

# INTERNATIONAL CONSERVATION

## NEWSLETTER

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**2005 International Workshop on  
Integrated Biodiversity and  
Regional Forum of  
Species 2000 Asia-Oceania**

The 2005 International Workshop on Integrated Biodiversity and Natural Specimens Databases and the Regional Forum of Species 2000 Asia-Oceania were jointly held from September 30 to October 2, 2005 at the National Museum of Natural Science in Taichung, Taiwan. The two events were organized side-by-side by the Research Center for Biodiversity, Academia Sinica (RCBAS), in cooperation with the Institute of Ecology and Evolutionary Biology of the College of Life Science at National Taiwan University, the National Museum of Natural Science (NMNS), and other organizations, and supported by the National Science Council (NSC) and the Council of Agriculture (COA), Executive Yuan.

Due to the fact that a wide range of different systems have emerged in various nations' efforts to establish biodiversity databases, one of the most important goals of current biodiversity conservation work around the world has become finding ways to integrate

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and utilize these databases as a whole, in order to effectively manage knowledge about global species. Therefore, representatives from Species 2000, Species 2000 Asia-Oceania and other international organizations, and the project directors and computer program designers of ASEANET (the Southeast Asian loop of the global network for taxonomy, BioNET INTERNATIONAL), PBIF (the Pacific Biodiversity Information Forum) and other international cooperation projects were invited to Taiwan to exchange ideas on the content, format, and technical specifications of

databases with experts in the fields of biodiversity taxonomy, ecology, evolution, conservation, education, and management from Taiwan.

During the 2005 International Workshop on Integrated Biodiversity Databases, those people responsible for establishing and managing biodiversity databases in Taiwan had the opportunity to engage in discussion with their counterparts and other experts from Southeast Asia, Japan, and Australia, among others, and to promote academic exchange in the future.

In the regional workshop of Species 2000 Asia-Oceania and a concurrent meeting of its taskforces, 15 to 20 members from 13 nations discussed the direction of future cooperation and explored potential projects in the area of regional biodiversity information. The meeting focused on a comparison of common names in local languages for fish (representatives from Taiwan, Japan, South Korea, and the Philippines) and flora (representatives from Taiwan, Australia, and the Philippines) species.

For more detailed information about the meetings, please refer to the following website: [http://biodiv.sinica.edu.tw/symposium/biodiv\\_database/agenda.php](http://biodiv.sinica.edu.tw/symposium/biodiv_database/agenda.php)

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### Third Symposium of Vegetation Diversity in Taiwan

The Forestry Bureau of the Council of Agriculture (COA), Executive Yuan, recently publicized the results of a national project to investigate and map local vegetation diversity at the Third Symposium of Vegetation Diversity in Taiwan held from September 8 to 9, 2005. A database of plant species, populations and other information established as a result of the project is expected to formally come online in the near future.

Although almost 60% of Taiwan's total area is covered with forest and other vegetation, its forest ecosystems had never been surveyed in a detailed and systematic fashion. This led to a situation whereby it was extremely hard to assess the level of protection afforded to various rare and endangered plant species, even though Taiwan had already created numerous protected areas and reserves. To remedy this, the COA began the National Vegetation Inventory and Mapping Project in 2003 with the aim of conducting a 'tree-to-tree' census of all Taiwan's forests so that the true distributions and populations of various species could be assessed.

The three main goals of the project are to establish a national vegetation classification

system, to complete a more detailed map of existing vegetation, and to establish a database of vegetation diversity in Taiwan, according to National Taiwan University School of Forestry and Resource Conservation assistant professor Dr. Chiou Chyi-Rong, who participated in the project.

The vegetation inventory project represents a basic phase in national land conservation. Increasing understanding of the distribution of various flora throughout the island will be helpful to land conservation and monitoring in Taiwan. Once it becomes public in the future, the database will not only facilitate other relevant research, but will also serve as a basis for observing qualitative vegetation changes within certain regions to monitor the overall status of national land.

For more information in Chinese, please refer to: <http://e-info.org.tw/node/326>



### Pheasant-tailed Jacana Chicks Indicate Success of Zhouzai Wetland Restoration

A project to restore Zhouzai Wetland in Kaohsiung has been labelled a success with the return of the endangered Pheasant-tailed Jacana (*Hydrophasianus chirurgus*). The rare wader

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has been seen nesting at the wetland and four jacana chicks were sighted this summer. All four chicks were in a healthy condition.

Chiu Man-hsing, director of Wetlands Taiwan, the conservation group heading the project, said that Zhouzai Wetland has been restored to its original condition nearly 150 years ago and is now an important habitat to over 100 bird species and hundreds of other organisms. The species diversity of the wetland is extremely precious, he said.

