

# Threatened Birds of Asia:

## The BirdLife International Red Data Book

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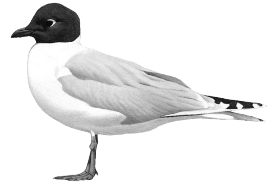
## SAUNDERS'S GULL

### *Larus saundersi*

Critical  —

Endangered  —

Vulnerable  A2c; C1



*This linearly distributed seabird has a small, declining population. The rate of decline is likely to increase in the next 10 years as a result of land reclamation on tidal flats and disturbance of colonies. These factors qualify it as Vulnerable.*

**DISTRIBUTION** Saunders's Gull (see Remarks 1) is only known to breed at a few coastal areas in eastern China and South Korea, although there have also been reports of breeding inland in northern China (see Remarks 2). It is recorded on passage and winter in the Russian Far East, Japan, North Korea, South Korea, mainland China, Macao, Hong Kong, Taiwan and Vietnam, mainly at coastal localities.

■ **RUSSIA** The species is apparently only known by a handful of records, as follows:

■ **Primorye Blagodatnoye lake**, Sikhote-Alin' State Reserve, one, May 1970 (Yelsukov 1974); near **Shkotovka estuary**, Ussuri bay, c.50 birds with a large flock of Black-headed Gulls *Larus ridibundus*, April 1988 (Nechaev 1988a); **Sedimi** (Sidemi), near Vladivostok, one collected, April 1882 (Taczanowski 1881–1893);

■ **Sakhalin Sakhalin island**, undated (Takahashi 1937; also Nechaev 1991).

■ **JAPAN** Until recently, it was regarded as a vagrant in Japan, but it is now known to be a locally common annual winter visitor at certain sites in the south, and a very rare winter visitor further north (Brazil 1991; see below). Small numbers winter on Shikoku and Okinawa, but the main wintering grounds are on Kyushu, notably Sone tidal flat in Fukuoka, Daijyugarami and Shinkomori in Saga, Isahaya in Nagasaki, and Shio-hama in Kumamoto. Many colour-banded birds from Liaoning in mainland China have been seen on Shikoku and Kyushu, indicating that many of the wintering birds in Japan breed in Liaoning. Records (by island and prefecture) are as follows:

**Hokkaido Bekkai-cho**, Notsuke-gun, Nemuro, adult seen, May 1998 (*Birder* 98/7); **Tokachi**, one, October 1976 (Brazil 1991; also Wildlife Information Center, Hokkaido 1985); **Iburi**, undated (Wildlife Information Center, Hokkaido 1985);

**Honshu** ■ **Aomori Oominato**, **Mutsu-shi**, December 1965 (Aomori Prefecture 1978);

■ **Miyagi** unspecified localities, undated (Takano 1981); ■ **Chiba Funabashi** Seaside Park, Funabashi-shi, recorded annually, highest recent count of five in March 1994 (*Birder* 94/5); **Yatsu tidal flat** (Yatsu-higata), Narashino-shi, recorded annually, highest recent count five in March 1994 (*Birder* 94/5), one, January–February 1998 (*Birder* 98/4), one, December 1998–January 1999 (*Birder* 99/3); **Obitsu-gawa river mouth**, Kisarazu-shi, two, February 1996 (*Birder* 96/4); **Ichinomiya-gawa river mouth**, Chosei-gun, one, January 1994 (*Birder* 94/3); ■ **Tokyo Kasai**, May 1971 (WBSJ 1975); **Tama-gawa** river, Inagi-shi, March–April 1968 (WBSJ 1975); ■ **Kanagawa Kawasaki-shi**, “irregularly recorded”, 1986–1991 (WBSJ Kanagawa Chapter 1992); **Tama-gawa river mouth**, Kawasaki-ku, Kawasaki-shi, single birds seen annually in recent years, including one adult in November 1998 (many records in *Birder* magazine); **Hiratsuka-shi**, before 1986 (WBSJ Kanagawa Chapter 1992); **Sagami-gawa river mouth**, Hiratsuka-shi, June 1979 (Hamaguchi *et al.* 1984 in Brazil 1991), one, March 1983 (Takeshita 1996); **Yugawara-machi**, before 1986 (WBSJ Kanagawa Chapter 1992); ■ **Niigata Sado island**, undated (OSJ 2000); **Toyano-gata**, Niigata-shi, one, April 1978 (Takeshita 1996); **Joetsu-shi**, two juveniles, October 1990, one staying into February 1991 (Nakamura 1994); ■ **Toyama**

Junicho-gata, **Himi-shi**, one, March 1988 (WBSJ 1988); **Sho-kawa** river, Takaoka-shi, one, May 1991 (Takeshita 1996); **Horioka**, Shinminato-shi, December 1989 (WBSJ Toyama Chapter database); **Shinminato-shi**, one at Toyama New Port, December 1988 (Takeshita 1996), one at Koshinogata reclamation, January 1988 (WBSJ 1988), at Kawaguchi in May 1991, and at Kaio-machi in 1988, 1994 and 1996 (WBSJ Toyama Chapter database); ■ **Ishikawa Kahoku-gata**, Tsubata-machi, Kahoku-gun, one, January 1991 (Takeshita 1996); **Kanazawa** port, Kanazawa-shi, one, September 1976 (Takeshita 1996); ■ **Shizuoka Ukishimamura**, Enoo, Fuji-shi, March 1982 (WBSJ Minamifuji Chapter database); **Fuji-gawa river mouth**, July 1982, April 1996 and April 1997 (WBSJ Minamifuji Chapter database), one, March–April 1996 (WBSJ 1997a); Nakano-shima island, **Hamana-ko** lake, Maisaka-cho, Hamana-gun, two juveniles, January 1991 (WBSJ Totomi Chapter database); **Ota-gawa river mouth**, Fukude-cho, Iwata-gun, adult and juvenile, April 1991 (WBSJ Totomi Chapter database); ■ **Aichi Shonai-gawa river mouth**, Nagoya-shi, November–March, 1984–1985 (Takeshita 1996), two, March 1996 (*Birder* 96/6); Shiokawa tidal flat, **Tahara-cho**, Atsumi-gun, juvenile, November 1996 (*Birder* 97/2), adult and juvenile, March 1997 (*Birder* 97/5); ■ **Mie Mikumo-cho**, Ichishi-gun, one, December 1995 (WBSJ 1997a); Tanaka-gawa river mouth, **Kawage-cho**, Age-gun, six, winter 1990/1991 (Takeshita 1996); **Matsusaka-shi**, one, December 1995, three adults and one immature, March 1996, two adults, March 1996 (WBSJ 1997a); ■ **Osaka** South Osaka Bird Park, **Suminodo-cho** (Sumonoe-ku), single birds, early 1997 (*Birder* 97/3); Minamiminato landfill (untraced), eight, undated (Takeshita 1996); ■ **Hyogo Himeji-shi**, two, March 1991 (Takeshita 1996); ■ **Wakayama Wakaura**, Wakayama-shi, November 1994 (WBSJ Wakayama Chapter database); **Hidaka-gawa river mouth**, Goboshi, March 1987 (Takeshita 1996); ■ **Tottori Tenjin-gawa river mouth**, Hawaii-cho, Tohaku-gun, December 1996 (WBSJ Tottori Chapter database); ■ **Shimane Inashi-gawa river mouth**, Yasugi-shi, December 1997 (WBSJ Tottori Chapter database); **Hikawa-cho**, Hikawa-gun, one, winter 1993/1994 (Takeshita 1996); **Ooda-shi**, one immature, April 1979 (Uchida 1982); ■ **Hiroshima Fukuyama-shi**, one at Minoshima landfill in February 1982 (WBSJ Hiroshima Branch 1998), at Fujii-gawa river mouth, Takanishi-cho, one in February 1990, three in January 1991, two adults in March 1993 and one in January 1997 (WBSJ Hiroshima Chapter database) and two at Hongo-gawa river mouth, Imazu-cho, in March 1994 (WBSJ Hiroshima Branch 1998); **Ashida-gawa** river, Fukuyama-shi, two, February 1986, adult, March 1987 (WBSJ Hiroshima Branch 1998); **Matsunaga bay**, Imazu-cho, Fukuyama-shi, four, November 1992, the only regular site in recent years (WBSJ Hiroshima Branch 1998); **Yawata-gawa river mouth**, Nishi-ku, Hiroshima-shi, one, March 1979 (Takeshita 1996), one, December 1986 (WBSJ Hiroshima Branch 1998); **Oshiba-shima** (Oshiba-suimon), Otagawa, Hiroshima-shi, one, January 1992 (WBSJ Hiroshima Branch 1998); ■ **Yamaguchi Tsuno-jima**, undated (OSJ 2000); Asa-gawa, **Sanyo-cho**, Asa-gun, two, winter 1993/1994 (Takeshita 1996), eight, February 1996 (S. Hanawa *in litt.* 1997); Doroishi-gawa river, **Ajisu-cho**, eight, February 1996 (S. Hanawa *in litt.* 1997); Aibara-kaigan coast, 13 birds, February 1996 (S. Hanawa *in litt.* 1997);

*Hachijo-jima* island, Izu islands, rare (fewer than 10 records), March 1984–1986 (Takagi *et al.* 1986);

*Shikoku* ■ **Tokushima Yoshino-gawa river mouth**, Tokushima-shi, one, July 1981 (Ishihara 1982), up to five, winter 1993/1994 (Takeshita 1996, *Birder* 94/3), four, January 1996 (S. Hanawa *in litt.* 1997), seven, November 1996 (including one colour-banded juvenile from Shuangtai Hekou, China) (Kitakyushu City Government and Yamashina Institute for Ornithology 1997), “frequent visitor” (WBSJ Tokushima Chapter database); ■ **Kagawa Kasuga-gawa river mouth**, Takamatsu-shi, two, winter 1993/1994 (Takeshita 1996); ■ **Ehime Kamo-gawa river mouth**, recorded annually, maximum counts of 15 in 1992/1993, 23 in 1993/1994, 15 in 1994/1995, 21 in 1995/1996, 23 in 1996/1997 and 27 in 1997/1998 (WBSJ Ehime Chapter database), with one colour-banded juvenile from Shuangtai Hekou, China, found in December 1996 (Kitakyushu

City Government and Yamashina Institute for Ornithology 1997); **Shigenobu-gawa river mouth**, Nishihabu-cho, Matsuyama-shi, c.150 birds, April 1981 (Ishihara 1982), 1–3 recorded, 1996–1999 (many records in *Birder* magazine); ■ **Kochi Monobe-gawa river**, “very rare”, March and November (unspecified years) (Kuroiwa 1999);

