Ueta, M., Kurosawa, R. & Allen, D. (eds)
Conservation and research of Black-faced Spoonbills and their habitats
Second edition pp. 55-62. (2000) Wild Bird Society of Japan, Tokyo, Japan.

Winter Census of Black-faced Spoonbill *Platalea minor*, 1996-98

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ABSTRACT. Synchronised censusesof Black-faced Spoonbills *Platalea minor* were undertaken in January and March 1997, and January 1998. Census totals were 509 and 486 birds, respectively, in 1997, and 613 birds in 1998. Countries and regions where birds were found included Taiwan, China (including Hong Kong), Macau, Vietnam, Japan and South Korea. Two winter censuses in 1997 are compared with a single census in 1998 in terms of accuracy of the count and resources expended. Trends in numbers and distribution of the species are discussed based on censuses from 1988 through 1998.

INTRODUCTION

The Black-faced Spoonbill *Platalea minor* (BFS) was classified as Endangered by the IUCN (Groombridge 1993, IUCN 1997), and Critical by Collar *et al.* (Collar *et al.* 1994). In 1995, in view of the endangered status of this species and the known threats to its wintering habitats, an Action Plan was developed to outline the actions required for successful conservation of the species (Severinghaus *et al.* 1995). Establishing a reliable estimate of the world population of BFS was identified in the Action Plan as an urgent conservation priority. The work reported here represents a continuing effort to produce a reliable global population estimate.

Winter BFS counts from numerous range states were reported for the period 1988-90 by Kennerley (1990). Counts from 1991 through 1993 were reported by Gao & Huang (1994). Since 1993 census results from wintering sites have been reported by Dahmer & Felley (1994, 1995, unpubl. reports). The species' wintering sites are believed to be reasonably well known, although some may remain unidentified in locations not thoroughly surveyed such as the China coast south of the Yangtze estuary, coastal southern Vietnam, or coastal Thailand. The decision was made at a regional Black-faced Spoonbill workshop held in Beijing in May 1996 to conduct midwinter counts across the species' known winter range. The objective was to obtain synchronised counts from all wintering sites to produce an accurate estimate of the global population. This paper reports the results of synchronised census efforts in January and March 1997, and January 1998.

METHODS

A synchronised census of BFS across their winter range was conducted for the first time in January 1997, and repeated in March 1997. In 1998 a single synchronized count was made in January. The census relied upon volunteer counters in the various winter range states and regions. Census volunteers were contacted through wild bird societies in different regions

and through contacts from BFS workshops and visits to wintering sites. Volunteers who provided data included bird watchers, ornithologists, nature reserve staff, and wildlife biologists.

Survey dates were 12-19 January, 9-16 March 1997, and 16-18 January 1998. The January dates were chosen to coincide with the Asian Waterfowl Census (AWC) organised by Wetlands International-Asia Pacific, because many sites potentially harbouring BFS would be visited on these dates and duplication of effort could thus be reduced. The March 1997 dates were chosen to census immediately prior to the northward migration.

We distributed a request for volunteers by post and fax on 20 December 1996 to individuals and organisations based in China, Hong Kong, Taiwan, Japan, Malaysia, South Korea, North Korea, Philippines, Thailand and Vietnam. A second request for volunteers for the March count was distributed to the same recipients on 25 February 1997. This request also reported results of the January count. A similar protocol was followed for the single census in 1998.

For each site, volunteers were requested to complete an AWC Count Unit Form (one for each site visited) and Count Form (one for each day of counting at each site). The latter included a space for recording BFS numbers. Volunteers were requested to return results of BFS counts and any additional count forms or reports to the authors and to send copies to Wetlands International-Asia Pacific in cases where AWC forms were completed.

RESULTS

Results of the censuses are shown in Table 1. The geographic coverage of the species' winter range increased over the three census periods. Fourteen stations reported counts in January 1997, 18 stations in March 1997, and 24 stations in January 1998. Locations of all reporting stations are shown on Figure 1.

In spite of the greater number of reporting stations the March 1997 count was slightly lower than the January 1997 count, and therefore added little information. The March count was also affected by the onset of the northward migration: Some birds were in flight at the time of the count, or had moved away from traditional winter areas, and were not counted. An example of this is the reduction of 50 birds at Tsengwen River Estuary between the two counts.

The January 1998 census showed an increase of 104 birds (20%) over the January 1997 total. The greater number of reporting stations in 1998 (24) versus 1997 (14) reflected a substantial increase in geographic coverage. However, comparing the 14 station totals from 1997 with those from the same locations in 1998 also shows a population increase of 13%, from 509 to 577 birds. The additional 36 birds recorded at the ten new census stations in January 1998 may not be attributable to global population increase, but to enhanced winter range coverage.

