

中国首次卫星跟踪黑颈鹤研究初报

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黑颈鹤 (*Grus nigricollis*) 为国家 I 级重点保护野生动物, 分别被 IUCN 和 CITES 列为易危和附录 I 物种, 是世界上 15 种鹤类中唯一生活于高原的鹤类。黑颈鹤夏季在我国境内的青藏高原繁殖, 冬季除在不丹北部有少量个体外, 绝大部分种群在青藏高原东南部和云贵高原越冬。作为主要分布于我国的珍稀鸟类, 我国学者对该物种的地理分布、越冬生态、种群数量、食性、繁殖生态、越冬栖息地选择、栖息地保护、迁徙等进行过很多研究。吴至康等 (1993, 1994) 认为黑颈鹤有 3 条主要的迁徙路线, 然而具体的迁徙路线、中途是否停歇、停歇地的环境情况等均不清楚。由于卫星跟踪具有大范围准确跟踪观测对象并能提供精确的时间和地理位置信息的功能, 因此, 笔者等于 2005 年春季在云南省昭通大山包黑颈鹤国家级自然保护区对越冬的黑颈鹤开展了卫星跟踪研究, 现将初步结果报道如下:

观察对象: 2005 年 2 月 26 日和 3 月 1 日在云南省昭通大山包黑颈鹤国家级自然保护区 (东经 103°14'~103°23', 北纬 27°18'~27°29'), 分别将捕捉的 4 只野生黑颈鹤进行测量和环志, 将有专门编号的卫星发射器 (编号 55981, 55982, 55983 和 55984) 用背负式方法固定在黑颈鹤的背上, 检查完好后放飞。

卫星发射器: 本项目采用 Microwave Telemetry Inc. (美国马里兰州) 生产的卫星发射器, 按 12 h 关, 6 h 开的方式 (即每 18 h 发射 6 h 卫星信号的方式) 设计信号发射模式。当卫星经过信号发射器的上空时, 卫星上的传感器即可接收到发射器传出的信号, 然后再将信号转送到地面接收站的卫星信号处理中心, 经过计算机处理后, 将发射器所在位置的经纬度用邮件发送到研究者的电子邮箱中, 研究者通过对发射器位置的变化了解跟踪对象的迁徙路线和重要停歇地。

迁徙时间和路线: 带有卫星发射器的 4 只黑颈鹤分别在 2005 年 4 月 4、6、9 和 30 日迁离大山包, 并分别在四川省的金阳、甘洛、石棉、美姑、天全、汉源、理县和红原等县境内停留, 其中 4 月 9 日和 30 日迁离的 2 只黑颈鹤的发射器 (编号 55983 和 55981) 信号在四川省汉源县境内消失, 原因不明; 4 月 4 日和 4 月 6 日迁离的 2 只鹤 (编号 55982 和 55984), 分别在 4 月 6 日和 9 日到达四川和甘肃两省交界处的若尔盖湿地, 之后这 2 只鹤一直活动于若尔盖沼泽湿地中。2005 年 7 月 30 日 55982 号黑颈鹤在繁殖地最后发回一组数据后, 信号便消失了, 因此仅剩 55984 号黑颈鹤的卫星发射器仍然在工作。该鹤在 2005 年 11 月 17 日从四川省若尔盖湿地发回信号, 11 月 18 日迁往四川省红原县, 然后分别在四川省汉源、甘洛县中途停留, 11 月 25 日下午 15 点 54 分在云南省昭通市大山包国家级黑颈鹤自然保护区发出信号, 显示该鹤在离开越冬地 132 天后又回到其越冬地。截至 12 月 14 日该鹤仍然在云南省大山包自然保护区内活动, 没有继续南迁。

迁徙距离和停留时间: 依到达若尔盖湿地的 2 只黑颈鹤的卫星数据分析, 从越冬地云南省昭通大山包自然保护区到繁殖区四川省若尔盖县的直线飞行距离约为 700~710 km, 正常迁飞时间 3~4 天。迁徙途中分别在 4 个县境内停留, 但不同的个体停留的地点和时间不同, 每天的飞行距离也不相同, 初步分析每个停歇地之间的间隔 95~240 km。从繁殖地返回越冬地的迁飞时间为 8 天, 明显长于从越冬地到繁殖地的迁飞时间。

下一步需待解决的问题: 目前有关黑颈鹤的迁徙仍有下列问题需要加以确认: (1) 在云南大山包与四川繁殖地之间是否有大群黑颈鹤停留时间较长的停歇地? (2) 是否有新的

Report on the first satellite tracking study of the Black-necked Cranes in China

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Black-necked Crane is the 1st class national key protected wildlife in China. It is listed as the vulnerable species and list in the appendix I by IUCN and CITES respectively. There are 15 species of cranes in the world. Black-necked Crane is the only crane species living in the plateau. The Black-necked Crane breeds in Qing-Zang Plateau in summer; except few individuals breeding in northern Bhutan; most cranes wintering in southeast Qing-Zang Plateau and Yun-Gui Plateau. Being the rare and precious bird mainly distributed in China, Chinese experts have made lots of studies in the distribution, wintering ecology, population size, feeding habits, breeding ecology, wintering habitat selection, habitat conservation and the migration of the Black-necked Crane. Wu Zhi-Kang *et al.*(1993,1994) indicated that there were 3 flyways used by Black-necked Cranes, however, several questions concerning the actual flyways, whether or not the cranes stopped during migration and the environmental of stopover sites were not confirmed. Satellite telemetry could track the crane in a wide area and provide exact time and locations, hence satellite tracking was used on the Black-necked Crane at Dashanbao National Natural Reserve, Zhaotong, Yunnan in spring, 2005.

Observing targets: Four Black-necked Cranes were caught, each crane was measured, banded and mounted with satellite transmitter (no. 55981, 55982, 55983 and 55984 respectively) and released at Dashanbao Black-necked Crane National N.R., (E103°14'-103°23', N27°18'-27°29')Zhaotong, Yunnan, on February 26th and March 1st, 2005.

The satellite transmitter: The transmitter

was produced by Microwave Telemetry Inc. (Maryland, USA), the signal transmitting modal was set in a frequency of 12h off and 6h on. The sensor of the satellite could receive the signal sent by the transmitter when the satellite cycling over the transmitter, the satellites then sent the signal back to the processing center of ground receiving station, computer processed data (the location of the transmitter) were e-mailed to the researchers. By tracking the changing location of the transmitter, the researchers could clearly monitor the migratory rout and the main stopovers of the Black-necked Crane.

Migratory date and routs: The four satellite tagged cranes left Dashanbao at April 4th, 6th, 9th and 30th, 2005 respectively, and once stayed in Jinyang, Ganluo, Shimian, Meigu, Tianquan, Hanyuan, Lixian and Hongyuan Counties, Sichuan respectively. The signal of no.55983 (the crane released on April 9th) and no.55981 (the crane released on April 30th) disappeared in Hanyuan County, Sichuan (the reason was unknown). The cranes with no. 55982 and no. 55984, released on April 4th and April 6th arrived at Nuorgai Wetland on the boundary of Sichuan and Gansu Provinces on April 6th and April 9th respectively, and stayed there hereafter. No. 55982 ended the signal at the breeding site on July 30th, while no. 55984 still sent signal from Nuorgai Wetland on November 11th. It arrived at Hongyuan County, Sichuan on the next day, and then stayed at Hanyuan and Ganluo Counties respectively. The signal was finally received at Dashanbao N.R. showed that after 132 days' migration the crane returned to its wintering site. The crane then stayed at Dashanbao N.R. till

December 14th.

Migration distance and staying duration:

Satellite data showed that the straight line between Dashanbao N.R. the wintering site and Nuorgai the breeding site is about 700~710 km, normally it takes 3~4 days to finish the flight. Each crane has successively stopped in the areas of above mentioned 4 counties, but in different stopovers, stop durations and different flying distance. It was estimated that there were 95~240 km between one stopover to the next one. The returning migration took 8 days, It

was much longer than the migratory time spent from wintering site to breeding site.

Problems waits for solving: Based on the migratory situation of the cranes we should answer following questions: 1) Is there any stopover between Dashanbao and the breeding site in Sichuan for large flock of cranes to stay for relatively long time? 2) Is there any new breeding site? 3) Do the cranes belonging to different roosting flocks in the same wintering area select different breeding sites?

如何理解和借鉴日本北海道的丹顶鹤保护经验

2003年9月和2004年1月,在日本三得利株式会社的赞助下,(日本)丹顶鹤保护调查连合分别邀请了以马逸清和王岐山先生为代表的中国丹顶鹤繁殖地和越冬地的鹤类专家到日本北海道进行访问和交流。我有幸参与了接待各位专家的来访,并有幸陪同日本丹顶鹤保护调查连合的三名专家于2003年12月访问了中国盐城自然保护区。在上述互访交流过程中,双方不但考察了访问地的鹤类繁殖和越冬状况,还对两国的鹤类保护现状以及在鹤类保护工作中存在的问题进行了坦率的交流。日本丹顶鹤保护调查连合的专家对盐城丹顶鹤越冬地的考察报告已发表在日本生态学会《保全生态学研究》第9卷141-151页上。

在这篇考察报告中,作者根据半个世纪以来在北海道丹顶鹤保护过程中所获得的正、反面的经验,从保护生息环境、避免投放人工饵料或创造有利于其采食的人工环境、避免散放人工繁殖种群等方面,对中国丹顶鹤保护现状提出了有价值的建议。作者特借《中国鹤类通讯》介绍日本北海道的丹顶鹤保护历史以及人工投食给这个种群带来的利与弊,为中国大陆丹顶鹤种群的管理提供借鉴。

历史上,日本丹顶鹤种群夏季在北海道和本州北部繁殖,冬季迁飞到本州南部越冬。农田开发和明治期间(1868-1911年)的大量捕杀,使种群的数量急剧下降,在一段时期里曾

被认为已经灭绝。到了1924年,在位于北海道东部当时人烟稀少还没有被开发的钿路湿原中再次发现了十多只丹顶鹤。冬季冰雪覆盖的钿路湿原中有一些水域不封冻,这些丹顶鹤隐身于上述水域中,逃脱了人类的捕杀而得以生存下来。可以说这个时期迁徙种群已经灭绝,存活下来的是这些不迁徙的少数个体。这些丹顶鹤被发现之后,虽然采取了保护其繁殖地以及冬季在湿地周边的农田里放置饲料等措施,但这个种群在很长的时期里并没有明显增加,人工饲料也没有被接受。1952年冬季罕见的大雪,使在自然环境中无法获得食物的丹顶鹤接受了人工饵料,人工给食也从此正式开始,同年记录到33只个体。

此后,种群数量开始逐步增长,经过半个世纪已恢复到现在的1000只的规模,种群的繁殖区也在扩大。事实证明,冬季食物的缺乏是当初抑制种群增长的主要原因,人工给食减少了因冬季食物缺乏而造成的死亡,使其种群逐步扩大。当然,现在如果中止人工给食,靠自然索饵已无法保证这样一个规模的种群顺利地越冬。所以对于这个种群来说,不论在过去还是现在,人工给食都是必要的,也是不得已的救助措施。虽然人工给食挽救了这个种群,但也改变了这个种群的野性,驯化了它对人类的依存性和对人类生活环境的适应性,或者说逐步被家禽化。很多个体不但冬季接近人

类的生活圈，就是在夏季也光顾给食场，或到人类的日常生活圈中繁殖。很多行为作为野生动物来说，已无法被理解。幸运的是，丹顶鹤大陆种群现阶段不论在繁殖地，还是在越冬地，尚存有一定面积的生息地，天然食物尚可维持种群生存。就丹顶鹤大陆种群而言，应以维持和改善其生息环境、最大限度地保持野生种群的固有习性以及在自然界的生存能力为保护的目标和原则。

据了解，国内的各丹顶鹤保护区正在利用人工繁殖技术建立人工种群，并在保护区散放饲养。当然，掌握人工繁殖和人工繁殖个体野化的技术，在野生种群靠其自身的能力无法恢复到其种群延续所需规模时，作为一种应急手段释放人工繁殖个体以补充野生种群是有价值的。以沈阳动物园为代表的丹顶鹤人工繁殖技术已经走在了世界前列。但如何使人工繁殖个体在严酷的自然环境中能生存下去，并继承物种的繁殖、迁徙、越冬习性的问题在中国未见研究报道。保护区可以与动物园合作，参考国际鹤类基金会在美洲鹤上的一些做法，做一些人工繁殖个体野化的研究工作。但应在保证不影响野生种群基因多样性和不给野生种群传播疾病的前提下进行。

令人担心的是各种人工种群遗传多样性问题。据说，保护区饲养的丹顶鹤最初来自于野生个体的卵和雏鸟。如果是这样的话，可以想象这些卵和雏鸟的来源只限于那些容易被发现的少数巢，即各人工种群的个体间可能具有高度的近亲关系。北海道现有的丹顶鹤种群就是少数个体的后代，因此，人们推测现有个体间可能具有高度的近亲关系，基因的多样性水平低。最新的 DNA 研究已证实了这一推测

(Hasegawa *et al.*, Zoological Science 16: 685-692)。如果这样的个体被大量繁殖和散放饲养，性成熟后会到湿地中去繁殖。由于人工种群内的个体间的交流机会毕竟多于与野生个体的交流机会，所以人工繁殖个体间形成配偶、进行繁殖的可能性也必然要高。这样的话，由于不需要远距离迁徙，冬季又有充分的食物供给，显然人工种群对繁殖地的竞争能力要大于野生种群。从接受人工饲料后北海道丹顶鹤种群增长曲线来看，当种群达到一定数量之后，会有一个迅速的增长。这样会大量地占用野生种群的繁殖地。如果人工种群与野生种群接触形成配偶，也将影响野生种群的基因多样性组成，使基因组成单一化。同时，野生种群，特别是那些亚成体可能会跟随人工种群学会接近人类、取食人工饵料，而终年留居在繁殖地或越冬地，丧失迁徙习性。因此，有可能导致用一个基因组成单一化的、丧失物种固有习性的、不能独立生存的人工种群来代替现存的野生种群，显然其后果是极为严重的。

当然，从开展旅游观光和环境教育事业的角度讲，保护区内应该保持少量的饲养个体。但在不清楚其基因特征和健康状况是否会给野生种群带来基因多样性和疾病等影响的情况下，应与野生种群保持隔离。

最后想说明的是，虽然对北海道丹顶鹤所实施的人工给食做法不值得提倡，但很多保护工作以及民众对丹顶鹤保护的认知和所做的努力都是值得我们学习和借鉴的。欢迎有更多的同仁来考察北海道的丹顶鹤保护工作。

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How to understand and use the experiences in protecting Red-crowned Crane in Hokkaido, Japan?

Supported by Japan Sandeli Limited Company, the Tancho Protection Unit of Janpan had invited Chinese experts from the breeding area (Led by Prof. Ma Yi-Qing) and wintering area (Led by Prof. Wang Qi-Shan) of Red-crowned Cranes to visit Hokkaido and to

do some exchanges in September, 2003 and January 2004, respectively. I was lucky to meet the two visiting expert groups in Hokkaido and accompany with the three experts from the Tancho Protection Unit of Janpan to visit Yancheng N.R. in December, 2003. By

exchanging visits both sides, not only investigated the breeding and wintering status of the cranes in visited areas, but also exchanged the experiences and problems in crane protection. The Findings Report of the Tancho Protection Unit of Japan was published in vol.9 of "Research on Conservation Ecology" of Japan Ecological Society.

In the findings report, based on the positive and negative experiences from Red-crowned Crane protection in Hokkaido in the past half century, the authors offered some valuable suggestions in habitat protection, in avoiding artificial feeding or creating an artificial environment suitable for cranes to feed and in avoiding releasing captive breeding population. Making use of <*China Crane News*>, the author introduced the history of Red-crowned Crane protection in Hokkaido, the advantage and disadvantage of artificial feeding on this crane population, may it be useful for the management of Red-crowned Crane in Mainland China.

Historically, the population of Red-crowned Crane in Japan had bred in Hokkaido and northern Honshu in summer, and had wintered in southern Honshu. The farmland exploitation and the massive capture and killing in Meiji Dynasty (during 1868-1911) dropped the crane population sharply. It had once considered distinct until the rediscovery of ten more cranes in Kushiro Marsh (in eastern Hokkaido) in 1924. At that time Kushiro Marsh was a wild marshland, in winter some unfrozen waters hid these cranes, and prevented them from human capture. The survival cranes were the non-migratory individuals, while the migratory population had been distinct already. Although measures of protecting their breeding site and put food in the farmland around the marshland in winter were taken, but for a long time the rediscovered cranes refused to take artificial food and the crane population did not increase remarkably. The rare heavy fall of snow in 1952 forced the cranes to take artificial food, artificial feeding was initiated hereafter. Thirty-three cranes were recorded in that year.

Half century past, the Hokkaido population has recovered to about 1 000 individuals and its breeding area has extended. Winter artificial feeding had rescued the crane from food shortage. Today, these cranes still hard to survive in winter without artificial feeding. It means that although artificial feeding had rescued the population, but it changed the wild nature of the cranes, the crane was tamed to rely on human and to adapt human surroundings, and behaved more and more like the poultry. Many cranes not only went into human surroundings in winter but also went to feeding site or bred in human surroundings in summer, being a kind of wildlife many behaviors of the population was incomprehensible. Fortunately the Mainland China population of Red-crowned Crane still owns certain breeding and wintering areas and population-sustainable natural food. To sustain and improve the habitat, to mention wild population innate habits and survival ability in nature to the maximum should be the protecting aim and principle for Mainland China population.

Many artificial populations of Red-crowned Crane are established by way of artificial breeding in the reserves of Red-crowned Crane in China, and reared in the reserve. Of course, it is valuable to master the techniques of artificial breeding and fertilization to supplement wild population in case of the wild population is not able to be self-sustained. Shenyang Wildlife Garden presents the leading artificial breeding technique in the world. But how to survive these artificial breeding cranes in cruel nature condition, and made them inherit the breeding, migration and wintering habits of a species was not reported in China. The author suggests that the reserves may cooperate with zoos, consulting some measures used in Whooping Cranes by the ICF to do more fertilization researches for artificial breeding cranes, but should make sure that it will not affect genetic diversity of wild population and not spread diseases.

