

ความหลากหลายทางชีวภาพของราทะเลบริเวณอุทยานแห่งชาติখনอม-หมู่เกาะทะเลใต้

Biodiversity of Marine Fungi at Khanom Beach and South Sea Islands National Park

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Thailand is a rich biodiversity country in the tropical zone. However, currently only 34% of the described marine fungi have been documented for Thailand, compared to the worldwide figure. Therefore, it is an urgent need to continue investigate the diversity of marine fungi, especially those that occur on little known substrata and from new survey area, Khanom beach and South Sea Islands National Park. This project will be undertaken for three years. Year 1: a broad survey of saprobic marine fungal diversity from various poorly known substrata will be made. In Year 2, the biodiversity of marine fungi at Khanom will be continued, but the major thrust will be the evaluation of endophytic fungi of sea grasses and selected animals. Molecular sequencing and phylogenetic analysis will be a major tool for confirming their identity. In Year 3 final sampling for saprobic and endophytic fungi will be undertaken and compilation of the data. Fungi will be isolated into axenic culture and deposited in the BIOTEC Culture Collection, where they can be screened for industrial enzymes and bioactive compounds. Data gathered from this project will increase the number of scientific publications and our knowledge of fungi in Thailand.

การศึกษาความหลากหลายทางชีวภาพของสาหร่ายทะเลในอุทยานแห่งชาติ
หาดขนม-หมู่เกาะทะเลใต้จังหวัดนครศรีธรรมราช (เกาะแตง)

**Diversity of macroalgae at Ko Tan, Had Khanom-Mu Ko Thale Tai
National Park, Nakhon Si Thammarat Province**

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Diversity of macroalgae at Ko Tan, Had Khanom-Mu Ko Thale Tai National Park, Nakhon Si Thammarat province was investigated by randomly selecting 8 sites along the coastal line of Ko Tan during 1st- 5th October 2005. There were 15 species of green algae: *Avrainvillea erecta* (Berkeley) A. Gepp & E.S. Gepp, *Avrainvillea* sp., *Boergesenia forbesii* (Harvey) Feldmann, *Boodlea composita* (Harvey) F. Brand, *Bryopsis pennata* J. V. Lamouroux, *Caulerpa racemosa* (Forsskäl) J. Agardh, *C. serrulata* (Forsskäl) J. Agardh, *Caulerpa* sp.1, *Caulerpa* sp.2, *Chlorodesmis hilderbrandtii* A. Gepp & E.S. Gepp, *Dictyosphaeria* sp., *Enteromorpha* sp., *Halimeda* sp., *Rhipidosiphon javensis* Montagne and *Struvea* sp. Fifteen species of red algae were *Acanthophora spicifera* (M. Vahl) Børgesen, *Actinotrichia* sp., *Amphiroa* sp., *Chondria* sp., *Gelidiella acerosa* (Forsskäl) Feldmann & G. Hamel, *Gelidium pusillum* (Stackhouse) Le Jolis, *Gelidium* sp., *Gracilaria rhodymenioides* A.J.K. Millar, *G. salicornia* (C. Agardh) E.Y. Dawson, *Hypnea* sp., *Jania* sp., *Laurencia* sp., *Leveillea* sp., *Peyssonnelia* sp. and coralline red algae.; 9 species of brown algae were *Dictyota* sp., *Padina* sp.1, *Padina* sp.2, *Sargassum polycystum* C. Agardh, *Sargassum* sp., *Turbinaria conoides* (J. Agardh) Kützinger, *T. decurrens* Bory de Saint-Vincent, *T. ornata* (Turner) J. Agardh and *Turbinaria* sp.; and 2 species of blue-green algae were *Lyngbya* sp. and *Symploca* sp.

ความหลากหลาย การแพร่กระจายและความหนาแน่นของหญ้าทะเล บริเวณอุทยานแห่งชาติ
หาดขนอม หมู่เกาะทะเลใต้ จังหวัดนครศรีธรรมราช

**Diversity, distribution and abundance of seagrass at Had Khanom-Mu Koh Talay
Tai Marine National Park, Nakhon Si Thammarat Province, Thailand**

