



中央研究院生物多樣性研究中心

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Explorer and Practicer in Marine Scientific Research



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Time: 2021. 12. 09 Thu. 09:00

**Venue: Auditorium, 1st Floor,
Interdisciplinary Research Building
跨領域科技研究大樓1樓演講廳**

Host: Dr. Chi-Hon Lee 李奇鴻特聘研究員

~Attendee must wear mask~

~與會者請配戴口罩~



Abstract

My hometown is in Penghu, where I grew up with my childhood and often used snapping shrimps as bait in fishing. The snapping shrimp, *Apheus edwardsii*, thus becoming my research subject when I started my master and doctoral degree. I got a scuba diving license during my university study which enabled me to explore the underwater environment of the ocean. When I backed to Penghu during my university summer vacation, I engaged in fishing work on a squid fishing boat. Such experience in my three years' summer vacation let me understand the importance of sustainable use of fishery resources.

Scuba diving is an essential technique for marine ecological research, and many of marine studies are based on diving surveys and underwater photography, especially in the waters around Taiwan, Dongsha Atoll, Taiping Island (Itu Aba, Spratlys), and 14 countries worldwide with coral reefs. From my diving experience, I explored the shallow water sulfur-rich hydrothermal vents in the Kueishan Island, Taiwan in 1996, and discovered tens of millions of vent crabs gathered around the vents which is a unique phenomenon in this habitat. I studied why such vent crab populations can survive in this extreme, toxic vent habitat and published my result entitled as "Hydrothermal vent crabs feast on sea snow" in Nature on 2004, which attracted the attention in the global marine ecologist community.

My major study focus on the taxonomy, ecology and behavior of snapping shrimps and crabs, and further expanding to other marine invertebrates, especially the soft corals genus *Sinularia* which having discrete sclerites rocks for reef building and the phylogeny and systematics of deep-sea precious corals (Corallidae). From the last five years, my study also focusing on monitoring multi-year macro ocean litter dynamics on a remote island in the South China Sea using backward-tracking simulation to determine the litter origins. I raised out the importance of global marine litter distribution and cleanup opportunities for macro ocean litter. In 2021, my team discovered an outbreak of the crown-of-thorns starfish at Taiping Island, Taiwan and published 2 papers in this issue. I have published a total of 68 SCI papers, 75 conference papers, 20 popular scientific books, 46 investigative reports and 58 regular popular science magazines.

Biodiversity research should ultimately direct to the importance of conservation. I have been actively promoting marine conservation and education for 30 years and delivered more than 1,500 related marine conservation speeches. I recently awarded the Ministry of Education's Marine Education Pusher Award in 2021. Together with my connections to relevant government departments, we have successfully established the Dongsha Atoll National Park and South Penghu Marine National Park in Taiwan, and have included the rare large coral reef fish, Napoleon wrasse (*Cheilinus undulatus*) and the Bumphead parrotfish (*Bolbomtopon muricatum*) in the list of endangered animals in Taiwan.

In my research life in marine scientific research, I am glad that I have the spirit of an explorer (selected by National Geographic magazine as the World Chinese Explorer Award in 2015), and I continue my curiosity to explore our unknown ocean. Based on my experience on the changes and collapse of Taiwan's marine ecological environment, I always think of how to restore the natural environment in the future. With my spirit in practicing scientific research, my marine education experience and my involvement in Taiwan's legislation and law enforcement, it is possible to enhance sustainable development of Taiwan's marine resources in the future.