The genetic diversity of various kinds of artificial populations is worrisome. It was said

that the cranes reared in these reserves came from the eggs and nestlings collected from the field. If these eggs and nestlings came from few available nests, we may image that cranes in an artificial breeding population were highly close relative and with a low genetic diversity. Recent DNA study has confirmed the guess (Hasegawa *et al.*, Zoological Science 16:685-692). To massive breed and rear such kind of individuals, the individuals of artificial population have more contact chance than that with wild individuals in marshland, results in a more pairing and breeding possibility among artificial population. Takes the advantage of saving the energy used in long distance migration and plentiful food supply in winter, the artificial population surely wins breeding site competition with wild population. The population growth curve in Hokkaido showed that a rapid growth might happen when the population reached a certain size, this population might seize large area of breeding site from wild population. The mating between artificial and wild individuals might affect the genetic diversity of wild population. At the same time, cranes, especially the sub-adults of wild population might follow the artificial population to approach to Human and to feed

artificial food, at last became the resident bird either in breeding or wintering site. An artificial population with simple genetic components, without the innate habits of the species and losing independent living ability will possibly replace the existing wild population, may have serious consequences.

Of cause, to rear a few cranes in a reserve may promote the tourism and education, but before making sure whether the genetic characters and health condition might harm the wild population, these cranes should be isolated from wild population.

The author considers that, although the artificial feeding for Red-crowned Cranes in Hokkaido does not deserve recommendation, but many protecting measures and the local people awareness and efforts in protecting the cranes are worth to learn from and to consult. The author welcomes more Chinese colleagues to investigate the protection work on Red-crowned Cranes in Hokkaido.

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Long Term Research on Greater Sandhill Cranes by ICF in the Briggsville Study Area of South Central Wisconsin: A Review

1. History and Current Population Trends

The Sandhill Crane, *Grus canadensis*, was included in the crane classification in 1819, after previously being grouped by Linnaeus with the herons (Johnsgard 1991). Since that time, six subspecies have been identified with ranges that cross the North American continent. Three of these, the Lesser (*G. c. canadensis*), Canadian (*G. c. rowani*) and Greater Sandhill Crane (*G. c. tabida*), are migratory with relatively stable numbers. The breeding range for these subspecies extends across northern North America and eastern Siberia; their wintering

grounds are located in the southern United States and northern Mexico. The remaining three subspecies, the Florida (*G. c. pratensis*), Cuban (*G. c. nesiotus*) and Mississippi (*G. c. pulla*) Sandhill Crane, are non-migratory with restricted ranges in the southern United States and Cuba. The current population estimate totals over 500,000, making the Sandhill the most abundant of all the crane species (Meine and Archibald 1996).

The turn of the 20th century saw a dramatic decline in the Eastern population of Greater Sandhill Cranes due to human disturbance,

primarily hunting and the draining of wetlands for agricultural use. The disappearance was most drastic between 1870 and 1915 (Walkinshaw 1949). In Wisconsin the decline was disturbing, with only about twenty-five breeding pairs remaining by the 1930s (Henika 1936). Conservation measures have been taken since that decline to protect the population. In 1918 the Sandhill Crane was included in the Migratory Bird Treaty Act, which made any injuring or possession of the birds illegal. In addition, many crane breeding, wintering, and staging areas were placed under federal protection. As well as protecting areas that are important in the cranes' life cycle, the protective measures also have helped raise awareness and appreciation of these magnificent birds.

The International Crane Foundation (ICF) holds the Annual Midwest Crane Count in April in order to estimate the number of Sandhill (and now Whooping) Cranes in the Midwest states where the cranes currently breed. The count began in 1976 as a single-county survey. It now encompasses over 90% of the counties in Wisconsin as well as many counties in the surrounding states (Su 2004). The 2004 count recorded almost 13,000 cranes in the state of Wisconsin. (For more information on ICF's Crane Count, go to ICF's website at www.savingcranes.org/conservation/our_projects/article.cfm?cid=1&aid=49&pid=17)

Based on information generated during 22 years of the Crane Count, Su *et al.* (2004) found that the number of Greater Sandhill Cranes in Wisconsin had more than tripled. Eight central counties hold more than 60% of the counted population, with more than 25% of the cranes counted found in three of the core counties. This density is caused in large part by the combination of appropriate habitats in this part of the state. There are wetland complexes for nesting and roosting surrounded by agricultural lands for foraging. This habitat composition is found very near ICF, where the Field Ecology Department conducts long term research on Sandhill Cranes near the town of Briggsville, Wisconsin (see figure for location of study area).

2. Long Term Research in Central Wisconsin

The long term research that ICF conducts on Sandhill Cranes in Wisconsin is based on banding family groups in the study area. Colored leg bands allow us to follow breeding pairs and their chicks over many years. There are two ways that ICF captures cranes for banding. The first is to capture flightless chicks in the early summer. The second involves the use of a chemical sedative on corn bait. This method allows entire family groups, including fledged chicks and flighted adults, to be captured at once. Once captured, the cranes are banded using a standardized, non-repetitive banding pattern. One leg carries a 3" plastic band above the hock and is engraved with an ICF-issued three-digit numeric code and a metal U.S. Fish and Wildlife Service number band above the toes. The other leg has one to three 1" colored bands for identification from greater distances.

We have learned much descriptive data from the Briggsville cranes. The 6500 ha study area supports 63 nest sites. In 15 years of studying banded birds, we estimate annual mean productivity to be 0.56 chicks/pair (ICF, unpubl. data). We are learning about dispersal, as several chicks that we banded in Briggsville have successfully nested in the study area. Banded and radioed birds further have demonstrated that the wintering area for these birds extends at least as far west as Mississippi and Louisiana.

There is much information of interest that reveals itself only with time. For example, the study's first two banded birds were raised in 1982 by Kyoko Archibald, wife of ICF co-founder George Archibald, with a prototype puppet. They were released into the study area in Briggsville, and the male, Leo, established a territory. Because he was banded as a chick, we know that he fledged his first colt in his eighth year. Eight more chicks were confirmed fledged by Leo before he disappeared after the 2002 breeding season. The ICF Field Ecology Department has banded 273 birds to date, and we continue to study their habits and movements.

Through the banding of paired birds, Matt Hayes, a graduate student at the University of South Dakota, was able to examine closely the instances of divorce and extra-pair paternity. He found that, although neither mating strategy was common, both were employed by the cranes in the Briggsville population. He suggests that the population bottleneck that occurred might encourage alternative breeding strategies, such as polygamy, to diversify genetic transfers (2005; see ICF's website at www.savingcranes.org/conservation/our_projects/program.cfm?id=35 for the complete text.)

3. Current Research and Future Trends

Three important trends have become evident from research in the long term study. The number of cranes in the Eastern flyway has expanded rapidly in the second half of the 20th century. They have adapted their feeding ecology to make use of the agricultural fields located around wetlands in much of Wisconsin. This, in turn, has at times sparked conflict between land owners (specifically farmers) and the cranes.

Currently, a central focus of the Sandhill Project is to help solve crop damage by cranes. In the spring, cranes will forage in fields with newly germinating corn seedlings. The cranes will feed on the endosperm remaining in the soil, destroying the corn sprout in the process. Many farmers have solved the problem by applying the chemical lindane, which makes the seed taste bad and the cranes do not eat it. However, lindane is becoming less available for use on agricultural crops and is considered a potential environmental hazard (Lacy *et al.* in prep).

There are a few alternatives that have been tried in Wisconsin and elsewhere to ease the frustration with crop damage by cranes and other birds. Compensation arrangements have been made in attempt to reimburse farmers for damage. Scare techniques (lure crops, flagging and cannons) have been employed across the globe to deter birds from agricultural fields. Both of these tactics tend to perpetuate the

antagonistic relationship between people and wildlife.

ICF is in the process of proposing and testing a viable alternative to lindane as an herbivory solution. Anthraquinone is a substance/chemical that functions as a seed-specific deterrent to cranes (Lacy and Barzen in prep.). The chemical can be applied directly to the seeds pre-planting and remains effective throughout the vulnerable period for the crop.

Crop damage is one reason that some give as a reason to allow Sandhill Crane hunting, which is currently illegal in Wisconsin. Lesser Sandhill Cranes are hunted in several states in the western United States and Canada. ICF is attempting to provide a resource for objective decision-making in the hunting of the Greater Sandhill Crane in Wisconsin. (To view *The ICF Bugle* article on crane hunting in Wisconsin, go to ICF's website at www.savingcranes.org/conservation/our_projects/article.cfm?cid=4&aid=66&pid=34 and click on the link for 1999 Vol. 25, no. 2)

As the eastern population of Greater Sandhills recovers and defines itself in response to available resources, there are many trends to be studied. Several questions have been answered in part by the ICF long term research, including population growth patterns and mate selection/fidelity. Other issues, such as the development of a relationship between landowners and cranes, will require time and patient evaluation. The Field Ecology Department at the International Crane Foundation strives to discover as much as we can from this long term Sandhill Crane data. This will help us not only to be a source of information in local issues such as crane hunting and herbivory in Wisconsin but also in the global context of crane preservation everywhere.

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References

- Henika, F. A. 1936. "Sandhill Cranes in Wisconsin and Other Lake States." Proceedings North American Wildlife Conference 1: 644-646.
- Johnsgard, P. A. Crane Music: a Natural History of American Cranes. Washington: Smithsonian Institution Press, 1991.
- Lacy, A. and J. A. Barzen. (in prep) Evaluating crop damage and deterrence by Sandhill Cranes at two geographic scales of habitat selection.
- Lacy, A., J. A. Barzen, and T. P. Miller. (in prep) Evaluation of Anthraquinone as a crane deterrent.
- Meine, C. D. and G. W. Archibald (Eds). 1996. The cranes: Status survey and conservation action plan. IUCN, Gland, Switzerland, and Cambridge, U.K.
- Su, L. J. Harris, and J. Barzen. 2004. Changes in population and distribution for Greater Sandhill Cranes in Wisconsin. Passenger Pigeon 66(4).
- Su, L. 2003. Habitat selection by Sandhill Cranes, *Grus canadensis tabida*, at multiple geographic scales in Wisconsin. Dissertation, University of Wisconsin, Madison, Wisconsin, USA.
- Walkinshaw, L. H. The Sandhill Cranes Bulletin No. 29. Bloomfield Hills, MI: Cranbrook Institute of Science, 1949.

国际鹤类基金会在威斯康星中南部布里格斯维尔研究区 对大沙丘鹤长期研究的综述

1. 历史与近来种群趋势

沙丘鹤 *Grus canadensis* 自 1819 年起被列入鹤的分类范畴，此前林奈将它和鹭归在一组 (Johnsgard 1991)。随后，在北美大陆鉴别出 6 个亚种。其中小沙丘鹤 (*G. c. canadensis*)、加拿大鹤 (*G. c. rowani*) 和大沙丘鹤 (*G. c. tabida*) 三个亚种是候鸟，并且数量相对稳定，它们在北美洲北部和东西伯利亚繁殖，越冬于美国南部和墨西哥北部。其余的 3 个亚种，佛罗里达沙丘鹤 (*G. c. pratensis*)、古巴沙丘鹤 (*G. c. nesiototes*) 和密西西比沙丘鹤 (*G. c. pulla*) 是留鸟，只分布在美国南部和古巴。沙丘鹤目前的种群总数估计超过 50 万只，是鹤类中最繁盛的家族 (Meine and Archibald 1996)。

在 19—20 世纪的世纪之交，由于主要来自猎杀和湿地开垦等的人类干扰，大沙丘鹤东部种群数量大幅下降。1870~1915 年之间沙丘鹤的个体消失尤为剧烈 (Walkinshaw 1949)。到 20 世纪 30 年代，威斯康星州只剩下约 25 对繁殖鹤 (Henika 1936)，对该种群的保护也从此开始。1918 年沙丘鹤被列入候鸟条约法案，规定对该鸟的任何伤害和占有均为非法。此外，鹤类的许多繁殖地、越冬地和迁徙停歇地都受到联邦法律保护。这些生境保护措施不仅帮助鹤类完成了它们年复一年的生活周期，也提高了人们对这些神奇鸟类的认识和鉴赏。

国际鹤类基金会每年 4 月都进行中西部鹤类数量调查，以便掌握在中西部各州繁殖的沙丘鹤 (现在包括美州鹤) 的数量情况。这项调查始于 1976 年，当时只在一个县进行，现在已覆盖威斯康星州 90% 以上的县和周边各州的许多县 (Su 2004)。2004 年在威斯康星州记录到的鹤的数量将近 13 000 只 (欲知国际鹤类基金会鹤类数量调查更多的信息，请访问网站 www.savingcranes.org/conservation/our_projects/article.cfm?cid=1&aid=49&pid=17)。

在 22 年鹤类数量调查得出的信息基础上，苏立英等 (2004) 发现在威斯康星州的大沙丘鹤数量已增加 3 倍多。在威斯康星州八个中部县，鹤的数量占 60% 以上，三个核心县鹤的数量超过 25%。沙丘鹤在几个县形成这样高的密度在很大程度上是这些地方有各种合适的栖息环境，这里有适合大沙丘鹤繁殖和夜宿的湿地，在湿地外围有适合鹤类觅食的农地。离国际鹤类基金会总部不远的布里格斯维尔镇，其附近就有这种类型的生境，国际鹤类基金会野外生态部在这里对沙丘鹤进行了长期研究 (图 1 示研究区域)。

2. 在威斯康星州中部对沙丘鹤进行的长期研究

国际鹤类基金会在威斯康星州对沙丘鹤的多个家族群进行了长期研究。彩环环志有利于

我们多年跟踪研究繁殖对及其幼鹤。我们通过初夏捕捉尚无飞行能力的幼鹤和用拌有镇静剂的玉米为诱饵捕捉成年鹤加以环志，这样可以保证将全部家族群，包括不能飞的幼鹤和能飞的成年鹤立即捕获。捉到鹤以后，给鹤安上大小统一的，但组合不重复的彩色塑料环。在一条腿的跗关节上方装上一只 3 英寸的刻有国际鹤类基金会制作的 3 位数数字的塑料环，在趾的上方装上一只美国渔业和野生动物局的金属数字环。另一条腿上装有 1~3 个 1 英寸的彩环用于远距离识别。

我们从布里格斯维尔环志的鹤那里获得了不少信息。在 6500 公顷的研究范围内有 63 处营巢地。在研究环志鹤的 15 年中，估计每年平均繁殖率为 0.56 只幼鹤/繁殖对(国际鹤类基金会未发表资料)。从几只环志的幼鹤后来在研究区内成功繁殖，我们知道了很多鹤群的扩散行为。环志和无线电跟踪进一步显示，这些鹤的越冬地至少向西延伸到密西西比州和路易斯安娜州。

随着研究的进行，又发现更多有趣的信息。例如，本研究中的 2 只环志鹤，最早是 1982 年国际鹤类基金会的共创者乔治·阿其波的夫人恭子·阿其波用成年鹤的模型养大的。这两只鹤后来释放到布里格斯维尔的研究地，雄鹤“里奥”建立了领地。因为“里奥”是从小就被环志的，我们知道它在 8 岁时繁殖了第一窝鹤。在“里奥”于 2002 年的繁殖季节消失之前，它至少繁殖了 8 只幼鹤。目前国际鹤类基金会的野外生态部已环志了 273 只鹤，并将继续研究环志鹤的习性和活动。

Matt Hayes 是南达科他州大学的研究生，通过对配对鹤的环志使他有可能会对鹤的离异及雄鹤额外配对进行密切观察。他发现上述尽管两种繁殖策略都不常见，但这两种现象在布里格斯维尔种群都存在。Matt Hayes 认为，当种群出现瓶颈状态时，会鼓励其他的诸如多配偶繁殖策略来使基因转移多样化(Hayes 2005; 见国际鹤类基金会的网站 www.savingcranes.org/conservation/our_projects/program.cfm?id=35 可得到全文)。

3. 目前的研究和未来的趋势

从长期的研究中已显示出三个重要的趋

势：(1) 在 20 世纪后半叶东部迁徙路线上鹤的数量有了快速增长；(2) 鹤已采用了新的觅食策略，即利用在威斯康星境内许多湿地周围普遍存在的农田；(3) 这也反过来激起土地主人(特别是农民)和鹤的冲突。

近来，沙丘鹤项目的重点是帮助解决鹤损坏庄稼的问题。春季，鹤在农田觅食时正逢玉米发芽，鹤取食尚在土中的胚乳，破坏了玉米苗的出土。许多农民使用化合物林丹拌种来解决问题，使得鹤因玉米种子味道变差而放弃取食。然而，林丹在农业市场上越来越难买到，而且被认为对环境有潜在的危害(Lacy 等，未发表)。

在威斯康辛和其他地方已采取一些替代措施来缓解鹤与其它鸟类损害庄稼的问题。如，向受损失的农民提供赔偿金，驱鸟技术(种植诱鸟作物而避开对玉米苗的伤害，在田间插驱鸟旗和放炮)也用于从农田赶走鸟类。这些方法都是试图消除在人和野生动物间存在对立关系。

国际鹤类基金会正在筛选试验一种能够替代林丹的材料，以能解决植食性鹤类损坏庄稼的问题。蒽醌是一种专用于种子的对鹤类有拒食作用的化合物(Lacy 和 Barzen 待发表文)。该化合物可在种子种植前直接使用并在作物的脆弱期有效。

以损害庄稼为理由而狩猎沙丘鹤现在在威斯康星已视为非法。小沙丘鹤在美国西部的几个州和在加拿大是狩猎鸟类。国际鹤类基金会正在努力提供在威斯康星客观地决定是否狩猎大沙丘鹤的标准(在国际鹤类基金会网站 www.savingcranes.org/conservation/our_project/s/article.cfm?cid=4&aid=66&pid=34 上，击链接见《The ICF Bugle》1999 年，第 25 卷，第 2 期中“关于在威斯康星狩猎鹤类”的文章)。

随着大沙丘鹤东部种群的恢复和沙丘鹤种群自身对可利用资源的适应，我们还有许多问题要研究。国际鹤类基金会的长期研究已部分回答了几个问题，包括沙丘鹤的种群增长型和配偶选择或配偶忠贞。其它问题如农民和鹤的关系问题还有待时日 and 耐心地去解决。国际鹤类基金会的野外生态部将从长期研究的资料中努力获取更多的发现。这将不仅有助于在威斯