**Kyushu** ■ **Fukuoka** Tonda reservoir, Tonda, **Wakamatsu-ku**, Kitakyushu-shi, one, January 1996 (N. Minaai *in litt.* 1998); **Sone tidal flat**, Kokuraminami-ku, Kitakyushu-shi, wintering ground, where before 1989 the maximum count was 24, but since 1990 numbers have increased rapidly, with a maximum of 213 in 1992/1993 (and quite stable numbers present from December to February, indicating that the same flock probably wintered) (Takeshita *et al.* 1993), 146 birds, November 1996 (including one colour-banded juvenile from Shuangtai Hekou, China) (Kitakyushu City Government and Yamashina Institute for Ornithology 1997), peaks of 230 in January 1996, 214 in December 1996, 351 in January 1998, 174, February 1999 (*Birder* 99/5; also S. Hanawa *in litt.* 1997), a few remaining in early April, e.g. seven, April 1995, five, April 1998 (WBSJ Kitakyushu database); **Wajiro tidal flat**, Fukuoka-shi, seven, January 1996 (S. Hanawa *in litt.* 1997), up to eight wintering birds annually in the 1990s (many records in *Birder* magazine); **Shiida-machi**, Chikujo-gun, one, April 1998 (H. Kojo *in litt.* 1998); Sai-gawa river, **Yoshitomi-machi**, Chikujo-gun, one, December 1997 (N. Shimizu *in litt.* 1998); **Imazu tidal flat**, Nishi-ku, Fukuoka-shi, 22 birds, January 1994 (*Birder* 94/3), six, December 1994 (*Birder* 95/3) 19 birds, December 1998 (*Birder* 99/2), nine, March 1999 (*Birder* 99/5), c.20, March 2000 (SC); ■ **Saga Genkai**, rare winter visitor (unspecified years) (Wild Bird Society of Saga 1997); Daijyu-garami, **Saga-gun**, 167 birds, December 1992 (Takeshita *et al.* 1993), 257 birds, February 1996 (S. Hanawa *in litt.* 1997), more than 250, January 1997, more than 200, January 1998 (*Birder* 97/4, 98/3), 1–2 immatures, April 1998 (*Birder* 98/7), more than 300 (including one colour-ringed in Liaoning), November 1998 (*Birder* 99/2), more than 450, December 1998 (*Birder* 99/3), more than 400, February 1999, 281, March 1999 (*Birder* 99/5, 99/6), two immatures, May 1999 (*Birder* 99/8); **Kase-gawa river**, 10 birds, January 1996 (S. Hanawa *in litt.* 1997); **Rokkaku-gawa river**, 18 birds, February 1996 (S. Hanawa *in litt.* 1997); **Hama reclamation**, eight, January 1996 (S. Hanawa *in litt.* 1997); Shin-komori (untraced), 99 birds, January 1996 (S. Hanawa *in litt.* 1997), more than 150, February 1997, juvenile, April 1997, 115 birds, January 1998 (*Birder* 97/5, 97/6, 98/3), 153 birds, February 1998 (*Birder* 98/5); ■ **Nagasaki Omura bay**, one collected, undated (Austin and Kuroda 1953); **Isahaya tidal flat**, Onojima, Isahaya city, 27 birds, February 1988 (Brazil 1991), 220 birds, December 1992 (Takeshita *et al.* 1993), 291 birds, January 1996 (S. Hanawa *in litt.* 1997), 197 birds, December 1996 (including one colour-banded juvenile from Shuangtai Hekou, China) (Kitakyushu City Government and Yamashina Institute for Ornithology 1997), at least 120, December 1996, at least 180, February 1997 (*Birder* 97/3, 97/5); ■ **Kumamoto Shira-kawa**, five, January 1996 (S. Hanawa *in litt.* 1997); Shiohama/**Mifune**, 112 birds, January 1996 (S. Hanawa *in litt.* 1997); **Kuma-gawa river mouth**, Sozou, Yatsushiro city, 34 birds, February 1990 (Brazil 1991), 59 birds, January 1994 (*Birder* 94/3), 85 birds, January 1996 (S. Hanawa *in litt.* 1997), with one colour-banded juvenile from Shuangtai Hekou, China, March 1997 (Kitakyushu City Government and Yamashina Institute for Ornithology 1997); Kitashinchi (untraced), four, February 1996 (S. Hanawa *in litt.* 1997); Ooe-ko (untraced), 12 birds, February 1996 (S. Hanawa *in litt.* 1997); ■ **Oita Higashihama, Nakatsu-shi**, 29 birds, February 1994 (Takeshita 1996), 49 birds, January 1996 (S. Hanawa *in litt.* 1997), 24 birds, December 1998 (*Birder* 99/2); **Otome beach**, Usa-shi, three, January 1996 (S. Hanawa *in litt.* 1997), 24 birds, November 1996, including one colour-banded juvenile bird from Shuangtai Hekou, China (Kitakyushu City Government and Yamashina Institute for Ornithology 1997); **Kitsuki-shi**, two at Katano, February 1996 (*Birder* 96/5), up to three (in October 1996) recorded in recent years at Enden, Kitsuki (*Birder* 97/1); Takayama-gawa river (untraced), three, January 1996 (S. Hanawa *in litt.* 1997); Yasaka-gawa river (untraced), up to three, February–March 1996 (S. Hanawa *in litt.* 1997, *Birder* 96/5), six, December 1998 (*Birder*

99/3); ■ **Miyazaki Hitotsuse-gawa river mouth**, Shintomi-cho, Koyu-gun, adult, December 1994 (*Birder* 95/3), one, January 1996 (*Birder* 96/3), seven, March 1996 (*Birder* 96/5); ■ **Sadowara-cho**, Miyazaki-gun, one, March 1993 (Takeshita 1996); ■ **Kagoshima Euchi-gawa river mouth**, **Izumi-shi**, three, November 1998 (*Birder* 99/2); Amori-gawa river mouth, **Kokubu-shi**, six, January 1995 (*Birder* 95/4); ■ **Taniyama**, Kagoshima-shi, one, December 1973 (Takeshita 1996); unspecified localities, rare winter visitor, collected in February (unspecified years) (Horii 1917);

**Amami-ooshima** island, one, November 1989 (Ishida *et al.* 1990a); Ose, **Kasari-cho**, two juveniles, May 1995 (*Birder* 95/7), four adults, November 1995 (*Birder* 96/3), one, January 1998 (*Birder* 98/3), one, November 1998 (A. Chartier *in litt.* 1999);

**Okinawa** island, **Manko**, Tomigusuku-son, Shimajirigun and Naha-shi, up to eight, January–February 1988, 1–4 birds regularly winter (unspecified years) (McWhirter *et al.* 1996), 14 birds, January 1996 (*Birder* 96/3), 27 birds, January 1996 (S. Hanawa *in litt.* 1997); **Gushi tidal flat**, Gushi, Naha-shi, 1–4 wintering in the Naha/Yone area (unspecified years) (Brazil 1991), with six, November 1995 (*Birder* 96/1);

**Miyako-jima** island, regular in winter (unspecified years) (Brazil 1991);

**Ishigaki-jima** island, January 1976 (Wild Bird Society of Yaeyama 1982 in Brazil 1991);

**Iriomote-jima** island, offshore, April–May 1980–1983 (Kohno and Shoyama 1982 and Kohno *et al.* 1986 in Brazil 1991), one sick bird, March 1986 (Brazil 1991);

**Yonaguni-jima** island (not mapped), February–March 1992 (McWhirter *et al.* 1996).

■ **KOREA** ■ **NORTH KOREA** Saunders's Gull is known by rather few records in North Korea, although from both east and west coasts; several of these were in the breeding season (mid-May to early July) and some involved birds in nuptial plumage, suggesting that the species may nest (Tomek 1999). Records (by province) are as follows: ■ **South Hamgyong Riwon**, two collected (in summer plumage), June 1985 (Fiebig 1993, Tomek 1999); ■ **Sinpo** (Sinpho), collected, July 1960 (Tomek 1999); ■ **North Pyongan Yomju** (Jomju, Haksori), two collected (in summer plumage), March 1958 (Fiebig 1993, Tomek 1999); ■ **Sindo**, Ryongchon, male collected, April 1961 (Fiebig 1993, Tomek 1999); unspecified locality, May 1917 (Austin 1948); ■ **South Pyongan near Nampho** (Nampo), Taedong-gang river mouth, two (in summer plumage), April 1987 (Fiebig 1993, Tomek 1999), 20 birds at West Sea barrage, February 1990 (Perennou *et al.* 1990); unspecified locality, May 1917 (Austin 1948); ■ **Pyongyang Pyongyang**, May 1933 or 1934 (Tomek 1999); ■ **Kangwon Kukdo**, June 1949 (Tomek 1999); ■ **Wonsan**, February 1888 (Taczanowski 1888, 1889 in Tomek 1999); ■ **Tongchon** (Alsom), June 1949 (Tomek 1999).

■ **SOUTH KOREA** Several of the estuaries on the western and southern coasts of South Korea are important wintering grounds for this species, including Namyang-Asan bays in Kyonggi and South Chungchong, Cheonsu bay, the Kum river estuary in South Chungchong, Mangyong river and estuary in North Cholla, and Suncheon-Kwangyang bays in South Cholla. Breeding colonies were discovered at two sites in the late 1990s, but neither is secure. Records (by province) are as follows: ■ **Kyonggi and Seoul Kanghwa island**, up to four at Unpuk-ri, South Kanghwa island, April–May 1998 (Scott 1989, Lee Woo-shin *in litt.* 1998), one at Kunmal-ri, South Kanghwa island, May 1993 (Cresswell *et al.* 1993), with more than 100 occurring in the southern part of the island on migration (unspecified years) (Park Jin-young *in litt.* 1999); ■ **Yongjong island**, up to four, May 1993 (Cresswell *et al.* 1993), one, May 1998 (Lee Woo-shin *in litt.* 1998), 23, April (unspecified year) (Kim Jin-han *in litt.* 1998), c.100 breeding pairs, summer 1999 (Park Jin-young *in litt.* 1999; see Threats); ■ **Teibu-do**, used as a foraging site by the birds breeding at Shihwa lake (Moore 1999); ■ **Namyang bay**, just north of Asan bay, c.100–200 wintering birds present since January 1994, and c.55 on passage in April (Park Jin-young verbally 1995, Han Sang-hoon *in litt.* 1997), up to nine, April–May 1998 (Lee Woo-shin *in litt.* 1998), four, October–November (unspecified year) (Kim Jin-han *in litt.* 1998), 30 birds, January 1999 (Kim Jin-han *in litt.* 2000), the site being at the northern

