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生態觀察
Ecology
Observation

聆聽海洋生命之歌—— 台灣海域豐富魚種

Fish Diversity in the Open Ocean near Taiwan



絲鰭圓天竺鯛
Sphaeramia nematoptera



鬼頭刀 (稚魚)
Coryphaena hippurus



長鼻鷹魚
Oxycirrhites typus



長刺河魨
Diodon holocanthus



角箱魨
Lactoria cornuta

台灣，雖然僅佔全球陸地總面積的萬分之2.5，不過卻因得天獨厚的自然環境，而孕育出令人豔羨的豐富魚類相。根據中研院生物多樣性研究中心的統計，目前台灣的魚類將近有3,000種，為世界魚種的十分之一，幾乎每週都持續有新物種的發現。

Taiwan only represents 0.025% of the world's land. However, within the rich natural environment of Taiwan's territorial waters, current statistics from the Research Center for Biodiversity, Academia Sinica, shows there are 3,000 fish species, representing about one tenth of the world's variety, with new species continuing to be reported almost every week.



台灣四周環海，包含離島在內，海岸線總長達1,600公里，沿岸蜿蜒曲折，多淺灘、岩礁與港灣，從淺海到深海，海域內之生物得以因其天生本能選擇不同之棲居環境。不同的棲地環境促使台灣擁有多種不同的海洋生態系，如珊瑚礁生態系、沙泥生態系、河口及紅樹林生態系、潟湖生態系、岩礁生態系、大洋生態系、深海生態系及深海熱泉生態系等。

由於台灣位處亞熱帶與熱帶交接地，周邊海域生態深受黑潮、中國沿岸流、南中國海水團等三股海流的影響，冷暖海流交會，水溫及鹽度之差異亦影響著南北海底物種之分布差異。台灣的海水魚分布以東北角到澎湖南部為切線，分為以黑潮為主的墾丁、綠島、蘭嶼及蘇澳以南的熱帶體系，以及冬季受到大陸閩浙沿岸冷水流南下影響的台灣北部、西部及澎湖一帶的亞熱帶體系。南北兩地魚種分布各有不同，並且隨著季節及洋流盛行之情況，而有著魚種相互替代的有趣現象。

造成台灣魚類生物多樣豐富的原因，除了上述之棲地及海流外，還包含因台灣位居於全球物種最豐富的東印度群島地理區北緣，為東海、南海、黑潮洋流三大海洋生態系之交會處；同時，緊鄰歐亞大陸板塊的台灣，亦位於全球最大陸棚邊緣，也就是位於全球最大漁場邊緣，因此魚種自然豐富。

The total length of coastline for Taiwan and its nearby islands exceeds 1,600 km. Long stretches of coastal landscapes vary from safe harbours to dangerous shoals, from coral reefs to mud flats, from shallow waters to deep sea. Living organisms adapt and thrive in each habitat, especially flourishing in Taiwan's abundant areas of coral reefs, estuaries, lagoons, mangrove wetlands, and tidal zones.

Taiwan is bisected by the Tropic of Cancer, a line of latitude which divides world maps into subtropical and tropical regions. Its nearby waters are influenced by the Kuroshio Current, the China Coastal Current, and the South China Sea Current. Water temperature and salinity change when warm currents meet cold currents, and this effect influences the biodiversity of individual regions of ocean. For Taiwan, the effects of prevailing ocean currents divide territorial waters into tropical and sub-tropical regions, with the dividing line running from the northeast coast of Taiwan (near Keelung) to Penghu Island, off the southwest coast of Taiwan. The waters to the north and west of this line are defined as a subtropical marine ecosystem, mostly influenced by the South China Sea Current. The waters to the south and east of this line, from Kenting, around to Green Island, Lanyu Island, and up most of the east coast is defined as a tropical marine ecosystem, influenced by the Kuroshio Current. The fish resources in each area are different, and also show different effects from seasonal changes and fluctuations in current.

Geographical location is also an important element of fish diversity for Taiwan. Taiwan is fortunate to be located at one of the richest areas of marine biodiversity in the world, being at the north rim of the east Indian Islands, as well as the meeting point of the East China Sea Current, the South China Sea Current, and the Kuroshio Current. Furthermore, it is next to the Eurasian Plate, the world's largest continental shelf, and also the world's most productive fishing grounds. As a result, Taiwan is blessed with rich and diverse fisheries in its territorial waters.