黄河三角洲自然保护区 2005 年鹤类南迁简讯

黄河三角洲自然保护区 2005 年鹤类南迁调查已结束。与 2004 年度的野外调查数据比较, 各种鹤的数量偏少, 迁徙期比往年要晚半月左右, 鹤类集中分布于 11 月份, 而其停歇期相对延长了 10 天左右。

10 月中下旬气温相对较高可能是鹤类迁徙滞后的原因, 在 11 月份气候稳定可能是鹤类数量保持稳定的原因。在近海滩涂区, 油田作业施工严重干扰了在此区域栖息的鹤类, 影响了当年数量。

1. 白鹤 *Grus leucogeranus*

表 1 2005 年南迁期白鹤调查结果

Table 1 Survey on southwards migratory Siberian Crane in 2005

时间 Date	地点 Location	数量 Number	生境 Habitat
10, 29	大汶流湿地恢复区 Restoring area of Dawenliu Wetland	5	淡水芦苇沼泽 Fresh water reed marshland
11, 09	大汶流湿地恢复区 Restoring area of Dawenliu Wetland	40	淡水芦苇沼泽 Fresh water reed marshland
11, 10	大汶流湿地恢复区 Restoring area of Dawenliu Wetland	19	淡水芦苇沼泽 Fresh water reed marshland
11, 10	大汶流 121 南 South of 121, Dawenliu	3	近海滩涂、咸水芦苇沼泽 Inshore sea beech, brine water reed marshland
11, 11	大汶流 29 井 The 29 Well, Dawenliu	5	芦苇、海滩湿地 Reed and sea beech wetlands
11, 13	大汶流 29 井 The 29 Well, Dawenliu	1	芦苇、海滩湿地 Reed and sea beech wetlands
11, 18	大汶流 29 井 The 29 Well, Dawenliu	4	芦苇、海滩湿地 Reed and sea beech wetlands
11, 22	黄河口人工河 Artificial river in estuary of the Yellow River	27	近海滩涂 Inshore sea beech
11, 22	黄河口六号路南、北 South and North of the 6 th Road, in estuary of the Yellow River	7	芦苇、水面 Reed, water surface

1) 迁徙时间: 2005 年白鹤的迁徙季要晚于往年 (2004 年为 10 月下旬至 11 月上旬), 野外的最早纪录为 10 月 29 日, 最晚纪录为 11 月 22 日, 迁徙期也比往年延长为 23 天; 其迁徙出现两次高峰期为 11 月 10 日前后和 11 月 22 日, 两次高峰期地点不同: 一个位于黄河南岸的大汶流管理站 (最高数量为 40 只), 另一个在黄河北岸的黄河口管理站内 (最高数量为 34 只)。其最高数量低于 2004 年。

2) 生境: 白鹤的优先选择生境为大面积

水域与芦苇沼泽相交的生境, 近海滩涂中的潮间带往年也有相当数量的白鹤种群。2005 年, 近海油田作业施工, 导致了此区域白鹤数量的急剧下降。

3) 观察误差: 保护区大面积芦苇沼泽使野外的观察十分困难, 野外记录的数量是惊飞和观察到的真实数量, 所以在同一时间和同一地点内发现的数据有很大差别; 近海滩涂生境由于无法近距离观察, 实际数量也难以统计。

4) 野外观察中发现一落单的当年亚成体

白鹤，其头、颈、背为红色。

2. 白枕鹤 *Grus vipio*

2005 年南迁期，于 10 月 8 日，29 日，11 月 6 日和 10 日在大汶流湿地恢复区淡水芦苇沼泽分别调查到 3，54，60 和 11 只白枕鹤。

数据分析：

白枕鹤的最早野外记录（10 月 8 日）是

每年迁徙期最早的记录，其迁徙高峰期与往年（10 月下旬至 11 月上旬）相差不大，但比 2004 年 650 只迁徙种群相比数量相差很大（2005 年最高记录为 60 只）。其分布生境仅在黄河南岸的大汶流管理站内，每年在近海滩涂中发现的种群今年没有野外记录，可能是近海油田作业施工影响所导致。

3. 丹顶鹤 *Grus japonensis*

表 2 南迁期丹顶鹤调查结果

Table 2 Survey on southwards migratory White-naped Crane in 2005

时间 Date	地点 Location	数量 Number	生境 Habitat
10,28	大汶流 29 井、121 井 The 29 th and 121 st Wells, Dawenliu	8	近海滩涂、咸水芦苇沼泽 Inshore sea beech, brine water reed marshland
10,29	大汶流 29 井、121 井 The 29 th and 121 st Wells, Dawenliu	11	近海滩涂、咸水芦苇沼泽 Inshore sea beech, brine water reed marshland
10,31	大汶流湿地恢复区 Restoring area of Dawenliu Wetland	15	淡水芦苇沼泽 Fresh water reed marshland
11,01	大汶流湿地恢复区 Restoring area of Dawenliu Wetland	16	淡水芦苇沼泽 Fresh water reed marshland
11,02	大汶流湿地恢复区 Restoring area of Dawenliu Wetland	21	淡水芦苇沼泽 Fresh water reed marshland
11,02	大汶流 121 井路两侧 Roadside of 121 st Well, Dawenliu	4	芦苇、海滩湿地 Reed and sea beech wetlands
11,03	大汶流湿地恢复区 Restoring area of Dawenliu Wetland	13	淡水芦苇沼泽 Fresh water reed marshland
11,06	大汶流湿地恢复区 Restoring area of Dawenliu Wetland	5	淡水芦苇沼泽 Fresh water reed marshland
11,08	大汶流湿地恢复区 Restoring area of Dawenliu Wetland	12	淡水芦苇沼泽 Fresh water reed marshland
11,08	大汶流 29 井 The 29 th Well, Dawenliu	6	近海滩涂、咸水芦苇沼泽 Inshore sea beech, brine water reed marshland
11,08	一千二 106 区 the 106 th region, yiqianer	2	近海滩涂 Inshore sea beech
11,10	大汶流湿地恢复区 Restoring area of Dawenliu Wetland	4	淡水芦苇沼泽 Fresh water reed marshland
11,10	大汶流 121 井路两侧 Roadside of 121 st Well, Dawenliu	17	芦苇、海滩湿地 Reed and sea beech wetlands
11,10	一千二 106 区 the 106 th region, yiqianer	9	近海滩涂、咸水芦苇沼泽 Inshore sea beech, brine water reed marshland
11,11	大汶流湿地恢复区	8	淡水芦苇沼泽

	Restoring area of Dawenliu Wetland		Fresh water reed marshland
11,11	大汶流 121 井路两侧 Roadside of 121 st Well, Dawenliu	17	近海滩涂、咸水芦苇沼泽 Inshore sea beech, brine water reed marshland
11,12	大汶流湿地恢复区 Restoring area of Dawenliu Wetland	21	淡水芦苇沼泽 Fresh water reed marshland
11,12	大汶流 121 井路两侧 Roadside of 121 st Well, Dawenliu	7	近海滩涂、咸水芦苇沼泽 Inshore sea beech, brine water reed marshland
11,13	大汶流湿地恢复区 Restoring area of Dawenliu Wetland	77	淡水芦苇沼泽 Fresh water reed marshland
11,13	大汶流 29 井 The 29 th Well, Dawenliu	8	近海滩涂、咸水芦苇沼泽 Inshore sea beech, brine water reed marshland
11,14	大汶流湿地恢复区 Restoring area of Dawenliu Wetland	24	淡水芦苇沼泽 Fresh water reed marshland
11,14	大汶流 29 井、121 井 The 29 th and 121 st Wells, Dawenliu	7	近海滩涂、咸水芦苇沼泽 Inshore sea beech, brine water reed marshland
11,15	大汶流湿地恢复区 Restoring area of Dawenliu Wetland	8	淡水芦苇沼泽 Fresh water reed marshland
11,15	大汶流 29 井、121 井 The 29 th and 121 st Wells, Dawenliu	16	近海滩涂、咸水芦苇沼泽 Inshore sea beech, brine water reed marshland
11,16	大汶流湿地恢复区 Restoring area of Dawenliu Wetland	19	淡水芦苇沼泽 Fresh water reed marshland
11,16	大汶流 29 井、121 井 The 29 th and 121 st Wells, Dawenliu	21	近海滩涂、咸水芦苇沼泽 Inshore sea beech, brine water reed marshland
11,17	大汶流湿地恢复区 Restoring area of Dawenliu Wetland	42	淡水芦苇沼泽 Fresh water reed marshland
11,17	大汶流 29 井、121 井 The 29 th and 121 st Wells, Dawenliu	4	近海滩涂、咸水芦苇沼泽 Inshore sea beech, brine water reed marshland
11,22	大汶流湿地恢复区 Restoring area of Dawenliu Wetland	10	淡水芦苇沼泽 Fresh water reed marshland
11,22	大汶流 121 井 The 121 st Well, Dawenliu	31	近海滩涂、咸水芦苇沼泽 Inshore sea beech, brine water reed marshland
11,24	大汶流湿地恢复区 Restoring area of Dawenliu Wetland	12	淡水芦苇沼泽 Fresh water reed marshland
11,24	大汶流 29 井、121 井 The 29 th and 121 st Wells, Dawenliu	32	近海滩涂、咸水芦苇沼泽 Inshore sea beech, brine water reed marshland

丹顶鹤在迁徙期内数量保持相对平稳，基本保护在 30—40 只，最高数量为 85 只（11 月 13 日），在 11 月间气候没有太大变化可能是其原因。从分布区域来看，数量在大汶流湿地

恢复区和近海滩涂（29 井、121 井）间来回变化，丹顶鹤受近海油田作业施工所造成的人为干扰影响可能不大。

另外在 2005-11-30 的野外调查中发现一

只左上脚戴带橘红色彩标的丹顶鹤，上有白色大写字母“T”，其生境为黄河入海口附近近海滩涂中的潮间带。

4. 灰鹤 *Grus grus*

表 3 南迁期灰鹤调查结果

Table 3. Survey on southwards migratory Common Crane in 2005

时间 Date	地点 Location	数量 Number	生境 Habitat
11,10	大汶流湿地恢复区 Restoring area of Dawenliu Wetland	55	淡水芦苇沼泽 Fresh water reed marshland
11,10	大汶流 29 井 The 29 th Well, Dawenliu	14	近海滩涂、咸水芦苇沼泽 Inshore sea beach, brine water reed marshland
11,11	大汶流湿地恢复区 Restoring area of Dawenliu Wetland	13	淡水芦苇沼泽 Fresh water reed marshland
11,11	一千二四河 Sihe River of Yiqianer	74	豆地 Soybean field
11,12	大汶流湿地恢复区 Restoring area of Dawenliu Wetland	44	淡水芦苇沼泽 Fresh water reed marshland
11,12	一千二孤北水库 Gubei Reservoir of Yiqianer	85	淡水芦苇沼泽 Fresh water reed marshland
11,13	大汶流湿地恢复区 Restoring area of Dawenliu Wetland	147	淡水芦苇沼泽 Fresh water reed marshland
11,13	一千二河口苇场 Reed field of Yiqianer	23	淡水芦苇沼泽 Fresh water reed marshland
11,14	大汶流湿地恢复区 Restoring area of Dawenliu Wetland	89	淡水芦苇沼泽 Fresh water reed marshland
11,10	大汶流 29 井 The 29 th Well, Dawenliu	69	近海滩涂、咸水芦苇沼泽 Inshore sea beach, brine water reed marshland
11,15	大汶流湿地恢复区 Restoring area of Dawenliu Wetland	69	淡水芦苇沼泽 Fresh water reed marshland
11,17	大汶流湿地恢复区 Restoring area of Dawenliu Wetland	103	淡水芦苇沼泽 Fresh water reed marshland
11,22	大汶流湿地恢复区 Restoring area of Dawenliu Wetland	33	淡水芦苇沼泽 Fresh water reed marshland
11,22	一千二下镇屋子 Xiazhengwozi, Yiqianer	23	农田 Farmland
11,23	大汶流湿地恢复区 Restoring area of Dawenliu Wetland	23	淡水芦苇沼泽 Fresh water reed marshland
11,22	一千二下镇屋子 Xiazhengwozi, Yiqianer	25	农田 Farmland
11,25	大汶流湿地恢复区 Restoring area of Dawenliu Wetland	24	淡水芦苇沼泽 Fresh water reed marshland

灰鹤栖息于芦苇沼泽、近海滩涂、农田、草地等多种生境，由于其数量分散且多处迁飞野外获得其真实数量非常困难。统计到的最高数量为 170 只（11 月 13 日）。与 90 年代数以

千计的灰鹤种群相比，近几年灰鹤数量年度变化很大，农田生境的大面积丧失可能是最重要原因。

5. 白头鹤 *Grus monacha*

表 4 南迁期白头鹤调查结果

Table 4. Survey on southwards migratory Hooded Crane in 2005

时 间 Data	地点 Location	数量 Number	生境 Habitat
11,09	大汶流湿地恢复区 Restoring area of Dawenliu Wetland	4	淡水芦苇沼泽 Fresh water reed marshland
11,10	大汶流 29 井 The 29 th Well, Dawenliu	6	近海滩涂 Inshore sea beach
11,11	大汶流 121 井路两侧 Roadside of 121 st Well, Dawenliu	4	芦苇、海滩湿地 Reed and sea beach wetlands
11,17	大汶流湿地恢复区 Restoring area of Dawenliu Wetland	4	淡水芦苇沼泽 Fresh water reed marshland

与往年的数量比较，白头鹤的数量稀少。白头鹤在此区域在有的年份缺少野外种群，停歇的时间相对其它鹤短。

单凯（黄河三角洲国家级自然保护区管理局 257091）

Brief report on southwards migration of cranes at the Yellow River Delta N.R.,2005

The survey on southwards migration of cranes at the Yellow River Delta N.R., 2005 was finished. Compared with the data collected in 2004, crane number of each species stopped at the reserve was less than that of the former year. They arrived about half a month later than in former year, and hence left 10days later than in former year, most cranes stayed here in November.

The warm weather in the mid and late ten days of October may delay the migration of the cranes. The stable weather in November maintained a stable crane number. The oilfield operation disturbed cranes and reduced their numbers.

1. Siberian Crane

1) Migratory time: The earliest and latest record of Siberian Crane at the reserve was on October 29th and November 22nd, 2005 respectively, it was more late than in former year (it was in last ten days of October to early ten days of November in 2004); the main departure day was on November 10th and November 22nd, 2005 respectively, 23 days later than in former year. The main departure location was at Dawenliu Administrative Station, in the south bank of Huanghe River (40 cranes) and at Huanghe Estuary Administrative Station (34 cranes) respectively. The amount of the stopover cranes was less than that in 2004.

2) Habitat: The boulder of reed marshland

and large area of waters is the most suitable habitat of Siberian Crane, so is the intertidal zone. The operation of the inshore oilfield decreased crane number very much.

3) Observing error: It is very hard by scattering and counting to record crane number in large area of reed marshland, the unapproachable of inshore either makes the long distance counting not so reliable.

4) A lonely sub-adult crane with reddish in head, neck and back born in the same year was found.

2. White-naped Crane

Three, 54, 60 and 11 White-naped Cranes were found at the freshwater reed marshland, restoring region, Dawenliu Wetland, on October 8th, 29th, November 6th and 10th respectively.

The earliest record of White-naped Crane at the reserve in 2005, is the earliest record of the species in years, they mainly stayed at the reserve from the last ten days of October to early ten days of November in former year, but there were more less individuals here than in former year (the highest record in 2004 was 60 cranes). They only distributed at Dawenliu Administrative Station, none appeared at the inshore seabeaches, it might caused by the inshore oilfield operation.

3. Red-crowned Crane

Red-crowned Crane maintained a relatively

stable population size during migratory time, basically with 30-40 cranes, 85 cranes in maximum (November, 13th). Their number fluctuated between the restoring region of Dawenliu Wetland and inshore seabeaches (the 29th and 121st wells). The oilfield did not affect the crane so much.

A leg-flagged Red-crowned Crane was found at the intertidal zone of inshore seabeaches, estuary of Huanghe River on November 30th, 2005, the orange flag with a white capital letter "T" in it was banded in the left leg.

4. Common Crane

Common Crane inhabits in reed marshland, inshore seabeaches, farmland and grassland, the

habitat diversity makes it difficult in counting. 170 individuals was the maximum amount (November 13th) we have recorded. Compared with number of thousands in 1990's, the amount of Common Cranes decreased remarkably, the loss of large areas of farmland might be the main reason to cause the situation.

5. Hooded Crane

In 2005, Hooded Crane was far less than in former years. In some years there was no wild population of Hooded Crane at the reserve, and had a shorter staying duration than other cranes.

