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COA Revised the List of Protected Species

On July 2, 2008, the Council of Agriculture (COA) has officially included Formosan weasels (*Mustela formosanus*), Asiatic water shrews (*Chimarrogale himalayica*) and Crested Mynas (*Acridotheres cristatellus*) in the “other Conservation-Deserving Wildlife” category of the amended version of the Schedule of Protected Species. The *Rhacophorus arvalis* enters the “Rare and Valuable Species” category. Formosan salamanders (*Hynobius formosanus*), on the other hand, has moved to the “Endangered Species” category.

The Wildlife Conservation Act, enacted in 1989, has undergone four amendments. To make the Schedule of Protected Species more reflective of the wildlife status in reality, it was amended again in February, 2008, and has taken effect on August 1, 2008.

According to the Wildlife Conservation Act, protected species are rated to the following

three categories: the “Endangered Species” category, the “Rare and Valuable Species” category, and the “other Conservation-Deserving Wildlife” category.

Kuan, Li-Hao, the Director of the Conservation Division of the COA’s Forestry Bureau, said this year’s new appearances on the “other Conservation-Deserving Wildlife” category are Formosan weasels, Asiatic water shrews and native Crested Mynas. Formosan weasel is a new record species and is rare in quantity. Asiatic water shrews, suffering from degraded habitat as the result of stream engineering, enter the third category list along with native Crested Mynas which have not been able to compete with their exotic counterparts.

The *Rhacophorus arvalis* was recently promoted from its formal status as “General Wildlife” to the “Rare and Valuable Species.” Facing wetland loss, other low altitude wetland inhabitants, such as the *Sinonatrix annularis*, Chinese water snakes (*Enhydris chinensis*) and the *Rana plancyi Lataste*, all enter this category.

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Formosan salamanders, a Glacier era survivor, have faced mountain habitat dwindling as the result of global warming. Therefore, its' protection status has been promoted from category two to the "Endangered Species" category.

In the COA's recent amended Schedule of Protected Species, the number of native mammal species has increased from formal 14 to current 17. Native bird species are currently 90 on the list, from its formal 89, with 16 new appearances on the list and 15 removals. There are now 44

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reptile species on the list, from its formal 51, with 13 new appearances and 20 removals. There are still assessments waiting in the fish and the insect categories, so their numbers on the list stay unchanged for the moment.

The Forestry Bureau said, with policies like planning reserve zones, imposing felling ban on natural forests, making control on forest roads, more forest wildlife inhabitants of medium to high altitude are able to go through steady increase in overall population. For examples, Mikado Pheasants (*Symaticus Mikado*) and Swinhoe's Pheasants (*Lophera swinhoii*) have their status moved from the "Endangered Species" category to the "Rare and Valuable Species" category. Formosan rock macaques (*Macaca cyclopis*), Formosan Reeve's Muntjac (*Muntiacus reevesi micrurus*) and the *Paguma larvata taivana* have also moved from the "Rare and Valuable Species" category to the "other Conservation-Deserving Wildlife" category.

In addition, Emerald Doves (*Chalcophaps indica*), Ashy Minivets (*Pericrocotus divaricatus*), Yellow-throated Minivets (*Pericrocotus solaris*), the White-eared Sibia (*Heterophasia auricularis*), Formosan Yuhinas (*Yuhina brunneiceps*), the *Rhacophorus moltrechti* and the *Rhacophorus robustus* have their names removed from the Schedule of Protected Species, because recent conservation

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efforts have paved way for their steady increase in population.

The Forestry Bureau invited a group of experts to assess and evaluate, based on the Wildlife Assessment and Classification Principles, the distribution of wildlife populations, their numbers and trends of population changes, as well as their taxonomic status and the threats they are facing, which include habitat loss and pressure from being poached and exploited. These are the principles which help to guide the amending process of the Schedule of Protected Species. The final list was reached by conducting prior notices, asking for opinions from the public and having detailed discussion in series of meetings.



Expert Urges for Green Turtles Refuge Plan on Orchid Island

Professor Cheng I-Jiunn from the Institute of Marine Biology, National Taiwan Ocean University has found out, on analyzing population genetic data of green turtles (*Chelonia mydas*) on Penghu's Wangan and on Taitung's Orchid Island from 1997 to 2006, that green turtles from both regions all come from an ancient green turtle population in Indian Pacific. Though, geographically, Wangan and Orchid Island are only 150 kilometers apart, these genetically-related sea turtles from both regions

stay distant. One stays by the continental shelf, and the other in the Pacific. Therefore, it would only be appropriate to have separate refuges for sea turtles in both regions.

For many, the green turtle is a long-living creature and its home range is great. By that, they often jump to the conclusion that green turtles from different parts of Taiwan should not be very different. Cheng I-Jiunn, on the other hand, has found out after years of study on reproductive ecology, that green turtles from Wangan and the Orchid Island are indeed quite different. For one reason, Wangan is in a much hotter climatic environment. It is also much drier than the Orchid Island. Female turtles on Wangan, if compared to their Orchid Island counterparts, go on shore more frequently, dig deeper and more holes for laying eggs, and their interval in between breeding is much longer.

