

# INTERNATIONAL CONSERVATION

## NEWSLETTER

Vol. 9, No. 3

September 2001



Published by Society for Wildlife and Nature

### Biodiversity Action Plan Ratified in Taiwan

On August 15, 2001, the 2,747<sup>th</sup> meeting of the Executive Yuan ratified and passed the Republic of China's "Biological Diversity Action Plan", marking a truly significant milestone in Taiwan's efforts to preserve its biodiversity.

Taiwan has a relative abundance of biological resources. At a rough estimate, there are around 150,000 different species throughout the whole island, or 1.5% of the world's total known species. Taiwan's geographical location straddling the tropics and the subtropics and its unique natural environment has endowed it with a diverse range of habitats and ecosystems. Taiwan is not only an important source of global biological resources; its resources constitute a fundamental guarantee for the island's continued economic development and efforts to provide a better environment and

long-term benefits to all residents. A draft proposal for Taiwan's national biodiversity plan was put forward by a special editing and drafting group within the Council of Agriculture (COA). After two years of discussion between various ministry officials, academics and researchers from all disciplines, and members of the National Council for Sustainable Development (NCSO), the "Biological Diversity Action Plan" was finally completed and ratified by the Executive Yuan on Aug. 15, 2001.

The COA said that the "Biological Diversity Action Plan" announces the Republic of China's national objectives and strategies for implementing and promoting conservation and sustainable utilization of its biological diversity. The plan is particularly significant because it looks at biodiversity issues from a farsighted, global standpoint and further consolidates administrative resources and academic research, allowing the combination of industrial research with the knowledge of

# INTERNATIONAL CONSERVATION NEWSLETTER

economy. The strategy for implementing the plan falls within a comprehensive national mechanism for promoting and improving biodiversity conservation and management; strengthening biodiversity research and sustainable utilization of biological resources; encouraging education, training and public awareness and participation in biodiversity issues; and advancing national and international partnerships and cooperation. It is hoped that the plan can be implemented to fulfill the goals of conserving and sustainable use of Taiwan's

<b>INSIDE</b>
<b>Biodiversity Action Plan Ratified in Taiwan</b>
<b>Handbook of Important Bird Areas in Taiwan Published</b>
<b>Check Dams Demolished in Effort to Save Formosan Landlocked Salmon</b>
<b>Restoration Success at Hanbao Wetlands in Changhwa</b>
<b>Cetacean Rescue Pool Established at Chengkung in Taitung</b>
<b>Introduction to Taiwan's Nature Reserves –Yuanyang Lake Nature Reserve</b>
<b><u>International Conservation Newsletter</u> is free of charge. To be put on the mailing list, please send your complete address to SWAN International.</b>

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biological diversity and creating a balance between preservation and economic development in Taiwan. \*

## Handbook of Important Bird Areas in Taiwan Published

Following three years of planning and compilation, the “Handbook of Important Bird Areas in Taiwan” has been finally published with support from the Council of Agriculture (COA). The chairman of BirdLife Asia, Mr. Noritaka Ichida, traveled to Taiwan especially for the launch of the handbook, which was edited and written by the Wild Bird Federation Taiwan (WBFT). Mr. Ichida said that the handbook was the most comprehensive and beautiful handbook of important bird areas (IBA) he had ever seen. He suggested that the WBFT and the COA use the handbook to promote conservation and develop ecotourism in Taiwan.

The “Handbook of Important Bird Areas in Taiwan” was written and edited by ornithologists in Taiwan as part of BirdLife International's “Global Important Bird Areas” project. The handbook describes the location and resources found at 53 important bird habitats in Taiwan that meet international standards for IBA. It provides clear, comprehensive information about these important areas and the need for their conservation.

# INTERNATIONAL CONSERVATION NEWSLETTER

WBFT chairman, Mr. S. C. Liao, said that, through the publication of this handbook, Taiwan's bird-lovers hoped to provide the basis for decision-making on conservation policy issues by conservation and environmental protection agencies, while helping ordinary people in Taiwan to become better aware of the precious natural resources in Taiwan. Of the 53 IBAs described in the handbook, six are national parks, 10 are nature reserves and 13 are wildlife refuges. Although most of the IBA listed are well-known conservation areas, quite a number of the regions listed have not yet been designated protected areas, including some areas of marshland and river estuaries.

Based on his experience of over 10 years' interaction with ornithologists in Taiwan and almost 30 visits to Taiwan, Mr. Ichida pointed out that, out of the whole of Southeast Asia, Taiwan is the best qualified to develop ecotourism. He said that Taiwan not only has an abundance of indigenous bird species, but it also has a low crime rate, friendly people, convenient transportation systems and a wealth of delicious foods to offer. He said that all of these factors were important considerations for planning bird-watching trips and could be used to attract foreign bird-lovers to Taiwan. Therefore, he urged the COA and the WBFT to

use the newly-published handbook to develop Taiwan's resources in this direction.