extreme of the wintering grounds in Korea, and sometimes unoccupied during severe weather (Park Jin-young *in litt.* 1999; see Threats); **Shihwa reclamation lake**, chicks reported in the mid-1990s, 32 breeding pairs (five nests with one egg, 17 nests with two eggs and 10 nests with three eggs), with a total of 102 adults seen, May 1998, but deserting in late June because of human disturbance (Kim Jin-han *in litt.* 1998, Moores 1998), 12 birds, February 1999 (MOE Korea 1999); unspecified locality, January 1928 (Austin 1948, Gore and Won 1971); ■ **South Chungchong Asan bay** (Asan and Samkyo lakes), which with the nearby Namyang bay forms an important wintering area shares the same population (Park Jin-young *in litt.* 1999), up to 11 in May (at Asan bay, Unpyong-ri and Namyang bay, unspecified year), and specifically at Asan bay: 100–300 birds, winter (unspecified years) (Kim Jin-han *in litt.* 1998; also Cresswell *et al.* 1993), c.250 in February 1994 and c.150 in January 1995, but sometimes none present (Park Jin-young verbally 1995), 75 birds, December 1995, maximum of 362 birds in recent years (Han Sang-hoon *in litt.* 1997), 249 birds (including one banded in China), February 1997 (Han Sang-hoon *in litt.* 1997), 35–69 birds, January–February 1999 (MOE Korea 1999, Kim Jin-han *in litt.* 2000), five in April and one in autumn (unspecified year) (Kim Jin-han *in litt.* 1998); **Cheonsu bay**, 50–100 birds every winter (Park Jin-young *in litt.* 1999), 41, January 1996 (Han Sang-hoon *in litt.* 1997), 78, February 1997 (Han Sang-hoon *in litt.* 1997), 95 roosting on the eastern flats, undated (Moores 1999), 30, January 1999 (Kim Jin-han *in litt.* 2000); **Kum estuary**, c.100–500 wintering in the late 1990s (Park Jin-young verbally 1995, Han Sang-hoon *in litt.* 1997, Lee Woo-shin *in litt.* 1998, Kim Jin-han *in litt.* 1998, Sutherland and Son a Kim 1999), maximum of 520 birds, January 1999 (Kim Jin-han *in litt.* 2000), 489, February 1999 (MOE Korea 1999; see Threats); ■ **South Kyongsang near Chinhae**, small numbers wintering annually (Park Jin-young *in litt.* 1999); **Nakdong estuary**, collected in January 1967 and December 1970 (Won 1969, Gore and Won 1971), up to 15 birds, December 1991–February 1992 (Forestry Research Institute, Korea 1992), four, January 1996, 176, December 1996 (Han Sang-hoon *in litt.* 1997), 136, January 1999 (Kim Jin-han *in litt.* 2000), 17, February 1999 (MOE Korea 1999), c.100–150 wintering annually (Park Jin-young *in litt.* 1999), although numbers started to decline in the late 1990s (Kim Jin-han *in litt.* 1998; see Threats); **Namhae island**, wintering in small numbers (Park Jin-young *in litt.* 1999); ■ **North Cholla Mangyong estuary** (Mankyung estuary), Saemankeum area, 500 birds, January 1996, 363 birds, February 1997 (Han Sang-hoon *in litt.* 1997), 134, January 1999 (Kim Jin-han *in litt.* 2000), 200–500 wintering regularly (Kim Jin-han *in litt.* 1998; see Threats); **Tongjin river**, Saemankeum area, two, April–May 1998 (Kim Jin-han *in litt.* 1998); ■ **South Cholla Kwangyang bay**, near Suncheon bay, a very important area which shares its wintering population with Suncheon bay (Park Jin-young *in litt.* 1999), with 670 birds, January 1999 (Kim Jin-han *in litt.* 2000); between **Yeosu** and Seongpo, 1974–1975 (Min and Won 1976); **Suncheon bay**, the most important wintering ground in South Korea, with 950 birds in January 1998 (Kim Jin-han *in litt.* 1998), more than 600 in January 1997 (Han Sang-hoon *in litt.* 1997), 480 in January 1999 (Kim Jin-han *in litt.* 2000), and 2,000 in February 1999 (Park Jin-young *in litt.* 1999); **Haenam mudflat**, 26 birds, January 1997 (Han Sang-hoon *in litt.* 1997), 12 birds, January 1999 (Kim Jin-han *in litt.* 2000); unspecified localities, three collected, February 1927 (Austin 1948, Gore and Won 1971); ■ **Cheju Cheju island** (Quelpart island), undated (Kuroda and Mori 1918).

■ **CHINA** ■ **MAINLAND CHINA** Most of the known breeding colonies of this species are on the coast of eastern China, the largest at Shuangtai Hekou Nature Reserve in Liaoning and Yancheng Reserve in Jiangsu, with smaller numbers along the coast of the Gulf of Bohai in Hebei (and reportedly also in Tianjin) and at the Yellow River delta in Shangdong. There have also been reports of it nesting inland in Inner Mongolia and of summering birds in Heilongjiang, but these remain to be confirmed (see Remarks 2). Saunders's Gull is widespread along the eastern and southern coasts of China on passage and in winter, and large wintering

concentrations have been found at Yancheng in Jiangsu, Hangzhou bay, Xuanmen bay, Yueqing bay and Wenzhou bay in Zhejiang, Dongwuyang bay, Weitou bay (near Xiamen and Jinmen) in Fujian, and Shenzhen bay (Inner Deep Bay) in Guangdong and Hong Kong. Records (by province) are as follows:

■ **Heilongjiang** Confluence of the **Xun He** (Xunbiela) river with the Amur river, Xunke county, several birds reported (but see Remarks 2), May–June 1997 (Liu Xiaolong *et al.* 1998);

■ **Jilin Baicheng prefecture**, undated (Jilin Wildlife Conservation Society 1987); **Changchun**, one collected, undated (Mizuno 1934);

■ **Liaoning Shuangtai Hekou National Nature Reserve**, Panjin city, one of the two largest known breeding grounds, discovered in July 1989 (Li Yuxiang *et al.* 1998), two nests with eggs in the west of the reserve in 1989, 15 birds but no nests in the west of the reserve and c.130 birds and 32 nests (with eggs and chicks) in five scattered colonies in the south-east of the reserve, all on saltmarshes, May–June 1990 (Melville 1990), 13 nesting colonies located, June 1996 (Kitakyushu City 1996), c.2,000 breeding birds estimated in the reserve from 1996 to 1999, with 1,022 birds in a colony east of the Shuangtai river in 1996, which moved west of the Shuangtai river following the construction of a reservoir at the old nesting site, and are now concentrated at Shili (1,010 breeding birds in 1999), Nanxiaohe (1,106 birds in 1999) and Liuzigou (170 birds in 1999) (Li Yuxiang verbally 1999, M. Takeishi verbally 1999); **Daling He estuary**, 170 adults and 23 subadults seen, and eight empty nests with signs that young had fledged, June 1992 (Liang Yu and Wong 1993); **Xiaozhuangzi** (Xiazhuangzi), two adults seen, June 1992 (Liang Yu and Wong 1993); **Yalu Jiang estuary**, 5–10 seen, May 1991, 21 nests and 62 eggs found at Gushan, in the core zone of the reserve, early June 1996, 30–37 birds seen at Gushan, Yiquan and Xingou (in the buffer zone of the reserve), but with no subsequent reports of breeding (Xu Chuanzhen *in litt.* 2000); **Donggang**, on the Yellow Sea, 38 birds and seven nests with 17 eggs, June 1998, most of the nests being on dykes protecting shrimp-ponds (*Oriental Bird Club Bull.* 29 [1999]: 16); **Lüshun** (Port Arthur, Liushutun), near Jinzhou and Dalian, one collected, undated (Mizuno 1934; also Cheng Tso-hsin 1987);

■ **Inner Mongolia** reported from Hulun Buir, Hinggan, Xilin Gol and Ulanqab leagues (see Remarks 2), undated (Yang Guisheng and Xing Lianlian 1998); Dalai Hu National Nature Reserve (Hulun Nur), six nests reportedly of this species on the edge of a small island in the lake (see Remarks 2), May 1987 (Shi *et al.* 1988; also Scott 1989), these perhaps actually having been Relict Gulls *Larus relictus* (Xu Weishu and Melville 1994);

■ **Yunnan Lugu Hu** lake, Ninglang county, eight seen, March 1997 (Yang Lan 1997b, Yang Lan and Yang Xiaojun 1997);

■ **Hebei Beidaihe**, 10–19 birds, April–May 1985 (Williams 1986), first-winter, October 1986, up to five, October–November 1987, one, October 1988, three, October 1989, five, September–November 1990 (Williams *et al.* 1992), 38+ birds, mostly adults, March–May 1989 (Holt 1989; also Scott 1989), with small numbers seen during the spring and autumn migration periods, late 1980s and through the 1990s (many observers *in litt.*); **Qilihai**, south of Beidaihe, two, May 1999 (A. Holcombe *in litt.* 1999); **Luan He estuary**, a breeding ground, four nests with 10 eggs and two chicks, June 1992, 39 adults seen, June 1992 (Liang Yu and Wong 1993), two seen, October 1989 (Williams *et al.* 1989), seven seen, May 1990 (Bradshaw *et al.* 1990); **Daqinghe estuary**, four seen, October 1989 (Williams *et al.* 1989), reported probably breeding in the area (G. J. Carey in Wang Hui and Sai Daojian 1996), but this has never been confirmed (G. J. Carey *in litt.* 2000); **Shijiutuo** (“Happy island”) and Daqinghe estuary, south of Beidaihe, 30 birds, May 1992 (T. Uggla *in litt.* 1999), up to 30 birds, May 1993 (D. Jardine *in litt.* 1999), maximum of 68 birds, August–September 1994 (Dierschke and Heintzenberg 1994), up to 120 birds, May 1995 (P. van der Wielen *in litt.* 1999), up to 85 birds, April 2000 (J. Hornskov *in litt.* 2000), no proof of breeding, but surely bred nearby in the early to mid-1990s, given the number of birds present there in late spring (P. Alström,

U. Olsson and D. Zetterström *in litt.* 2000); Xiangyundao Tree Farm (untraced), two adults seen, June 1992 (Liang Yu and Wong 1993);

■ **Tianjin Tanggu**, April 1935 (specimen in ASCN), reported to probably be breeding in the area (G. J. Carey in Wang Hui and Sai Daojian 1996), but this has never been confirmed (G. J. Carey *in litt.* 2000);

■ **Shandong** Yellow River delta (Huang He njiaozhou) as a passage migrant and summer visitor, the largest concentrations occurring in August and September, recorded in the following areas (most of which are inside the Yellow River Delta Nature Reserve): west bank of the **Tiao river** (Xintiao river), two nests with three eggs found and 120 adults seen, June 1992 (Liang Yu and Wong 1993); **Wuhaozhuang** (Wuhaozhao), five, October 1989, five, August 1990, 14 birds, April 1992 (Wang Hui and Sai Daojian 1996); **Yellow River** (Huang He), two, June 1988, nine, July 1989, 12 birds, September 1990 (Wang Hui and Sai Daojian 1996), seven at Gudao Tree Farm, 12 near Yiqian'er (including on the old channel of the Yellow River) and 12 on the Yellow River estuary, June 1992 (Liang Yu and Wong 1993); **Guangli-Zhimai confluence**, Dongying city, at the Zimai river mouth, 3–5 birds, September 1988, September 1989 and August 1991, 52 birds, April 1992 (Wang Hui and Sai Daojian 1996), at the Guangli He river mouth, 200 adults, June 1992 (Liang Yu and Wong 1993), at the confluence of the two rivers, seven nests containing 18 eggs found and 50 adults seen, June 1992 (Liang Yu and Wong 1993); **Changyi** Zaohu, four adults, June 1992 (Liang Yu and Wong 1993); **Qingdao**, undated (Cheng Tso-hsin 1987), 20 birds, January 1990 (Waterbird Specialist Group 1994); Daikou (untraced), three, May 1989, seven birds on 10 August 1990 and 40 birds on 12 September 1991, 48 birds, April 1992 (Wang Hui and Sai Daojian 1996); Dawenliu (untraced), 15 birds, July 1988, 3–5 birds, June 1989 and June 1990, 500–600 birds, September 1991, 188 birds, April 1992 (Wang Hui and Sai Daojian 1996); Nanhaipu (untraced), four, October 1988, 88 birds, September 1990 (Wang Hui and Sai Daojian 1996), eight, June 1992 (Liang Yu and Wong 1993);

