

Directory of Important Bird Areas in China (Mainland): Key Sites for Conservation

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FOREWORD

Birds are a very special component of life on Earth. They have for millennia inspired human civilizations and become powerful cultural icons and spiritual symbols. This is why birds are loved, observed and studied all over the world more than any other category of wildlife. In modern times we have also discovered that they are excellent indicators of the state of the environment they (and all of us) depend on. This is why BirdLife organisations around the world, and increasingly also institutions and international conventions, use birds as messengers to guide our work to protect nature and the environment. BirdLife International is a worldwide Partnership of local conservation organisations spread over 100 nations and territories with members and supporters who strive to conserve birds, their habitats and global biodiversity, working with people towards sustainability in the use of natural resources.

The IBA Directory for mainland China is the most comprehensive inventory of key sites for biodiversity in the country. China is one of the most important countries in the world for birds. It is home to over 80 Globally Threatened bird species and for 40 of these, China is critical for their survival. This phenomenal publication identifies 512 Important Bird Areas, covering over 1 million square kilometres of Chinese habitats. It demonstrates the enormous richness of China's biodiversity and its international importance. The IBAs are the critical places for the conservation of the birds in China and, with them, a wealth of other biodiversity. IBAs are a crucial subset of key biodiversity areas and can lead the way in helping prioritise conservation planning and financing. This is an inventory of sites that have been clearly identified through a thorough assessment of their biodiversity value. It is therefore a formidable tool to guide decision makers in governments, private sector, investment banks and donor institutions in order to avoid adverse impacts of development projects on priority sites and species, and to direct conservation funding towards clearly defined priorities.

It has been a massive task for the team of compilers to gather such detailed information about the birds and IBAs of China. It also shows the incredibly rapid growth of interest and expertise in nature conservation in the country. We are extremely grateful to the many people who have contributed to this book, including members of bird watching clubs as well as academic ornithologists. The World Bank has generously supported the publication of this directory which we hope will make a significant contribution to the conservation of some of the world's most precious and fragile species and habitats. This work truly represents a milestone for bird conservation in China. I know that I speak for all in the global BirdLife Partnership when I say we very much welcome this new directory and look forward to developing a closer cooperation with everyone in China who shares an interest in conserving the birds and other wildlife of this vast, diverse and magnificent country.

Dr Marco Lambertini
Chief Executive
BirdLife International



At an IBA workshop in Fuzhou in March 2007, the members of recently established birdwatching societies from many parts of mainland China provided valuable information about key sites and the distribution and numbers of important bird species. (PHOTO: SIMBA CHAN)



Xianghai Nature Reserve (CN037) is located on the Songnen Plain in Jilin Province, near to the steppes of Inner Mongolia. The habitats in the IBA are a transition from woodland and wetland to steppe. It is one of the few known sites in the world for Rufous-backed Bunting *Emberiza jankowskii* and many waterbirds occur there on migration. (PHOTO: CHEN LIANG)

INTRODUCTION ON THE CHINA MAINLAND IBA INVENTORY

Simba Chan, Senior Conservation Officer, BirdLife Asia Division

With an area of 9.6 million square kilometres, China is almost as big as Europe. On the eastern side, almost all birds breed in eastern Russia and Mongolia have to migrate through or winter in China. On the western side, the steppe and mountains are the large strongholds of many species found in inland Asia, for example, Black-necked Crane and Saker Falcon. In the southwest, mountains of the eastern Himalayas interlock with the subtropical forests of South East Asia, resulting in an area of high diversity and endemism and relict species. Conservation of Asia's bird species cannot be achieved without China.

We now all understand that the most important and effective way to protect species is to conserve the places they dependent upon. However, selection of sites and prioritization on resources investment is far from easy. The Important Bird Area (IBA) Programme of BirdLife International provided a set of scientific and objective criteria and a list of sites of conservation importance judged against these criteria. Of course, people would quickly point out that the main interest of BirdLife and BirdLife partners is birds, which may be seen as biased. However, since the beginning of the IBA Programme BirdLife has not pretended the IBA would include all important sites. We are working at our best knowledge to use birds as indicators of biodiversity at various sites. In fact, from the experience of the last 20 years this has been very effective. The joint programme that BirdLife International works with Conservation International and other organisations, the Key Biodiversity Area (KBA), revealed most of the KBAs are also identified by the IBA criteria. For instance, more than 90% of the KBAs in the Philippines are identified by the IBA programme. This makes IBA not just a universal indicator but also a popular one, as there are far more birdwatchers who can contribute data than people who are interested in other wildlife taxa.