In terms of laying eggs, it is not the size of the female turtles that counts. Female turtles go on shore of the Orchid Island are generally bigger compared to the Wangan ones. However, eggs laid on Wangan Island are bigger and heavier with shorter incubation period. The hatchings also weigh heavier. However, the mortality rate of hatchings on Wangan Island is higher, and chances for hatched sea turtles to go out of the nest are lower. According to Cheng I-Jiunn's study on reproductive ecology and genetic data analyses, one out of three subgroups

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of the Wangan Island breeding population comes from an ancient green turtle population in India and the Pacific region. While its Orchid Island counterpart belongs to one genetic group which is related to populations in Australia, India and the Pacific region.

Parts of the genetic features of the Wangan Island's green turtle population are close to its Orchid Island counterpart. That means both of them have evolved from the same population. But the fact that there are differences in their genetic composition also reveals little interaction between the two. Results from satellite and tag migration tracking are all supportive of that point.

Generally, differences appearing in genes and characteristics often occur when breeding locations are at least 500 kilometers apart. Wangan and Orchid Island are only 150 kilometers away from each other. These differences could very much be the results from different habitat environments. The fact that Wangan is situated on a continental shelf and that the Orchid Island is on the Pacific could result in geographical barriers.

Apart from unveiling the mystery to the lives of Taiwan's breeding green turtles, the conservation of these green turtles on both Wangan and Orchid Island are equally important. Though the green turtle populations

on Wangan and Orchid Island are genetically related, both fail to interact with each other. That shows both populations stick loyal to their breeding locations. The Wangan sea turtles never go to Orchid Island to breed. Therefore, Cheng I-Jiunn urged to set up a refuge on the beaches where Orchid Island sea turtles breed to prevent them from wipe out.



IUCN Announcing Taiwan Strait's Indo-Pacific Humpback Dolphin as Critically Endangered

On August 12, the International Union for Conservation of Nature (IUCN) has assessed Taiwan Strait's Indo-Pacific humpback dolphin (*Scousa chinensis*), or Matsu's Fish, nicknamed by general public, to be Critically Endangered in its Red List of Threatened Species. Taiwan's conservation groups urge the Council of Agriculture (COA) to protect the Indo-Pacific humpback dolphin's ranges of activities as a Major Wildlife Habitat.

According to Matsu's Fish Conservation Union, Taiwan Strait's Indo-Pacific humpback dolphins were first discovered in Taiwan's west coast in 2002. The dolphin's main distribution is in Waisanding sandbank which stretches from Miaoli's Houlong river mouth to the border between Yunlin and Chiayi Counties. The

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dolphins' appearances usually peak around Matsu's Birthday, and that's how they got their nickname. Their population is estimated less than 200 in number because of impact such as coastal development, cement use on coast and waste water discharge.

Chen Huan-yu from the Wild at Heart Legal Defense Association revealed that some environmental groups in Taiwan have invited the IUCN Cetaceans specialist group members to meetings and survey in Taiwan in 2007. Members from the group have agreed that Taiwan Strait's Indo-Pacific humpback dolphins share the same Critically Endangered status as polar bears.

Chen Huan-yu pointed out that the cetaceans have strong communal and regional senses, and feeling secure in their habitat is essential to their very existence. Indo-Pacific humpback dolphins are active around industrial area and coasts where cement is heavily used. Those have already jeopardized their sense of direction and their foraging in coastal area. Compounded by the Formosa Plastics Group's steel refinery and the Guo Guang Petrochemical plant development projects, Indo-Pacific humpback dolphins' existence is seriously threatened. The environmental groups hope that the COA sets up a Major Wildlife Habitat to help protect Indo-Pacific humpback dolphins.



Largest Algal Reef Discovered on the East Coast of Taiwan

A wide range of well-developed algal reef, the largest on the eastern waters, was discovered at Shan-yuan Bay on the east coast of Taiwan. Along with that, many waste fishing nets were also discovered. Therefore, expert urges to mark up the area as protected area.

Chen Chaolun, Associate Research Fellow at the Academia Sinica's Biodiversity Research Center, on his dive research at Nanjiao, near Taitung County's Shan-yuan Bay, discovered that Nanjiao is consisted of a huge layer of algal reef which grows with corals, as its basis. This is, the largest algal reef found in the eastern Taiwan.

Chen said, from what he saw underwater, the algal reef looked well developed. Though, it is a surprise to him, that in such warmer temperature, Shan-yuan Bay should produce well-developed algal reef.

Algal reef is calcareous algae. Through calcifying process, calcium carbonate is deposited. When algal reef is dead, the foundation is left for others to make use of. That will eventually form the basis of the reef. Algal reef and coral reef are different. Algal reef is plant by definition, while coral reef is animal. Algal reef is smooth and even, while coral reef has acute angle. Algal reef plays an important

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role in the ecosystem. The process of its development is often proof of coastline changes and is a special “souvenir from nature.” Apart from that, algal reef does not cover the coastline of Taiwan as far as the coral reef does. That simply makes it even more precious.