■ **Jiangsu** Yancheng marshes, an important breeding ground, with three major breeding colonies in Xiangshui county at the northern end of the marshes, Sheyang county in the middle, and Dafeng and Dongtai cities in the south (see Remarks 3), also a wintering ground, 699 birds, winter 1990–1991 (Wang Hui 1991), c.1,000 pairs nesting and 200 summering first-year birds in the nature reserve including more than 500 pairs in the core area, summer 1999, and more than 2,000 birds wintering in the reserve (Wang Hui *in litt.* 2000), with records from the following specific localities (with the exception of Dongtai in the south, all located inside Yancheng Nature Reserve): **Linhong estuary**, Lianyungang city, 94 birds, February 1992 (Waterbird Specialist Group 1994); **Liezi estuary** (Liezi Kou), Lianyungang city and Guanyun county, 121 birds, December 1997–January 1998 (Su Hualong *et al.* 1998); **Guandong salt works**, Xiangshui county, breeding colony of 194 birds discovered in 1990 (Wang Hui 1993), 325 birds, January 1990, 68 birds, December 1991 (Waterbird Specialist Group 1994); **Xintan salt works**, Binhai county, 27 birds, January 1990, 18 birds, December 1990 (Waterbird Specialist Group 1994), at least 150 birds, December 1997–January 1998 (Su Hualong *et al.* 1998); near **Sheyang He** estuary, Sheyang county, 58 birds, December 1997–January 1998 (Su Hualong *et al.* 1998), 880 birds at Shenyang river mouth, February 2000 (Wang Hui *in litt.* 2000); **Sheyang salt works**, Sheyang county, breeding colony (the first known for the species) discovered in 1984, with well over 200 birds in 1984, 540 birds in 1987 (Scott 1989, Wang Hui 1993), 1,510 birds, winter 1989/1990 (Wang Hui and Du Jinjin 1993), 805 birds, January 1990, c.370 birds, winter 1990/1991 and 1991/1992 (Waterbird Specialist Group 1994), 289 nests found in 1992 (Wong 1994), up to 360 adults, 64 second-year birds and 656 juveniles in the breeding seasons of 1993 and 1994 (Wang Hui and Sai Daojian 1996), at least 60 birds, December 1997–January 1998 (Su Hualong *et al.* 1998); **Yancheng Nature Reserve** core area, Sheyang county, up to 36 birds, winter 1990/1991 and 1991/1992 (Waterbird Specialist Group 1994), up to 457 adults, 62 second-year birds and 260 juveniles in the breeding

seasons of 1993 and 1994 (Wang Hui and Sai Daojian 1996), 58 birds, December 1997–January 1998 (Su Hualong *et al.* 1998); **Simaoyou He**, Dafeng city, up to 89 adults, 22 second-years, one juvenile in the 1993 and 1994 breeding seasons (Wang Hui and Sai Daojian 1996); **Haifeng farm** fishponds and coast, probably outside the nature reserve boundary, with up to 79 birds at the coast, winter 1989/1990 and 1990/1991 (Waterbird Specialist Group 1994), and at least 350 at the fishponds and 123 at the coast, December 1997–January 1998 (Su Hualong *et al.* 1998); near **Wanggang He**, Dafeng city, up to 153 adults and 98 juveniles at Wanggang Haifeng in the 1993 and 1994 breeding seasons (Wang Hui and Sai Daojian 1996), at least 300 birds at Wanggang, December 1997–January 1998 (Su Hualong *et al.* 1998); Zhugang, **Dafeng county**, 54 adults, 28 second-years and 60 juveniles in the 1994 breeding season (Wang Hui and Sai Daojian 1996); **Dunmenkou**, Dongtai city, 12 birds, November 1991 (Waterbird Specialist Group 1994); **Chuangong Gang** estuary, Dafeng city, at least 80 birds, December 1997–January 1998 (Su Hualong *et al.* 1998); Dongshatan, **Dongtai city**, 11 birds, November 1991 (Waterbird Specialist Group 1994); **Sancang He**, Dongtai city, 68 adults, 38 second-years and 38 juveniles found in the 1994 breeding season (Wang Hui and Sai Daojian 1996); **Liangduo He**, Dongtai city, 16 adults, eight second-years and six juveniles found in the 1994 breeding season (Wang Hui and Sai Daojian 1996); **Liulishhe**, Dongtai city, 415 birds, November 1991 (Waterbird Specialist Group 1994); **Lianxinggang**, Qidong city, 15 birds, December 1997–January 1998 (Su Hualong *et al.* 1998); Sisheng Gang (untraced), 108 adults and 26 eggs found in the 1993 breeding season (Wang Hui and Sai Daojian 1996); Zhongru Gang (untraced), 52 juveniles, summer 1993 (Wang Hui and Sai Daojian 1996); Zhuzhuan (untraced), 224 adults found in the 1993 breeding season (Wang Hui and Sai Daojian 1996);

■ **Shanghai Chongming Dao** island, in the mouth of Yangtze river, c.15 pairs showing signs of breeding behaviour, late April 1987 (Scott 1989), but none seen in Shanghai during the 1997/1998 coastal counts (Hou Yunqiu and Qian Fawen 1998); **Chengxing Dao** and Hengsha islands, in the mouth of Yangtze river, winter (unspecified years) (Scott 1989);

■ **Zhejiang Zhoushan islands**, winter (unspecified years) (Zhu Xi and Yang Chunjiang 1988); **Hangzhou** (presumably Hangzhou bay), undated (Zhuge Yang 1990); **Dinghai**, Zhoushan Dao island, undated (Zhuge Yang 1990); **Zhenhai county**, 210 birds at Chengguan, Hangzhou bay, December 1997 (Qian Fawen *et al.* 1998); **Putuo**, Zhoushan Dao island, undated (Zhuge Yang 1990); **Ningbo**, recently collected (Xu Weishu in Melville 1984), winter (unspecified years) (Zhu Xi and Yang Chunjiang 1988, Zhuge Yang 1990); **Chunhu**, Xiangshan bay, Fenghua county, 12 birds, December 1997 (Qian Fawen *et al.* 1998); **Xidian**, Xiangshan bay, Ninghai county, 18 birds, December 1997 (Qian Fawen *et al.* 1998); **Chayuan**, Sanmen bay, Ninghai county, 14 birds, December 1997 (Qian Fawen *et al.* 1998); **Ninghai county** (probably Sanmen bay), undated (Zhuge Yang 1990); **Sanmen bay**, 53 birds, January 1990 (Waterbird Specialist Group 1994); **Huangyan county**, winter (unspecified years) (Zheng Baoyou *et al.* 1993); **Jinqing**, Taizhou bay, Jiaojiang county, 135 birds, December 1997 (Qian Fawen *et al.* 1998); **Dongpu**, Yiwan bay, Wenling county, 63 birds, December 1997 (Qian Fawen *et al.* 1998); **Jiangxia**, Yueqing bay, Wenling county, 282 birds, December 1997 (Qian Fawen *et al.* 1998); **Hengshan**, Yueqing bay, Wenling county, 25 birds, December 1997 (Qian Fawen *et al.* 1998); **Yuhuan county**, 188 birds at Longxi, Yueqing bay, and 220 birds at Chengguan, Xuanmen bay, December 1997 (Qian Fawen *et al.* 1998); **Yuecheng** township, Yueqing bay, Yueqing county, 500 birds, December 1997 (Qian Fawen *et al.* 1998), c.500 estimated at Sanyandou, December 1998 (Ding Ping *in litt.* 1998); **Ouhai county**, Wenzhou bay, 48 birds at Beixin village, Haibin town and 512 birds at Tianhe, December 1997 (Qian Fawen *et al.* 1998), 450–500 birds at Tianhe, December 1998 (Ding Ping *in litt.* 1998); **Ou Jiang estuary**, 15 birds, January 1990 (Waterbird Specialist Group 1994); **Wenzhou city** (probably Wenzhou bay), undated (Zhu Xi and Yang Chunjiang 1988, Zhuge Yang 1990); **Lingkun island**, Wenzhou bay, Ouhai county, 522 birds, December 1997 (Qian Fawen *et al.* 1998), 12 birds, April 1999 (Ding Ping undated);

**Yongxingzhen** (Yongxing), Wenzhou bay, Ou hai county, 1,345 birds (including at Haibin and Tianhe), January 1999, 96 birds, April 1999, one, May 1999 (Ding Ping undated); **Longjiang**, Wenzhou bay, Cangnan county, one, May 1999 (Ding Ping undated);

■ **Fujian** (note that Jinmen Dao island is under the administration of Taipei) **Dongwu Yang** bay, Xiapu county, 110 birds at Zucuo village, Changchun town, late December 1997 (Qian Fawen *et al.* 1999); **Sandu Ao** (San-tu-ao) bay, Ningde county, February–March 1903 (five males in BMNH); **Fuzhou** (Foochow), “scarce”, March and November 1891, March 1893, January and March 1896 (La Touche 1892, six specimens in AMNH, BMNH and MCZ); **Haikou** salt works and Huaqiao farm, Fuqing city, 102 birds, January 1997 (Qian Fawen *et al.* 1999); **Xinghua bay**, Jiangkou village, Jiangkou town, Putian city, 50 birds, December 1997 (Qian Fawen *et al.* 1999); Meizhou bay, **Lingchuan** town, Putian city, 30 birds at Dongjin village and 40 birds at Dongsha village, December 1997 (Qian Fawen *et al.* 1999); Anhai Pier, **Jinjiang county**, nine, January 1997 (Qian Fawen *et al.* 1999); **Dadeng Dao** island, Weitao bay, Xiamen, up to 120 birds, January and December 1997 (Qian Fawen *et al.* 1999); **Jiulong Jiang estuary**, Xiamen city, winter (unspecified years) (Lin Peng 1997); Jinding village, Zini town, **Longhai city**, 25 birds, December 1997 (Qian Fawen *et al.* 1999); **Jinmen Dao** (Chin-men Tao, Kinmen or Quemoy) island, 65–130 birds, 1994–1995 (CWBF database); **Xiamen** (Amoy), “common winter bird”, February 1858, November–December 1867, January–February 1893 (Swinhoe 1871, five specimens in BMNH, MCML and MCZ); **Dongshan bay** (Dongshan Nei’ao bay), Zhuta village, Dongxia town, Yunxiao county, 41 birds, December 1997 (Qian Fawen *et al.* 1999); Haizao/Jiang Kou (not mapped), 100 km south of Fuzhou, 525 birds, March 2000 (*Oriental Bird Club Bull.* 32 [2000]: 66–76);

■ **Jiangxi Poyang Hu** lake, 12 adults at Bang Hu, January 1986, four adults at Changhu Chi, January 1986 (Kennerley 1987);

■ **Guangxi Tieshan Gang** bay, Beihai city, four, December 1997–January 1998 (Hou Yunqiu and Qian Fawen 1998); northern **Beibu bay** (Gulf of Tonkin), very rare winter visitor, under five (undated) records (Zhou Fang *et al.* 1999);

■ **Guangdong Shantou** (Swatow), common in the spring, 1887 (La Touche 1892, four specimens in AMNH and BMNH); **Lufeng** coast, eight, January 1990 (Waterbird Specialist Group 1994); **Honghai bay**, Haifeng county, several, December 1997–January 1998 (Hou Yunqiu and Qian Fawen 1998); between **Jiangmen** (Kong Mun) and Sanshui (Samshui), about a dozen seen, March 1904 (Vaughan and Jones 1913); **Futian Nature Reserve**, Shenzhen, small numbers (same birds as in Inner Deep Bay, Hong Kong), undated (Scott 1989); **Zhanjiang** (Konang-Tcheou-wan), four collected, October 1932 and January 1933 (Jabouille 1935, two specimens in BMNH);

■ **Hainan Haikou** (Hoi Chou), December 1890 (juvenile male in AMNH; also Ogilvie-Grant 1900a), not recorded on Hainan in recent years (Hou Yunqiu and Qian Fawen 1998, SC).

■ **HONG KONG** This gull is a regular winter visitor to the Inner Deep Bay area, with occasional reports from elsewhere. The largest numbers occur February and March, indicating that some birds are passage migrants (HKBWS database). Records are as follows: Inner Deep Bay area, including **Mai Po** and Tsim Bei Tusi, annual winter visitor and passage migrant in November to April, with annual maximum counts of: 24 in March 1984, 38 in March 1985, c.40 in February and March 1986, 30 in February 1987, 80 in March 1988, 67 in February 1989, 143 in February 1990, 163 in February 1991, 120 in February 1992, 107 in February 1993, 172 in February 1994, 131 in March 1995, 113 in February 1996, 127 in February 1997 (HKBWS database); **Chek Lap Kok**, Lantau island, one, March 1997 (HKBWS database).