The BirdLife IBA programme has successfully been acknowledged by the Europe Union as a tool to identify sites for the Special Protected Areas ('Bird Directive'). Since the publication of the first European IBA inventory (1989), regional inventories in the Middle East (1994), a second edition for Europe (2000), and Africa (2001) have been published. The Asian inventory was published and launched at the IUCN World Conservation Congress in Bangkok in 2004. Regional IBA inventories are in preparation and planned for the Americas and Oceania, and national IBA directories have been published for almost 70 countries.

Compilation of IBA in China started in 1998. The workshop in Changhua, Taiwan had invited scores of birdwatchers representing birdwatching organizations all over Taiwan, Penghu, Kinmen and Mazu to identify sites qualified to be listed in the IBA inventory. A total of 53 sites have been identified and confirmed. In December 1998, the first IBA workshop in China mainland invited about 12 ornithologists to discuss potential IBAs in China mainland. Additional field surveys were conducted in western China from 2000 to 2002. When the inventory of Asia was published in 2004, a total of 445 IBAs had been identified in China mainland, plus two in Hong Kong and one in Macao.

Although we had spent some years in collecting IBA information in China, there are lots of gaps of knowledge as China is so big a country. In recent year, as more and more people interested in birds, and information flow speeded up thanks to the use of the Internet, we have acquired a lot more new information on distribution of species and previously unknown sites. The old inventory may have missed some recently discovered important sites. In 2006, with the funds available from the World Bank Safeguarding Important Area of Natural Habitat Programme, BirdLife organized workshops and consultation on revising the IBA inventory of China in 2006 and 2007. The revised China mainland inventory is published in Chinese for the first time.

Despite all the efforts devoted and care taken in updating the inventory, this edition is still far from being a complete inventory of all possible IBA in China, and some data may still have to be revised and improved. However, we believe this is the best we can get with resources available at present. We want to have it published to promote an understanding and interest in IBA amongst amateurs and researchers alike, and have a wider involvement of contributors to the programme. Then we will have a more comprehensive and detailed inventory on important sites to be protected in China. The IBA inventory we published now marks a beginning, but not the conclusion, of the IBA development in China.

We hope in the near future, there will be more people with good knowledge of birds participating in the IBA programme in China. For more detailed and focused data collection, compilation of provincial inventories will be more preferable than another national inventory. When all of the provinces have their own IBA inventories, we will have a complete inventory for China. We also hope the IBA programme in China will have the similar function as the European IBA inventory, not just to list up all sites needed to be protected, but also promote a system of site monitoring and local community involvement in conservation actions. The IBA programme should also promote information exchange and cooperation between site managers in China and neighbouring countries.

The major contributors to the programme are listed on the title page of this inventory. In addition, the following people contributed to the compilation of the inventory, including participants to the IBA Workshop held in Fuzhou from 30 March to 1 April 2007: Bai Qingquan, Silvia Choi Ching-ya, Jimmy Choi Chi-yeung, Cao Lei, Chen Cangsang, Chen Zhihong, Dong Jiangtian, Dong Lei, Dong Lu, Dong Wenxiao, Gan Xiaojing, Lei Jinyu, Li Peng, Li Zhaocheng, Leung Va, Liang Wei, Lin Chen, Lin Qingxian, Liu Qiang, Liu Yang, Liu Yuyi, Long Tinglun, Que Pinjia, Shan Kai, Tao Xudong, Wang Changda, Wang Chuanbo, Wang Jian, Wang Ruiqing, Wang Xiaolan, Wen Xianji, Yang Jin, Yu Yat-tung, Yuan Xiao, Fion Cheung Ka-wing, Zhang Liying, Zhang Yu, Zheng Kanghua, Zhou Haixiang, Mark Barter, and Richard Lewthwaite. The surveys in western China from 2000-2002 were supported and conducted by Ma Ming, Drolma Yangzom, Liu Wulin, Dorge Tsering, Zhang Hong, Wang Chuanbo, Zhang Fang, and Cheng Jun. We also thank those who contributed photographs of IBAs to this inventory, or assisted in finding suitable photographs: Bai Qingquan, Chen Bin, Chen Hui, Chen Liang, Chen Shuihua, Chen Zhihong, Ding Changqing, Ding Hong'an, Dong Jiangtian, Dong Lei, Dong Wenxiao, Feng Limin, Fu Jie, Gan Xiaojing, Gao Chuan, Gou Jun, Gu Changming, Han Lianxian, Han Yongxiang, Hu Shaorong, Hua Fangyuan, Huang Hai, Kang Hongli, Lee Kwok-shing, Li Mingpu, Li Peng, Li Sheng, Li Xin, Li Yunfei, Li Zhongqi, Liu Mingyu, Liu Xuezhong, Liu Yang, Liu Yuyi, Lin Zhi, Ma Chaohong, Carrie Ma Ka-wai, Ma Ming, Shan Kai, Shen You, Samson So Ngai-hung, Tian Suixing, Wang Hengrui, Wang Jiyi, Wang Qishan, Wang Ruiqing, Wang Xiaolan, Wei Qian, Xiao Wen, Yang Jin, Yao Li, Yu Haiyan, Yu Lin, Yu Yat-tung, Zhang Gaofeng, Fion Cheung Ka-wing, Zhang Yong, Zhang Yu, Zhang Kejia, Zheng Yongfu, Zheng Zhuo, Zhong Jia, Zhou Fang, Zhou Lizhi and Zhu Mihui.