Dongsha Atolls Go on Google Earth Layer

Taiwan’s southernmost Dongsha Marine National Park has created waves of attention in the world. Well-known Google Earth was attracted to ask for relevant information. Google is scheduled to include Dongsha atolls into its ocean protected area layer for its 350 million users to visit.

Dongsha atolls, the well-developed coral atolls, include the Dongsha Islands as well as the atolls. They are rare natural heritage in the world. Dongsha Marine National Park, Taiwan’s first marine national park, since its establishment, has attracted attention from the IUCN’s World Commission on Protected Areas (WCPA).

The national park has been under management of the Marine National Park Headquarters since last October. Google Earth contacted the Park Headquarters in late August to request for details. By October, its 350 million users worldwide are expected to gather that

information by paying a visit at the Google Earth webpage.



Exchanges between Taiwan and Hong Kong on Wetland Conservation

On July 19 and 20, the Society of Wilderness, the Ecological Engineering Center of National Taiwan University, and Taipei County Sustainable Development Education Center invited Mai Po Marshes reserve representatives from Hong Kong, scholars, experts, administration officials and sponsors in Taiwan to provide practical advices on wetland management.

Wetland conservation, under efforts put forth from both the government and local groups, has recently received great attention in Taiwan. Construction and Planning Agency under the Executive Yuan first marked out 75 “important national wetlands” in 2006. In addition to that, it made year 2008 “Year of Taiwan’s Wetlands.” Wetland conservation was not quite achieved simply because of that. In the face of popular discrepancy, pressure from development and insufficient law package to go with, Taiwan’s real challenge of wetland conservation and management is only to begin.

When the wetland is marked out as reserve, first problem encountered is rejection from

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neighboring industries. Landlords are not able to make good use of their land because of the conservation laws. And wild birds in the reserve often fly across border. This has created problems for both side and all across Taiwan. Hong Kong's Mai Po Marshes was founded since 1984 and it faced the same problem. Lau Siu Keung, who is in charge of community conservation, found out the long isolated reserve had created sense of alienation in the community, and because of that it's hard to build up mutual goals. Therefore, Mai Po started to talk with the community, provided raised fund as incentives for people, and held fish and shrimp raising activities. It is only through interaction that both sides achieve mutual understanding.

When it comes to pressure for peripheral development, Li Kwai Chan, Director of the training department of the Mai Po natural reserve, pointed out the same dilemma worldwide. She said, to cut cost, less costly wetland is generally the number one choice for economic development land use. Development projects often start along the reserve their construction of building complex, agricultural areas and highways.

H. Y. Cheng, Dean of the College of Environment and Ecology, National Tainan University, pointed out the importance of switching the concept of "economics." He said "ecology" and "economics" share the same

prefix, and it is important to change the "short-term business consideration" into thinking on "all round sustainability of economics." He pinpointed by giving examples of foreign green enterprises the real value to treat environmental protection as the essential value of enterprises. He believed that conservation reserves are not obstacles to economic progress, but the way to sustainable development.

Hong Jia-hong, Deputy Chief of the Town and Country Planning Bureau, Construction and Planning Agency, said that Article 18 of the Environment Basic Law, promulgated in 2002, is the only legal basis specifically related to wetland conservation. However, this law has no tangible enforcement regulations, nor any specific competent enforcement agencies. Besides, there is no other lawful ground to define wetlands. Hong suggested that the government should draft and enact wetland conservation law and to plan a network of protected wetlands as soon as possible. That will eventually put Taiwan's wetland conservation on the map and therefore, strengthen the value on promoting sustainable wetland conservation.



Taiwan Red Cross Plants Trees in Indonesia to Cut CO₂ Emission

The Red Cross Society of ROC led around 20 university students from Taiwan to visit Pusat

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Pembibitan Konservasi Bodhicitta Mandala Indonesia (KBM) Pancur Batu di Pancur Batu in Indonesia in late July.

Alex, whose duty is attending to the center, said the seed bank has taken shape for two years now. They have grown a total of over a million tree seeds. Among them, nearly one hundred thousand seeds were already handed out to farmers and schools in need. Durain seeds, cocoa seeds, mango seeds and mangosteen seeds were among those which contribute to the conservation of water and soil.

Wu Heng-ji, an Indonesian Chinese student from Transworld Institute of Technology, had participated the seed bank's 2007 "1,111,111 Trees and 1,111,111 hope" planting program. He said tree seeds were handed out to people who have pieces of land and are willing to plant. In order to get young students more involved in forest conservation, the bank also held briefings in local elementary schools and junior high schools to encourage them to help implement local planting program.

Hsieh Ming-hai from the KBM said, the growth of the tree seeds will continue to be monitored after the handout. The seeds' survival rate is observed to be around 80 percent. But, facing restrictions in manpower, resources and environment as well as species, he wishes exchanges like this will bring the world to close

watch on Indonesia's rainforests.

In the program, the students helped to remove weeds, using hoes, and to calculate the seeds. They attended to about ten of thousands of seeds. Guo Yi-fa, who administered this event of the Red Cross, said students who participated in the event are sometimes the opinion leaders in school. They brought stories behind conservation work in Indonesia back to Taiwan after their participation in rainforest conservation.



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