Shan Kai (Huanghe River Delta National N.R. Administrative Bureau, 257091)

2005 年吉林莫莫格自然保护区东方白鹳迁徙动态

莫莫格国家级自然保护区是东方白鹳的重要迁徙停歇地, 总面积 14.4 万公顷, 地理坐标北纬 45° 45' ~ 46° 10', 东经 122° 27' ~ 124° 04'。莫莫格保护区水利资源丰富, 属嫩江水系。嫩江流经该区 111.5 公里, 流域面积达 3 万多公顷, 形成了独具特色的苔草小叶樟湿地。东方白鹳迁徙主要停歇在保护区的哈尔滨核心区, 2000 年在保护区发现过 800 多只的东方白鹳种群。2005 年保护区对该区内的东方

白鹳进行了监测, 春季发现东方白鹳最大种群 178 只, 夏季 86 只, 秋季 657 只。在莫莫格夏季东方白鹳有过繁殖记录, 但近 3 年来夏季没有发现东方白鹳, 也没有繁殖记录。今年发现的东方白鹳大多为游荡的亚成体, 在区内也没有发现繁殖巢。在 2005 年 11 月 6 日东方白鹳在哈尔滨核心区的东毛山集群 600 多只由保护区向南方迁徙。东方白鹳数量分布见表 1。

表 1. 2005 年莫莫格自然保护区东方白鹳数量分布

Table 1 Number and distribution of Oriental White Stork at Momoge N.R., 2005

日期 Date	地点 Location	数量 Number
4. 5	哈尔滨水库 Harnao Reservoir	28
4. 5	哈尔滨水库 Harnao Reservoir	14
4. 8	嫩江堤边 Bank of Nenjiang River	4
4. 22	杨树堂 Yanshutang	1
5. 8	杨树堂 Yanshutang	178
6. 23	哈尔滨水库 Harnao Reservoir	65
6. 28	龙坑 Longkeng	2
6. 30	月亮泡 Moon Lake	1
7. 1	哈尔滨水库 Harnao Reservoir	86
7. 8	哈尔滨水库 Harnao Reservoir	2
7. 13	哈尔滨水库 Harnao Reservoir	16

7.15	哈尔挠保护站 Harnao Conservation Station	14
7.17	哈尔挠保护站 Harnao Conservation Station	18
10.8	王家屯西泡 West lake of Wangjiatun	3
10.9	老鸱窝 Laoguawo	176
10.13	杨树堂保口 Baokou of Yanshutang	1
10.14	哈尔挠水库 Harnao Reservoir	200
10.15	哈尔挠水库闸门 Floodgate of Harnao Reservoir	100
10.15	哈尔挠水库南 Southern Harnao Reservoir	235
10.15	杨树堂 Yanshutang	178
10.30	东毛山 Dongmao Mountain	352
11.6	东毛山 Dongmao Mountain	657

杨兵兵, 于国海, 孙孝维, 邹畅林 (吉林莫莫格国家级自然保护区, 137316)

Migratory dynamics of Oriental White Stork at the Momoge N.R., Jilin, 2005

Momoge N.R. is an important stopover site for migratory Oriental White Stork. The coordinate of the reserve is N 45°45' ~ 46°10' and E 122°27' ~ 124°04', with an area of 144 000hm. With 111.5km long section of Nenjiang River across and more than 30 000 hm of drainage area, the area is a special Sedge and Narrowleaf Small Reed wetland. The main stopover site for the Oriental White Stork located in the core area of the reserve, 800 more storks were found there in 2000. The largest population at the reserve in spring, summer and autumn of 2005 each had 178, 86 and 657 storks

respectively. The stork once had bred at the reserve, but in the recent three years no stork appeared. The storks found in 2005 mostly were wandering sub-adults, and no nest was found. A flock of 600 more storks was found at Dongmao Mountain in the core area of Harnao and started their southward migration on November 6th, 2005. Table 1 shows the number and distribution of Oriental White Storks.

Yang Bing-Bing, Yu Guo-Hai, Sun Xiao-Wei, Zou Chang-Lin (Jilin Momoge National N.R., 137316)

吉林莫莫格自然保护区 2005 年水鸟迁徙简报

2005 年莫莫格保护区在春秋迁徙季节对区内鹤类、鸕类和雁鸭类水鸟进行了调查。2005 年迁徙的鹤类主要有白鹤、丹顶鹤、灰鹤、白

枕鹤和白头鹤, 鸕类为东方白鸕, 雁鸭类主要有鸿雁、豆雁、白额雁、绿头鸭和红头潜鸭等。

表 1 2005 年莫莫格保护区春季和秋季迁徙水鸟数量分布

Table 1 Population size of waterfowls migrating at Momoge N.R. in spring and autumn, 2005

物种 Species	春季 Spring	秋季 Autumn
白鹤 Siberian Crane	41	225
丹顶鹤 Red-crowned Crane	—	6
灰鹤 Common Crane	3	4
白枕鹤 White-napped Crane	2	—

白头鹤	Hooded Crane	6	33
东方白鹳	Oriental White Stork	178	657
大天鹅	Whooper Swan	5	—
白琵鹭	White Spoonbill	—	25
白额雁	White-fronted Goose	40	200
小白额雁	Lesser White-fronted Goose	5	12
鸿雁	Swan Goose	100	290
豆雁	Bean Goose	17400	17000
绿头鸭	Mallard	2580	5070
琵嘴鸭	Shoveller	380	550
红头潜鸭	Common Pochard	1520	800
绿翅鸭	Common Teal	630	500

杨兵兵, 孙孝维, 邹畅林, 王波, 王永 (吉林莫莫格国家级自然保护区, 邮编 137316)

Brief report on migratory waterfowls at Momoge N.R., Jilin, 2005

During the spring and autumn migratory seasons in 2005, we surveyed the cranes, storks, geese and ducks at Momoge N.R.. The migratory waterfowls mainly were: Red-crowned Crane, Common Crane, White-napped Crane, Hooded Crane, Oriental White Stork,

Swan Goose, Bean Goose, White-fronted Goose, Mallard and Common Pochard. Table 1 shows the survey result.

Yang Bing-Bing, Sun Xiao-Wei, Zou Chang-Lin, Wang Bo, Wang Yong (Jilin Momoge National N.R., 137316)

贵州省草海自然保护区 2005 年 1 月鹤类及大型水禽调查

接云南省林业厅保护办《关于开展“2005 年云贵高原鹤类及大型水禽调查”的通知》，草海保护区管理处组织职工于 2005 年元月 18、19 日进行了调查。调查人员分成 5 个小组，在每天早上 7:30 开始同时计数在黑颈鹤夜宿地的数量，调查结果见表 1。

在调查的两天中，均为阴天有雾，能见度不太理想，我们的调查结果可能会比实际数量偏低。18 日那天的天气较 19 日差，当能够分辨在夜宿地的鹤类种类和数量时，一些鹤类已经开始飞到空中，难以得到准确的结果，因此 19 日的的数据更接近实际的数量。

表 1 草海自然保护区 2005 年 1 月鹤类及大型水禽数量

Table 1 The counting of cranes and large waterfowls at Caohai N.R., January 2005

物种 Species	日期 Date	夜宿地 Roosting site					合计 Total	
		簸箕湾 Bojiwan	朱家湾 Zhujiawan	胡叶林 Huyelin	阳关山 Yangguanshan	吴家岩头 Wujia-yantou		
黑颈鹤 Black-necked Crane	1. 18	236	81	139	—	162	618	
		幼鹤 Juvenile	20	7	17	—	16	60
	1. 19		234	84	315	4	140	777
		幼鹤 Juvenile	21	7	28	1	13	70
灰鹤	1. 18	9	57	262	104	211	643	

Common Crane	1. 19		9	58	292	—	270	629
斑头雁	1. 18		1000	48	607	500	110	2265
Bar-headed Goose	1. 19		1500	43	610	—	107	2260

李振吉 (贵州草海国家级自然保护区)

Census on cranes and large waterfowls at Guizhou Caohai N.R., in January 2005

According to the <Notice of "Census on cranes and large waterfowls in Yunnan-Guizhou in 2005"> from the wildlife protection office, Yunnan Forestry Bureau, the staff of Administrative Department, Caohai N.R. conducted a census on 18th and 19th January, 2005. Started at 07:30, synchronic countings on Black-necked Cranes at their roosting sites were conducted by 5 groups. The

result showed in table 1.

The fog weather affected the visibility of crane counting. The crane number counted might be lower than the actual number. The fog on 18th is heavier than on 19th, before we were able to distinguish the crane species and individuals some cranes had taken off, hence the crane number counted on 19th is more reliable.

Li Zhen-Ji (Guizhou Caohai National N.R.)

2005 年扎龙保护区春季鸟类统计

黑龙江扎龙国家级自然保护区位于黑龙江省西部松嫩平原、乌裕尔河下游，地理坐标为 46°52'-47°32'N, 123°47'-124°37'E。保护区属典型的湿地生态系统类型自然保护区。区内植被类型主要有羊草草甸草原、杂草草甸、芦苇沼泽、水生植被等 4 种植物群落。高等植物合计 67 科 469 种；区内哺乳类 5 目 8 科 21 种，鸟类 17 目 48 科 260 种，两栖类 2 目 3 科 6 种，爬行类 2 目 2 科 2 种，鱼类 9 科 46 种。鸟类中国家 I 级重点保护鸟类 8 种、II 级重点保护鸟类 37 种。丹顶鹤是扎龙自然保护区最

主要的保护对象，近年来保护区内丹顶鹤的繁殖种群已达 400 只以上。东方白鹳、白琵鹭、黑头白鹳等珍禽也在湿地内营巢繁殖。2005 年春季我们结合 GEF 白鹳项目对保护区 4 个管护站（林甸管护站、吐木台管护站、烟筒屯管护站和扎龙管护站）周边的水禽进行了初步调查。调查时间从 4 月 3 日到 6 月 5 日。共统计到水禽 19 种 34462 只。包括鹤类 4 种 932 只，鹭类 3 种 1078 只，鸭类 4 种 1047 只，鸕鹚类 4 种 1600 只，鸥类 2 种 30000 只。

表 1 2005 年春季扎龙自然保护区水禽统计

Table 1. Waterfowl census at Zhalong N.R. in spring, 2005.

物种 Species	林甸管理站 Lindian	吐木台 Tumutai	烟筒屯 Yantongtun	扎龙保护站 Zhalong	小计 Total
丹顶鹤 Red-crowned Crane	52 (38)	6 (6)	39 (16)	72 (48)	169 (108)
白枕鹤 White-naped crane	37 (8)		9 (2)	8 (8)	54 (18)
白头鹤 Hooded Crane	8	100		350	458
白鹤 Siberian Crane	64	130	55	2	251
普通鸕鹚	21				21

Great Cormorant					
大鸨 Great Bustard	7				7
大白鹭 Great Egret				4	4
草鹭 Purple Heron	500			34	534
苍鹭 Grey Heron	400			140	540
红头潜鸭 Common Pochard	1000				1000
斑嘴鸭 Spot-billed Duck	17				17
绿头鸭 Northern Pintail	22				22
琵嘴鸭 Shoveller	8				8
黑翅长脚鹬 Black-winged Stilt	1000				1000
泽鹬 Marsh Sandpiper	200				200
林鹬 Wood Sandpiper	100				100
金眶鸻 Litter Ringed Plover	300				300
白翅浮鸥 White-winged Black Tern	20000				20000
须浮鸥 Whiskered Tern	10000				10000
合计	33647	230	55	530	34462

逢世良 刘胜龙 仇福臣 蔡勇军
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Waterbird census at Zhalong N.R. in spring, 2005

Heilongjiang Zhalong N.R. is located in the Song-Nen Plain and the lower basin of Wuyuer River, western Heilongjiang Province. The geographic coordinates is 46°52'-47°32'N, 123°47'-124°37'E. There are four vegetation communities: Chinese Leymus grass marshland and prairie, rank grass marshland, reed grass marshland and aquatic vegetation. There are 67 families, 469 species of vascular bundle plants; 5 orders, 8 families, 21 species of mammals; 17 orders, 48 families, 260 species of birds; 2 orders, 3 families, 6 species amphibians; 2 orders, 2 families, 2 species of reptiles and 9 families, 46 species of fish in the reserve. Among birds there are 8 species and 37 species of birds listed as the 1st class and 2nd class of national protective wildlife in China. Red-crowned Crane is the main protected bird in

the reserve with the breeding population about 400 individuals. The rare and precious birds such as, Oriental White Stork, White Spoonbill and Oriental White Ibis breed in the wetland either. To carry out the GEF Project we made a survey on waterfowls at Lindian, Tumutai, Yantongtun and Zhalong Administrative Stations from April 3rd to June 5th. Nineteen species, 34 462 waterfowls were recorded, including 4 species, 932 individuals of cranes; 3 species, 1 078 individuals of herons and egrets; 4 species, 1 047 individuals of ducks; 4 species, 1 600 individuals of shorebirds and 2 species, 30 000 individuals of gulls.

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2005 年洪河保护区水禽调查报告

2005 年春、夏、秋三季我们对洪河自然保护区的大型水禽种群状况进行了调查。

春季调查始于 5 月 11 日, 5 月 19 日结束。在洪河保护区共发现丹顶鹤 19 只, 其中繁殖个体 6 对, 亚成体 6 只, 老龄孤鹤 1 只, 另外发现 5 对白枕鹤繁殖个体。我们找到并定位了其中的 3 个丹顶鹤巢和 2 个白枕鹤巢, 在调查过程中我们注意到 2 个白枕鹤巢与丹顶鹤巢的距离很近, 二者的种间关系有待深入研究。洪河保护区是东方白鹤在三江平原的集中营巢地, 本年度共有 9 巢东方白鹤在此繁殖, 其中天然巢 4 个、人工招引巢 5 个, 与往年的状况相比今年的东方白鹤繁殖巢数量急剧下降。

夏季调查从 8 月 3 日开始。受周边农业开发的影响, 洪河湿地的水位明显偏低, 保护区外围的局部湿地已开始向草甸退化。保护区是该地区野生动物仅存的避难地, 各种野生动物相对集中, 我们共发现 21 只丹顶鹤, 其中繁殖鸟 7 对, 分布在保护区内的 4 对带有雏鸟, 而分布在保护区外围的 3 对成体丹顶鹤未带雏鸟。看来当地的农、牧业生产活动严重干扰并阻断了它们的繁殖。在保护区内有 4 对白枕鹤成功繁殖, 此外在洪河农场八区的一处收割后的小麦田里有 15 只白枕鹤集群(去年有 40 余只白枕鹤在此集群)。8 月 8 日在考察洪河保护区外围的浓江河上游地区时, 我们发现了 4 只正在觅食的东方白鹤, 在距其 2km 处有一个由 13 只白琵鹭与 11 只白鹭组成的混合群体, 这

些事实表明了加强保护区外围生境的重要性, 它存在的价值不仅在于为野生动物提供异质生境, 更可以减缓保护区的岛屿化效应。

秋季调查开始于 10 月 2 日, 此时东方白鹤已经迁徙离去。在这里共发现丹顶鹤 17 只, 其中三对依旧分布于夏季调查时发现它们的保护区外围洪河农场八区, 而白枕鹤只发现了 7 只, 且分布位置不在夏季调查时发现它们的栖息地。可见, 丹顶鹤相比白枕鹤更倾向于保持较固定的领域。

回顾今年的考察我们发现洪河保护区的水禽数量较以往年份同期显著偏低, 这显然与湿地水位持续下降有关, 而浓江河上游湿地被开发正在加剧这一进程。此外, 在洪河保护区外围尚有大片河流湿地未得到有效保护, 位于三江平原腹地的浓江河湿地不仅是连接洪河、三江国家级自然保护区(二者都是国际重要湿地)的生态走廊, 也是影响该地区农业生产安全的天然蓄水库, 继续开发这块仅存的河流湿地不但会造成珍稀野生动物的生境丧失, 也将加剧周边洪河、三江国家级自然保护区的岛屿化效应, 甚至引发东北亚地区保护区网络的缺失。建议将浓江河两岸的河流湿地划进保护区, 以保证其稳定发挥生态走廊的作用。

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Waterfowl findings report at Honghe N.R. in 2005

In the spring, summer and autumn of 2005 the authors surveyed the populations of large waterfowls at Honghe N.R..

Spring survey was conducted from May 11th to May 19th, 19 Red-crowned Cranes (including 6 pairs, 6 sub-adults and a single old one) and 5 pairs of White-naped Cranes were found. Three nests of Red-crowned Cranes and 2 nests of White-naped Cranes were located, the 5 nests were closed each other, the species

relationship between the two species of cranes needs further research. The reserve is the main breeding area for Oriental White Stork in Sanjiang Plain, 9 nests were found here (including 4 nature nests and 5 artificially attracted nests), but the number of nests was far less than those in last year.

Summer survey was conducted from August 3rd to August 8th. Affected by the development of agriculture in the peripheral

areas, the water level was obviously lower than before, some peripheral wetland of the reserve was degenerated to grassy marshland, the reserve was hence became the refuge of wildlife. Twenty-one Red-crowned Cranes were found (including 7 pairs) in the wetland, the 4 pairs found in the reserve all had chicks with them, while the 3 pairs found in the peripheral area had no chick. It seems that the farming and herding activities had seriously disturbed the cranes and prevented them from breeding. Four pairs of White-naped Cranes were found successfully bred in the reserve, a group of 15 White-naped Cranes were found in a harvested wheat field, the 8th region of Honghe Farm (there had been a group of 40 more individuals here last year). On August 8th, four Oriental White Storks were found feeding in the upper reaches of Nongjiang River, the periphery of Honghe N.R. About 2 km away, there was a mixed group of 13 White Spoonbills and 11 egrets. The fact shows that it is important to protect the habitat of the peripheral area of the reserve. The existing of these habitats not only provides wildlife with heterogeneous habitats but also retards the fragmentation of the reserve.

Autumn survey started on October 2nd, after the departure of Oriental White Storks. Seventeen Red-crowned Cranes were found, 3 pairs of them still stayed at the 8th region, Honghe Farm, the same site they had stayed in

summer. But the site where 7 White-naped Cranes found was different from where they were found in summer. It means that Red-crowned Crane is more preferred to stay at a fixed territory than White-naped Crane does.

The number of waterfowls we found in Honghe reserve was lower than that in the same period of former years. The exploiting of wetland in the upper reaches of Nongjiang River surely lowers the water level of wetland and worsens the progress. Nongjiang River wetland is not only the ecological corridor to link Honghe National N.R. and Sanjiang National N.R.(both wetlands are all belong to the Ramsar Site), but also a nature reservoir for the farming of local area. The exploiting of the only existing river wetland will result in the loss of wildlife habitat, the fragmentation of the habitats in both reserves, even will cause the loss of North East Asia Reserve Network. The authors suggest that to incorporate the river wetlands along Nongjiang River into the reserve, to ensure the function of ecological corridor of the wetland.

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黑龙江洪河国家级自然保护区及周边地区鹤类繁殖初步调查

为了进一步了解洪河国家级自然保护区及其周边地区鹤类栖息地生境状况。笔者与中科院东北地理与生态农业研究所赵志春于 2005 年 5 月 31 日-6 月 4 日对洪河国家级自然保护

区及周边的洪河农场八区、前锋农场 1 队和 2 队的丹顶鹤、白枕鹤栖息地生境及繁殖数量进行了初步调查。表 1 是调查的结果。

表 1 在洪河自然保护区及其周边地区对鹤类繁殖的调查结果

Table 1 Survey result of breeding cranes at Honghe N.R. and the peripheral areas.