Wang Dezhi, the BP Conservation Programme Intern at Conservation International Beijing Office checked all IBA information over the KBA database and gave useful comments on revision. Samson So Ngai-hung extracted information from the Chinese IBA data forms and translated this into English. Fion Cheung Kar-wing translated the chapter on justification and supported publication of the inventory. Hua Fangyuan translated introductory chapters of the IBA inventory into Chinese and proof-read the entire Chinese text voluntarily. We would like to send our gratitude to this assistant editorial team.

We would also like to thank Prof. Zheng Guangmei who gave advice to our IBA programme from the beginning, Richard Grimmett and Noritaka Ichida for their supervision of the IBA Programme and Anthony Whitten of the World Bank for his support and advice.

ENGLISH SUMMARY

1. INTRODUCTION

BirdLife International's Important Bird Area (IBA) Programme is a worldwide initiative aimed at identifying, documenting and working towards the conservation and sustainable management of a network of critical sites for the world's birds. The IBAs are identified through the application of standard, internationally recognised criteria, based, as far as possible, upon accurate and up-to-date knowledge of bird distributions and populations. The worldwide use of standard criteria to identify IBAs means that they are a "common currency" for conservation, comparable among countries and regions.

The first list of Important Bird Areas in China was published as part of an Asia-wide inventory of IBAs in 2004 (BirdLife International 2004) with 445 sites identified in China mainland based on the work and survey done before 2003. Building on this work, this publication presents a more detailed and comprehensive inventory of 512 sites in China mainland, covering a total area of 1,185,543 km² or 12.4% of the land area, plus a further 56 sites in Hong Kong, Macao and Taiwan. This English summary sets out a justification for this work, the methodology used, and an analysis of the inventory. A list of sites on a province by province basis is provided in table 1, including information on the IBA criteria they meet, and the extent to which they are protected. More detailed information is then presented in Chinese on each of the sites.



The Min Jiang Estuary in Fujian Province, south-eastern China, is a very important site for many threatened species such as Spoon-billed Sandpiper and Chinese Crested Tern. The area is also under very high development pressure (PHOTO: SIMBA CHAN)

2. PRESSURES ON BIODIVERSITY AND THE NEED TO IDENTIFY IMPORTANT BIRD AREAS

China is noteworthy for its extraordinary biodiversity, and in particular its high levels of endemism. For example, its mountain forests, such as in Qinghai, Sichuan and Yunnan Provinces, support many species of animals and plants found nowhere else on Earth. Noteworthy too are the remaining extensive wetlands, such as in the lower Yangtze basin and along the Yellow Sea coast, which support huge numbers of passage and wintering waterbirds. China's high population densities, and long history of agricultural activity, have resulted in the fragmentation of natural habitats over much of the country. China's natural habitats, particularly in the south-eastern coastal provinces, have come under recent increasing pressure as a result of the rapid economic development experienced over the last two decades.

Alongside economic development there is need to ensure that biodiversity is conserved and vital ecological processes are sustained. As a contribution towards this goal, there is a need to identify the most important sites and to define their location, extent and biodiversity values. Sites need to be identified in order that they may be protected (as nature reserves and national parks etc) and safeguarded by wise policies and land-use planning. This inventory of Important Bird Areas is intended to be a major contribution towards the identification of these important sites, and to guide policies and plans, including protected area designation, at local, national and international levels.

3. DOMESTIC FRAMEWORKS FOR PROTECTED AREA DESIGNATION IN CHINA

Wildlife conservation and the establishment of protected areas are principally under the jurisdiction of the State Forestry Administration. However, the State Environment Protection Administration, State Oceanic Administration, Ministry of Agriculture, Ministry of Land and Resources, Ministry of Water Resources and other agencies have also established a number of protected areas. Governments of provinces, counties and cities can also designate protected areas and place them under the administration of local forestry, environmental protection or agricultural bureaus.