當紅明星

1. 克氏海葵魚

因迪士尼動畫《海底總動員》而聲名大噪的克氏海葵魚，俗稱小丑魚，主要棲息於潟湖及外礁斜坡處，並多與海葵共生，以藻類和浮游生物為食，其體表之黏液可保護自己不被海葵傷害。台灣各地礁區均可見小丑魚出沒其中，因體色豔麗以及與海葵共生之習性，加上目前已能人工繁殖，使其成為受歡迎之水族觀賞魚。

2. 豆丁海馬

體長不超過3公分的豆丁海馬，主要分布在西太平洋海域，是世界上最小型的海馬，因而又稱侏儒海馬。2006年在墾丁和蘭嶼發現豆丁海馬的蹤跡時，牠就宛如被媒體追逐的超級名模一般，令人驚豔不已。豆丁海馬最喜歡棲息在一種海扇型的網柳珊瑚上面，因體色和所棲息的珊瑚幾乎一模一樣，甚至身上還有凸起的表皮組織，像極了珊瑚的一小段分枝，相似度之高讓人難以分辨。

Well-known Fish

1. *Amphiprion clarkii*

Clark's Anemonefish or the Yellowtail Clownfish (*Amphiprion clarkii*) is a widely distributed omnivorous clownfish, almost always found living in a mutually symbiotic relationship with anemone. Commonly seen in Taiwan, it is found in lagoons and on outer reef slopes in tropical waters. It is also a popular aquarium species.

2. *Hippocampus bargibanti*

The pygmy seahorse, *Hippocampus bargibanti*, is a tiny seahorse of the family Syngnathidae in the western central Pacific. Then first discovered in Taiwan waters, near Kenting and Lanyu Island in 2006, the amazing camouflage of the pygmy seahorse brought great amusement to the general public. This seahorse, which grows no larger than 3cm, is known to live only on gorgonian corals of the genus *Muricella*. It has evolved to resemble its host to a remarkable degree, with camouflage so effective that the head of the seahorse matches the color and shape of the free end of the gorgonian corals, while the seahorse body matches the lower stem of the coral.





3. 斑點長翻車魷

為台灣罕見魚種，常棲息於較外海水域，因行動遲緩，常側臥於水面而隨波逐流，被俗稱為翻車魚或曼波魚。長相可愛又帶點奇怪的翻車魚，因肌肉白色，看起來有如肥肉一般，且食之淡而無味，故過去均引不起饕客的興趣，而只吃翻車魚腸，也就是海產餐廳內常見的菜色「龍腸」，但隨著觀光業興起，現今翻車魚也隨之被拱上舞台成為主角，甚至做成冰淇淋或起士蛋糕。

3. *Ranzania laevis*

The Slender Sunfish, *Ranzania laevis*, is a mola, or ocean sunfish, of the family Molidae, from the genus *Ranzania*. It lives near the surface in the open ocean, and it is classified as a rare species in Taiwan. The Slender Sunfish is smaller, and has smoother skin, with a thinner, more elongate appearance than other Mola species. The Slender Sunfish has recently become a popular food fish in Taiwanese restaurants, though this was not historically the case, as the flesh of this fish use to be considered un-appetizing.

斑點長翻車魷
Ranzania laevis



世界新種

1. 台灣鬚鯨

根據在台灣恆春南灣潮池所發現的一尾標本而命名的新種，後來在中太平洋之新喀里多尼亞島的海蛇的胃內容物被大量發現，體型雖不大，但因屬肉食性魚種，受侵擾時會具有攻擊性，加上牠們多半於夜間活動，聽覺及嗅覺靈敏，喜好於近海潛水者，在穿梭礁石間時可得小心牠們的蹤跡。

2. 台灣園鰻

1985年首度於墾丁國家公園內被發現，後被發表為世界新種。體最長可達74.1公分的園鰻，因體型細長，平常白天會將下半身隱埋於砂地，只露出上半身在水層中啄食浮游動物，隨著海流晃動，搖曳生姿，遠遠望去好比迎風搖曳的園中花草，因此英文俗名又被稱為「花園鰻」。

New Species of World

1. *Cirrimaxilla formosa*

Cirrimaxilla formosa is a species of saltwater eel. It is the only member of the genus *Cirrimaxilla* of the Muraenidea (Moray eel) family, and it is found in the South Bay in Pingtung County, Taiwan. *Cirrimaxilla formosa*, which is carnivorous and can be aggressive when disturbed. The body of these eels can reach lengths of 16.6cm, with the dorsal and anal fins concentrated on the caudal end. The eels have a keen sense of hearing and smell, and they tend to be most active at night.



台灣鬚鯨
Cirrimaxilla formosa

2. *Gorgasia taiwanensis*

Gorgasia taiwanensis belongs to the family of congridae (Conger and garden eels), and this particular species was first discovered in 1985 in Kenting National Park, Taiwan. Like all eels, the body is long and thin, and this species can reach lengths of up to 74.1cm. During the day, they prefer hiding in the sandy bottom, only revealing their head and neck to peck plankton. When they congregate in groups, they resemble plants waving in the currents, and so they have acquired the name Garden Gorgasia.