The wetland near Tsuoying in Kaohsiung was the place where the Pheasant-tailed jacana was firstly sighted in Taiwan by British naturalist Robert Swinhoe in 1865. The species' habitat was subsequently destroyed by the gradual urbanization of the region. Pheasant-tailed jacana populations plummeted to the point that the species was listed as in danger of extinction.

Jacanas are a group of waders in the family Charadriidae, identifiable by their huge feet and claws which enable them to walk on floating vegetation in the shallow lakes that are their preferred habitat. They are found worldwide within the tropical zone. They feed on insects and other invertebrates picked from the floating vegetation or off the water's surface.

The Wetlands Taiwan-led project, known as the 'Return of the Jacana', won first prize in 2003's Ford Conservation and Environmental Grant competition and was begun after gaining management of the proposed location of Tsuoying First Park from Kaohsiung City Government to operate a wetland park. After two years of hard work, conservationists established the type of floating vegetation environment favored by Pheasant-tailed jacanas and three jacanas settled at the wetland late last year. One of these flew away, leaving just two jacanas. They built a nest in June 2005 and hatched four chicks at the beginning of July. The park manager hopes that more jacanas will nest there in the future and restoration of the wetland can continue.

<http://www.taipeitimes.com/News/taiwan/archives/2004/10/23/2003208062>



### **Fishing Ban on Four Streams in Pingtung**

Faced with the urgent need to protect the natural environment and meet the goal of sustainable utilization, on July 7, 2005, the Pingtung County Government announced a comprehensive fishing ban on four streams in the Chunjih Township area, including Lili Creek, starting immediately and ending on June

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30, 2006. During this period, all types of fishing (including fly fishing) and the capture of all aquatic species will be prohibited. Offenders will be punished under Article 65 of the Fisheries Act and subject to fines of between NT\$30,000 and NT\$150,000.

The decision to ban river fishing in certain areas for a limited period of time was made by the Pingtung County Government in view of the fact that many freshwater species are becoming endangered and numerous streams have been damaged by fishing and other activities.

Already, several townships in the county have implemented fishing bans and other protective measures. For instance, Wutai and Mutan townships outlawed fishing on all streams in their jurisdiction in April 2004 and January 2005, respectively. The bans were considered so effective that Chunjih Township requested permission from the County Government to implement its own fishing bans on Lili Creek, Chichia Creek, Shihwen Creek and Tsaoshan Creek, all of which have suffered extensive species loss from over-fishing and other human activities.

All four streams are important habitats to such rare and endangered species as Swamp eels (*Anguilla marmorata* (Quoy et Gaimard)), the Taiwan ku fish (*Varicorhinus alticorpus*),

the Monk goby (*Sicyopterus japonicus*) and *Hemimyzon formosanus*. The restriction on river fishing within the Chunjih region was put forward to give fish and other organisms a chance to regenerate.

After assessing the conservation management plans put forward by Chunjih Township and seeing the critical need to use natural resources in a sustainable manner, the County Government granted permission for the fishing ban to be implemented. Stream conservation measures were announced for four streams, including Lili Creek, effective immediately. The exact scope of the fishing ban incorporates the middle reaches of Lili Creek (from approximately the 14th national forest compartment) to Kutiao Bridge, the whole of Chichia Creek, the downstream area of Shihwen Creek from Hsi-lakalaka-wu-shan to its confluence with Tsaoshan Creek, and small creeks from Chia-luka-en-shan towards Shihwen Community.

The conservation plan put forward by Chunjih Township aims to restore the rivers concerned, to conserve and protect their natural environment, and to eradicate all illegal fishing activities during the ban. Implementation methods will include the use of signs, 24-hour patrols by volunteers, and education and training. Local government officials say they

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are confident that the measures will effectively restore the natural environment at Chichia Creek, Lili Creek, Shihwen Creek, Tsaoshan Creek and other streams and will help regenerate the local economy through ecotourism and other leisure activities around the region's high quality river resources.



### **Local Government Supports Grassroots Crab Conservation in Hualien**

Hualien County Government bolstered local efforts to conserve an important crab habitat by constructing a shelter for rangers protecting the species, in July this year. Demand for Mitten crabs as a local delicacy had led to a major decline in the species and destruction of its natural habitat at Sanfu Creek in central Hualien until local residents formed a conservation group to protect the species. Hualien County Government also formally listed Sanfu Creek as one of Hualien's ecotour itineraries in an effort to boost the local economy.

Sanfu Creek, located in Chingpu Village in Fengpin Township, is the East Coast home of the Chinese Mitten crab (*Eriocheir sinensis* H. Milne Edwards, 1854). The stream, also known as Bala-eluan Creek, stretches a length of eight

kilometers and has its source high up in Mt. Chihluo (Chihluoshan) at an elevation of 1,150 meters. It is an important location for observing catadromous migratory fish, shrimp and crab species. The aquatic species most frequently seen include crabs in the family Pinnotheridae (pea crabs), Formosan mitten crabs (*Eriocheir formosa* Chan, Huang and Yu, 1995), *Macrobrachium* sp., Swamp eels (*Anguilla marmorata*), Monk gobies (*Sicyopterus japonicus*), Jungle perch (*Kuhlia rupestris*), and others. Of these, Mitten crab populations are the most significant.