The legal status of protected areas is ensured by the following laws in China: Forest Law of the People's Republic of China (enacted in 1984 and revised in 1998), Law of the People's Republic of China on Wild Animal Protection (enacted in 1988), and the Law of the People's Republic of China on Protection of the Environment (enacted in 1989). Under these laws, regulations have been announced on the procedures for the establishment and management of protected areas, namely the 'Rules for the Management of the Forest and Wildlife Type Nature Reserve' (1985), the 'People's Republic of China's Regulation for the Management of Nature Reserves' (1994), and the 'People's Republic of China's Regulation for the Wild Plants Protection' (1996).

By 2005, there were 2,349 protected areas (total area 1,499,490 km²) in China mainland, including 243 designated as National Protected Areas (Reference: Division of Ecological Conservation, State Environmental Protection Agency (2005) A list of protected areas in China. China Environmental Science Publishing House. Beijing. (in Chinese) In 2001, China announced the Project on Nationwide Wildlife and Plant Conservation and Establishment of Protected Areas, which aims to increase the number of protected areas to 2,500 by the year 2050, covering about 18% of the country's area. It is hoped that this inventory of Important Bird Areas will help in the identification of gaps in the protected area system, and the prioritisation of sites most worthy of future inclusion.

4. INTERNATIONAL FRAMEWORKS RELEVANT TO IMPORTANT BIRD AREA CONSERVATION

The identification of Important Bird Areas in China also represents a contribution towards the implementation of international agreements. China is a Contracting Party to the Convention on Biological Diversity (CBD), the Ramsar Convention on Wetlands and the World Heritage Convention, and has recently joined the East Asian – Australasian Flyway Partnership. China will also hopefully soon sign the Convention on Migratory Species (CMS).

4.1 Convention on Biological Diversity

Under the CBD, Contracting Parties have *inter alia* made a commitment to establish "a system of protected areas or areas where special measures need to be taken to conserve biological diversity". In 2004, the CBD adopted a programme of work on protected areas which aims to establish and maintain comprehensive, effectively managed, and ecologically representative national and regional protected area systems (by 2010 for terrestrial areas and by 2012 for marine areas). This inventory of Important Bird Areas provides an objective scientific basis for the review and expansion of protected areas networks in order to meet the 2010 and 2012 targets.

4.2 Ramsar Convention

Contracting Parties to the Ramsar Convention have *inter alia* made a commitment to promote the wise-use of wetlands in their territory, to designate suitable sites for inclusion on the List of Wetlands of International Importance (Ramsar Sites), and to promote their conservation. This inventory of sites includes many wetlands that meet the criteria for Ramsar Sites and are therefore worthy of consideration for future designation. This inventory also aims to assist in the development and implementation of wetland policies and provide a basis for national wetland monitoring programmes.

4.3 World Heritage Convention

This Convention aims to identify and conserve cultural and natural monuments and sites of outstanding universal value through their designation as World Heritage Sites. A significant number of sites identified in this inventory have outstanding biological and other natural values, and information on these sites can be used to identify candidate sites for nomination as World Heritage Sites.

4.4 Convention on Migratory Species (CMS)

Contracting Parties have *inter alia* made a commitment to conserve and restore important habitats for migratory species, and to conclude international agreements with other range states for the conservation and management of migratory species (which includes the protection of networks of suitable areas of habitat along each species' migration routes). Information on sites can assist parties to meet this commitment by identifying suitable areas of habitat for the bird species covered by international agreements.

4.5 East Asian – Australasian Flyway Partnership

This Partnership has been set-up to promote the conservation of waterbirds and their habitats along the East Asian – Australasian migration flyway. The Partnership brings together government agencies and civil society organizations, and aims *inter alia* to develop flyway site networks for migratory waterbirds. This inventory of Important Bird Areas can assist in the identification of sites that might be included in the flyway networks.



Chongming Dongtan, the tidal flat on the eastern coast of Chongming Dao island in the Yangtze Estuary, is identified as an IBA because of its importance to threatened species such as Black-faced Spoonbill and Hooded Crane, and the large numbers of migratory shorebirds and other waterbirds that use this site as a stop-over. It is a Ramsar site and a network site of the East Asian-Australasian Flyway Partnership. (PHOTO: SIMBA CHAN)

4.6 International environmental safeguard policies

The World Bank and Asian Development Bank, alongside other donor institutions, have introduced environmental safeguard policies to ensure that appropriate measures are taken to mitigate potential negative impacts of their financing operations. These policies provide a basis for safeguarding important sites for biodiversity conservation from incompatible development. Given the threats to biodiversity, and the rapid pace of economic development currently underway, the full implementation of these policies is of urgent importance. The availability and provision of information on important sites such as Important Bird Areas is an essential requirement in order to assist the effective implementation of safeguard policies. Such information helps to ensure greater coherence and clarity about the implementation of safeguard policies between donor agencies, borrowers and the public.