The following records are now considered to be unconfirmed (G. J. Carey *in litt.* 2000): Lau Fau Shan, near Inner Deep Bay, one, February 1973 (HKBWS database); Stonecutters island, one, March 1978 (HKBWS database); Kai Tak (the former international airport), one, April 1975 (HKBWS database); Victoria Harbour, single birds, February 1979 and November 1980 (HKBWS database).

■ **MACAO** There is a single record: **Macao**, one obtained, September 1906 (Vaughan and Jones 1913; specimen in RMNH).

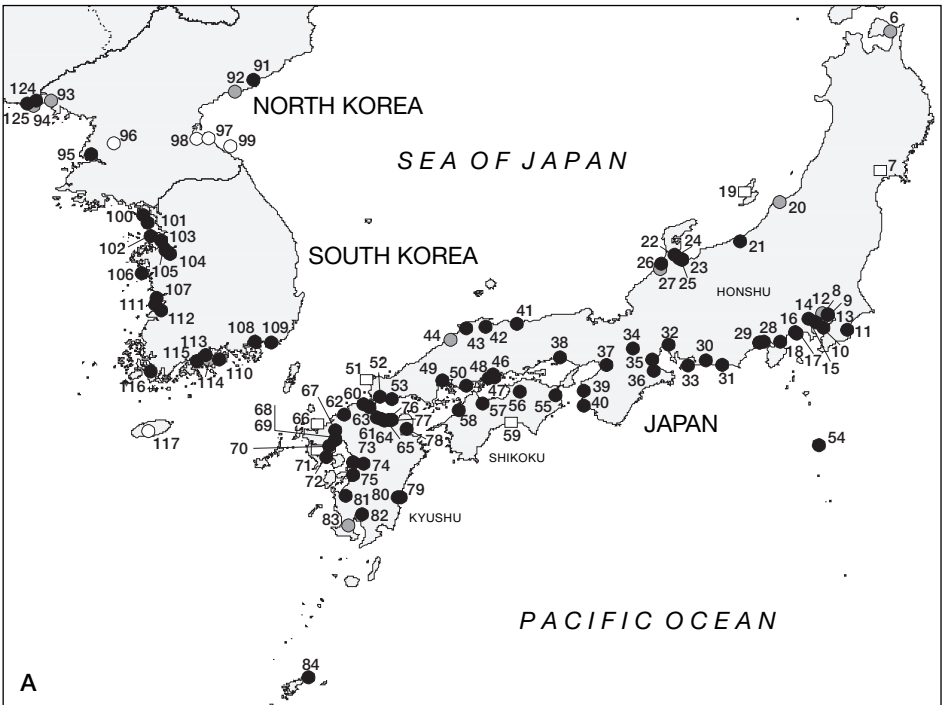
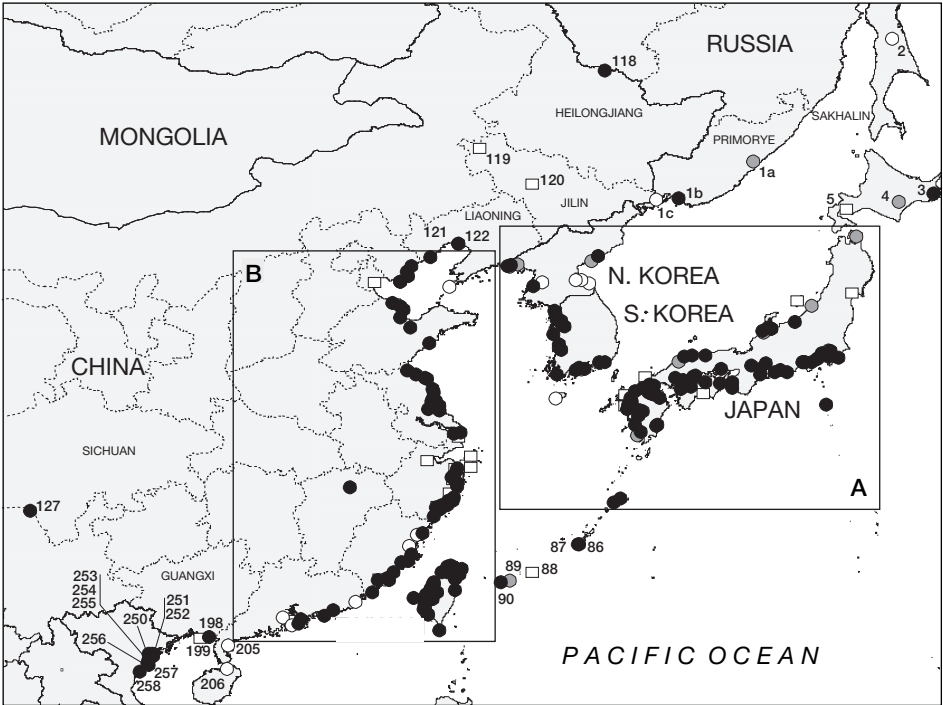
■ **TAIWAN** The species has been found in all coastal areas on Taiwan, but most records are from the western and north-eastern coasts, and the largest numbers are found in Taichung, Changhwa and Chiaï counties, especially at Hanpao and the Tatu estuary, with records as follows (for records on Jinmen Dao island, see under Fujian province above): **Watzuwei**, Taipei, three in 1992, two in 1995 (CWBF database); **Kuantu**, Taipei, undated (Scott 1989), three, 1998 (CWBF database); **Shetzu**, Taipei, across the river from Kuantu, four in 1989, two in 1990, one in 1996, one in 1999 (CWBF database); **Chuntou**, Taoyuan county, 2–4 birds, 1996 and 1997 (CWBF database); **Kungliao**, Taipei, one in 1995 (CWBF database); **Tapingting**, Taoyuan county, 22 birds, 1997 (CWBF database); **Tachuang**, Hsinchu county, 10–20 birds annually in the late 1990s (CWBF database); **Chu-an**, Ilan county, one, November 1984 (Alström 1984), three, 1994 (CWBF database); **Kangnan**, Hsinchu county, usually fewer than 10 birds annually, 1986–1998, maximum of 17 in 1992 (CWBF database); **Ilan**, four, November 1984 (Alström 1984); **Kuting** (South Kuting), Ilan county, seven, 1996 (CWBF database); **Lanyang estuary**, Ilan county, four, January 1988 (Fang Woei-horng 1988), 5–50 birds, but usually 10–20, during the migration seasons of 1988–1997, maximum of 50 birds in 1993 (CWBF database); Ilan plain, **Ilan county**, 60 birds, 1997 (CWBF database); **Kaomei** (Tachia estuary), Taichung county, 40 birds, December 1995–January 1996, 94 birds, 1998 (CWBF database); **Chingshui**, Taichung, 130 birds, December 1999 (*Oriental Bird Club Bull.* 31 [2000]: 49–57); **Shuili**, Yunlin county, 147 birds, 1995 (CWBF database); **Tatu estuary**, Changhwa county, eight, December 1985, 42 birds, December 1986 (Chen Ping-huang 1987), 75 birds, December 1987 (Chang Wanfu 1988), 30–385 birds, winter 1988–1996 (CWBF database), in recent years c.300 birds recorded annually, maximum of 385 in January 1994 (Fang Woei-horng 1995a), 316 birds in January 1995 (Fang Woei-horng 1995b), 182 birds in January 1996 (Fang Woei-horng 1996), 300 birds in January 1997 (Fang Woei-horng 1998a); **Hanpao**, Changhwa county, maximum count of 600 birds in 1996 (Liau Chi-chiang and Luo Jui-kun 1998), 16 birds, January 1995 (CWBF database), four, January 1997 (Fang Woei-horng 1998a), winter numbers fluctuating from under 10 to 600 birds in 1993–1998, usually fewer than 40, but c.600 birds counted in 1994 and 1996 (CWBF database); **Changhua county**, at Tacheng, 21 birds in 1996 and 105 in 1997 (CWBF database), at His-kang, 220 birds in January 2000 (*Oriental Bird Club Bull.* 32 [2000]: 66–76); **Hualien estuary**, Hualien county, 1–6 birds, 1995–1998 (CWBF database); **Tacheng**, Tainan, two, 1994 (CWBF database); **Chuoshui estuary**, Changhwa county, 105 birds, January 1997 (Fang Woei-horng 1998a); **Hsinwu estuary**, five, 1997 (CWBF database); **Wenkang**, Yunlin county, six, 1996 (CWBF database); **Wutiaokang**, Yunlin county, 7–147 birds, 1996–1998 (CWBF database); **Hsingien** Tsai-yuan, Penghu county, two in 1996, one in 1998 (CWBF database); **Peikang estuary**, Yunlin county, 12 birds, 1996 (CWBF database), 53, January 1997 (Fang Woei-horng 1998a); **Aoku**, Chiaï county, 10–80 wintering birds, 1988–1996 (CWBF database); Yichu, **Chiaï county**, 16 birds in 1995, two in 1997 (CWBF database); **Potzu river**, Chiaï county, 26 birds, January 1997 (Fang Woei-horng 1998a), 17–33 birds in 1995–1998 (CWBF database); **Tungshi bridge**, Chiaï county, 54–380 birds in 1995–1998 (CWBF database); **Putai**, Chiaï county, 12 birds, January 1995 (Fang Woei-horng 1995b), two, January 1997 (Fang Woei-horng 1998a), usually under 10 birds annually in 1994–1997, maximum count of 65 in 1997 (CWBF database); **Nankunshen** and **Wuchi**, Tainan, 15 birds in 1992, 100 in 1993 (CWBF database); **Peimen** salt pans, Tainan, 29 birds, January 1996 (Fang Woei-horng 1996), 170 birds in December 1996 (Weng Yung-hsuan 1997), two, January 1997 (Fang Woei-horng 1998a), eight, 1998 (CWBF database); **Chiku salt pans**, Tainan, winter visitor, maximum of 16 birds in February 1998 (Weng Yi-chong 1998); **Tsengwen estuary**, Tainan, 20 birds in 1993, one in 1994 (CWBF database); Szutsau, **Tainan city**, 20 birds in 1993, 1–3 birds in 1995, 1996 and 1998 (CWBF database); **Yungan** salt works, Kaohsiung county, three, 1995 (CWBF database); **Yuanchungkang** and **Kochailiau**, Tsuoying, Kaohsiung county, 60 birds, September