The January 1998 count was the highest total reported since 1990 (Table 2, Fig. 2), and reflected the greatest level of participation by census takers. The second highest count was for the 1995-6 winter when only 8 areas were covered.

Table 1. Results of 1997 and 1998 winter counts of Black-faced Spoonbills.

Location	Jan.97		Mar.97		Jan.98	
	No. of birds	Date	No. of birds	Date	No. of birds	Date
Taiwan						
Tseng-wen River Estuary	298	17 Jan.	248	8 Mar.	321	17 Jan.
Ilan County	3	18 Jan.	5	11 Mar.	---	---
Tatu Estuary	4	17 Jan.	1	7 Mar.	4	17 Jan.
Penghu Islands	1	17 Jan.	1	23 Mar.	---	---
Chungkang Estuary	---	---	5	15 Mar.	---	---
Au-ku	---	---	---	---	2	18 Jan.
Macau						
Taipa-Coloane Mudflat	---	---	---	---	9	17 Jan.
China						
Hong Kong, Mai Po	69	11 Jan.	70	16 Mar.	88	17 Jan.
Futian, Shenzhen	32	11 Jan.	0	16 Mar.	25	17 Jan.
Dongzhaigang, Hainan	4	18-19 Jan.	4	16-17 Mar.	3	17 Jan.
Yancheng Biosphere Reserve, Jiangsu	38	10-26 Jan.	2	11 Mar.	2	17 Jan.
Dongsha Islands, Jiangsu	16	20 Jan.	40	4-15 Mar.	---	---
Vietnam						
Xuan Thuy Nature Reserve, Red River Delta	---	---	44	7 Mar.	59	18 Jan.
Thai Binh Estuary, Red River Delta	---	---	14	8 Mar.	0	17 Jan.
Nghia Hung, Day River Estuary	---	---	12	7 Mar.	0	17 Jan.
Japan						
Imazu tidal flat, Fukuoka	15	12 Jan.	15	14-16 Mar.	17	18 Jan.
Wajiro tidal flat, Fukuoka	---	---	---	---	8	18 Jan.
Mannose, Kagoshima Prefecture	8	18 Jan.	7	15 Mar.	19	18 Jan.
East Reclamation, Takanono-cho, Kagoshima	---	---	---	---	3	17 Jan.
Beppu River, Aira-cho, Kagoshima	---	---	---	---	1	17 Jan.
Hikawa Estuary, Kumamoto	5	19 Jan.	6	4, 9 Mar.	14	17-18 Jan.
Manko Lake, Okinawa	---	---	---	---	2	18 Jan.
Yone tidal flat, Okinawa	---	---	---	---	9	18 Jan.
Yonaha Bay, Miyako Island	---	---	---	---	1	17 Jan.
Sawada, Irabu Island	---	---	---	---	1	17 Jan.
South Korea						
Hado-ri, Cheju Island	16	15-18 Jan.	0	17-19 Mar.	19	16 Jan.
Songsan Fish Pond, Cheju Island	0	15-18 Mar.	12	17-19 Mar.	6	16 Jan.
Total:	509		486		613	

DISCUSSION

BFS have been recorded flying up to 30 km to feed in a single day (Pak U-Il and Chong Jong-Ryol, pers. comm.), so the risk of double-counting at nearby sites when counts are spread over even a few days cannot be excluded. A count of 13 birds at Jiuduansha in the Yangtze (Changjiang) Estuary, Jiangsu, China, made on 28-31 January 1997 was thus excluded from the total on the grounds that it fell too far outside the survey dates and may have double-counted birds from Yancheng or the Dongsha Islands. All reported counts were similarly screened to exclude possible double-counts from the totals given in Table 1. Therefore, the total numbers given can be viewed as conservative, but generally reliable for the areas and dates reported.