5. METHODOLOGY USED IN THE IDENTIFICATION OF IMPORTANT BIRD AREAS

5.1 Why birds?

As a group, birds have many features that make them good indicators for the selection of important sites which also have wider biodiversity importance. For example:

- They contain high numbers of globally threatened and restricted-range species, and their distributions overlap with other globally threatened and endemic, but less well-known, taxa;

- They are widely distributed in almost all habitats and elevations, including those that are semi-natural, and throughout all geographical regions;
- They have well understood distributions and habitat requirements, and are relatively easy to record and identify in the field;
- They are good indicators of habitat condition and human disturbance, and provide a means of relatively easily monitoring ecological changes over time;
- Criteria exist and have been developed over a period of over 20 years for the objective identification of important sites at global and regional scales;
- They can act as flagships for conservation, and there is a large community of people, amateur and professional, that are motivated to work for their conservation.

A greater amount of information is available on the status and distribution of birds in China than on any other major taxonomic group.

Birds are also an important conservation focus in their own right. They perform ecological roles essential to the function of ecosystems, such as seed-dispersal and pollination, and they have economic values, particularly as a basis for ecotourism. Moreover, birds have high significance in Chinese history and culture, and, like all elements of biodiversity, should be conserved for the richness and diversity they contribute to human experience.

5.2. Important Bird Area criteria

Important Bird Areas are selected through the application of standard, internationally-recognized criteria, as far as possible based upon accurate, up-to-date knowledge of bird species distributions and populations. Given that birds are such good indicators of overall biodiversity, these sites are very likely, and often proven, to be important for other fauna and flora. Indeed, reviews have shown that IBAs do capture the bulk of diversity in other groups, as well as the most significant sites for threatened and restricted-range species.

IBAs are identified based on the presence of (1) Globally threatened bird species; (2) Restricted-range bird species; (3) Assemblages of biome-restricted bird species; (3) Globally important concentrations of birds.

A summary of the global categories and criteria is given below.

Important Bird Areas: summary of global categories and criteria		
Category	Criterion	Application in China
A1: Globally threatened species	The site regularly holds significant numbers of a globally threatened species, or other species of global conservation concern.	The site qualifies if it is known, estimated or thought to hold a population of a species categorized as Critical, Endangered or Vulnerable
A2: Restricted-range species	The site is known or thought to hold a significant component of the restricted-range species whose breeding distributions define an Endemic Bird Area (EBA) or Secondary Area (SA).	The site has to form one of a set selected to ensure that, as far as possible, all restricted-range species of an EBA or SA are present in significant numbers in at least one site in the set and, preferably, in more.
A3: Biome-restricted assemblages	The site is known or thought to hold a significant component of the group of species whose breeding distributions are largely or wholly confined to one biome.	The site has to form one of a set selected to ensure that, as far as possible, all species and habitats characteristic of a biome are adequately represented.

A4: Globally important congregations	(i) The site is known or thought to hold, on a regular basis, $\geq 1\%$ of a biogeographic population of a congregatory waterbird species. <i>or</i>	Thresholds for each species are set regionally, by estimating 1% of biogeographic populations.
	(ii) The site is known or thought to hold, on a regular basis, $\geq 1\%$ of the global population of a congregatory seabird or terrestrial species. <i>or</i>	Thresholds for each species are set regionally or inter-regionally, by estimating 1% of the global population.
	(iii) The site is known or thought to hold, on a regular basis, $\geq 20,000$ waterbirds or $\geq 10,000$ pairs of seabirds of one or more species. <i>or</i>	For waterbirds, this is the same as Ramsar Convention criteria category 5. There are no sites meeting criteria A4 (iii), for seabirds, in China or Mongolia (latter for obvious reasons)
	(iv) The site is known or thought to exceed thresholds set for migratory species at bottleneck sites.	A threshold of at least 20,000 migrating individuals of all raptor or crane species was set regionally.

An Important Bird Area is defined so that, as far as possible, it:

- i. is different in character or habitat or ornithological importance from the surrounding area;
- ii. exists as an actual or potential protected area, with or without buffer zones, or is an area which can be managed in some way for nature conservation;
- iii. is, alone or with other sites, a self-sufficient area which provides all the requirements of the birds, when present, for which it is important.

5.3 History of IBA identification in China

Since the publication of the first European IBA inventory (1989), regional inventories for the Middle East (1994), a second edition for Europe (2000), and Africa (2001) have been published. The BirdLife IBA programme has been acknowledged by the European Commission as a tool to identify sites as Special Protection Areas (in accordance with the European Union's 'Wild Birds Directive'). The first Asian inventory of IBAs was published and launched at the IUCN World Conservation Congress in Bangkok in 2004. Regional IBA inventories are in preparation and planned for the Americas and Oceania and national IBA inventories have been published for almost 70 countries.