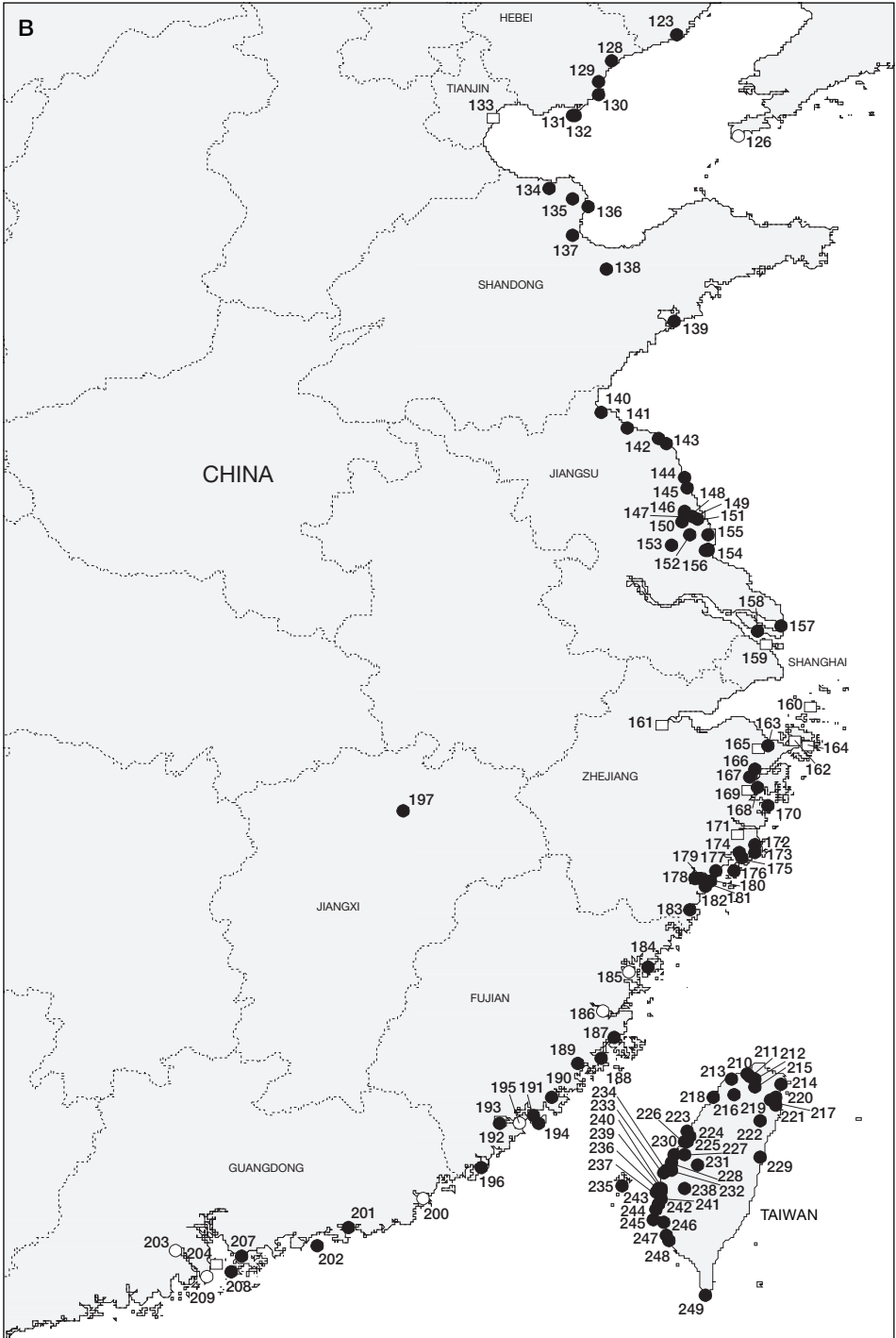
1983 (Yen Chung-wei 1984), eight, December 1987 (Chang Wanfu 1988); **Kenting National Park**, Pingtung county, October–May 1985–1987 (Simon 1990).

■ **VIETNAM** Saunders's Gull is a regular winter visitor to the coastal zone of the Red River delta, with records, arranged from north to south, as follows: Kien Thuy district, **Hai Phong**, 30 birds between Do Son district and the Van Uc estuary, February 1996 (Eames and Tordoff in prep.); **An Hai** district, Hai Phong, 17 birds, spring 1996 (Pedersen and Nguyen Huy Thang 1996); **Do Son** district, Hai Phong, one, March 1997 (Eames and Tordoff in prep.); **Van Uc estuary**, Tien Lang district, Hai Phong, one, February 1996 (Eames and Tordoff in prep.); **Tien Lang** district, Hai Phong, 30 birds, spring 1996 (Pedersen and Nguyen Huy Thang 1996); **Thai Thuy** district, Thai Binh, 147 birds at Thai Binh estuary, February 1996

**The distribution of Saunders's Gull *Larus saundersi* (maps opposite):** (1a) Blagodatnoye lake; (1b) Shkotovka estuary; (1c) Sedimi; (2) Sakhalin island; (3) Bekkai-cho; (4) Tokachi; (5) Iburi; (6) Mutsu-shi; (7) Miyagi; (8) Funabashi; (9) Yatsu tidal flat; (10) Obitsu-gawa river mouth; (11) Ichinomiya-gawa river mouth; (12) Kasai; (13) Tama-gawa; (14) Kawasaki-shi; (15) Tama-gawa river mouth; (16) Hiratsuka-shi; (17) Sagami-gawa river mouth; (18) Yugawara-machi; (19) Sado island; (20) Toyano-gata; (21) Joetsu-shi; (22) Himi-shi; (23) Sho-gawa; (24) Horioka; (25) Shimminato-shi; (26) Kahoku-gata; (27) Kanazawa; (28) Ukishima-numa; (29) Fuji-gawa river mouth; (30) Hamana-ko; (31) Ota-gawa river mouth; (32) Shonai-gawa river mouth; (33) Tahara-cho; (34) Mikumo-cho; (35) Kawage-cho; (36) Matsusaka-shi; (37) Suminodo-cho; (38) Himeji-shi; (39) Wakaura; (40) Hidaka-gawa river mouth; (41) Tenjin-gawa river mouth; (42) linashi-gawa river mouth; (43) Hikawa-cho; (44) Ooda-shi; (45) unallocated; (46) Fukuyama-shi; (47) Ashida-gawa; (48) Matsunaga bay; (49) Yawata-gawa river mouth; (50) Oshiba-shima; (51) Tsuno-jima; (52) Sanyo-cho; (53) Ajisu-cho; (54) Hachijo-jima; (55) Yoshino-gawa river mouth; (56) Kasuga-gawa river mouth; (57) Kamo-gawa river mouth; (58) Shigenobu-gawa river mouth; (59) Monobe-gawa; (60) Wakamatsu-ku; (61) Sone tidal flat; (62) Wajiro tidal flat; (63) Shiida-machi; (64) Yoshitomi-machi; (65) Imazu tidal flat; (66) Genkai; (67) Saga-gun; (68) Kase-gawa; (69) Rokkaku-gawa; (70) Hama reclamation; (71) Omura bay; (72) Isahaya tidal flat; (73) Shira-kawa; (74) Mifune; (75) Kuma-gawa river mouth; (76) Nakatsu-shi; (77) Otome; (78) Kitsuki-shi; (79) Hitotsuse-gawa river mouth; (80) Sadowara-cho; (81) Izumi-shi; (82) Kokubu-shi; (83) Taniyama; (84) Kasari-cho; (85) unallocated; (86) Manko; (87) Gushi tidal flat; (88) Miyako-jima; (89) Ishigaki-jima; (90) Iriomote-jima; (91) Riwon; (92) Sinpo; (93) Yomju; (94) Sindo; (95) Nampho; (96) Pyongyang; (97) Kukdo; (98) Wonsan; (99) Tongchon; (100) Kanghai island; (101) Yongjong island; (102) Taebu-do; (103) Namyang bay; (104) Shihwa reclamation lake; (105) Asan bay; (106) Cheonsu bay; (107) Kum estuary; (108) Chinhae; (109) Nakdong estuary; (110) Namhae island; (111) Mangyong estuary; (112) Tongjin river; (113) Kwangyang bay; (114) Yeosu; (115) Suncheon bay; (116) Haenam; (117) Cheju island; (118) Xun He; (119) Baicheng prefecture; (120) Changchun; (121) Shuangtai Hekou National Nature Reserve; (122) Daling He estuary; (123) Xiaozhuangzi; (124) Yalu Jiang estuary; (125) Donggang; (126) Lüshun; (127) Lugu Hu; (128) Beidaihe; (129) Qilihai; (130) Luan He estuary; (131) Daqinghe estuary; (132) Shijiutuo; (133) Tanggu; (134) Tiao river; (135) Wuhaozhuang; (136) Yellow River; (137) Guangli-Zhimai confluence; (138) Changyi; (139) Qingdao; (140) Linhong estuary; (141) Liezi estuary; (142) Guandong salt works; (143) Xintan salt works; (144) Sheyang He; (145) Sheyang salt works; (146) Yancheng Nature Reserve; (147) Simaoyou He; (148) Haifeng farm; (149) Wanggang He; (150) Dafeng county; (151) Dunmenkou; (152) Chuandong Gang; (153) Dongtai city; (154) Sancang He; (155) Liangduo He; (156) Liulische; (157) Lianxinggang; (158) Chongming Dao; (159) Chengxing Dao; (160) Zhoushan islands; (161) Hangzhou; (162) Dinghai; (163) Zhenhai county; (164) Putuo; (165) Ningbo; (166) Chunhu; (167) Xidian; (168) Chayuan; (169) Ninghai county; (170) Sanmen bay; (171) Huangyan county; (172) Jinqing; (173) Dongpu; (174) Jiangxia; (175) Hengshan; (176) Yuhuan county; (177) Yuecheng; (178) Ouhai county; (179) Ou Jiang estuary; (180) Wenzhou city; (181) Lingkun island; (182) Yongxingzhen; (183) Longjiang; (184) Dongwu Yang; (185) Sandu Ao; (186) Fuzhou; (187) Haikou; (188) Xinghua bay; (189) Lingchuan; (190) Jinjiang county; (191) Dadeng Dao; (192) Jiulong Jiang estuary; (193) Longhai city; (194) Jinmen Dao; (195) Xiamen; (196) Dongshan bay; (197) Poyang Hu; (198) Tieshan Gang; (199) Beibu bay; (200) Shantou; (201) Lufeng; (202) Honghai bay; (203) Jiangmen; (204) Futian Nature Reserve; (205) Zhanjiang; (206) Haikou; (207) Mai Po; (208) Chek Lap Kok; (209) Macao; (210) Watzuwei; (211) Kuantu; (212) Shetzu; (213) Chuntou; (214) Kungliao; (215) Tapingting; (216) Tachuang; (217) Chu-an; (218) Kangnan; (219) Ilan; (220) Kuting; (221) Lanyang river; (222) Ilan county; (223) Kaomei; (224) Chingshui; (225) Shuili; (226) Tatu estuary; (227) Hanpao; (228) Changhua county; (229) Hualien estuary; (230) Tacheng; (231) Chuoshui estuary; (232) Hsinwu estuary; (233) Wenkan; (234) Wutiaokang; (235) Hsingjen; (236) Peikang estuary; (237) Aoku; (238) Chiai county; (239) Potzu river; (240) Tungshi bridge; (241) Putai; (242) Nankunshen; (243) Peimen; (244) Chiku salt pans; (245) Tsengwen estuary; (246) Tainan city; (247) Yungan; (248) Yuanchungkang; (249) Kenting; (250) Hai Phong; (251) An Hai; (252) Don Son; (253) Van Uc estuary; (254) Tien Lang; (255) Thai Thuy; (256) Tien Hai; (257) Xuan Thuy Nature Reserve; (258) Cua Day estuary.

○ Historical (pre-1950) ● Fairly recent (1950–1979) ● Recent (1980–present) □ Undated





(Pedersen and Nguyen Huy Thang 1996), 55 birds, March 1997, 75 birds, January 1998 (Eames and Tordoff in prep.), 100 birds at Thai Binh estuary, January 1999 (Fang Woeihorn 1999); **Tien Hai** district, Thai Binh, two, spring 1996 (Pedersen and Nguyen Huy Thang 1996); **Xuan Thuy Nature Reserve**, Nam Dinh, 200 birds, March 1988 (Scott 1988), two, March 1989 (Scott *et al.* 1989), regularly recorded between October and March in 1994–1998, maximum of over 100 birds in January 1996 (Eames and Tordoff in prep.; also Pedersen and Nguyen Huy Thang 1996, Fang 1998b); **Cua Day estuary**, Nghia Hung district, Nam Dinh, c.120 birds, February 1995, 17 birds, March 1997 (Eames and Tordoff in prep.).