地点 Location	丹顶鹤 Red-crowned Crane	白枕鹤 White-naped Crane	注 Notice
保护区鹤类主要繁殖区的核心区和缓冲区 The core and buffer areas in main breeding area of the reserve	12 (4 对, 其余 4 只成 1 群。 4 pairs, the rest 4 cranes in one group)	16 (8 对.8pairs)	

	group)		
核心区 Core area* 保护区工作站西侧* East to the working station of the reserve*	1 巢 1 nests 1 巢 1 nests	2 巢 2nests 1 巢 1 nests	每巢均有 2 枚卵 Each nest had 2 eggs in it
洪河农场 3 区, 4 区** The 3 rd and 4 th regions of Honghe Farm**	—	—	
洪河农场 8 区 The 8 th region of Honghe Farm	2 只 (成鸟) 2 adults	6 只 (成鸟) 6 adults	经走访知全为繁殖对 Breeding pairs
前锋农场 1 队, 2 队 The 1 st and 2 nd Teams of Qianfeng Farm	3 只 (1 个家庭) 3 from one family	2 只 (1 对) One pair	
总计	21 只 (5 对)	24 只 (12 对)	

*东北林业大学野生动物资源学院硕士研究生刘学昌等 5 月 11-19 日的调查数据

*The survey result of Mr.Liu Xue-Chang,a graduate student, College of Wildlife Resources, Northeast Forestry University.

**2002 年和 2003 年均有 8 只丹顶鹤和 4 只白枕鹤在此活动

**Eight Red-crowned Cranes and 4 White-naped Cranes were found in 2002 and 2003.

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Survey on breeding cranes at Heilongjiang Honghe National N.R. and the peripheral areas

In order to know more about the habitat status of Honghe National N.R. and the peripheral areas, Mr. Zhao Zhi-Chun of Institute of Northeast Geology and Ecological Agriculture, Academia Sinica and the author conducted a survey on the habitat and breeding pairs of Red-crowned Cranes and White-naped Cranes at Honghe National N.R. and the 8th

region of Honghe Farm, the 1st and 2nd Teams of Qianfeng Farm, the peripheral areas of the reserve. Table 1 shows the survey result.

Zhu Bao-Guang (Administrative Bureau, Heilongjiang Honghe National N.R.) **Zhao Zhi-Chun** (Institute of Northeast Geology and Ecological Agriculture, Chinese Academy of Sciences)

2004—2005 年度中国境内白鹤迁徙监测情况报告

中国东北松嫩平原及长江中下游地区是白鹤东部种群重要的迁徙停歇地和越冬地。上世纪 80 年代以来, 中国各级野生动物行政主管部门、国内外鹤类及水鸟保护组织、鸟类研究人员对白鹤等全球迁徙水鸟的分布、数量、迁徙、繁殖、保护管理等进行了许多调查与研究, 获得了较为丰富的基础数据与信息。但是, 由于经济、技术等原因, 以往的调查研究工作间断断续, 缺乏连续数据监测与信息积累, 各地调查统计方法不统一、不规范, 影响了调查数

据间的对比和分析, 以至到目前为止, 我们对白鹤东部种群的种群动态和迁徙规律仍然知之不多。同时, 由于人口增长压力、农业生产与石油开发等影响, 白鹤迁徙停歇地、越冬地一直面临着退化乃至消失的威胁。

为了切实提高白鹤及同一迁徙路线上其它全球重要迁徙水鸟的保护管理能力与水平, 白鹤 GEF 项目确立了国家级水平子项目: “对白鹤及其它全球重要意义的迁徙水鸟的分布与迁徙进行监测”, 2004 年 3-6 月白鹤 GEF 项目国家

项目办组织编制了有关该项目的监测方案，并在同年6月安徽合肥会议上讨论通过。经过一年的监测实践，为总结交流2004年秋季、越冬和2005年春季中国境内白鹤迁徙路线监测成果，分析评估监测过程中存在的问题以及下一步解决方案，讨论完善监测方案，特别是监测地点、时间和人员分工等，2005年7月国家项目办在北戴河组织召开了“2004—2005年度中国境内白鹤迁徙监测研讨会”。参加本次研讨会的代表包括国家咨询委员会成员王岐山教授、国家级专家吴志刚研究员、相关省林业主管部门领导、各监测点负责人以及各项目点代表，共计28人。通过两天的总结交流和讨论，与会代表充分肯定了2004—2005年度监测活动取得的重大成绩：

1) 中国境内首次采用统一监测方法，对鹤类等重要水鸟进行跟踪监测；

2) 验证了白鹤迁徙监测网络的合理性、可行性与有效性；

3) 新发现了一些白鹤停歇地，如：吉林通榆包拉温都、农安菠萝湖、长岭三团，辽宁康平卧龙湖，内蒙科右中旗白音努拉湿地、龙王湖，湖北网湖等；大群聚集地如图牧吉等；越冬地如安徽安庆白荡湖等；

4) 促进了地方湿地与水鸟的保护管理工作，同时开展了公众宣传教育活动。

会议期间，区域协调员按照监测评估表，

对所辖片区内的每个监测组的监测工作进行了评估。分发评估表18份，回收100%。评估结果表明：22%地点监测工作优秀，56%地点监测工作良好，11%地点监测工作一般，11%地点监测工作不合格。

同时，根据监测的实际情况，完善并通过了修订的监测方案。主要修订内容包括：

1) 修订并规范了数据分析汇总方法，采用国际通用表格，便于进行统计和交流；

2) 调整了监测点的布局。特别增加了长江中下游越冬监测点，华北、辽吉、黑蒙春秋迁徙监测点；减少了长江中下游春秋迁徙监测点。另外，增加了一些机动监测点和北戴河莲峰山春秋迁徙定点监测点；

3) 调整监测时间；

4) 明确监测组提交阶段成果的内容、格式和时间；

另外，与会代表还就有关事宜达成如下共识：

1) 为便于项目文档保存和管理，规范报告和相关附件的电子文件名称：年份+季节+地点+主题语；

2) 区域协调员继续加强对所辖片区监测组的协调、指导和监督；

3) 确定2006年7月在内蒙古乌兰浩特市召开2005—2006年度迁徙监测总结交流会。

钱法文（白鹤 GEF 项目办公室）

Report on monitoring the migration of Siberian Crane in China, 2004-2005

Song-Nen Plain of Northeast China and the middle and lower basins of Yangtse River are the important stopover and wintering sites for the eastern population of Siberian Cranes. Since 1980s, the wildlife responsible departments at all levels, the internal and external crane and waterfowl protection organizations and bird researchers had made lots of surveys and researches on the distribution, population size, migration, breeding, protection and administration of Siberian Crane and other migratory waterfowls, and got rich data and information. Limited by the economic and technical conditions, the past surveys were

intermittent and irregular, so that the discontinuous and unmatchable data affect the data analysis, even now we still short of the population dynamics and migratory rules of the eastern population of Siberian Cranes. At the same time, affected by the increasing of human population, farming and oil exploitation, the stopover and wintering sites of the crane are facing the threat of degeneration and even distinguish.

In order to raise the conservation and manage ability on Siberian Cranes and other migratory waterfowls using the same flyway, the GEF Project set a sub-project on national level: "The monitoring of distribution and migration

of Siberian Cranes and other migratory waterfowls". The monitoring action plan was made by the GEF Project China section in March-June, 2004, and approved at the meeting held in Hefei in June, 2004. The GEF Project China section held "The symposium of monitoring the migration of Siberian Cranes in China in 2004-2005" in Beidaihe in July, 2005, to sum up and exchange the result of monitoring, to analyze and evaluate the problems exist in monitoring progress and put forward methods to resolve the problems, and complete the monitoring plan especially in monitoring site, time and personnel division of labor. Twenty-eight persons including Prof. Wang Qi-Shan, the member of national consult committee, national expert and Senior Researcher Wu Zhi-Gang, the leaders responsible for forestry in related provinces, the chief leaders at monitoring sites and project sites attend the meeting. In session of two days, by way of exchange and discussion, all the delegates confirmed the following achievements in monitoring in 2004-2005:

1) It is the first time using an unified standard to track and monitoring cranes and storks in China;

2) The practice confirmed the rationality, feasibility and effectiveness of the monitoring network of Siberian Crane;

3) Some new stopover sites were found, such as the Baolawendu of Tongyu, Buoluo Lake of Nongan, Santuan of Changling in Jilin province; the Wolong Lake of Kangping in Liaoning province; the Baiyinlula Wetland of Keyouzhong Banner and the Longwang Lake in Inner Mongolia; the Wanghu Lake in Hubei province. Tumuji was an stopover site for large flock of cranes, Baidang Lake of Anqing, Anhui was an wintering site.

4) It promoted the protection and management in wetland and waterfowls in

locality, and companied with public propagation and education.

During the meeting, the local coordinators evaluated the monitoring work of each monitoring group of the areas under their jurisdiction according the standard table. Eighteen tables were sent out and 100% of the tables were returned. The ratio of excellent, fine, average and not qualified took 22%, 56%, 11% and 11% of the total monitoring sites respectively.

The revised monitoring action plan was improved and approved. Following are the revised contents:

1) Adopted the general table form in the world to revise and standardize the way of analyzing and combining data, to promote the statistics and exchange.

2) Adjusted the distribution of monitoring sites, especially add more wintering sites in middle and lower basins of Yangtse River, and the spring and autumn migratory sites in North China, Liaonin, Jilin, Heilongjiang and Inner Mongolia; reduce the spring and autumn monitoring sites in middle and lower basins of Yangtse River. Lianfengshan of Beidaihe and some other flexible sites for spring and autumn monitoring were added.

3) Adjusted the monitoring time.

4) Set up the content, form and time of stage result promoted by the monitoring group.

The delegates all agreed that:

1) To standardize the name of report and the appendix of e-mail: year+season+location+subject;

2) Local coordinators should strengthen the coordination, guide and monitoring the work on the areas under their jurisdiction.

3) Decided next meeting will be held in Wulanhaote City, Inner Mongolia in July, 2006.

Qian Fa-Wen (Office of the GEF Project)

松嫩平原白头鹤秋季迁徙简讯

2005年10月,我们对在松嫩平原停歇的白头鹤,在两个固定地点(E124°36', N47°7';

E125°14', N47°16') 进行了同步观察, 分别记录到白头鹤 547 只和 158 (分别取连续观察 3 天的最高值), 合计 705 只, 并发现一只具有彩环的亚成体。同时统计了家庭群的构成、鸟群

中的幼鸟比例。为进一步工作如何区分成鸟性别、如何区别成鸟和亚成体等积累了经验。

郭玉民 付建国 刘相林 (首都师范大学生命科学学院)

Autumn migration of Hooded Crane in Song-Nen Plain

A synchronic census on stopover Hooded Cranes was conducted at two fixed sites: E124°36', N47°7' and E125°14', N47°16' in Song-Nen Plain, 547 and 158 cranes (each was the highest record in continuous observation in 3 days) were recorded respectively, 705 cranes in total, among them there was a sub-adult with color rings. The composition of family groups

and the ratio of juveniles were calculated. The census cumulates the experiences in distinguishing the sex of adults and distinguishing the adult from sub-adult in our future research.

Guo Yu-Min, Fu Jian-Guo, Liu Xiang-Lin (College of Life Sciences, Capital Normal University)

2005 年白头鹤繁殖地种群数量调查新进展

在国家林业局保护司的资助下, 我们于 4~9 月对松花江林管局的北三局(绥棱、通北、沾河: E127° 1' ~ 128° 27', N47° 46' ~ 49° 3') 白头鹤繁殖地的种群数量作了进一步调查。共记录到白头鹤 35 只。

巢相距约 5.5 km。还在胜利经营所的 166 林班发现 2 只雏鸟 (不足 5 日龄) 和它们的 2 只亲鸟。此外, 在 2004 年找到巢的 3 个地点还分别记录到成对白头鹤活动, 并有领域行为。在嘎拉气等地点也见到实体, 总体情况详见表 1:

期间在五道林林场找到 2 个白头鹤巢。两

表 1 2005 年白头鹤繁殖地种群数量调查结果

Table 1 Population counting at the breeding site of Hooded Crane

时间 Date	地点 Location	数量 Number	备注 Notes
5.20~8.28	五道林 55 林班 The 55 th woodland of Wudaolin	2	找到巢 Found nest
5.16~8.4	五道林 28 林班 The 28 th woodland of Wudaolin	2	找到巢 Found nest
5.26\5.29\ 6.3	五道林 35、36 和 37 林班 The 35 th , 36 th and 37 th woodlands of Wudaolin	3	同时活动, 非繁殖个体 Non-breeding cranes, moving together
5.29\6.1~ 6.11	五道林 58 林班 The 58 th Woodland of Wudaolin	1	是否参与繁殖不确定 Breeding status unknown
6.5	胜利经营所 166 林班 The 166 th woodland of Shengli Operating Department	2	见到两只幼鸟和两只亲鸟 Found parents and 2 chicks
4.4~9.16	乌斯孟 49、53、62 和 63 林班 The 49 th , 53 rd , 62 nd and 63 rd woodlands of Wusimeng	2	与去年 2 号巢同一区域, 有领域行为, 8 月 5 日开始见到 1 只幼鸟跟随活动 Within the same area of no.2 nest of last year, territoriality. One chick was found following parents since August 5 th .
4.14\4.18\	北沾河 43 和 44 林班	2	与去年 1 号巢同一区域, 有领域行为

4.19\4.26	The 43 rd and 44 th woodlands of Beizhanhe		Within the same area of no.1 nest of last year, territoriality.
4.14~4.19\ 4.26	北沽河 24 林班 The 24 th woodland of Beizhanhe	3	同时活动 Moved together
5.19~5.22	茂岚 29 和 39 林班 The 29 th and 39 th woodlands of Maonan	2	与去年 3 号巢同一区域, 有领域行为 Within the same area of no.3 nest of last year, territoriality.
4.12~5.22\ 8.16	茂岚 21 和 22 林班 The 21 st and 22 nd woodlands of Maonan	6	没参加繁殖, 经常来麦田. Non-breeding, often came to wheat field.
4.15\6.10~ 6.26	嘎拉气前进工区 Qianjin Work Area of Galaqi	2	与去年发现有领域行为的在同一区域, 有领域行为. Within the same area of territorial cranes found last year, territoriality.
4.15\5.13~ 5.18	嘎拉气振兴工区 Zhengxing Work Area of Galaqi	4	持续同来同往 Moved together
5.7	尖新山 30 林班 The 33 rd woodland of Jianxinshan	2	没发现有领域行为 Territoriality not found
6.20\7.9	汤元山 17 林班 The 17 th woodland of Tangyuanshan	2	繁殖情况不详 Breeding status unknown
合计 Total		35	

*在绥棱和通北两个林业局的调查期间没能见到实体。

*No crane was found during the surveys in Suiling and Tongbei Forestry Bureaus.

郭玉民 刘相林 徐纯柱 (首都师范大学生命科学学院)

New progress in population census at the breeding site of Hooded Crane

Supported by Division of Wildlife Conservation, State Forestry Administration, we conducted a population census at the breeding site of Hooded Crane, within the areas of Suilin, Tongbei and Zhanhe (E127° 1' ~ 128° 27' , N47° 46' ~49° 3') Bureaus of Songhuajiang Forestry Administrative Bureau from April to September, 2005. 35 Hooded Cranes were recorded.

Two nests about 5.5km apart were found at

Wudaolin Tree Farm. Two nestlings (hatched within 5 days) and their parents were found at the 166th woodland of Shengli Operating Department. Paired cranes with territoriality were found at the three sites where nests had been found last year. Cranes were also found at Galaqi and other sites.

Guo Yu-Min, Liu Xiang-Lin, Xu Chun-Zhu
(College of Life Sciences, Capital Normal University)

2005 年小兴安岭西北部沾河流域、南北河流域 丹顶鹤和白枕鹤繁殖地种群数量调查

前几年的野外工作中零星记录了一些在小兴安岭地区繁殖的丹顶鹤和白枕鹤。在国家林业局保护司的资助下, 我们于 2005 年 5~9 月对位于小兴安岭西北部的沾河流域、南北河流域

(E127° 1' ~ 128° 27' , N47° 46' ~49° 3'), 丹顶鹤和白枕鹤繁殖地的种群数量作了初步调查。今年共记录到丹顶鹤 18 只、白枕鹤 12 只。详细情况见表 1 和表 2:

表 1 小兴安岭西北部丹顶鹤繁殖地种群数量

Table 1 Number of Red-crowned Cranes at the breeding site of northwest Xiaoxinganling Mountain

时间 Date	地点 Location	数量 Number
8.26~9.18	沾河流域六道岗 Liudaogang, Zhanhe River Basin	4(2+2)
8.27~9.19	沾河流域张牯子种地点儿 Zhongdianer, Zhangmangzi, Zhanhe River Basin	2
5.30~9.20	南北河流域红星林场 4 林班、建设林场 93 林班 The 4 th woodland of Hongxing Tree Farm and the 93 rd woodland of Jianshe Tree Farm, Nanbeihe Basin	3(2+1)
5.31~9.20	南北河流域前进林场 14、15 林班、曙光林场 28、29 林班 The 14 th and 15 th woodlands of Qianjin Tree Farm and the 28 th and 29 th woodlands of Shuguang Tree Farm, Nanbeihe Basin	3(2+1)
7.22~9.21	南北河流域双胜林场 74、76 林班 The 74 th and 76 th woodlands of Suangsheng Tree Farm, Nanbeihe Basin	2
7.22~9.21	南北河流域朝阳林场 38 林班、卫东林场 1 林班 The 38 th woodland of Chaoyang Tree Farm, the 1 st woodland of Weidong Tree Farm, Nanbeihe Basin	2
4.30	南北河流域建设农场 Jianshe Farm, Nanbeihe Basin	2
合计		18*

*其中 4 只为当年幼鸟。 *Four of them were newborn chicks.

表 2 小兴安岭西北部白枕鹤繁殖地种群数量

Table 2 Number of White-naped Cranes at the breeding site of northwest Xiaoxinganling Mountain

时间 Date	地点 Location	数量 Number
6.11	沾河流域陈吉安种地点儿 Zhongdianer, Chenji'an, Zhanhe River Basin	1
5.30~9.20	南北河流域红星林场 4 林班、建设林场 93 林班 The 4 th woodland of Hongxing Tree Farm and the 93 rd woodland of Jianshe Tree Farm, Nanbeihe Basin	4(2+2)
5.31~9.20	南北河流域曙光 28、29 林班 The 28 th and 29 th woodlands of Shuguang Tree Farm, Nanbeihe Basin	3(2+1)
7.22	南北河流域朝阳林场 38 林班 The 38 th woodland of Chaoyang Tree Farm, Nanbeihe Basin	4(2+2)
合计 Total		12*

*其中 5 只为当年幼鸟 *Five of them were newborn chicks

郭玉民 刘相林 张剑英 (首都师范大学生命科学学院, E-mail: www.guoym21@sohu.com)

Crane Census at the breeding sites of Red-crowned Crane and White-naped Crane in Zhanhe Basin and Nanbeihe Basin, northwest Xiaoxinganling Mountains

In our early field surveys we had recorded some data about Red-crowned Cranes and White-naped Cranes bred in Xiaoxinganling Mountain area. Supported by Division of Wildlife Conservation, State Forestry Administration, we conducted crane census at the breeding sites of Red-crowned Crane and White-naped Crane in Zhanhe and Nanbeihe

Basins (E127°1'~ 128°27', N47°46'~49°3'), northwest Xiaoxinganling Mountains. Eighteen Red-crowned Crane and 12 White-naped Cranes were found. Table 1 and table 2 show the data in detail.