Compilation of information on IBAs in China started in 1998. The first workshop in Changhua, Taiwan had invited scores of birdwatchers representing birdwatching organizations all over Taiwan, Penghu, Kinmen and Matsu to identify sites that qualified to be listed in the IBA inventory. In December 1998, the first IBA workshop in China mainland invited ornithologists to discuss potential IBAs in China mainland. Additional field surveys were conducted in western China from 2000 to 2002. When the inventory of Asia was published in 2004, a total of 445 IBAs had been identified in China mainland, plus a further 56 sites in Hong Kong, Macao and Taiwan.

In recent years, as more and more people have become interested in birds, and the flow of information has speeded up thanks to the Internet, considerable additional information has been compiled. In 2006, with the support of the World Bank and Japanese Consultant Trust Funds, these data were pulled together and further consultation was organised. This revised inventory of Important Bird Areas in the China mainland is the result, with data published in Chinese for the first time.

6. OVERVIEW OF THE INVENTORY FOR CHINA

6.1 Overview for China mainland

A total of 512 areas have been identified in China mainland, covering a total area of 1,185,543 km² or 12.4% of the land area. These sites are listed in table 1 below, with more detailed site accounts presented in Chinese. A further 56 sites, identified for Hong Kong, Macao and Taiwan in 2004 (BirdLife 2004), are also included to ensure completeness.

China's IBAs include some very large sites in parts of the country with low human population density where extensive areas of intact natural habitats remain, notably the Changtang plateau (IBA 132) in northern Tibet which has an area of 337,920 km² (3.5% of the land area of the entire country). In the densely populated provinces of eastern China the IBAs tend to be much smaller, reflecting the fragmentation of natural habitats.

Four hundred and sixty sites meet Criteria A1 because they are considered to be important for Globally Threatened Species. One hundred and ninety sites meet Criteria A2 because they support the indicator restricted-range species for the 12 Endemic Bird Areas and two Secondary Areas in China mainland. Three-hundred and six sites meet Criteria A3, because they support the indicator species for one or more of the Biomes in China mainland. One hundred and eighty eight sites meet Criteria A4 because they hold large congregations of migratory waterbirds, seabirds or raptors.

6.2 Extent to which IBAs are protected

China has made remarkable progress in the expansion of its protected area system. Of the 512 in this inventory, 320 (62.5%) are wholly within protected areas, 64 (12.5%) are partially protected, and 128 (25%) are unprotected. Furthermore, many of the unprotected sites in this inventory have been proposed for establishment as new reserves. Twenty-nine Wetlands of International Importance (or 'Ramsar Sites') have been designated in China under the Convention on Wetlands, of which 23 overlap with IBAs. More than 200 additional IBAs meet the Ramsar Criteria and are therefore potential Ramsar Sites.

There are, however, severe budget limitations and no stable financial mechanism in the national budget to support protected areas. As a consequence, many reserves have to generate income for their own operating budget, which can at times lead to activities which may be contrary to the conservation values of the site. Limitations in staff capacity and complicated management arrangements (with some reserves managed by several different government departments) also undermine administrative coherence.

The Chinese government faces major challenges in reserve management. Illegal activities are regrettably widespread in many protected areas, including logging, mining, forest grazing, agricultural encroachment and hunting, and uncontrolled tourism is often a problem. Many existing management plans are inadequate or outdated, and require revision.

As of 31 October 2008 there are 36 Ramsar Sites in China, including six sites pending to be designated (total area about 3.8 million ha. 23 of which are either completely or partially included in an IBA

As of 31 October 2008 China has designated 37 World Heritage Sites, seven of which are designated for their ecological importance and four are for both cultural and ecological importance. Eight sites are overlapping with IBAs, some of which are so big that included many IBAs (for example, the Sichuan Giant Panda Sanctuaries and the Three Parallel Rivers of Yunnan Protected Areas)

As many of the Flyway Network Sites are still under a transitional period (i.e. some countries have not joined the Partnership) I cannot find the exact number of sites now. There were 71 sites (shorebirds, cranes and Anatidae) in Asia (excluding those in Australia, Papua New Guinea and New Zealand). Nearly all of them have been identified as IBAs or included in an IBA.