台灣園鰻
Gorgasia taiwanensis



3. 眼斑擬盔魚

主要棲息於珊瑚礁區域，隆頭魚科的魚類的幼魚，雌魚及雄魚的體色均不同。通常以群體活動出沒，組成方式為一雄多雌，食用動物性浮游生物。多半分布於西北太平洋海域，在台灣南部及北部岩礁海域皆可發現其蹤跡，本種本為台灣特有種，但後來在日本海域也有發現。

3. *Pseudocoris ocellata*

Pseudocoris ocellata is a species of wrasse of the family Labridae. Their preferred natural habitat is a coral reef, and plankton is their main food source. They are commonly found in the waters near reefs off northern, southern, and western Taiwan. They are often seen in schools, though the mating characteristics are usually centered around one male with many different females.



眼斑擬盔魚
Pseudocoris ocellata



眼斑擬盔魚
Pseudocoris ocellata

瀕臨滅絕

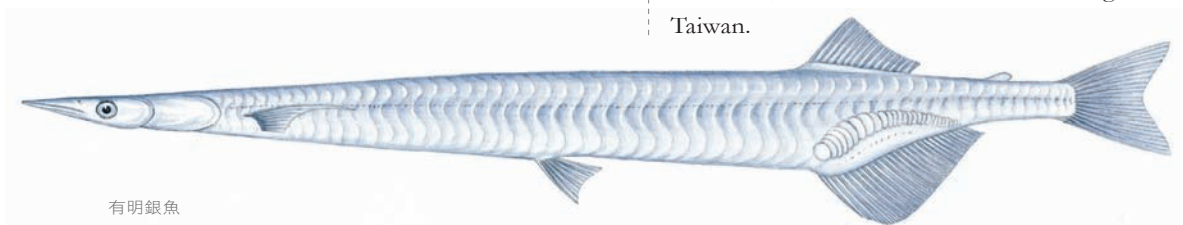
1. 有明銀魚

體型細長，頭部平扁而吻部尖長，呈三角形外貌的牠可是台灣罕見種，目前則已列為滅絕魚種。俗稱為銳頭銀魚或尖頭銀魚，白色半透明的魚身，大多裸露無鱗或僅局部有不規則而易脫落之薄圓鱗。雄雌魚的最大區別在於，雄魚臀鰭基部有一較大的圓鱗，由前往後漸小，呈疊瓦狀排列。

Endangered Species

1. *Salanx ariakensis*

Salanx ariakensis is in the family Salangidae (Icelfish or Noodlefish). It has an elongated, triangle-shaped head, with a semi-transparent body. Most of the body has no scales, though small scattered areas do have some irregular scales which come off easily. Males and females of this species are distinguished from each other by the presence of round-shaped scales on the anal fin of males. *Salanx ariakensis* is not a rare species in the world, but it has been listed as endangered in Taiwan.



有明銀魚
Salanx ariakensis

2. 雪花鴨嘴燕魷

普遍棲息於沿岸淺水區，偶爾自水中跳出，加上體長可達300公分，有如海中的巨大飛雁，而有「水中轟炸機」的稱號。外型一身雪花，又具有如鴨嘴般的長吻，可是在侏儸紀時期便已存在的古代魚，但因以體內受精的卵胎生方式繁殖，一次只能產下幾顆卵，繁殖不易；原分布於台灣西部、澎湖及東沙群島附近海域，現今則列為瀕臨滅絕之物種。

2. *Aetobatus narinari*

Aetobatus narinari, also called the White-spotted Eagle Ray, is of the myliobatidae family. It is a large fish, growing to at least 3 meters in total length, characterized by white spots on the upper surface. The snout can vary in shape, from spade-like in juveniles to pointed in large adults. Females bear a maximum of four pups after a gestation period of probably a year. *Aetobatus narinari* is found in tropical coastal waters throughout the world. In Taiwan it is seen in western waters, Penghu Island, and Dongsha Atoll.