Guo Yu-Min, Liu Xiang-Lin, Zhang Jian-Ying (College of Life Sciences, Capital Normal University, 100037)

大庆救助一只白鹤

2005年10月14日下午,大庆市林业局接到电话,称杜尔伯特蒙古族自治县一心乡村民拣到一只受伤“大鸟”。林业局责成设在大庆龙凤湿地自然保护区的野生动物救助站于次日派人前往现场。

据拣到该鸟的当事人介绍,3天前(12日)

就发现这只鸟在泡子边,因为看到它像有病的样子,才把它捉回来,捉时它不飞,就是叨人。到家后立刻拨打了110。经鉴定伤病的“大鸟”是一只成年白鹤。这只白鹤栖息地点的坐标为: E124°27', N46°46'。

郭玉民 (首都师范大学生命科学学院)

A Siberian Crane was rescued in Daqing

After answer a phone in the afternoon on October 14th , 2005, Daqing Forestry Bureau instructed the Wildlife Succoring Station, Daqing Longfeng Wetland N.R. to Duerbote Mongolian Autonomous County to treat a wounded “large bird”. A villager who had found the bird stayed on the edge of a lake and looked sick, when he go to catch the bird it did not fly

away just to peck instead, he took the bird home and called 110.

The “large bird” was then identified to be an adult Siberian Crane, it was found at the coordinates of: E124°27', N46°46'

Guo Yu-Min (College of Life Sciences, Capital Normal University)

灰鹤在北京延庆野鸭湖湿地自然保护区越冬

野鸭湖湿地自然保护区位于北京市延庆县西北部,东经115°47'--115°54',北纬40°25'--40°30',是由官厅水库延庆辖区及环湖淹没区滩涂组成的次生湿地。每年秋天有大约200-300只灰鹤来此越冬,整个冬天它们都留居此地,刚来时它们以大群一起活动,以后多以小群或家族群形式活动于玉米田中,

夜晚在冰面上过夜,次年的3月份离开北京飞往繁殖地。北京动物园从2004年开始对灰鹤在北京的越冬生态进行研究,调查灰鹤的越冬行为和栖息地利用,开展相关的保护宣传活动。详见封2、封3。

吴秀山 (北京动物园)

Common Cranes wintering at Yeyahu Wetland N.R., Yanqing county, Beijing

Yeyahu (Wild Duck Lake) Wetland Natural Reserve locates in the northwest of Yanqing county of Beijing, 115°47'--115°54'E, 40°25'--40°30'N. It consists of the Guanting Reservoir and the marshes around the lake. In the autumn, about 200-300 common cranes arrived Yeyahu Wetland N.R. and stayed at

there for winter. The cranes arrived in big flocks, and then feed in the corn field in small flocks or family flocks. They stayed on the iced lake for night. The cranes left Beijing for breeding in March. Since 2004, Beijing Zoo has conducted a research project on the Wintering Ecology of Common Crane in Yeyahu. The

wintering behaviors and the habitat use were investigated. Some related conservation and public awareness activities were also developed.

Photos on the Cover 2 and Cover 3.

Wu Xiu-Shan (Beijing Zoo)

2005 年秋季崇明东滩南迁鸻鹬类环志和彩色旗标系放工作顺利结束

每年的 8 月~10 月是东亚—澳大利西亚涉禽迁徙路线上南迁涉禽在崇明东滩湿地停留的集中时期。自 2002 年秋季开始, 崇明东滩鸟类自然保护区对在东滩国际重要湿地停留的鸻鹬类开展了环志工作。2003 年春季, 根据《东亚—澳洲迁徙路线上迁徙海滨鸟彩色旗标协议书》的要求, 保护区结合迁徙涉禽的环志开展了彩色旗标系放工作。鸻鹬类的环志工作不仅对于国际性鸟类迁徙的合作研究、履行有关国际义务和扩大鸟类保护的宣传有很重要的意

义, 也对研究崇明东滩在涉禽迁徙路线上的重要作用提供了充分的基础数据。

2005 年秋季的鸻鹬类环志和彩色旗标工作于 8 月 15 日开始, 至 10 月 7 日结束。鸻鹬类的捕捉由两名捕鸟经验丰富的当地居民采用崇明特有的翻网法捕捉, 由环志人员现场环志、佩戴旗标和测量身体量度等指标后放飞。本次环志中, 总共环志鸻鹬类 35 种, 共 1794 只。具体种类和数量见下表。

表 1 2005 年秋季崇明东滩水鸟环志和彩色旗标系放统计表

Table 1 Banded and leg-flagged Shorebirds at Chongming Dongtan in autumn, 2005

种类	SPECIES	数量 Number
灰斑鸻	Grey Plover	29
金斑鸻	Golden Plover	40
铁嘴沙鸻	Greater Sandplover	83
蒙古沙鸻	Lesser Sandplover	5
金眶鸻	Little Ringed Plover	1
环颈鸻	Kentish Plover	14
大沙锥	Swinhoe's Snipe	3
扇尾沙锥	Common Snipe	17
黑尾塍鹬	Black-tailed Godwit	43
斑尾塍鹬	Bar-tailed Godwit	69
半蹼鹬	Asiatic Dowitcher	6
白腰杓鹬	Eurasian Curlew	25
大杓鹬	Eastern Curlew	29
中杓鹬	Whimbrel	274
小杓鹬	Little Curlew	5
鹤鹬	Spotted Redshank	42
红脚鹬	Common Redshank	166
青脚鹬	Common Greenshank	220

种类	SPECIES	数量 Number
泽鹬	Marsh Sandpiper	20
林鹬	Wood Sandpiper	135
矶鹬	Common Sandpiper	12
灰鹬	Grey Tailed Tattler	23
大滨鹬	Great Knot	1
红腹滨鹬	Red Knot	5
尖尾滨鹬	Sharp Tailed Sandpiper	44
红颈滨鹬	Red-necked Stint	33
长趾滨鹬	Long-toed Stint	184
黑腹滨鹬	Dunlin	29
弯嘴滨鹬	Curlew Sandpiper	4
阔嘴鹬	Broad-billed Sandpiper	3
翘嘴鹬	Terek Sandpiper	209
翻石鹬	Ruddy Turnstone	11
红颈瓣蹼鹬	Red-necked Phalarope	5
普通燕鹬	Oriental Pratincole	2
须浮鸥	Whiskered Tern	3
总计		1794

自 2002 年保护区开展鸟类环志工作至

今, 崇明东滩鸟类自然保护区共环志放飞鸻鹬类和燕鹬类 43 种, 共 9789 只, 鸻鹬类的种类

和数量居国内之首。特别是 2005 年一年就环志了 5739 只，取得了巨大的成效。今年的环志和以往 3 年相比有以下的不同之处：

1. 今年在鸟类北迁和南迁时期的环志时间各延长到将近 2 个月，比以前的环志时间长了 1 倍以上，基本覆盖了涉禽迁徙经过东滩的全部时间，这样使环志尽可能包括了经过东滩的全部涉禽种类，数据上也更丰富，结果也更科学。

2. 澳大利亚涉禽研究组委派了两位经验丰富的涉禽专家参加了东滩春季的环志，不仅弥补了保护区环志人手的不足，而且帮助保护区环志人员提高了对涉禽的换羽和年龄的鉴别能力，促进了国际交流。

3. 除了迁徙季节的环志外，保护区对在东滩越冬的鸻鹬类也进行了一次环志，弥补了冬季环志数据的缺乏。保护区对在东滩繁殖的须浮鸥进行了幼鸟环志的初步尝试，这也是国内首次进行环志须浮鸥幼鸟的工作。

4. 今年首次引进了志愿者参与环志工作。志愿者来自高校和社会上热衷鸟类保护并具有鸟类识别能力的鸟类爱好者。除了上海本地的志愿者外，还有数名来自北京、南京、杭州观鸟团体的成员和 1 位澳洲的留学生参加。他们不仅补充了保护区的环志人手，同时也成为帮助保护区对外宣传环志工作意义的很好渠道。

章克家, 钮栋梁

(崇明东滩鸟类国家级自然保护区管理处)

The ring and color leg-flag bandings of shorebirds at Chongming Dongtan in autumn, 2005

Each year from August to October the southwards migratory shorebirds on Asian-Australasian Shorebird Flyway may stopover at the wetland of Chongming Dongtan. Since the autumn of 2002, the staff of Chongming Dongtan Bird N.R. started the banding on the stopover shorebirds. According the request of *<Protocol of color flag setting on migratory shorebird of Asian- Australasian Shorebird Flyway >*, the staff banded color leg-flags on to the shorebirds while in ring banding. This work is not only important to the cooperative research of world bird migration, to perform international duty and strengthen the propagation of bird protection, but also offers basic data. It shows that Chongming Dongtan is an important site in shorebird migratory rout.

The bird was caught by turning net method(unique to Chongming), after ring banding, flag banding and body measuring and weighing, the bird was released at once. From August 15th to October 7th, 35 species, totally 1 794 individuals of shorebirds were banded.

Since 2002 the reserve had banded 43 species, 9 789 shorebirds and terns. The species and number of shorebirds (5 739 shorebirds in 2005) are all ranked at the first in China. Compared with the former 3 years, the

banding work of 2005 has some characters:

1. The banding period for northwards and southwards shorebirds each prolonged to nearly two months. It spent double banding times of the former years, the period basically covered the whole staging time of shorebirds at the reserve. This banding got rich data and conducted more scientifically.

2. Two senior shorebird specialists were sent to Chongming Dongtan by Australasian Wader Studies Group (AWSG) to help our spring banding work. They improved the ability of the staff in identifying the molting and age of shorebirds, and promoted the international learning and exchange.

3. Besides the bandings in migratory seasons, the staff also banded the wintering shorebirds to complete the banding data. The reserve tried to do the first banding work on the juveniles of Whiskered Tern in China.

4. Volunteers were first involved in banding work. They came from universities and bird lovers who is capable of identifying birds and eager to protect bird. It composed Shanghai volunteers, several people from Beijing, Nanjing and Hangzhou Bird Watching Groups and an Australasian student. They were the good

banding assistants and the good propagators in showing the meaning of bird banding.

(Administrative Department of Chongming Dongtan National N.R.)

Zhang Ke-Jia, Niu Dong-Liang

鸻形目鸟类在“东亚-澳大利亚”的南北方向迁徙路线是否一致 ——长江口研究案例

长江口滨海滩涂湿地包括崇明东滩，长江口南岸和杭州湾北岸，位于亚太地区候鸟南北迁徙必经的路径上，处于“东亚-澳大利亚”涉禽迁飞路线的中点，是过境候鸟停歇、补充能量的驿站和良好的越冬地。1984-2005年，我们在长江口地区进行了鸟类调查，包括水鸟资源、捕猎状况、候鸟环志以及鸻形目鸟类羽式鉴别和年龄结构分析等工作，研究中途停歇生态学，由此探究鸻形目鸟类在不同迁徙季节对中转站的利用状况及年龄差异。

从春秋两季的鸟类调查及环志数据可知，1984至2005年，不同调查区域（崇明东滩，长江口南岸和杭州湾北岸）鸻形目鸟类在北迁期（春季）数量比例均比南迁期（秋季）高，变化幅度为1.5:1—7.2:1。由1991至1992年捕猎状况的调查分析可知，鸻形目鸟类在的春秋两季的数量比例也在2:1左右。鸻形目鸟类北迁期的优势种为大滨鹬（*Calidris*

tenuirostris），红腹滨鹬（*Calidris canutus*），斑尾膝鹬（*Limosa lapponica*），尖尾滨鹬（*Calidris acuminata*）和红颈滨鹬（*Calidris ruficollis*），且数量较大，但南迁期时数量大大减少。所以可以总结出，鸻形目鸟类在春秋两季迁徙期可能采用不相同的迁飞路线和停歇策略。

根据2002至2004年鸻形目鸟类羽式及年龄结构分析可知，春季北迁期停留在长江口滨海湿地的鸻形目鸟类96.98%为成鸟，相比而言，秋季繁殖期过后，在研究区域发现的94.73%为幼鸟。我们初步认为，鸻形目鸟类春季由南半球迁飞到北极圈繁殖和秋季南迁至越冬地的迁徙过程中，成鸟在繁殖期结束后南迁时与春季北迁期采用的路线并不一致，但其新生幼鸟仍可能沿袭春季成鸟的北迁路线飞回南半球越冬。

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袁晓（崇明鸟类环志中心）

Do shorebirds in East Asia-Australian Flyway have different migratory routes on the northwards and southwards passage? —— a case study on the Yangtze River Estuary, China

Yangtze River Estuary, including Chongming Dongtan wetland, Southern Yangtze Estuaries and North Hangzhou Bay, is an important stopover site for migratory shorebirds of the East Asian-Australasian Flyway. From 1984 to 2005, Shorebird counting, hunting, flag banding, identifying the molt status and age of the birds were carried out in Yangtze River Estuary to understand how the shorebirds to

make use of the stopover area.

The date of shorebird counting and banding showed that the ratios of the shorebird number varied from 1.5:1 to 7.2:1 between northward migration period (spring) and southward migration period (autumn) in different survey sites during 1984-2005, and the bird hunting ratios in the both seasons of 1991 and 1992 was

about 2:1. The dominant migratory species of northward migration with large number in the study area were Great Knot *Calidris tenuirostris*, Red Knot *Calidris canutus*, Bar-tailed Godwit *Limosa lapponica*, Sharp-tailed Sandpiper *Calidris acuminata* and Red-necked Stint *Calidris ruficollis*. During southward migration their number decreased a lot. It infers that during the spring and autumn migrations, the shorebirds may take different fly routes and different stopover strategy.

According to the shorebird aging data of 2002 to 2004, 96.98% of shorebirds stopped at the study area were adults during the northward

migration period (spring), comparatively, 94.73% of total aged birds were newborn during the southward migration period after breeding season. We suggest that the shorebird adults probably fly along the China coastline from south hemisphere to Arctic breeding area with a different migratory route of their return to south, however the newborn shorebirds might take their parents' northward migratory route back to the south hemisphere.

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Yuan Xiao (Chongming Bird Banding Station)

中国饲养鹤类的数量

在过去的 50 年中，人类采取了广泛的保护措施来挽救日益减少的鹤类种群。迁地保护正逐渐成为一个行而有效的保护途径，人工饲养种群终将成为补充野外种群的重要来源。作者调查总结了从 1984 年到 2004 年 20 年间中国有关单位饲养鹤类的数量写成本文，希望能为我国的鹤类保护提供参考和帮助。

到 2004 年，我国饲养的鹤类种类达 14 种（除美洲鹤外），其中有 13 种鹤有繁殖记录（除美洲鹤和澳洲鹤），分别饲养于全国近 150 家

动物园、野生动物园、公园、风景区、保护区以及鹤类繁殖基地等迁地保护单位，分布于我国除西藏和台湾以外的 30 个省、直辖市和自治区。近 20 年，笔者 4 次对中国鹤类饲养数量进行调查，统计结果如表 1。结果表明我国鹤类的饲养数量持续增长，尤其是一些濒危鹤类的数量更是呈现大幅增长的趋势，且很多已建立较健康的繁殖种群。

田秀华（东北林业大学）

表 1 1984、1998、2001 和 2004 年中国迁地保护鹤类数量

Table 1 Population size of *ex-situ* conservation cranes in China, in 1984, 1998, 2001 and 2004

物种	Species	1984	1998	2001	2004
丹顶鹤	Red-crowned Crane	200	565	865	1148
黑颈鹤	Black-naped Crane	19	69	100	138
白鹤	Siberian Crane	12	36	64	108
白头鹤	Hooded Crane	39	32	47	48
白枕鹤	White-naped Crane	189	191	282	360
蓑羽鹤	Demoiselle Crane	103	186	242	395
灰鹤	Common Crane	228	228	286	337
赤颈鹤	Sarus Crane	5	4	4	1
沙丘鹤	Sandhill Crane	0	6	6	4
东非冠鹤	Black-crowned Crane	6	66	177	378
西非冠鹤	Grey-crowned Crane	0	18	27	43
澳洲鹤	Brolga Crane	0	2	2	1

兰鹤	Blue Crane	0	2	13	10
肉垂鹤	Wattled Crane	0	0	10	6
总计	Total	801	1405	2125	2977

Population size of the *ex-situ* conservation cranes in China

In the past 50 years, various protecting measures have been taken to save the decreasing population of cranes. *Ex-situ* conservation is now an effective protecting measure. The captive bred crane population will be the main resource to supplement the wild crane population. The author investigated and summed up the population number of captive cranes in China in 1984~2004. It would be helpful to the crane conservation in China.

By the year of 2004, there were 14 species of captive cranes (except for Whooping Crane) in China, among them 13 species had breeding records (except for Whooping Crane

and Brolga Crane). These captive cranes were reared in nearly 150 *ex-situ* protecting units, such as zoos, wildlife gardens, parks, scenic spots, reserves and breeding bases, distributed in 30 provinces, municipalities directly under the Central Government and autonomous regions (except for Tibet and Taiwan). The author made four investigations on the population size of the captive cranes in China. Table 1 shows that the population size of captive cranes, especially for some endangered species, are getting increased. Most of them have established healthy breeding populations.