However the creek's abundance of fish, shrimp and crab resources and its unique mud-shale geology were recently put under pressure from demand for local seafood restaurants and family dinner tables. The area's Mitten crab population plummeted and its habitat was destroyed by over-fishing and unregulated exploitation. To protect the species and the natural environment at Sanfu Creek, the residents of Chingpu Village formed the Bala-eluan Creek Preservation Association in 1999. Practically the whole village became involved in the effort to restore and protect the stream. Through guidance and training provided by Hualien County Government, the local people were able to rescue Sanfu Creek and its environment.

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Furthermore, to actively boost the stream conservation project, Hualien County magistrate Hsieh Shen-shan ordered the County Government's Agriculture Bureau to construct a shelter for rangers and other people engaged in creek patrols. The shelter, which formally began operations on July 23, 2005, provides rangers with a place to rest during night-time patrols and a refuge from bad weather. The shelter can also be used for meetings and other gatherings.

In addition, the County Government also put Sanfu Creek onto its ecotour itinerary. The creek is surrounded on both sides by exceptional mud-shale and shell fossil geology and lush forest cover, making it an important location for geological, botanical and ornithological observation and study.



### **Urchin Decline Signals Red Light for Marine Conservation in Kenting**

Sea urchin populations in south Taiwan are being decimated by tourists catching them to eat, a research survey released in August 2005 has revealed. Researchers called on the government to step up patrols at an urchin reserve at Kenting in an effort to protect the species.

The short-spined sea urchin (*Tripneustes gratilla*) is sparsely distributed throughout the whole Kenting marine area; however, overall species numbers are extremely low, according to the study. Researchers collected fewer than 10 specimens in most of a series of diving surveys conducted earlier this year. Each dive lasted for one hour. The main reason for the decline in short-spined sea urchins is because thousands of tourists come to Kenting each year to catch and eat sea urchins, according to the research report.

The survey of invertebrate change in the marine area at Kenting was conducted in early 2005 by National Museum of Natural Science researcher Dr. Shyh-Min Chao at the request of the Kenting National Park Administration. The results of the survey, which included a study of urchins and other spiny organisms, were released on August 12, 2005. Dr. Chao said that the plunder of Kenting's sea urchins was shocking and the critical loss of species signaled a red light for marine conservation in the region. He recommended strengthening protection measures around the sea urchin reserve at Houpihu Lagoon by stepping up police patrols and conservation management.

Short-spined sea urchins inhabiting the lagoon could be used as a seed bank for the species, he said. An appropriate number of

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individuals could be relocated to other protected habitat areas to breed, and then specific marine locations could be found to release the short-spined urchins back into the wild.

Dr. Chao said that out of the tens of thousands of hectares of sea at Kenting, only Houpihu Lagoon had a reasonable sea urchin population. Species density there was 6.3 individuals per 100 sq. m. on average. The higher than average population density at Houpihu was a direct result of a collaborative research project to release urchins into the lagoon conducted in 2002 by Chao and researchers from National Sun Yat-sen University and the Taiwan Fisheries Research Institute Tungkang Branch. The urchins released had subsequently reproduced and populations had regenerated. The success of the project was evidenced by the frequent sighting of juvenile urchins at the lagoon. Furthermore, the lagoon's short-spined sea urchin population had remained stable because the region was regularly patrolled by the Houbihu division of the Kenting National Park police, which had prevented visitors and locals from catching and eating them.

Dr. Chao said that the 2002 research suggested that, as long as short-spined urchins are protected from human interference,

populations can recover rapidly. To continue the project to restore urchin populations, on May 26 this year, 275 short-spined sea urchins were moved from Houbihu Lagoon to the snorkeling area on its western flank. Researchers will continue to monitor the urchins to assess effectiveness of the relocation and population regeneration.



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**Publisher:** Ping-shi Yang

**Editor-in-Chief:** Ling-ling Lee

**Editors:** Yi-chun Yu / Yi-fen Lin / Halima Chen

**Publisher & Editorial Office:**

Society for Wildlife and Nature (SWAN)

**Add.:** 1F, No. 35, Lane 175, Hoping E. Road,  
Taipei 116, Taiwan, ROC

**Tel:** +(886-2) 2709-8160

**Fax:** +(886-2) 2709-8160

**Email:** swanint@eagle.seed.net.tw

**Website:** [http:// www.swan.org.tw](http://www.swan.org.tw)

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