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The ecological roles of seagrasses are very important, they filter estuarine and coastal waters of nutrients, contaminants, and sediments, and are closely linked to other communities e.g. coral reef and mangrove systems. Seagrass also are home to many economic marine organisms (crabs, sea cucumber and seashells) and those of the endangered species such as dugong and turtle. However, very little is known about diversity, distribution and abundance of seagrass at Nakorn Sri Thammarat Coastal line, Gulf of Thailand. This project, therefore, is to investigate diversity and distribution as well as to monitor seagrass along the coastal line of Kanorm and Mu Ko Talay Tai Marine National Park, Nakorn Sri Thammarat. The study would be done using the sampling protocol of SeagrassNet and Seagrass-Watch; which have been used worldwide. The SeagrassNet would allow us to monitor the seagrass changes throughout time by sampling quarterly as well as the Seagrass-Watch. The data from this project would be shared with SeagrassNet and Seagrass-Watch members around the world. While, database, activities of this project would be share with Thai through <http://www.seagrass-thailand.com>, where more people can share their knowledge and experience of seagrass under this webpage. A paper, at least, should be produced under this research project. We also wish to have a few students enroll and work under this project in various aspects of seagrass study.

ความหลากหลายของชนิดฟองน้ำทะเลที่อาศัยอยู่ในแนวปะการังบริเวณหมู่เกาะทะเลใต้
อุทยานแห่งชาติหาดขนอม-หมู่เกาะทะเลใต้ จังหวัดนครศรีธรรมราช

**Species diversity of marine sponges (Demospongiae, Porifera) dwelling in the
coral reefs in Had Khanom – Mo Ko Thale Tai National Park,
Nakhon Si Thammarat Province**

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Marine sponges are one of the better known groups of invertebrates. They play important roles, not only for marine ecological communities but also for economically biological resources from the ancient time. Although there are many studies on sponges as natural product sources in Thailand, but there has not been many studies conducted on their biodiversity, particularly in the Southern part of the Gulf of Thailand. Hence, the research project on species diversity of marine sponges (Demospongiae, Porifera) dwelling in the coral reefs in Had Khanom – Mo Ko Thale Tai National Park, Nakhon Si Thammarat Province is proposed. The main objectives of this study are inventory surveys and collecting sponge specimens in the study area. The results of this study will be advantage for the basic knowledge on marine biodiversity and local wisdom, the conservation and the sustainable uses and marine biological resources database development in the local area through the national level. The procedure of the study is starting from assigning site collection, reference articles and technical collections, survey planning and area approach, field surveys, sponge identification, registration and database development and submitted the final report.

ความหลากหลายและการกระจายของกัลปังหาบริเวณอุทยานแห่งชาติ
หาดขนอม - หมู่เกาะทะเลใต้ จังหวัดนครศรีธรรมราช

**Species diversity and distribution of Gorgonians at Had Khanom - Mu Ko Thale
Tai Natural Park, Nakhon Si Thammarat**

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Gorgonian is a marine invertebrate that is belong to phylum Cnidaria as same as coral and jelly fish. The gorgonian was classified in the same group (subclass Octocorallia) of blue coral, soft coral and sea pen. Unlike the coral and sea anemone which have 6 tentacles, gorgonian has 8 tentacles which use for catching food. The purpose of this study is to investigate the diversity and distribution of gorgonians at Had Khanom - Mu Ko Thale Tai Natural Park by using SCUBA diving technique. The samples were photographed and some were collected and preserved in 70% alcohol for further identification and being reference specimens. Shapes and characteristics of colonies and sclerites of gorgonians are used to identify into the genus level. The results from the preliminary surveys at Ko Tan showed that there were at least 9 genera of gorgonians. They were found at 5-12 m depth of water, and normally attached on rocks, dead corals, or rubbles that lie beneath sand or silt substrate. Their distribution was in clump. The most dominant genus species was *Subergorgia*.

กระบวนการเพิ่มจำนวนประชากรและการเปลี่ยนแปลงของสังคมปะการังแข็งขนาดเล็ก ในเขต
อุทยานแห่งชาติหาดขนอมและหมู่เกาะทะเลใต้

Recruitment processes and community dynamics of juvenile scleractinian corals on inshore reefs around Khanom-South Sea Islands Marine National Park

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Tens of thousands of Thai people depend in part or wholly on the biodiversity of coral reefs distributed along the islands of Khnom or the “South Sea Islands” archipelago. The Khnom – South Sea Islands Declared Area is undergoing final preparation to receive Marine National Park status. Knowledge of marine biodiversity and ecosystems of the region is therefore urgently required in order to develop an effective management plan. We propose to undertake long-term studies of recruitment processes which will provide understanding of the resilience of reefs around this region. This study will be the first detailed study of key processes on Khnom’s reefs using a rigorous sampling design and quantitative analyses. The information derived from this study will enable reef management agencies to formulate an effective conservation plan. Other key components of project, such as education via public media, will increase public awareness of the importance of preserving Thailand’s marine biodiversity. Moreover, the field team will also include training of new researchers and local community management officers to allow them to gain necessary skills to enhance Thailand’s marine conservation efforts and to strengthen the Thai Coral Reef Network.