6.3 Overview by regions and habitats

In north-east China, 55 IBAs (with a total area of c.50,800 km²) have been identified to cover the boreal and temperate forests and riverine floodplain wetlands in Heilongjiang, Jilin, Liaoning and north-east Inner Mongolia. They include several IBAs that are outstanding for globally threatened species: Zhalong (IBA 11), Qixing He Wetland (IBA 26), Xingkai Hu (IBA 27), Honghe (IBA 30) and Sanjiang Nature Reserves (IBA 31) in Heilongjiang; and Xianghai (IBA 37) and Melmeg (Momege) Nature Reserves (IBA 39) in Jilin. Large-scale commercial logging has now ceased as a result of the National Forest Protection Program. This has greatly reduced the pressure on forests in this region, but some of them are still threatened by illegal logging, encroachment for agriculture, and development (urban, industrial and infrastructural). Although large-scale wetland reclamation has ceased in this region, important sites continue to be threatened by agricultural encroachment and intensification, water extraction for irrigation, drought (possibly associated with climate change) and infrastructure development (especially roads).

In northern China, 66 IBAs (with a total area of c.251,300 km²) have been identified in the steppe grasslands and deserts and their associated wetlands, in Inner Mongolia, Xinjiang, northern Gansu and parts of adjacent provinces. They include the following IBAs that are outstanding for globally threatened species: Dalai Nur (IBA 70), Huihe (IBA 71) and Ordos Taolimiao-Alashanwan Haizi (IBA 87), all in Inner Mongolia. Grassland and desert sites are subject to overgrazing by livestock and some are under severe threat of desertification and continued agricultural encroachment. The saline and freshwater wetlands in this zone are under threat from drought and extraction of water for irrigation. Other threats to grassland and desert sites include development projects, cutting of trees used by nesting birds, steppe fires (usually set by man), pesticide use, hunting and disturbance by people and domestic animals.

On the densely-populated plains of northern and central China (between the steppes and the Yangtze basin), 18 wetland IBAs (with a total area of c.8,600 km²) have been identified in Shaanxi, Shanxi, Hebei, Beijing, Shandong, Henan and Jiangsu. There are a further 12 IBAs (with a total area of c.2,000 km²) in the mountain forests of north-east Inner Mongolia, Shaanxi, Shanxi, Hebei and Beijing. Pangquangou Nature Reserve (IBA 306) in Shanxi is considered to be outstanding for globally threatened species.

In south-west China, there are 79 IBAs (with a total area of c.128,300 km²) in mid- to high altitudes forests and alpine grasslands and scrublands in the mountains around the flanks of the Qinghai-Tibetan plateau, and 29 IBAs (with a total area of c.630,600 km²) in the high-altitude grasslands, deserts and wetlands on the plateau itself, in Xinjiang, Tibet, Qinghai, southern Gansu, Ningxia, Sichuan, Yunnan, Guizhou and southern Shaanxi. Some of these IBAs are very large, reflecting the relatively intact nature of natural habitats in some parts of this region of China. They include the following IBAs that are outstanding for globally threatened species: Siling Co (IBA 133) and the Yarlong Zangpo Middle Reaches Black-necked Crane Nature Reserve (IBA 144) in Tibet; Qinghai Hu (Koko Nor) (IBA 156) in Qinghai; Zoigê (Ruo'ergai) Marshes (IBA 182), Jiuzhaigou (IBA 185) and Wolong Nature Reserves (IBA 201) and Muli-Kangwu (IBA 222) in Sichuan; Gaoligong Shan (IBA 244), Dashanbao (IBA 268) and Huize Black-necked Crane Nature Reserve (IBA 271) in Yunnan; and Cao Hai Nature Reserve (IBA 274) in Guizhou. Forests in this region were until recently subject to large-scale logging operations, but this has now ceased with the National Forest Protection Program. Continuing pressures on forest sites in this region include illegal logging,

small-scale encroachment for agriculture and plantations, and collection of fuelwood and other forest products. Threats to the high-altitude wetlands include conversion to grazing pasture, and the building of dams and reservoirs.



Dayao Shan Nature Reserve in Guangxi, one of the IBAs in southern China which includes an important area of subtropical forest (PHOTO: LEE KWOK-SHING)

There are 136 IBAs (with a total area of c.47,400 km²) in the subtropical forests of south-west and south-east China, in southern Gansu, Sichuan, Chongqing, Yunnan, Guizhou, southern Shaanxi, Henan, Hubei, Anhui, Zhejiang, Fujian, Jiangxi, Hunan, Guangxi and Guangdong. Many of them are small and isolated, reflecting the fragmented nature of the remaining forests in this part of China. They include the following IBAs that are outstanding for globally threatened species: Pingshan Wuzhi Shan (IBA 215) in Sichuan; Dongzhai Nature Reserve (IBA 346) in Henan; Gutian Shan (IBA 401) and Wuyanling (IBA 407) in Zhejiang; Wuyi Shan Nature Reserve (IBA 408) in Fujian; Guanshan Nature Reserve (IBA 418) in Jiangxi; Mao'er Shan (IBA 465) and Dayao Shan Nature Reserves (IBA 475) and Daming Shan (IBA 479) in Guangxi; and Nanling mountains (IBA 489) and Chebaling (IBA 492) in Guangdong. There is continued pressure on these forests for timber, fuel wood, forest products, as well as small-scale clearance for agriculture. These sites are vulnerable to the development of roads, dams, power transmission lines, and tourism facilities. Hunting pressure is of particular concern at many of these forest sites.