The January 1997 count of 509 birds (Table 1) was less than the 1998 estimate (613 birds,

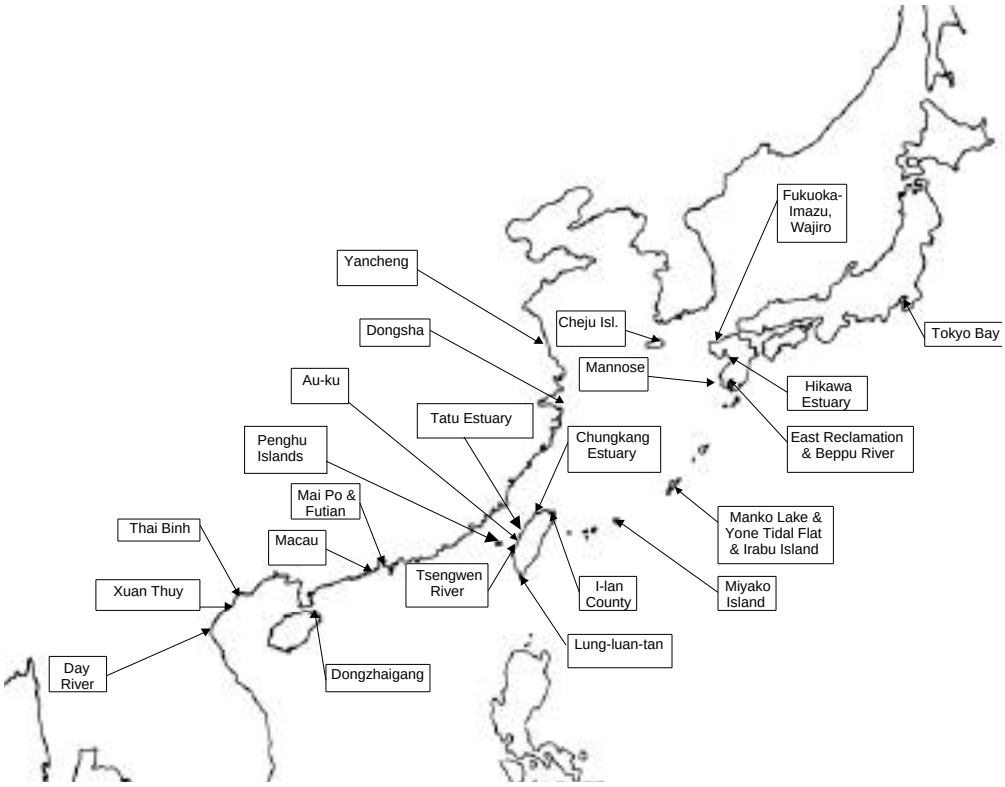

Fig. 1. Loacation of Censused sites.

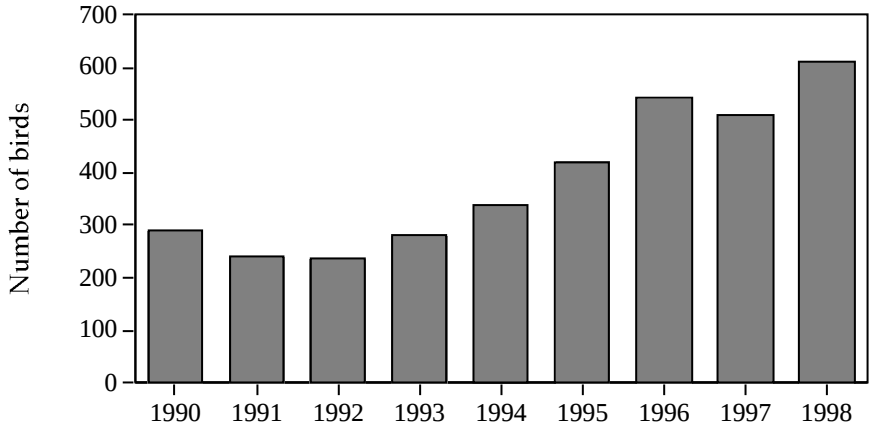

Fig. 2. Black-faced Spoonbill winter global population estimates, 1988-1998. Estimates for 1990 from Kennerley (1990), and for 1991, 1992, 1993 from Gao and Huang (1994)

Table 2. Global Black-faced Spoonbill population estimates from 1990 through 1998.