**POPULATION** Saunders's Gull appears to have been common on the coast of south-eastern China in the late nineteenth and early twentieth century: Swinhoe (1871) described it as a "common winter bird" at Xiamen (Amoy) in Fujian, and Caldwell and Caldwell (1931) considered it to be common on spring and autumn migration in Fujian and Hainan. Jabouille (1935) reported that at Zhanjiang in Guangdong it "appears to be the most common gull in the wetlands in winter", and Cheng Tso-hsin (1940) described it as common in Guangdong in spring. Some large non-breeding concentrations were found in Japan, South Korea, mainland China and Taiwan in the 1990s, but it is now generally uncommon and it has presumably declined in numbers in the past 50 years (see Distribution and below). This decline is likely to be linked to the ongoing reduction in the area of coastal saltmarshes suitable for nesting, for example at Shangtai Hekou Nature Reserve in Liaoning where its breeding population was recently reported to be much decreased (Wang Hui and Sai Daojian 1996).

The total population of this species was estimated at 3,000 birds by Rose and Scott (1997). However, the recent discoveries of additional nesting colonies and wintering areas, and improved censuses at some previously known sites, indicate that the total population is probably higher, perhaps a breeding population of c.3,500–4,500 birds, and a wintering population of c.7,100–9,600 birds (SC). Population estimates are given below for all major parts of its range.

**Japan** The major wintering areas are on Kyushu, where c.600 birds wintered in 1992/1993, and on Sone tidal flat, where only 11.3–12.9% of the wintering birds are immature birds (Takeshita *et al.* 1993).

**The distribution of Saunders's Gull *Larus saundersi* (map B opposite):** (123) Xiaozhuangzi; (128) Beidaihe; (129) Qilihai; (130) Luan He estuary; (131) Daqinghe estuary; (132) Shijutuo; (133) Tanggu; (134) Tiao river; (135) Wuhaozhuang; (136) Yellow River; (137) Guangli-Zhimai confluence; (138) Changyi; (139) Qingdao; (140) Linhong estuary; (141) Liezi estuary; (142) Guangdong salt works; (143) Xintan salt works; (144) Sheyang He; (145) Sheyang salt works; (146) Yancheng Nature Reserve; (147) Simaoyou He; (148) Haifeng farm; (149) Wanggang He; (150) Dafeng county; (151) Dunmenkou; (152) Chuandong Gang; (153) Dongtai city; (154) Sancang He; (155) Liangduo He; (156) Liulishe; (157) Lianxinggang; (158) Chongming Dao; (159) Chengxing Dao; (160) Zhoushan islands; (161) Hangzhou; (162) Dinghai; (163) Zhenhai county; (164) Putuo; (165) Ningbo; (166) Chunhu; (167) Xidian; (168) Chayuan; (169) Ninghai county; (170) Sanmen bay; (171) Huangyan county; (172) Jinqing; (173) Dongpu; (174) Jiangxia; (175) Hengshan; (176) Yuhuan county; (177) Yuecheng; (178) Ouhai county; (179) Ou Jiang estuary; (180) Wenzhou city; (181) Lingkun island; (182) Yongxingzhen; (183) Longjiang; (184) Dongwu Yang; (185) Sandu Ao; (186) Fuzhou; (187) Haikou; (188) Xinghua bay; (189) Lingchuan; (190) Jinjiang county; (191) Dadeng Dao; (192) Jiulong Jiang estuary; (193) Longhai city; (194) Jinmen Dao; (195) Xiamen; (196) Dongshan bay; (197) Poyang Hu; (200) Shantou; (201) Lufeng; (202) Honghai bay; (203) Jiangmen; (204) Futian Nature Reserve; (207) Mai Po; (208) Chek Lap Kok; (209) Macao; (210) Watzuwei; (211) Kuantu; (212) Shetzu; (213) Chuntou; (214) Kungliao; (215) Tapingting; (216) Tachuang; (217) Chu-an; (218) Kangnan; (219) Ilan; (220) Kuting; (221) Lanyang river; (222) Ilan county; (223) Kaomei; (224) Chingshui; (225) Shuili; (226) Tatu estuary; (227) Hanpao; (228) Changhua county; (229) Hualien estuary; (230) Tacheng; (231) Chuoshui estuary; (232) Hsinwu estuary; (233) Wenkang; (234) Wutiaokang; (235) Hsingjen; (236) Peikang estuary; (237) Aoku; (238) Chiai county; (239) Potzu river; (240) Tungshi bridge; (241) Putai; (242) Nankunshen; (243) Peimen; (244) Chiku salt pans; (245) Tsengwen estuary; (246) Tainan city; (247) Yungan; (248) Yuanchungkang; (249) Kenting.

○ Historical (pre-1950) ● Fairly recent (1950–1979) ● Recent (1980–present) □ Undated

**Korea** The total wintering population in South Korea is estimated at c.2,000–3,500 birds, based on recent winter counts. A total of more than 1,518 birds was counted in January–February 1997 (Han Sang-hoon *in litt.* 1997). During a survey in January 1998, c.3,000 birds were counted at Asan bay, the Kum estuary, the Mangyong estuary, Suncheon bay, Kwangyang bay and the Nakdong estuary (Park Jin-young *in litt.* 1999), and 2,094 birds were counted during a census in January 1999 (Kim Jin-han *in litt.* 2000). The most important wintering site is Suncheon bay, where c.1,000 birds were counted in winter 1997/1998, and 2,000 in February 1999 (Park Jin-young *in litt.* 1999). Two nesting colonies have recently been discovered in South Korea, with a total of c.130 breeding pairs (Moores 1999, Park Jin-young *in litt.* 1999; but see Threats).

**Mainland China** The current known breeding population along the Chinese coast is c.3,250–3,750 breeding birds, based on recent estimates at the nesting colonies (SC). At Shuangtai Hekou National Nature Reserve in Liaoning, c.2,000 birds (mean: 2,090, range: 1,542–2,369) were found breeding annually in 1996–1999 (M. Takeishi verbally 1999; see Kitakyushu City 1996, Li Yuxiang *et al.* 1998). In summer 1992, c.200 birds were found at the Yellow River delta in Shandong and c.40 birds at the Luan He estuary in Hebei (Liang Yu and Wong 1993). In Jiangsu, c.1,480 adults were recorded along the coast in summer 1992 (Wong 1994), an estimated c.1,000 breeding birds were present in Yancheng Nature Reserve (Wang Hui 1993), and in Dongtai city (much of which is outside the Yancheng reserve) there were counts of 1,193 adults, 38 second-years and 545 juveniles in June–August 1993, and 1,024 adults, 184 second-years, 1,118 juveniles in July–August 1994 (Wang Hui and Sai Daojian 1996). Based on recent counts, it is estimated that c.3,700–4,700 birds currently winter along the coast of mainland China (excluding the c.100 birds at Inner Deep Bay in Hong Kong) (SC). In the late 1990s, c.1,270 birds were counted in Jiangsu, c.3,000 birds in Zhejiang, c.400 in Fujian and c.60 in Guangdong (not including Hong Kong) and Guangxi (Hou Yunqiu and Qian Fawen 1998). However, some allowance should be made for the possibility of double counting (i.e. 3,700 may be closer to the real wintering population), as some adjacent sites were counted on different dates (SC). At Yancheng in Jiangsu, the mid-winter (December–January) counts were 1,207 birds in 1989/1990, 782 in 1990/1991, 751 in 1991/1992, 498 in 1992/1993, 654 in 1993/1994, 314 in 1994/1995 and 803 in 1995/1996 (Wang Hui and Sai Daojian 1996).

**Hong Kong** Since the 1990s, there has been an increase in the number of wintering and passage birds; c.80–100 birds are present in midwinter, and the highest numbers are usually found in February and March (the maximum count is 172 birds), indicating that some birds move through Hong Kong on passage (HKBWS database).

**Taiwan** The wintering population on Taiwan is currently estimated at c.500 birds (although it may be higher: see Distribution), and their numbers appear to be stable (Fang Woei-hong *in litt.* 1998).

**ECOLOGY Habitat** Saunders's Gull appears to be almost exclusively coastal in distribution, with very few inland records (see Distribution), although there have been reports of nesting at inland wetlands (see Remarks 2). The nesting colony at Yancheng in Jiangsu was in the pioneer level of a saltmarsh, in a belt c.400–1,000 m from the high-tide mark, where the rapid rate of accretion (c.300 m per year) had resulted in a band of consolidated but largely bare mud at the seaward side of the saltmarsh with scattered plants of woody *Suaeda* and *Aeluropus littoralis* grass, and a vegetation cover (in one part of the marsh) of c.45% (Shi *et al.* 1988). The other known breeding colonies are also on coastal saltmarshes, and at Yancheng the main nesting habitats are amongst *Suaeda salsa* vegetation, with a small proportion of the gulls nesting amongst *Spartina anglica* (Du Jinjin 1994). On the Gulf of Bohai, the nesting areas were on muddy (not sandy or rocky) shores, usually just above the intertidal zone, although one site was so close to the tideline that it could have been covered by the highest tides (Liang Yu and Wong 1993). The vegetation at the nesting sites included *Suaeda*

*heteroptera* (present at all sites, and one site was almost entirely covered with this species), *Aeluropus littoralis*, *Limonium bicolor*, *Carex* and *Phragmites* (Liang Yu and Wong 1993).

In winter, the main habitats are intertidal mudflats and sandflats in estuaries, and drained aquacultural ponds not far from the tidal flats (Takeshita 1996, Qian Fawen *et al.* 1998, Su Hualong *et al.* 1998, Yoo and Lee 1998). At Yancheng, birds often feed at fishponds in winter because of the scarcity of crabs and worms on the tidal flats at that time of year (Wang Hui 1993). However, birds wintering in Fujian were found mainly on tidal flats (95.5% of their time), and they tended to visit fishponds mainly during high tides, and were very rarely seen on sandy beaches (Qian Fawen *et al.* 1999). A winter bird seen inland at Poyang lake in Jiangxi was in an area of dead, waterlogged vegetation at the lake edge, but was not observed feeding (Melville 1987). In the northern part of its wintering range in South Korea (and Japan: SC), birds regularly move between the different wintering grounds according to the weather and food supply (Park Jin-young *in litt.* 1999).