Ten IBAs (with a total area of c.3,700 km²) have been identified in the tropical forests of southern Yunnan and Hainan, including Xishuangbanna (IBA 261) in Yunnan, and Bawangling (IBA 506) and Jianfengling Nature Reserves (IBA 510) in Hainan, which are considered to be outstanding for globally threatened species.

Sixty-two wetland IBAs (with a total area of c.35,100 km²) have been identified on or near the coast of eastern and southern China, in Liaoning, Hebei, Tianjin, Shandong, Jiangsu, Shanghai, Zhejiang, Fujian, Guangxi, Guangdong and Hainan. They include the following IBAs that are outstanding for globally threatened species: Shuangtai (Shuangtaizi) Estuary and Inner Gulf of Liaodong (IBA 52) in Liaoning; Beidaihe (IBA 311) in Hebei; Yellow River Delta Nature Reserve (IBA 327) in Shandong; Yancheng Nature Reserve (IBA 367) in Jiangsu; Chongming Dongtan Nature Reserve (IBA 375) in Shanghai; Wenzhou Wan (IBA 396) in Zhejiang; and Min Jiang Estuary (IBA 411) in Fujian.

Fifteen wetland IBAs (with a total area of c.12,700 km²) have been identified in the lower Yangtze basin, in Hubei, Anhui, Jiangsu, Jiangxi and Hunan. They include the following IBAs that are outstanding for globally threatened species: Chen Hu Wetland Nature Reserve

(IBA 352) in Hubei; Anqing wetlands (Caizi Hu, Wuchang Hu and other lakes) (IBA 360) and Shengjin Hu Nature Reserve (IBA 361) in Anhui; Poyang Hu wetlands (IBA 420) in Jiangxi; and Dongting Hu wetlands (IBA 438) in Hunan.

Wetland sites, particularly those in the coastal zone, are probably under the greatest of pressure. Coastal reclamation for agriculture, aquaculture, and land for urban and industrial development, is of particular concern, especially in the Yellow Sea and coastal provinces of southern China. Pollution of coastal wetlands is often severe. In the lower Yangtze basin, changes in river flow linked to the construction and operation of the Three Gorges and other dams could change the character of the wetland sites, and reduce their value for waterbirds. Hunting is a major problem at many wetland sites, including though the illegal use of poison baits to kill large numbers of birds for sale at markets.

6.4 Completeness of the IBA inventory

China has an increasing number of ornithologists and birdwatchers, however in many places the birds and other biodiversity have not yet been surveyed. It is anticipated that future field surveys will identify more sites which qualify as globally important, especially in forest, grassland and desert habitats.

It is important to stress also that that exclusion of any site, whether it be a protected area or not, does not in any way mean that it is not important. Sites may be important for other fauna and flora, and sites may be of local or national (rather than global importance).

7. LIMITATIONS OF THE IMPORTANT BIRD AREA APPROACH

There are limitations in using the IBA approach. A number of species are widely dispersed in their distributions and populations throughout all, or at key stages, in their life-cycle. These might be species that occur at low densities over large ranges, in which case only a small proportion of a species' population and range is likely to be covered in any network of IBAs. Or they might be species occurring in habitats that are comparatively intact and covering a very large area, in which case only representative sites are likely to be included in the inventory, and other landscape-level measures will be essential, covering a much larger area, if a species' population and range is to be maintained. These measures are likely to be in the form of national or provincial policies and plans for land-use, rather than measures targeting particular sites.

Furthermore, the problems facing some species may lie outside of the important sites where they occur. The reasons for a decline in a species' population may for example be due to wildlife trade or species persecution. In such situations the intervention measures necessary are likely to be national or provincial in nature, as well as site specific.

Also, birds are not perfect as indicators of wider biodiversity. Whilst birds occur in almost all habitats and geographical regions, their distributions and habitats do not exactly mirror all other groups. Plants and freshwater fish, for example, can show patterns of diversity and endemism which are not necessarily matched by birds. Birds are not good indicators of cave or coral reef sites for obvious reasons. There will therefore be other sites important for other fauna and flora, but not for birds, which will need to be identified at some later date. This will require the development of additional site selection criteria and further desk studies, consultation and field work.

Nevertheless, IBAs are an excellent first cut set of sites of wider biodiversity value, and the network of sites identified by this approach can be used with confidence, right away, to guide site safeguard and conservation planning and action for biodiversity as a whole.