Country / Region Location	1988-90*	1993-94	1994-95**	1995-96**	Jan 1997	Jan 1998
Taiwan						
Tseng-wen Estuary		206	286		298	321
Ta-tu Estuary					3	4
Au-ku	150			300+	4	2
Chungkang Estuary					---	---
Ilan County					1	---
Penghu Islands					---	---
Macau						
Taipa-Coloane mudflats					---	9
Mainland PRC / Hong Kong						
Mai Po	50	70	78	99	69	88
Shenzhen, Futian					32	25
Hainan, Dongzhaigang	15 (all mainland China sites)	9	6	6	4	3
Guangxi, Shankou					---	0
Jiangsu, Yancheng Biosphere Reserve		13		15	38	2
Jiangsu, Dongsha Islands			15		16	
Jiangsu, Yangtze Estuary, Jiuduansha						
Vietnam						
Red River Delta, Xuan Thuy Nature Reserve	62	25	23	75-104	---	59
Red River Delta, Thai Binh Estuary					---	0
Day River Estuary, Nghia Hung					---	0
Japan						
Fukuoka, Imazu tidal flat		9			15	17
Fukuoka, Wajiro tidal flat					---	8
Kagoshima, Mannose		6		20+	8	19
Kagoshima, Takaono-cho, East Reclamation					---	3
Kagoshima, Aira-cho, Beppu River	5		14		---	1
Kumamoto, Hikawa Estuary					5	14
Tokyo Bay		1				
Miyako Island, Yonaha Bay				up to 11 (all non-Kyushu sites)	---	1
Irabu Island, Sawada					---	2
Okinawa, Manko Lake					---	9
Okinawa, Yone tidal flat					---	1
South Korea						
Cheju Island, Hado-ri	6			15	16	19
Cheju Island, Seongsan-ri					0	6
TOTAL:	288	339	422	541-570	509	613

*Data from Kennerley (1990).
**Counts were not synchronized; total may include double counts.

Table 1) and the minimum 1996 estimate (541 birds, Table 2). The apparent decline from 1996 to 1997 was probably attributable to absence of data from Vietnam in January 1997. Totals of 75 BFS in Vietnam in early February 1996 (Table 2), and 59 BFS in Vietnam in January 1998 (Table 1) suggest that the number of BFS in Vietnam in January 1997 probably exceeded the difference between the global population estimates for 1996 and 1997 (32 birds). If so, there was probably no real population decrease between 1996 and 1997.

Because the March 1997 survey date fell after the start of the spring northward migration, we scheduled the 1998 count early in the winter season. In view of the potential for birds to move from one site to another in an area with several relatively close wintering sites, e.g. Taiwan or Kyushu, Japan, we narrowed the time span of the count dates, and conducted the census only once in 1998. Census dates earlier in the winter season were deemed preferable

by some ornithologists in Taiwan, since BFS numbers at the Tsengwen River Estuary typically peak in December. However, in Deep Bay, PRC, a similar December peak in recent years has been reliably documented as comprising up to one-third birds on passage, which are believed to have Vietnam as their final winter destination. A similar situation may prevail at Tsengwen River if there is a decline from the December peak count due to departure of passage birds for other winter areas such as Vietnam. Since the purpose of the census is to assess populations when they are most stable on winter ranges, a December count was considered too early for the more remote parts of the range (i.e. southern China and Vietnam).

Comparison With Past Winter Counts

Population estimates since 1990 are shown in Table 2. Two trends are apparent from the results. First, there is a general trend toward increasing population size (Fig. 2). In only one case since 1992 was there a decline from a previous estimate (1996 to 1997). As noted above, that decline is probably attributable to absence of census data from Vietnam for January 1997. The apparent trend toward population increase is due in part to increasing numbers of birds at some winter areas. Most notable is the 114% increase from 150 to 321 BFS at the Tsengwen River estuary between 1990 and 1998. Similarly, the total BFS count for South Korea increased 317% from 6 to 25 birds over the same period, with an increase from one to only two reporting stations.

The second trend is toward increasing numbers of reporting stations, from six in 1988-90 to 24 in 1998. Greater numbers of census takers are undoubtedly responsible for increasing the number of BFS recorded each year, as discussed above for the difference between 1997 and 1998 totals. Japan, for example had a single reporting station in 1990, compared to 10 in 1998. The numbers of reported BFS in Japan increased 1400% from 5 to 75 birds over the same period.

The 1997 and 1998 synchronised censuses achieved several objectives. First, geographic coverage increased, resulting in identification of new BFS wintering areas, and increasing the census total. Second, data returns from participants were excellent, enabling verification of counts in virtually all cases. Third, we learned that March counts can be confounded by early migraters, whereas January counts are more reliable. Finally, we were able to conclude that a single middle- to late-January count will enable a reliable global population estimate.

Recommendations

The following information should be provided by future volunteer census-takers:

- detailed location (plus description of the site if it has not been reported in the past)
- total numbers of BFS
- time and date of count
- numbers of immature and mature birds as distinguished by presence (immature) or absence (mature) of black primaries
- characteristics of leg-rings and radio or satellite transmitters. Birds banded in North Korea in summer 1995 carry the following bands: green and red colour bands on right

leg, yellow number band on left. Three birds ringed in Taiwan in December 1996 carry numbered metal rings and radio transmitter backpacks, fastened by a harness under the wings. Satellite transmitter backpacks were fitted to birds in Mai Po, Hong Kong and in Tsengwen Estuary, Taiwan in winter 1997-98, and in winter 1998-9.