การศึกษาความหลากหลายของเอไคโนเดิร์มบริเวณอุทยานแห่งชาติหาดขนอม-หมู่เกาะทะเลใต้
จังหวัดนครศรีธรรมราช

Diversity study on Echinoderms in Khanom Beach – South Sea Islands National Park, Nakhon Si Thammarat Province

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The biodiversity study of the Echinoderms in Khanom Beach – South Sea Island National Park has its prime objective to survey the richness of Echinoderms species inhabiting this national park. Obtained data will be further used as basic information for sustainable management of the site, especially dealing with the ever-growing ecological tourism. It will also be the wise way to incorporate understanding between the park staff, researchers, and local people living in adjoining areas of the park, on the biological resources and their precise conservation. The study process starts from gathering of fundamental data on the areas and the Echinoderms fauna reported to occur in the south of the country, emphasized on the study areas and neighboring sites; followed with field surveys in actual area by standard survey techniques; obtained data will be laterly identified, analyzed, and finally final report submitted.

ความหลากหลายของทากเปลือยบริเวณอุทยานแห่งชาติหาดขนอม-หมู่เกาะทะเลใต้ จังหวัด
นครศรีธรรมราช

**Species diversity of Nudibranch at Had Khanom - Mu Ko Thale Tai Natural
Park, Nakhon Si Thammarat**

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Nudibranch is belong to the mollusk group, but it has no shell protecting its soft body. The purpose of this study is to investigate the diversity and habitat ecology of nudibranch. Specimens are collected by using SCUBA diving technique. The specimens are photographed and recorded by using VDO camera before they are collected and preserved in the alcohol. Shapes, body colors, and color patterns of the nudibranchs are used to identify into the species level. The preliminary results showed that nudibranch can be found on coral colonies, coral reef, and sand substrate between 1-15 m depth of water. The most dominant nudibranch species are in Family Phyllidiidae.

การศึกษาชนิดของสัตว์กลุ่มหอยทะเลที่มีเปลือกหุ้มในบริเวณอุทยานแห่งชาติ
หาดขนอมและหมู่เกาะทะเลใต้ จังหวัดนครศรีธรรมราช

**Survey and identification of seashells at Had Khanom – Mu Ko Thale Tai
National Park, Nakhon Si Thammarat, Thailand**

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This project aims to survey and identify ‘seashells’ found at Had Khanom – Mu Ko Thale Tai National Park, Nakhon Si Thammarat Thailand. The term ‘seashells’ includes marine animals in phylum Mollusca mainly belong to class Bivalvia and class Gastropoda, which have external hard-shell covered, but this term excludes the ones in subclass Opisthobranchia (slugs), class Aplacophora (worm-like molluscs), and class Cephalopoda (squids, cuttlefish, etc). Whilst the study area is undergoing final preparation to designate a Marine National Park, it is necessity to fulfill knowledge of biodiversity of fauna and flora in the area to facilitate an effective and sustainable management plan. Scientific research and methodology of this study is primarily followed that described in a book ‘The Molluscs of the Southern Gulf of Thailand’ by Swennen et al., 2001. This book is the fourth of the series Thai Studies in Biodiversity, published by the Biodiversity Research and Training (BRT) program, which is widely accepted internationally for its clear and concise descriptions and illustrations. Results obtained from our study will be used as basis knowledge for better management of the seashells in the study area, in particular to fulfill the knowledge and information of seashells in the upper part of the Southern Gulf of Thailand and further comparisons can be made with other findings from the Southeast Asia and Indo-Pacific regions.

ความหลากหลายของปูน้ำเค็มในอุทยานแห่งชาติหาดขนอม-หมู่เกาะทะเลใต้

Marine crab diversity in Had Khanom – Mu Ko Thale Tai National Park

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This project is to study the marine crab diversity at Khanom - Mu Koh Thale Tai National Park by investigating the number of diversity of marine crab at the area and around. This would provide a baseline data on biodiversity of this area, which would be useful for further research. The study would be starting by reviewing the literature of the marine crab in the Gulf of Thailand and in this region. Then the investigation would be done by collecting all marine crabs in each marine habitat e.g. beach, rocky shore, mangrove forest, seagrass bed and coral reefs. The collection would be done also through local fishermen catches in Khanom and around. This area is now in the process of setting up as a *national park*. Then the data would be analyzed and reported.