Tian Xiu-Hua (Northeast Forestry University)

广州香江野生动物世界肉垂鹤(*Bugeranus carunculatus*)繁殖成功

肉垂鹤是鹤类中较大型的一种，也是世界上 7 种受威胁鹤类中唯一的留鸟。肉垂鹤原产于非洲，是非洲鹤类中唯一的有白色颈部的鹤，腭下具有显著的肉垂，大部分为白色略带红色。体长约 175cm，翼展长 230~260cm。雄性重 8300~8500g，雌性为 7100~7900g。野生状态下其繁殖期不十分固定，4 月到 10 月均有产卵的记录。

广州香江野生动物世界于 2000 年 6 月从坦桑尼亚引进肉垂鹤 10 只。经精心饲养和科学管理，已有一对成功繁殖。其从 2003 年开始连续 3 年产卵，到 2005 年共产卵 10 枚，受精 4 枚，人工孵化出雏 2 只，育成 1 只。产卵时间为 1~6 月，主要集中在 3~5 月，窝卵数 1 枚，利用人工捡卵再促进产卵，但时间间隔

较长，多为 14 天之后，最多一年产卵 4 枚。人工孵化期 35~36 天，从啄壳到出壳需约 31 小时。

广州香江野生动物世界日常饲料以种鸭颗粒饲料为主，配以面包虫和杂粮。肉垂鹤平时不喜食其它动物性饲料（如泥鳅、鱼和熟鸡蛋等），只有进入繁殖期后才会少量取食。肉垂鹤育雏初期饲料以面包虫和泥鳅为主，添加复合维生素和 B 族维生素（酵母）。育雏中后期添加颗粒料、蔬菜、熟鸡蛋、肉和蚯蚓等。

虽然肉垂鹤连续 3 年在广东香江野生动物世界成功繁殖，但受精率较低，今后要展开进一步的研究以提高肉垂鹤的繁殖率和成活率。

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Wattle Cranes successfully bred at Xiangjiang Wildlife World, Guangzhou

Wattle Crane is a large-sized bird and is the only one resident bird among the 7 species

of threatened cranes in the world. It is endemic to Africa. It has white neck, with a white wattle

(tint with a little red) beneath the palate. The body length of the crane is about 175cm, 230~260cm in wing span. Male weighs 8300~8500g, female weighs 7100~7900g.

Xiangjiang Wildlife World, Guangzhou introduced 10 Wattled Cranes from Tanzania in June, 2000, one pair has succeeded in breeding. Since 2003, the female has laid eggs for 3 years in succession, 10 eggs were laid, 4 of them were fertilized, 2 chicks were hatched by artificial incubation, one chick survived till 2005. The egg-laying happened between January and June, mainly between March and May, clutch size one egg. Artificially take out the egg may promote the female lay more eggs, but it takes female at least 14 days to lay the nest egg. Female at most lays 4 eggs annually. The hatching period takes 35~36 days in artificial incubating condition. It takes about 31 h for the chick from peaking at the egg shell to out of the shell.

The daily feed is mainly composed of pellets for breeding duck and meal worms and food grains other than wheat and rice in Xiangjiang Wildlife World, Guangzhou. Except that take few animal feed (such as loach, fish and cooked egg) in breeding period, Wattled Cranes don't like such kind of feed. We add compound vitamins and Vitamin B (yeast) into mealworm and loach to feed breeding cranes in the early stage, when in rearing chicks we add pellet feed, vegetable, cooked egg, meat and earthworm.

Although Wattled Crane has successfully bred in Xiangjiang Wildlife World, but the fertilization rate was relatively low. Conducting more researches and improving the breeding rate and survival rate are the tasks in the future.

Zhang De-Lu(Guangzhou Xiangjiang Wildlife World), **Tian Xiu-Hua** (Northeast Forestry University)

2005 年第六届海峡两岸鸟类学术研讨会水鸟研究报告

Waterbird Study Presentations in the 6th Ornithological Symposium between Mainland and Taiwan of China & the 8th China Ornithological Society Congress, 2005

	报告人 Reporter	报告题目 Topic
1	杨晓君 Yang Xiao-Jun	黑颈鹤东部种群的生态研究介绍 Introduction of ecological research on eastern population of Black-necked Crane
2	刘廷威 Liu Ting-Wei	台湾历年水鸟释放回收结果 Result of the releasing and recover of waterfowls in Taiwan Province over the years
3	马志军 Ma Zhi-Jun	崇明东滩鸻鹬类的觅食策略和栖息地利用 Forage strategy and usage of habitat of shorebirds at Congming Dongta
4	赛道建 Sai Dao-Jian	白额鸢繁殖行为的观察 Observation on breeding behavior of Streaked Shearwater
5	陈水华 Chen Shui-Hua	中国沿海岛屿繁殖海鸥与燕鸥的分布、资源及其受胁因素 Distribution, resources and threaten factors of gulls and terns bred on the inshore islands, China
6	郭玉民 Guo Yu-Min	小兴安岭白头鹤繁殖习性和种群数量 Breeding behavior and population size of Hooded Crane in Xiaoxinganling Mountian
7	李凤山	2002-2004 年云贵高原黑颈鹤的同步调查

	Li Feng-Shan	Synchronous census on Black-necked Cranes in Yunnan-Guizhou Plateau, 2002~2004
8	何春光 He Chun-Guang	丹顶鹤繁殖生境水量控制研究 Research on the control of water quantity in breeding habitat of Red-crowned Crane
9	杨洪燕 Yang Hong-Yan	渤海湾北部的越冬水鸟研究 Research on wintering waterbirds in northern Bohai Bay
10	杨陈、周立志 Yang Chen, Zhou Li-Zhi	安庆沿江湿地留居东方白鹤的繁殖生物学初步研究 Research on breeding biology of the resident Oriental White Stork in littoral wetland, Anqing, Anhui Province.
11	周立志、王岐山 Zhou Li-Zhi, Wang Qi-Shan	东方白鹤南方留居种群的繁殖特点及保护对策 Breeding characters and conservation strategy of southern resident population of Oriental White Stork
12	罗柳擘 Luo Liu-Chi	台湾高雄地区稻田中的彩鹬繁殖生态学研究 Research on breeding ecology of Greater-painted Snipe in rice field of Gaoxiong Region, Taiwan
13	刘阳、雷进宇 Liu Yang, Lei Jin-Yu	渤海湾遗鸥的分布、数量和年龄结构 Distribution, amount and age structure of Relict Gull in Bohai Bay
14	童春富 Tong Chun-Fu	高强度开发背景下城郊自然保护区迁徙鸻鹬群落结构的变化 The change of community structure of migratory shorebirds in rural reserves under high strength of exploitation
15	吕士成 Lv Shi-Cheng	人工湿地丹顶鹤的分布动态 Distribution trend of Red-crowned Crane in artificial wetland
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17	胡军华 Hu Jun-Hua	西洞庭湖湿地鸟类物种多样性及其区系分析 Analysis of species diversity and fauna of the birds in the wetland of Western Dongting Lake
18	楚国忠 Chu Guo-Zhong	中国大陆鸻鹬鸟类迁徙研究及彩色旗标的应用 Research on the migration of shorebirds in Mainland China and the usage of color flag banding
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20	张国钢 Zhang Guo-Gang	黑脸琵鹭在中国大陆的分布及栖息地的保护状况 Distribution and habitat protection of Black-faced Spoonbill in Mainland China
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23	李晓京 Li Xiao-Jing	北京地区越冬黑鹳的行为生态 Behavior ecology of Black Stork wintering in Beijing

丁长青 (中国科学院动物研究所)
Ding Chang-Qing (Institute of Zoology, Chinese Academy of Sciences)

首次发现东方白鹳在南昌野外自然繁殖

2005年5月20日下午，我们在南昌市进贤县三里镇观鸟时发现一只东方白鹳衔着枯草在飞行，于是开着车用望远镜进行跟踪，结果行驶了约两公里发现它降落在一个V形高压电线塔顶，在靠东北面塔顶上有1个由枯枝搭成的鸟巢，用望远镜观察发现巢里有1只东方白鹳在孵卵。

这座高架线铁塔离地面有20余米高，位置在北纬28°41'117"，东经116°24'620"，海拔约34米。周围主要是耕地，种有水稻，花生，大豆等植物。铁塔的东南面是鄱阳湖的外湖，北面是被当地农民利用起来搞水产养殖的封闭湖泊，有军山湖，倪湖，西面是丘陵和耕地。通过几天连续观察，它们取食及衔草补巢主要是在巢的东南面，也就是鄱阳湖的外湖，偶尔也在铁塔周围的稻田里活动。近几天南昌连续高温，白天平均气温近33摄氏度，东方白鹳孵卵时嘴一直张着，每隔20—30分钟就会站起来凉卵并不停用嘴及脚挪动蛋的位置。高架线铁塔底下有一条宽约2.5米的沙石路可以通车，东面约一公里就是昌万水泥

公路，这里人为活动比较频繁。据当地农民介绍，这个鸟巢去年就在这里。

这是首次发现国家I级保护动物东方白鹳在南昌地区繁殖。因此，引起了南昌野生动物保护工作者和媒体的广泛关注。5月22日，我们通过电话联系上了中国鸟类专家王岐山先生，王先生对此事非常感兴趣，并指派安徽大学的周立志教授来南昌指导保护东方白鹳繁殖工作。6月1日至3日，江西电视台、南昌电视台、江西都市报在安徽大学周立志教授的帮助下对此事进行了专题报道为保护好这个罕见的东方白鹳繁殖巢，让东方白鹳能顺利进行繁殖，南昌市和进贤县野保站已在铁塔上挂起了告示牌，告之当地群众保护东方白鹳的意义以及伤害它要承担的法律 responsibility，同时还积极与电力部门协商，希望巡查电网线路安全的同志既要确保电力安全又不要影响东方白鹳繁殖。

胡斌华，熊冬平，汪志如
(南昌市野生动植物保护管理站)

Oriental White Stork was first found bred in Nanchang

A flying Oriental White Stork carrying some dry grasses in its bill attracted the authors in the afternoon of May 20th, 2005. With the help of driving car and binoculars tracing, the authors followed the stork for about 2km, finally it fell on the top of a "V" shaped electric transmission tower. On the northeast top of the tower there was a nest built with dry branches. Using binoculars the authors found an incubating stork in the nest.

This iron tower is more than 20m high, and with the coordinates of N 28°41'117" , E 116°24'620" ,and at the elevation of 34m, with the surroundings of paddy ,peanut and soybeans fields. In the southeast of the tower is the outer

lake of Poyang Lake, in the north of the tower there are Junshan Lake and Nihu Lake (the lakes were closed by the local farmers for aqua-culture), in the west of the tower there are hills and farmlands. By keeping observing for several days, the authors found that the storks mainly fed and carried grasses back from the outer lake, occasionally they moved about in the paddy field near the tower. The hot weather in Nanchang (the average daytime temperature was 33°C)in those days made the storks kept their bills open while in incubation, and to cool their eggs in every 20-30 minutes and turning the eggs by bills and legs. Under the tower there is a sand traffic road, Changwan highway is 1km away from the tower in the east. Inspire of

human activities happened very often, the local people told the authors that the nest had been there since last year.

This is the first record of Oriental White Stork bred in Nanchang. It greatly attracted wildlife conservators and the news media. The authors connected Chinese ornithologist Prof. Wang Qi-Shan, he was very interesting in it, and let Prof. Zhou Li-Zhi, Anhui University come to Nanchang to guide the breeding work. A special topic report was arranged by Jiangxi TV Station, Nanchang TV Station and Jiangxi Urban

Newspaper. In order to protect this breeding nest of Oriental White Stork, the wildlife protection stations of Nanchang City and Jinxian County hung a notice board on the tower to notify local people the meaning of protecting the stork and responsibility of the people. The station consulted with the electric power department and expressed that when the workers made their rounds without disturbing the storks.

Hu Bin-Hua, Xiong Dong-Ping, Wang Zhi-Ru (Administrative Station of Wildlife and Plant, Nanchang)

陕西三河湿地发现东方白鹳、黑鹳和白琵鹭的混合越冬群体

作为冬季候鸟的迁徙驿站和越冬地，位于陕西省关中平原东端的三河湿地越来越受到鸟类学者的关注（吴家炎等 1998；丁长青等 2000；于晓平等 2001，2003，2005）。该区域从北至南包括合阳、大荔、华阴和潼关 4 县（市）。境内约 6 万 hm^2 的黄河滩地，特别是北部合阳县境内的黄河滩涂湿地中地下水热资源丰富，在冬季冰冷的河面与芦苇沼泽之间形成了大面积的不冻区域，尤其近年来境内人工鱼塘的大量开发为各种水禽的觅食、活动和隐蔽提供了良好的场所。

2005 年 12 月，我们在本区进行三河湿地国家级自然保护区的综合考察。4 日 12:30，天气晴朗，风和日丽，气温 5°C 左右。我们于合阳县洽川镇以南 1 km 处抽黄干渠西侧鱼塘内（北纬 $35^{\circ} 06' 34''$ ，东经 $110^{\circ} 18' 00''$ ）发现了混群觅食的东方白鹳（*Ciconia boyciana*）、黑鹳（*Ciconia nigra*）和白琵鹭（*Platalea leucorodia*），群中还间杂少量大白鹭（*Egretta alba*）。鱼塘因夜间温度低（ -6°C ）结有薄冰，日间部分消融，边缘水深 5—10cm，适合涉禽觅食。觅食群体中有东方白鹳 11 只，其中 3 只觅食，8 只因人为惊扰在空中盘旋，飞翔高度 30—40m；黑鹳 35 只和白琵鹭 45 只均在鱼塘边缘觅食或休息，个体间距离很近，群体显得较为集中。12:50 左右，整个觅

食群因鱼塘经营者的驱赶飞往其他地点，飞离时 3 种鸟类各自飞往不同的方向。飞翔的高度各不相同，东方白鹳和黑鹳的飞翔高度达到了 100m 以上，白琵鹭稍低，在 50m 左右。阳光下东方白鹳和黑鹳展翅翱翔，鹳形目鸟类的羽色、体型特征清晰可见，场面甚为壮观。

东方白鹳在我国黑龙江和内蒙古繁殖，冬季于长江中下游地区越冬（郑光美等 1998）。陕西省平利县曾于 20 世纪 80 年代初作为迷鸟采到 1 只标本（郑生武等 1994），此次较大群体在本区的首次发现实属罕见，至于这些个体来自何方尚不清楚，我们将进一步开展观察研究；黑鹳在我国东北、华北和西北地区繁殖，在长江以南地区越冬。陕西省的繁殖群体位于黄土高原南缘的林区，越冬时短距离活动至此，而且数量较大（4—93 只），活动稳定，每年的冬季都能发现（于晓平等 2003）；白琵鹭为旧大陆热带—温带型种类，于我国北方繁殖，在长江中下游和台湾越冬（张荣组 1999）。在本区内白琵鹭越冬期稳定，但出现时间较晚，10 月末该种离开太原以北的下茹越水库向南迁飞抵达黄河湿地（张龙胜等 1999），1 个月后才在本区出现，数量 1—120 只不等（于晓平等 2003）。

于晓平（陕西师范大学生命科学院）

A mixed wintering group of Oriental White Stork, Black Stork and White Spoonbill was found at Sanhe Wetland, Shaanxi

Being a stopover and wintering site for migratory birds, Sanhe Wetland (in the east end of Guanzhong Plain, Shaanxi) attracts the attention of the ornithologists (Wu Jia-Yan *et al.*, 1998; Ding Chang-Qing *et al.*, 2000; Yu Xiao-Ping *et al.*, 2001, 2003, 2005). This area includes Heyang, Dali, Huayin and Tongguan 4 counties (cities), with an area of about 60000 hm² beaches of the Yellow River. Rich in hydraulic and thermal resource underground, there is a large area of ice-free water in the beach wetland of Heyang County in winter, especially many new built fish ponds provide a nice site for waterfowls to forage, to move about and to conceal.

A comprehensive survey was conducted in this area in December, 2005. It was a fine day on December 4th, at 12:30, a mixed feeding group of Oriental White Stork, Black Stork, White Spoonbill and some Great Egrets were found at a fish pond, Chouhuanganqu, Hechuan Town, Heyang County. When the ice was partially melted leaving the beach with 5-10cm deep water suitable for the waders to forage. Except for 8 Oriental White Storks circling in the sky, there were 3 Oriental White Storks, 35 Black Storks and 45 White Spoonbills feeding or resting at the beach and distributed in a short distance. Later on, the birds were scattered by the owner of the fish pond, to form 3 groups each consisted absolutely one species they flew to different directions. Oriental White Stork and Black Stork flew over 100m high, while White Spoonbill in

the height about 50m.

Oriental White Stork breeds in Heilongjiang and Inner Mongolia and winters in the middle and lower basins of Changjiang River (Zheng Guang-Mei *et al.*, 1998). A lost stork had been caught in Pingli County, Shaanxi in 1980s (Zheng Sheng-Wu *et al.*, 1994). This is the first report of such a large group of oriental white storks found in Shaanxi. The authors will do more research to figure out where the storks come from.

Black Stork breeds in Northeast China, North China and West China and winters in the areas south of Changjiang River. The breeding site in Shaanxi is in the woodlands, southern Loessial Plateau. In winter the black storks flew to the reserve in large flocks (4-93 individuals) (Yu Xiao-Ping *et al.*, 2003).

White Spoonbill is a tropic—temperate species of the Old Land. It breeds in northern China and winters in the middle and lower basins of Changjiang River and Taiwan Province (Zhang Rong-Zhu, 1999). White Spoonbills leave Xiaruyue Reservoir, North of Taiyuan, Shanxi in the end of October southward to Shaanxi Sanhe Wetland (Zhang Long-sheng, 1999). Usually one month later, the white spoonbills arrived and the wintering population about 1-120 individuals (Yu Xiao-Ping *et al.*, 2003).