## **Check Dams Demolished in Effort to Save Formosan Landlocked Salmon**

Following the demolition of high mountain check dams by the Shei-pa National Park Headquarters, it has been found that Formosan landlocked salmon (*Oncorhynchus msaou formasanum*), which is considered a national treasure in Taiwan, are now successfully migrating upstream to breed. National Park authorities ordered the removal of two check dams after publication of research determining that the construction of dams on Chichiawan Creek, an upstream tributary of Tachia Creek in Taichung County, was in fact blocking the migratory path of fish species, including the Formosan landlocked salmon. To give the species a further chance of repopulation and survival, National Park authorities say they will demolish two more mountain stream check dams in the near future.

To save the Formosan landlocked salmon from extinction, Shei-pa National Park Headquarters commissioned a team of scholars

## INTERNATIONAL CONSERVATION NEWSLETTER

to undertake a study in which the effect of dam removal on the hydraulic engineering of the site would be modeled from the standpoints of water conservancy and ecological impact to ensure that the dams' removal would not affect the deep pools inhabited by the salmon below the dam. At the same time, the study revealed that dam removal would result in a reduction in the creek's gradient that would facilitate salmon migration, while also preventing changes in the creek's course caused by silting above the dam. Finally, it was concluded that dam building on mountain creeks was detrimental to the upstream migration of Formosan landlocked salmon.

Over the past two years, Shei-pa National Park Headquarters removed part of the No. 3 and No. 4 high mountain stream dams, which were originally 15 meters long, four meters tall and three meters wide. After making three- to five-meter-long T-shaped holes at the center of the dams, salmon that were previously prevented from migrating upstream by the dam have now successfully migrated upstream.

Shei-pa National Park Headquarters secretary, H. C. Wu, said that, at present, almost 100 salmon had migrated upstream and had been found near the new gaps in the dams. As there are around 1,000 Formosan landlocked salmon within Chichiawan Creek and other

mountain streams, authorities hope that the removal of the dams and an artificial breeding and repopulation project will help salmon populations avoid the threat of in-breeding caused by lack of suitable habitats.

In the near future, Shei-pa National Park will commission the demolition of the No. 1 and No. 2 high mountain stream dams. To prevent the build up of silt caused by torrential rainstorms and floods from blocking the Formosan landlocked salmon's path to upstream spawning areas, the National Park says it will undertake a follow-up project next year to remove all of the seven dams on Chichiawan Creek.



### **Restoration Success at Hanbao Wetlands in Changhwa**

Following the establishment of Hanbo Eco-Agriculture Park (HEAP) by Changhwa County residents, local citizens and members of the Hanbao Family, which was formed by conservationists from the Changhwa County Environmental Protection Alliance, have worked hard to restore Hanbao wetlands. Eighteen months later, the wetland area within the park is showing signs of successful

## INTERNATIONAL CONSERVATION NEWSLETTER

restoration. Not only did the number of breeding Black-winged stilt (*Himantopus himantopus*) pairs reach a new high this summer, but large numbers of transient and winter migrant birds visited the wetlands to feed and rest. The arrival of these avian visitors attracted throngs of weekend bird-watchers and enthusiasts.

Following a survey of bird species within HEAP in July, it was found that large numbers of transient and winter migrants had already arrived at the area. Almost 1,000 individuals from over 10 different species of waterfowl, including Kentish plovers (*Charadrius alexandrinus*), Little ringed plovers (*Charadrius dubius*), Greater sand plovers (*Charadrius leschenaultii*), *Calidris alapina*, Red-necked stints (*Calidris ruficollis*), Sharp-tailed sandpipers (*Calidris acuminata*), Spoon-billed sandpipers (*Eurynorhynchus pygmeus*), Red knots (*Calidris canutus*), Ruddy turnstones (*Arenaria interpres*), Common greenshanks (*Tringa nebularia*) and other transient and winter migrants had gathered within the two-hectare core area of the zone. The arrival of these visitors and the presence of residents like Painted snipes (*Rostratula benghalensis*) and the young and breeding black-winged stilts still inhabiting the area, as well as summer migrants like Little terns

(*Sterna albifrons*) and Little egrets (*Egretta garzetta*) meant that ornithologists at the HEAP were astounded at the wide range of species present.

Early this year, local residents and members of the Hanbao Family gradually finished work on bird-watching hides and waste-water systems within the HEAP. Already, the wetland has been restored to the point where it is now self-sufficient. Incoming tidal waters bring nutrients, providing the abundant benthos of the wetland with the food they need. The stable environment also provides a safe place for bird species to feed and rest; consequently, the present group of transient birds has been attracted to stop there on their long migration from northern areas. While resting after their long flights, they can replenish their energy using the abundant food resources in the area.

Members of the Hanbao Family said that they had recorded the sighting of a Greater sand plover with an orange tag attached to its right leg in the Hanbao Wetlands. They said that, in July last year they recorded the sighting of a Greater sand plover with the same coloring. They said that the bird had probably been captured and tagged by researchers in southeast Australia, leading them to believe that the

# INTERNATIONAL CONSERVATION NEWSLETTER

winter habitat of this group of transient birds may be Australia. ♣

## Cetacean Rescue Pool Established at Chengkung in Taitung

With assistance from the Taitung division of the COA Fisheries Research Institute, the Taiwan Cetacean Society (TCS) recently established Taiwan's third Cetacean rescue pool at Chengkung of Taitung County in southeast Taiwan, extending the island's Cetacean rescue capabilities to the east coast. Two other rescue pools are already located at Tunghsiao in Miaoli County and Ssutsao in Tainan on the west coast.