ความหลากหลายของเพรียงหัวหอมที่อาศัยอยู่ในแนวปะการังบริเวณหมู่เกาะทะเลใต้ อุทยาน
แห่งชาติหาดขนอม-หมู่เกาะทะเลใต้ จังหวัดนครศรีธรรมราช

**Species diversity of marine ascidians dwelling in the coral reefs in Had Khanom-
South Islands National Park, Nakhon Si Thammarat Province**

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Marine ascidians are higher invertebrate closed to chordate animals. They play important roles as filter feeder organisms, which clean up the suspended sediment in the water column. Although there are many studies on ascidians as natural product sources in Thailand, but there has not been many studies conducted on their biodiversity, particularly in the Southern part of the Gulf of Thailand. Hence, the research project on species diversity of marine ascidians dwelling in the coral reefs in Khanom-South Islands National Park, Nakhon Si Thammarat Province is proposed. The main objectives of this study are inventory surveys and collecting ascidian specimens in the study area. The results of this study will be advantage for the basic knowledge on marine biodiversity and local wisdom, the conservation and the sustainable uses and the marine biological resources database development in the local area through the national level. The procedure of the study is starting from assigning site collection, reference articles and technical collections, survey planning and area approach, field surveys, ascidian identification, registration and database development and submitted the final report.

ความหลากหลายของปลาในแนวปะการัง ภายในเขตอุทยานแห่งชาติหาดขนอมหมู่เกาะทะเลใต้

Diversity of reef fish in Had Kanom-Mu Ko Talay Tai National Park, Nakhon Si Thammarat

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Reef fish community in 6 stations, East of Ko Wang Nai, West of Ko Wang Nai, Ko Wang Nok, Ko Rab, Ko Tan, Ko Mud Sum, were recorded during September 8st - 12st, 2006. Seventy species of reef fish were recorded during this survey. The most dominant reef fish species, in term of abundance and frequency of occurrence, are damsels, *Neopomacentrus cyanomos* and *Neopomacentrus filamentosus*. Within 300 m² census area, the highest abundant of fish number are in Ko Tan (2,004.6), followed by Ko Rab (991.2), West of Ko Wang Nai (458.4), Ko Wang Nok (672.8), Ko Mud Sum (267.2) and East of Ko Wang Nai (82.2), respectively. In term of number of species, Ko Tan has a highest number of fish species (49 species) followed by Ko Rab (35 species), Ko Mud Sum (35 species), Ko Wang Nok (32 species), East of Ko Wang Nai (20 species), and West of Ko Wang Nai (13 species), respectively. However, in term of diversity index and evenness, Ko Mudsum has a highest diversity index and evenness (2.49, 0.61), followed by East of Ko Wang Nai (2.08, 0.51), Ko Wang Nok (2.04, 0.50), Ko Tan (1.77, 0.43), Ko Rab (1.73, 0.42) and West of Ko Wang Nai (1.03, 0.25).

สถานภาพโลมาบริเวณหมู่เกาะทะเลใต้ ประเทศไทย

Status of dolphin in Thale Tai Archipelago, Thailand

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Survey status of dolphin in Hadd Kanom-Talaytai archipelago national park which cover Donsak district, Suratthani province to Sichon district, Nakhonsithamarat province and other islands such as Ko Tan, Ko Rab, Ko Wangnai, Ko Wangnok would be done on 2 years project since August 2006 : The data will be collectd by data by interview fishery communities, stranding samples and ship-based survey 3-5 miles from coastline. The study by interview from Marine and Coastal Resources Research Centre, Southern Gulf of Thailand during 2005 show that 3 species of dolphin from 2 families were found. There are Indo-pacific hump-backed dolphin (*Sousa chinensis*), Irrawaddy dolphin (*Orcaella brevirostris*) and Finless porpoise (*Neophocaena phocaenoides*). One stranding sample of Indo-pacific hump-backed dolphin (*Sousa chinensis*) was also found at Thongnian-bay Kanom district Nakhonsithamarat province at April 2006.

สมุทรศาสตร์ฟิสิกส์บริเวณชายฝั่งขนอม-หมู่เกาะทะเลใต้

Physical oceanography around Khanom coast to Southern Sea Island

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The purpose of this project is to consolidate physical aspects such as climate, geology, and physical oceanography of Khanom Beach to southern Sea Island. The main hypothesis is that the biodiversity in the area is controlled by the physical parameters. Two fielding samplings will be carried out, and the numerical circulation and dispersion model will be applied to the dispersion of sediment or coral egg in the area. The project will be completed in 2 years (Jan 2007-Dec 2008). The project will produce one M. Sc. student and at least one academic paper.