in the region (UNESCO/IOC/WESTPAC; SEAFDEC; IUCN; UNEF; FAO/RAF; SPC; etc.), as well as bilateral or multilateral research initiatives such as the USS Albatross Philippines expedition 1907-1910; the Naga expedition: scientific results of marine investigations of the South China Sea and the Gulf of Thailand, 1959-1961; Cooperative Study of Kuroshio and adjacent regions (CSK) 1965 –1977; Marine fishery resources surveys in the South China Sea by SEAFDEC; The Philippines – Vietnam joint oceanographic and marine scientific research expeditions in the South China Sea from 1996 - 2007; UNEP/GEF/SCS Project “Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand, etc.

Collaborative research and programs in the Westpac region have been conducted in oceanography, environment, marine biodiversity, conservation and health of ocean ecosystems. Data collected and analyzed under these initiatives have contributed to further understanding of the oceanographic, biological and geological characteristics of the Westpac region. Results of the international cooperation programs on marine research in Westpac (area: Southeast Asian) are contained in scientific reports and scientific publications. These works also provide a valuable resource, figures, historical data and foundation for sustainable fisheries programs in the future. This paper aims to present various international marine research programs and initiatives related to Westpac countries and the availability of scientific reports and publications. The inventory of publications will include cooperative studies,

oceanographic and marine scientific research expeditions and joint surveys of Southeast Asia and its ecosystems (biodiversity, species composition, etc.) and conservation. The availability of these publications and scientific reports has been checked in libraries, websites and institutional repositories. It is essential to share these documents and publications, which require the support and cooperation of libraries and their institutions. Identification of significant works and publications for possible inclusion to the Aquatic Commons and Database of UNESCO/IOC/IODE will be explored.

The initiative to establish a network of marine libraries in Westpac is necessary. Today, various countries participating in the initiatives for “Blue Growth” need to share information through networks of marine libraries, thus improving the search for ecosystem knowledge, marine protection and making decisions on fisheries management and utilization of resources. The overall result is that the value of existing ecosystem information for planning and especially the possibilities for international collaboration in marine research is greatly increased.

The establishment of the network of marine libraries and dissemination of information in Westpac will face challenges: multiple languages/diversity of languages in publications, operational funds and manpower development. So the development of the marine library network in Westpac will need the support from the IOC/IODE, IOC/WESTPAC, IAMSLIC, ASFA/FAO, especially during its initial stages of establishment.

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