TCS chairperson, Dr. L. H. Chou said that, although the Society was still a long way from establishing a full Cetacean Rehabilitation Center in east Taiwan, the creation of a highly functional, mobile Cetacean rescue pool along the rocky east coast was a positive first step in improving the Cetacean rescue capabilities of east Taiwan.

Chou pointed out that, over the past decade, the frequency of Cetacean stranding and accidental entrapment along the east coast was relatively high. According to statistics, a total of 56 Cetaceans, including Pygmy sperm whale (*Kogia breviceps* de Blainville), Cuvier's

beaked whale (*Ziphius cavirostris*), Fraser's dolphin (*Lagenodelphis hosei*), Spinner dolphin (*Stenella longirostris*), Bottlenose dolphin (*Tursiops truncatus*) and other little-known Ziphiidae had been stranded on the east coast in Yilan, Hualien and Taitung counties. She said that the conservation image of Taiwan's fishermen would be improved if they could report incidents of Cetacean injury by fishing nets and call for an emergency rescue service.

The Taiwan Cetacean Society hopes that by establishing the new Cetacean rescue pool injured Cetaceans will no longer endure the long journey to suitable veterinary facilities of the past. Furthermore, the new rescue pool will help establish Cetacean conservation in Taitung County, while improving the success rate of Cetacean rescue activities on Taiwan's east coast. ♣

## Yuanyang Lake Nature Reserve

Introduction to Taiwan's Nature Reserves

Located at the edge of Chianshih Township in Hsinchu County, Fuhsing Township in Taoyuan County and Tatung Township in Yilan County, Yuanyang Lake Nature Reserve was established in 1986. With a total area of 374 hectares, the reserve is situated

## INTERNATIONAL CONSERVATION NEWSLETTER

at an elevation of 1,650 to 2,432 meters above sea level. Yuanyang Lake itself occupies an area of 3.6 hectares and lies at an elevation of 1,670 meters. The reserve is also made up of 2.2 hectares of marshland. The rest is mountain area.

The reserve protects an area of virgin mountain lake ecosystem. Due to the influence of the northeast monsoon, the area receives a high level of precipitation. The reserve is generally humid and largely covered in mist and cloud late in the year. Long and thin in shape, Yuanyang Lake reaches depths of up to 15 meters along its ravine-like bottom. The lake most likely began as a mountain valley, which flooded to form a lake after becoming dammed up by a landslide.

Yuanyang Lake is located in a remote area of Taiwan. Transportation is inconvenient, limiting human interference in the area. As a result, a relatively large and complete area of natural cypress forest has been preserved surrounding the lake. *Sparganium fallax* Graebner is one of Taiwan's rare and valuable plants. A member of the Sparganiaceae family, *Sparganium fallax* Graebner is an aquatic shrub that lives for many years. It is found growing at the edges of Yuanyang Lake and surrounding marsh areas. Another rare plant species found in the reserve is the *Chamaecyparis obtusa* Sieb.

& Zucc. var. *formosana* (Hayata) Rehder. At present, there are only a few samples of *Chamaecyparis obtusa* Sieb. & Zucc. var. *formosana* (Hayata) Rehder left in the Taiwan area. The species' distribution is limited, including a relatively large and complete area of *Chamaecyparis* forest within Yuanyang Nature Lake Reserve, where *Chamaecyparis obtusa* Sieb. & Zucc. var. *formosana* (Hayata) Rehder is the dominant tree species.

The limited wildlife data collected so far shows that the reserve has a relatively high number of rare and endangered animal species, including the rare amphibian, the Mandarin Ratsnake (*Elaphe mandarina*), threatened bird species like the Brown wood owl (*Strix leptogrammica*), and other rare bird species including Mandarin ducks (*Aix galericulata*), Besra sparrow hawks (*Accipiter virgatus*), Crested serpent eagles (*Spilornis cheela*), Collared owlets (*Glaucidium brodiei*), Spotted scops owls (*Otus spilocephalus*), White-backed woodpeckers (*Dendrocopos leucotos*), Grey-faced woodpeckers (*Picus canus*), Black-faced cuckoo shrike (*Coracina novaehollandiae*), Rufous laughing thrush (*Garrulax poecilorhynchus*) and others.

Since 1991, the Institute of Botany at Academia Sinica has been conducting various ecological studies within the reserve. In 1995,

# INTERNATIONAL CONSERVATION NEWSLETTER

the National Science Council formally established Yuanyang Lake Nature Reserve as one of its long-term ecological research (LTER) site, making it the fifth LTER site in the Taiwan Area dedicated to lake, plant and rare wildlife research.



## ***International Conservation Newsletter***

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**Printed by:** Cheng-fong Art Printing Co., Ltd.

**Add.:** No. 28, Alley 1, Lane 458, Yungho Rd.,  
Chungho City, Taipei Hsien, Taiwan,  
ROC.