Each winter a single, synchronized census should be conducted. This will enable scarce time and funding to be concentrated on the widest possible geographical coverage. Some sites, notably South Korea and Taiwan, attract more counters than required to ensure accuracy; the Cheju fish ponds in South Korea, a relatively small site, apparently attracted at least 3 separate groups of census-takers in winter 1997. Meanwhile, other sites were covered incompletely (Vietnam) or not at all (Guangxi, China) due to lack of volunteers or resources. There is great potential for volunteers from areas with surplus resources (e.g. Taiwan, Hong Kong, Japan, South Korea) to assist with counts in areas where resources for censusing are limited (e.g. China, Vietnam). Census efforts in Vietnam in 1998 benefited greatly from participation of members of the Wild Bird Federation of Taiwan.

ACKNOWLEDGEMENTS

We wish to express sincere gratitude to the following people who made the winter censuses possible by conducting counts and/or transmitting count results. These include the following individuals (listed in alphabetical order within each region). Affiliations and titles are omitted due to space limitations. Our sincere apologies are extended to anyone whom we have failed to acknowledge.

Taiwan: Ch'en Shui-sheng (S.-S. Chen), Fang Woei-horng (W.-H. Fang), Hsiao Mu-chi (M.-C. Hsiao), Kuo Tung-hui (T.-H. Kuo), Lin Mao-nan (M.-N. Lin), Oeng Jung-hsuen (R.-S. Oeng), Ou Wen-ch'un (W.-T. Ou), Shih Pi-chu (P.-C. She), Ueng I-Tsong (Y.-T. Ueng), Wang Shih-chin (S.-C. Wang), Wen Ch'un-fu (C.-F. Weng) and Wu Yung-hua (Y.-H. Wu).

China (including Hong Kong): Geoff Carey, Deborah Cha, Gao Yuren, Huang Zhongqi, Lu Jianjian, Wang Hui, Wang Yongjun, Lew Young, Zhang Xiaoming and Zheng Xinren.

South Korea: Han Sang-hoon, Kim Jin-han, Kim Wan-byung, Lee Woo-shin, Park Haeng-shin, Park Jin-young, Won Pyong-oh, Wong Chang-man, Yang Byeong-gug and Yi Jeong-yeon.

Japan: Simba Chan, Katsuji Aki, Mrs. Kuabana, Nakamura Yasuhiro, Nakashima Yoshito, Shigata Takano, Waki Yoshishige and Yamamoto Hiroko.

Vietnam: Nguyen Cu, Jonathan Eames and Le Trong Trai.

LITERATURE CITED

Collar, N.J., Crosby, M.J. & Sattersfield, A.J. 1994. Birds to Watch 2: The World List of Threatened Birds. BirdLife International, Cambridge.

Dahmer, T.D. & Felley, M.L. 1995. Report on Winter Range Survey of Black-faced Spoonbill, 1994-95. World Nature Association, USA.

Dahmer, T.D. & Felley, M.L. 1994. Census and population status of Black-faced Spoonbills during winter 1993-1994. HK Bird Report 1993. pp. 177-183. Hong Kong Bird Watching Society, Hong Kong.

Gao, Y.R. & Huang, Z.Q. 1994. The re-discovery of the Black-faced Spoonbill (*Platalea minor*) on Hainan Island. In: Lu, J.J., R.Z. Piao, Z.K. Wu, Y.R. Gao, F. Zhou, & Z.J. Zhao (eds). Waterbird Research in China; 1994. pp. 168-169. PRC. East China Normal Univ. Press, Shanghai.

Groombridge, B. (ed). 1993. 1994 IUCN Red List of Threatened Animals. IUCN Gland, Switzerland and Cambridge, UK.

IUCN. 1997. 1996 IUCN Red List of Threatened Animals. IUCN Gland, Switzerland and Cambridge, UK.

Kennerley, P.R. 1990. A review of the status and distribution of Black-faced Spoonbill. HK Bird Report 1989. pp. 116-125. Hong Kong Bird Watching Society, Hong Kong.

Severinghaus, L.L., Brouwer, K., Chan, S., Chong, J., Coulter, M.C., Poorter, E.P.R. & Wang, Y. 1995. Action Plan for the Black-faced Spoonbill *Platalea minor*. Wild Bird Society of ROC, Taipei, Taiwan ROC. "Task Force to Develop an Action Plan for the Preservation of the Black-faced Spoonbill" Taipei, Taiwan.