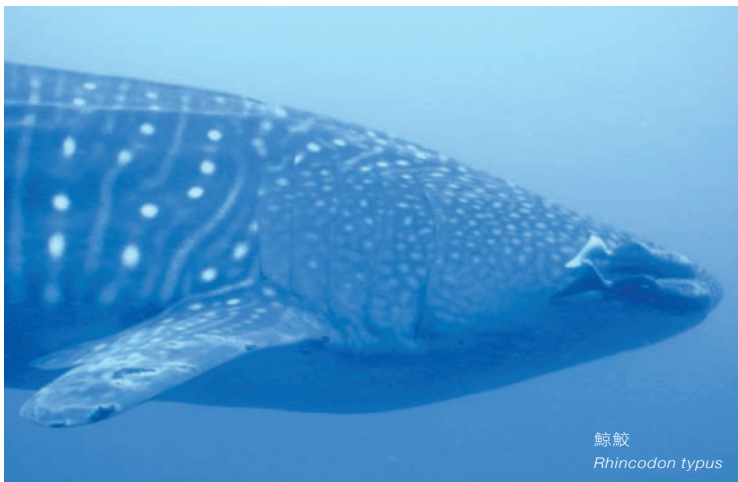
雪花鴨嘴燕魷
Aetobatus narinari



雪花鴨嘴燕魷
Aetobatus narinari



雪花鴨嘴燕魷
Aetobatus narinari



鯨鯨
Rhincodon typus



飛海蛾魚
Pegasus volitans

3. 鯨鯨

鯨鯨是海洋裡的巨無霸，也是地球上體型最大的魚類。鯨鯨又名鯨鯊，其肉質潔白如豆腐，而被地方上俗稱為豆腐鯊。鯨鯨性情溫和，且是「浮游食性」者，但因經濟價值高，肉可食用、肝可製成魚肝油、骨和內臟可加工成魚粉和藥品，因此成為漁民爭相獵捕的對象，目前國際保育組織已將鯨鯨列入第二類保育類，即禁止販售的種類。

造型特異

1. 飛海蛾魚

體型縱扁而寬，全身覆蓋堅硬骨板而無魚鱗，胸鰭呈水平翼狀，形似欲起飛之貌，加上嘴部突出，造型可說是噱頭十足。主要棲息在具海藻床的潟湖區或沙洲海域，為小型魚類，偶為底拖網捕獲，除學術研究外，不具食用價值。

3. *Rhincodon typus*

Rhincodon typus, more commonly known as Whale Shark, is the largest shark in the world. It resembles a whale in size, with a body that can reach 20 meters or more in length. Though it is a shark, it has very small teeth and a gentle temperament, feeding chiefly on plankton. It is an important commercial fish, with its flesh eaten for food, the liver yielding rich healthy oil, while the cartilage and the intestines are used in Traditional Chinese Medicine. Its high commercial value, combined with its gentle nature and huge size, has long made the Whale Shark a prized target for fishermen, and its dwindling numbers has prompted international conservation organizations to call for the prohibition of any further human exploitation of this noble fish.

Special Features

1. *Pegasus volitans*

Pegasus volitans is in the family of Pegasidae (Seamoths) and has the common name of Longtail Seamoth. Collected from muddy and sandy bottoms of estuaries and bays, it is a rare species, without value as a food fish. Its distinguishing features include: the tubercles are absent on the surface of its carapace; it has no scales on its orbit; the distal margin of its dorsal and anal fins are perpendicular to the horizontal axis of its body. Its four pairs of dorso-lateral body plates give it the appearance of an animal preparing to fly, and hence its Latin name "*Pegasus*".



日本鰻
Anguilla japonica



觸角蓑鮋
Pterois antennata

2. 日本鰻

俗名柳葉鰻，身長最長可達150公分，屬降河性洄游魚類，一般白天潛伏於石縫或土穴中，夜間出來捕食魚蝦及其他大型底棲動物維生。亞洲國家包括台灣之日本鰻均來自同一產卵場，即Mariana島以西之北赤道洋流區，卵孵化成柳葉幼生後，隨即展開南北漂流2,000公里，約百日發育成線鰻後，順黑潮海流北上，再於各國河口溯河而長成。

3. 觸角蓑鮋

俗稱獅子魚，多分布在珊瑚礁地區，外型花枝招展，如海洋花蝴蝶一般。為夜行性物種，晚上獵捕甲殼類或小魚維生，白天則通常一動也不動的停在水中或礁洞中休息。獅子魚的每根硬棘基部可都有毒腺，因而又有「火雞魚」或「火焰魚」之稱。

2. *Anguilla japonica*

Anguilla japonica, called Japanese Eel, is a species of eel which lives in both fresh and saltwater. Spawning grounds for the Japanese Eel in Asia are thought to be in the area of Mariana Island. After incubation into a form of their life-cycle called “leptocephali”, they travel up to 2,000 km north or south, metamorphosing into “elver” after about one hundred days. They move with the currents, and can be found commonly near the mouth of rivers.

3. *Pterois antennata*

Pterois antennata, called Spot-fin Lion Fish, is a member of the Scorpaenidae (Scorpionfish or Rockfish) family. Lion fish have a pattern of bright colors, which is often described as “a sea butterfly”. *Pterois antennata* likes to hide in crevices of rocks and coral formations during the day, then emerge to hunt shrimp and crabs at night. It is a venomous fish, capable of inflicting a painful sting on unwary humans.

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