Yu Xiao-Ping (College of Life Sciences, Shanxi Normal University)

鸭绿江下游夏季水鸟新发现

牯牛哨岛面积 73 060 平方米，岛上植被茂密、空气潮湿，以桑、柳、赤杨等高大乔木为主，林下有狭叶蕁麻、芦苇等草本植物，岛屿呈椭圆形，平行于水流方向，距离岸边有百余

米，上游一侧植被以芦苇柳丛为主，下游一侧林相较好，多有倒木和枯树，适合苍鹭、鸳鸯、白鹭等活动。

2005 年 6—7 月在鸭绿江下游牯牛哨夹心

子(岛)观鸟,发现 14 只鸳鸯繁殖群,它们栖落于江心岛靠近陆地一侧的水边横置的柳木上,也活动于岛与陆之间的水流湍急的江水中(牯牛哨),同时发现的还有 10 只大白鹭、2 只苍鹭、2 只绿鹭、10 余只的斑嘴鸭等水鸟。查阅中国鸟类志(赵正阶)及其他相关文献,在鸭绿江上游有鸳鸯繁殖的记录,但均无鸭绿江下游鸳鸯繁殖的报道。而此处 1995 年以前曾被开发成旅游度假区,由于 95 年的特大洪水将旅游设施冲毁一空,至今人迹罕至,加之水流湍急、清澈、食物丰富、倒木枯树众多,为野生鸳鸯的繁殖、栖息提供了得天独厚的自

然环境,而春秋、冬季更是大批水鸟理想的停歇站。

在靠近朝鲜一侧的江面上发现一群潜鸭,时浮时潜,随即借船前行,并用望远镜观察,头部色暗(其实是暗绿色),颈及腹部色白,飞行时背部沾白(雄),翅上有白色翼斑,共 7 只,经查阅图鉴、对比核实,最后确定是鹊鸭。该鸟在鸭绿江下游春秋和冬季较常见,夏季在距繁殖地(东北大兴安岭)遥远的鸭绿江下游出现,实属罕见,并有待于进一步观察研究。

高明(辽东学院城环系, 丹东, 118003)

New finding of summer waterfowls in the lower reaches of Yalujiang River

Mangniushao Islet is located at the lower reaches of Yalujiang River, with an area of 73 060m². It is ellipse in shape and parallel the current. The dense vegetation and dead woods there was suitable for Grey Herons, Mandarin Ducks and egrets to live.

During the bird watching at Jiaxinzi of Mangniushao Islet from June to July we found a breeding group of Mandarin Ducks (14 individuals), 10 Great Egrets, 2 Grey Herons, 2 Green-backed Heron and 10 more Spot-billed Ducks and other waterfowls. From the *China Aves Fauna* (Zhao Zheng-Jie) and other related references, the breeding record of Mandarin Duck was reported in the upper reaches of Yalujiang River. This is the first report from the lower reaches of the river.

Before 1995, the lower reaches of Yalujiang River once had been developed for tour and go vacationing. The huge flood happened in 1995 washed all the facilities away made this area a quite place for wild Mandarin Ducks to breed and inhabit, and the ideal stopover site for waterfowls.

On the bank facing North Korea we found a group of Common Goldeneyes (7 individuals) swimming and diving in the river. This bird is common in the lower reaches of Yalujiang River in spring, autumn and winter, but rarely appears here far from their breeding site (Daxinganling, Northeast China) in summer.

Gao Ming (Urban Environmental Department, Liaodong College, Dandong, 118003)

中国鹤类小额研究基金项目

Small Grant for China Crane Research: call for applications

为了促进和发展中国鹤类研究和保护事业,提高鹤类研究水平,国际鹤类基金会从 1999 年开始设立“中国鹤类研究基金”,至 2004 年共资助 17 项有关中国鹤类的野外研究项目。2005 年因国际鹤类基金会捐助方的原因暂停

一年。根据中国鸟类学会鹤类与水鸟专业委员会与国际鹤类基金会签署的 2006—2008 年合作协议,将恢复中国鹤类研究基金,重点面向从事中国鹤类野外研究工作的研究生和基层科研人员,每年资助 1—3 项,每项资助强度

1500 美元 (12000 元人民币)。

2006 年将资助 1 项有关中国鹤类的野外研究项目, 研究期限为 1 年。申请者请于 2006 年 4 月 15 日前将申请书寄至: 100080 北京市海淀区北四环西路 25 号, 中国科学院动物研究所, 丁长青博士收, 同时提交电子版到 cqding@mx.cei.gov.cn。基金管理小组将于 5 月组织评审, 获得资助的项目将于下期《通讯》(2006 年 6 月) 公布。第一笔经费 (人民币 10000 元) 于 2006 年 9 月到位, 项目启动; 2007 年 4 月提交进展报告后拨第二笔经费 (2000 元); 2007 年 10 月提交项目总结报告及 500—800 字的简报; 简报将于 2007 年 12 月在《中

国鹤类通讯》上刊出。

申请书内容包括:

1、简表 (项目名称; 申请人姓名、性别、年龄、职称、工作单位、通讯地址、电话、传真、电子信箱; 项目起止日期; 项目组成员); 2、项目背景和立论依据; 3、研究方案 (研究目的和内容、拟解决的关键问题、研究方法和路线); 4、研究基础; 5、预期进展 (年度进展、预期研究成果); 6、经费预算; 7、单位意见 (加盖公章); 8、申请人签名和申报日期。

中国鹤类研究基金管理小组

九段沙记录到佩戴崇明东滩彩色旗标的鸕鹚类

九段沙湿地自然保护区与崇明东滩鸟类自然保护区都位于长江河口区域, 该区域为鸕鹚类重要的迁徙停歇地。自 2003 年开始, 崇明东滩鸟类自然保护区在对鸕鹚类进行环志的同时给鸟类佩戴彩色旗标 (上白下黑)。2005 年秋季, 在对九段沙湿地的鸕鹚类进行调查的过程中, 发现 3 只佩戴有崇明东滩旗标的鸕鹚类。分别为: 8 月 26 日: 翘嘴鹬 1 只, 10 月 20 日: 斑尾塍鹬 1 只; 环颈鸕 1 只。

从体羽的特征来看, 在九段沙见到的三只鸕鹚类均为当年出生的幼鸟。由此可以推断, 这些鸕鹚类为当年在崇明东滩环志的个体。这表明, 在秋季迁徙期间, 一些鸕鹚类在崇明东滩停歇后, 仍会在相距近数十公里之外的九段沙停歇。两处湿地对于鸕鹚类的迁徙活动均具有重要的作用。

马志军 (复旦大学生命科学学院 200433)

Color leg-flagged Shorebirds banded at Chongming Dongtan were found at Jiuduansha

Jiuduansha Wetland N.R. and Chongming Dongtan Bird N.R. are all located at the estuary of Yangtse River. Jiuduansha Wetland N.R. is an important stopover site for migratory shorebirds. Since 2003, shorebirds in Chongming Dongtan Bird N.R. have been banded with color leg-flags (White over black). Three color leg-flagged shorebirds banded at Chongming Dongtan were found during the autumn survey in 2005. The record showed that: one Terek Sandpiper (*Xenus cinereus*) banded on August 26th, one Bar-tailed Godwit (*Limosa lapponica*) and one Kentish Plover (*Charadrius*

alexandrinus) banded on October 20th.

The plumages showed that, the three shorebirds found at Jiuduansha were all the new born juveniles. It means that they were the birds banded at Chongming Dongtan in the same year. It shows that during the autumn migration, shorebirds may stay at both sites for a period of time. Hence the two wetlands are all important to the migration of shorebirds.

Ma Zhi-Jun (College of Life Sciences, Fudan University, Shanghai, 200433)

河南孟津发现黄嘴鹮鹳

2005年10月16日上午天气晴朗,我们在河南孟津自然保护区扣马北黄河中的夹心滩上,发现1只体型像鹮鹳的大型水鸟,它的嘴长、颈长、脚长;嘴黄色,端部略向下弯曲,头前部的裸皮红色,体羽除飞羽和尾羽为黑色之外,其余全为白色;胫暗粉红色,跗蹠颜色略淡为淡灰红色,展翅时可见翅下覆羽有很淡的粉红色。

此鸟与苍鹭混群,在水中觅食,在河滩上休息,我们用莱卡16-48倍单筒望远镜进行观察,并用尼康4500数码相机拍下多张照片(见封三)。10月18日再次见到,10月24日观察

时已飞走不见。经多方咨询,由陈承彦先生鉴定,认为估计是从动物园逃出来的黄嘴鹮鹳 *Mycteria ibis*,分布在撒哈拉沙漠以南的非洲大陆和马达加斯加岛,比较常见,动物园养的也不少。

这次在孟津发现的黄嘴鹮鹳,虽然有可能是从动物园逃逸的个体,但它出现在黄河滩并能安然生存,有必要记录在案,在此作一报道供大家参考。

马朝红 马书钊 (河南洛阳市孟津自然保护区,邮编471100)

Yellow-billed Stork was found at Mengjin N.R., Henan

A large waterbird was found at an island of the Yellow River, Mengjing N.R., Henan Province in the morning of October 16th, 2005. The bird has long neck and long legs, the long yellow bill slightly curved down. It has red and naked skin in the front of the head, except for black flight and tail feathers the rest body is white, with dark pink shank and pale grey-red tarso-metatarsus, when wings spread pale pink appears in under wing coverts.

Using 16 x 48 Leica telescope and Nikon 4500 digital camera, the authors observed the bird and took many photos, the bird was feeding in water and resting on the beaches together with Grey Herons (see inside back

cover). The bird was then found on October 18th and left the site on October 24th. By consulting many experts, finally Mr. Simba Chan pointed out that this bird was a Yellow-billed Stork (*Mycteria ibis*) probably escaped from the zoo. It is a common bird distributing in Africa south to the Sahara Desert and Madagascar.

Although this bird might be an escaping bird, but it survived well in the Yellow River beaches, the fact is worthy to be reported for references.

Ma Chao-Hong, Ma Shu-Zhao
(Mengjing N.R. Luoyang, Henan, 471100)

《中国鹤类研究文献题录》书讯

《中国鹤类研究文献题录》由中国动物学会鸟类学分会委托马志军、周立志、苏立英三位博士编写,由安徽大学出版社于2005年9月份出版发行。该书主要收录国内和国外科技

人员在中国境内所从事的鹤类研究工作,共1127条,时间为1932年至2003年。

该书主要收录鹤类研究文献和少数科普文献,所收录的文献大多数为公开出版的刊物,

但也有相当一部分出自非正式出版物。文献题录的编排方式为中英文对照，文献作者、鹤类名称及主题词和发表年代均用索引形式列于书后，便于读者查找。

中英文对照的《中国鹤类文献题录》一书为鹤类工作人员检索文献提供了方便，是一本有重要价值的工具书，本书也为鸟类学同行全面了解中国鹤类研究提供了重要的参考资料，它将进一步加强国内外学术交流与推动鹤类研究工作。

由于时间的限制和编者水平等多种原因，本书可能出现遗漏，致使有些论文未能收录在内。由于公开刊物和内部刊物一并收录，因而有的论文可能会重复出现。本书受只收录鹤类的研究论文所限，各省和地方的动物志或区系调查研究的论文中有关鹤类的内容未能收录。这些难以避免的问题只能留给后人解决，希望读者使用时多加注意。

周立志（安徽大学生命科学学院）

Book message of < *Bibliography of Crane Research in China* >

<*Bibliography of Crane Research in China*> was sponsored by China Ornithological Society of China Zoological Society, Drs. Ma Zhi-Jun, Zhou Li-Zhi and Su Li-Ying were arranged to be the compilers. The book was published by The Publishing House of Anhui University in September 2005. This book mainly collected the papers of the crane researches in China from 1932 to 2003 by the internal and external experts, including 1127 items.

The papers of crane research and some popular science articles were mostly collected from open publications, some were from restricted publications. The content goes with the Chinese-English bilingual bibliography and the Author Index, Species Name and Subject Index, and Publishing Year Index.

This bilingual book will make the document retrieval convenient for crane researchers, it is a reference book of high value, and provides important information for our colleges, and will promote the academic exchange and crane research both in China and abroad.

Limited by time and the compilers' abilities, some publications might be missed; the collections from both open and restricted publications may result in the repetition of some papers. This book is unable to cover the faunas and faunistic papers at provincial and local levels. We hope that readers could take notice of it.

Zhou Li-Zhi (School of Life Sciences, Anhui University)

征稿启示

《中国鹤类通讯》是中国鸟类学会鹤类与水鸟专业委员会编辑的鹤类与水鸟信息交流的内部刊物，主要报道中国鹤类与水鸟的研究、保护、饲养、管理、宣传和教育等工作的动态和阶段成果，也报道国外鹤类研究动态及其它水鸟有关信息，欢迎同行及各界人士踊跃投稿。来稿要求①同时提交文字纸稿和电子版到本刊邮箱 chinacranenews@yahoo.com.cn，注明联系电话、电子邮箱和“中国鹤类通讯稿件”字样。无电子版稿件恕不接收；②字数以

500—1000字为宜，希勿超过2000字；③纸质文稿请用宋体小4号隔行打印；④内容简明扼要，相关地点请给出经纬度；⑤文末写明作者姓名、工作单位和邮政编码；⑥来稿可只用中文，由本刊负责译成英文。

来稿请寄：230039 安徽省合肥市安徽大学生命科学学院王岐山先生收，截稿日期为每年4月20日和10月20日。

《中国鹤类通讯》已改用彩色封面，欢迎提供鹤类及水鸟的高质量彩色照片。同时欢

迎各自然保护区和动物园提供介绍性稿件和照片（封2—3）。

本刊为半年刊，6月和12月出版，向鹤类与水鸟专业委员会会员及国内外有关单位

和个人免费赠阅。如因工作需要本刊者，请与丁长青博士联系，地址：100080 北京市海淀区北四环西路 25 号中国科学院动物研究所，电话：010—62558930。

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Membership for the China Crane and Waterbird Committee

The China Crane and Waterbird Committee (CCWC) offers membership to people who are making efforts in research, conservation, education, management, and publicity of cranes and other waterbirds, and their habitats in China. As a member, you will receive two issues of *China Crane News* each year. Dr. Li Feng-shan from the International Crane Foundation will be the coordinator for overseas membership. If you would like to enroll as a member of the CCWC, please make a check of

\$20 payable to: International Crane Foundation
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公 告

因工作需要，经多次开会酝酿研究并经中国动物学会鸟类学分会同意，在 2005 年第六届海峡两岸鸟类学术研讨会暨第八届中国动物学会鸟类学分会会员代表大会期间，对鹤类与水鸟专业委员会的专家组人员进行了调整，现将名单公布周知。

中国动物学会鸟类学分会鹤类及水鸟专业委员会

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Announcement

In order to meet the needs of our work, by several discussions and approved by China Ornithological Society, the members of Crane and Waterbird Specialist Group were adjusted during the 6th Ornithological Symposium Between the Mainland and Taiwan China & the 8th China Ornithological Society Congress, 2005. Following is the list of specialists.

Crane and Waterbird Committee, China Ornithological Society

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He Fen-Qi Institute of Zoology, Chinese Academy of Sciences

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Li Xiao-Ming	College of Wildlife Resources, Northeast Forestry University
Li Zhu-Mei	Biological Institute, Guizhou Academy of Sciences
Liang Wei	Biological Department, Hainan University
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Wu Zhi-Gang	Jilin Forestry Science Institute
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YU Yat Tung	Hong Kong Bird Watching Society
Zhang Jin-Guo	Beijing Zoo
Zhou Fang	College of Animal Science and Technology, Guangxi University
Zhou Li-Zhi	Life Science School, Anhui University
Zou Hong-Fei	College of Wildlife Resources, Northeast Forestry University

中国鸟类学会鹤类与水鸟专业委员会会员及注册年限

Membership for the China Crane and Waterbird Committee

中国动物学会鸟类学分会鹤类与水鸟专业委员会采取“会员制”的方式加强联系并邮寄《鹤类通讯》，个人会员会费每年 10 元（相当于一本《鹤类通讯》的成本），单位会员每年 100 元。个人会员每年可得到 1 份（2 期）《鹤类通讯》，单位会员寄 3 份。截至 2005 年 12 月，中国鸟类学会鹤类与水鸟专业委员会会员注册情况如下（按会员姓名拼音排序），请有兴趣加入的同志和拖欠会费的会员将会费（大陆会员每年 10 元，港澳台会员每年 20 元，

一次交纳不宜超过 5 年）寄至：中国科学院动物研究所 丁长青收，邮编 100080。

中国鸟类学会鹤类与水鸟专业委员会印制了以鹤类和水鸟为主题的贺年卡和不干胶图片（见封四），贺年卡可以放在标准信封中邮寄。凡本会注册会员均可免费得到贺年卡 1 套（6 张）和不干胶图片 1 张。有额外需要者请与丁长青联系（电话：010-62558930，Email: cqding@mx.cei.gov.cn）。

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陈浩	2007 年 12 月
丁长青	2007 年 12 月
董海艳	2007 年 12 月
董建秀	2007 年 12 月
冯尚柱	2007 年 12 月
高武	2007 年 12 月
郭玉民	2007 年 12 月
哈里斯	2007 年 12 月
韩联宪	2007 年 12 月
韩晓东	2005 年 12 月
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何芬奇	2007 年 12 月
胡洪涛	2003 年 12 月
胡鸿兴	2007 年 12 月
胡慧建	2009 年 12 月
胡军华	2009 年 12 月
纪伟涛	2006 年 12 月
江德龙	2009 年 12 月
江红星	2007 年 12 月
蒋忠佑	2009 年 12 月
雷进宇	2009 年 12 月
李方满	2007 年 12 月
李枫	2004 年 12 月

个人会员	有效期至
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李来兴	2009 年 12 月
李林	2007 年 12 月
李文发	2005 年 12 月
李晓京	2009 年 12 月
李晓民	2005 年 12 月
李拥军	2005 年 12 月
李玉祥	2003 年 12 月
林宝庆	2007 年 12 月
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刘阳	2009 年 12 月
刘政源	2003 年 12 月
吕士成	2005 年 12 月
吕昀群	2009 年 12 月
马建华	2007 年 12 月
马鸣	2007 年 12 月
马逸清	2007 年 12 月
马志军	2007 年 12 月
慕容	2003 年 12 月
钱法文	2008 年 12 月
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苏立英	2007 年 12 月
隋成芳	2004 年 12 月
孙德辉	2005 年 12 月
田秀华	2007 年 12 月

个人会员	有效期至
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王佳琪	2009 年 12 月
王岐山	2007 年 12 月
王昭荣	2010 年 12 月
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吴庆明	2007 年 12 月
徐文彬	2003 年 12 月
徐延恭	2007 年 12 月
杨晓君	2009 年 12 月
杨兆芬	2007 年 12 月
余日东	2009 年 12 月
曾南京	2006 年 12 月
张春兰	2009 年 12 月
张金国	2007 年 12 月
张玲	2007 年 12 月
张淑萍	2007 年 12 月
张正旺	2007 年 12 月
赵欣如	2007 年 12 月
郑光美	2007 年 12 月
周放	2007 年 12 月
周立志	2010 年 12 月
邹红菲	2007 年 12 月