**Food** This species primarily feeds on exposed intertidal mudflats (Takeshita *et al.* 1993, Wang Hui and Sai Daojian 1996, Weng Yung-hsuan 1997, Su Hualong *et al.* 1998). In the Yellow River delta, birds especially favour the mouth of the river (Wang Hui and Sai Daojian 1996). They also use drained fishponds, where they mainly feed when the other gulls and herons have finished feeding, and seldom mix with these other species (Su Hualong *et al.* 1998). At the breeding grounds in Jiangsu, they were frequently seen flying over the Dafeng Milu Reserve to an area c.7 km inland, where they fed on unidentified items turned up by a buffalo-drawn plough in wet paddies (Shi *et al.* 1988). The species has a distinctive, specialised feeding behaviour, flying with rather stiff, tern-like wing-beats over a mudflat at a height of about 10 m (sometimes lower, occasionally up to 30 m), and on sighting prey on the mud surface diving vertically and, on landing, immediately pecking at the prey item; this behaviour appears to be adapted to hunting crabs and mudskippers, which react very quickly to movement by entering burrows in the mud (Melville 1987). The species has an apparent aversion to water, and moves up the tidal flats at the tide rises; in Hong Kong it has never been seen swimming (although it must sometimes do so), which may be because it has deeply incised webs on its feet and is unable to swim particularly efficiently (Melville 1987). The feeding behaviour in Jiangsu during summer was similar to that of wintering birds in Hong Kong, when they were apparently mainly feeding on crabs; however, in winter the crabs on the Jiangsu coast hibernate, and birds were noted to feed (on unknown prey) mostly by paddling (Shi *et al.* 1988). Wintering birds in Jiangsu have also been reported to feed mostly on exposed mudflats at low tide, usually by walking or flying short distances and dashing at their prey (Su Hualong *et al.* 1998). Wintering birds in Hong Kong have been observed feeding on fish *Boleophthalmus boddarti*, crabs *Metaplex longipes* and polychaete worms (Melville 1987). Birds regularly kleptoparasitise conspecifics, Black-headed Gulls, and small to medium-sized waders, and they will also take the legs of crabs that have been discarded by foraging Eurasian Curlews *Numenius arquata* (HKBS *in litt.* 1998). In Taiwan, where birds feed mainly on crabs, they have been observed to steal them from Eurasian Curlews (Weng Yung-hsuan 1997). During a study in Japan, all food items observed to be taken by Saunders's Gulls were crabs, mainly *Macrophthalmus japonicus*, with small crabs eaten whole and large crabs dismembered before being consumed; adult birds had a 92% success rate in catching crabs and immatures a 78% success rate (Takeshita *et al.* 1993).

**Breeding** All known nesting colonies of this species in China and South Korea have been found on coastal saltmarshes (Wong 1994, Moores 1998). In Jiangsu, birds pair in early April and nest in early May (Wang Hui 1993). At Shuangtai Hekou in Liaoning, the breeding season starts in early May (Li Yuxiang *et al.* 1998). Pairs build a simple nest on the ground, which usually takes only one day to construct, and the closest nests have been 13.5 m apart; they have been found to nest near Common Tern *Sterna hirundo* colonies, and will attack intruders (Du Jinjin 1994). The nests found in South Korea were all simple circular depressions on the

ground, at the base of *Suaeda* bushes and within 20–50 m of each other (Moore 1998). Nests have been found to be constructed of dry *Suaeda heteroptera* stems, a mixture of the dry stems of *S. heteroptera*, *Aeluropus littoralis* and *Artemisia capillaris*, and of *Carex* with some stems of *S. heteroptera* (Liang Yu and Wong 1993). Clutches are laid from early May, and usually contain three eggs, and the incubation period is 21–23 days (Du Jinjin 1994, Li Yuxiang *et al.* 1998). However, clutches of one and two eggs have also been found in nesting colonies in the Yellow River delta and in Hebei and Liaoning: at the Xintiao estuary, two nests contained clutches of one and two eggs on 9 June 1992; at the Guangli He and Zimai He rivers, seven nests were found on 13 June 1992, with five clutches of three, and single clutches of one and two eggs; at the Luan He estuary, four nests were found in June 1992, one with six eggs (including one broken egg; presumably the result of two females laying in the same nest), one with one egg and two chicks, and the other two with clutches of one and two eggs; at the Daling He river, eight empty nests were found on 28 June 1992, presumably indicating that all the chicks had fledged as two nests had chick droppings nearby (Liang Yu and Wong 1993). The birds leave the nesting area from mid-August (Du Jinjin 1994).

**Migration** The migratory movements of this species are not well understood. Birds breeding at Shuangtai Hekou National Nature Reserve in Liaoning arrive there in mid-March and depart in mid-October (Li Yuxiang *et al.* 1998). At Yancheng in Jiangsu Saunders's Gull is both a breeding and winter visitor: the wintering birds are suspected to originate from further north (Wang Hui and Sai Daojian 1996), and mostly arrive after mid-October (Wang Hui 1993). Some of the breeding birds at Yancheng (are presumed to) also winter there (Wang Hui 1993), but most of the breeding birds arrive from mid-April (with the peak of migration in late April) and depart from mid- to late September (Du Jinjin 1994). In Japan, wintering birds arrive at the Sone tidal flat in mid-October, numbers peaking in mid-December, and departure commences in late February, with a rapid decrease in late March; adult birds arrive and depart about two weeks earlier than immature birds (Takeshita *et al.* 1993). A colour-banding study has shown that breeding birds (trapped and banded in June 1996) from Shuangtai Hekou National Nature Reserve in Liaoning wintered in Japan (Nagasaki, Fukuoka, Kumamoto, Tokushima and Oita prefectures, in winter 1996/1997) (Kitakyushu City Government and Yamashina Institute for Ornithology 1997), and one was seen at Asan bay in South Korea in March 1997 (Li Yuxiang *et al.* 1998). A bird that was colour-banded at Sone tidal flat in Japan in January/February 1997 was found wintering at Dafeng in Jiangsu in January 1998 (Hou Yunqiu and Qian Fawen 1998), showing that birds may winter in different localities in different years.

**THREATS** *Habitat loss* Estuaries, which are the primary wintering (and also breeding) habitat of Saunders's Gull, are under threat throughout its range owing to reclamation, pollution and other pressures (Melville 1987). *Japan* Its former wintering grounds at Isahaya have been destroyed by reclamation, and Sone tidal flat is threatened by the construction of Kitakyushu Airport and other developments (Takeshita 1996). Saga Airport has been constructed close to Daiju-garami, and other construction work was under way near the tidal flat in March 2000 (SC). The recent sudden increase in numbers of wintering Saunders's Gulls at Sone tidal flat was possibly linked to an increase in the number of crabs available as the sediment has become muddier, but it is more likely that it was caused by the deterioration of other wintering grounds (Takeshita *et al.* 1993). *Korea* During the construction of Incheon International Airport in the mid-1990s, the wetlands on Sammok and Yongjong islands were reclaimed; both islands had supported small numbers of Saunders's Gulls, but they disappeared on Sammok in 1995, where the tidal flat was completely reclaimed and, following an increase in 1994–1996, their numbers at Yongjong started to decline in 1997 (Park *et al.* 1997), and as the breeding ground was actually created during reclamation work, it is confidently predicted that with the impending completion of the airport the colony will die out (Park Jin-young *in litt.* 1999). At the Nakdong

river estuary, the number of wintering birds declined in the late 1990s when the main tidal flat that they used for feeding was reclaimed, and the continued expansion of Pusan city threatens the remaining habitats (Kim Jin-han *in litt.* 1998). Reclamation is planned at the important wintering grounds on the Kum river estuary, Mangyong river (Saemankeum area), Namyang bay (site predicted to be lost by 2002) and Asan bay (Kim Jin-han and Park Jin-young verbally 1998). **Mainland China** Reclamation and economic development of tidal flats is also the main threat to this species in mainland China (Wang Hui 1993). Most of the natural coastal saltmarshes of China have been already been reclaimed, and the remaining natural coastal habitats are being replaced by aquacultures, especially shrimp-ponds (Wong 1994). At Shuangtai Hekou in Liaoning, construction of a reservoir to the east of Shuantai river in 1996 displaced the former breeding colonies, and led to the establishment of new colonies to the west of the river; most of these new colonies are under threat from the construction of fish or shrimp ponds, and/or the conversion of saltmarsh into reed farms for paper manufacture (M. Takeishi verbally 1999). Human activity is high around the Gulf of Bohai, and there has already been encroachment into many areas of mudflats for farmland, saltworks or shrimp-ponds (Liang Yu and Wong 1993). The southern side of the Yellow River estuary in Shandong consists of a very large wetland area with numerous channels and little human activity, but much of the northern side of the estuary has been reclaimed for shrimp-ponds, saltpans and oilfield activities (Wang Hui and Sai Daojian 1996; also MacKinnon *et al.* 1996). At Yancheng in Jiangsu, the breeding areas of this highly specialised gull are under serious threat from land reclamation for the construction of shrimp-ponds, saltpans and other forms of development (industrial and recreational development, such as power stations and port facilities: MacKinnon *et al.* 1996), and in the first five years of the 1990s many former breeding sites were lost due to reclamation and construction (Wang Hui and Sai Daojian 1996). The wintering site in the Ouhai district of Wenzhou bay in Zhejiang is currently threatened by aquacultural developments (Ding Ping *in litt.* 1998). **Taiwan** The coastal wetlands favoured by this species are under pressure for large-scale development on the western coast of Taiwan (Fang Woei-hong *in litt.* 1998). For example, the Bird Protection Area on the Tatu estuary was under threat even before planning for the reserve was completed, from a landfill rubbish dump, a new road along the shoreline (with bridge supports being built in the reserve) and the erection of transmission line poles on the tidal flats by the Taiwan Power Company (*Oriental Bird Club Bull.* 23 [1996]: 16). **Vietnam** Pressures on coastal habitats in northern Vietnam are outlined in Threats under Black-faced Spoonbill *Platalea minor*.

**Egg collection Mainland China** Fishermen collect seabird eggs for food, which is likely to have reduced the breeding success of Saunders's Gull, especially as late replacement clutches are vulnerable to storms in Liaoning and typhoons in Jiangsu; although this species is normally not hunted for meat, it is tame during the breeding season and could be an easy target for hunters (Wong 1994). Before the 1990s, several hundred eggs of this species were collected by fishermen annually, and egg collecting sometimes still occurs (Du Jinjin 1994). Illegal egg collection is currently a major problem at Yancheng, including the collection of eggs for zoos which want to breed this species in captivity, and in summer 1994 at least 267 Saunders's Gull eggs were collected (Wang Hui and Sai Daojian 1996; also Wang Hui 1993).

**Human disturbance Mainland China** Some of the breeding colonies in China are close to fishing villages, where the movement of boats and the activities of fishermen and farmers can disturb breeding birds, and when the parent birds are disturbed the eggs and chicks are vulnerable to predation by foxes, crows, magpies or other predators (Wong 1994). The collection of lugworms on the tidal flats at Yancheng causes considerable disturbance at the nesting sites (Du Jinjin 1994), and the collection of invertebrates for shrimp feed causes disturbances to feeding Saunders's Gulls (Wong 1994).

**Pollution Mainland China** Some Saunders's Gull nests have been found to contain clutches of 5–6 eggs, which is possibly an indication of female–female pairing; this could be the results of an unequal sex ratio, caused by male birds being feminised by pesticides during their embryonic

development (Wong 1994), or perhaps simply because the females from two pairs laid their eggs in the same nest. There are active oilfields near to the breeding colonies at Shuangtai Hekou and the Yellow River delta, which could cause pollution and disturbance (Wong 1994). *Hong Kong* The threat that pollution poses to the mudflats in Inner Deep Bay (including Mai Po) is outlined in Threats under Spoon-billed Sandpiper *Eurynorhynchus pygmeus*. *Taiwan* The mudflats used by this species on Taiwan are affected by pollution, linked to the heavy development pressure on the western coast of the island (Fang Woei-horng *in litt.* 1998).

**Natural events** The soil at the nesting grounds at Yancheng in mainland China drains poorly, so heavy rain can flood the nesting grounds and destroy nests, eggs and chicks, and gales and high tides can sometimes also destroy nests (Du Jinjin 1994). Yancheng is also prone to typhoons during the breeding season, which have the potential to wipe out entire colonies for the breeding season (Wang Hui and Sai Daojian 1996), and c.120 nests were destroyed there by a typhoon in mid-May 1990 (Wang Hui 1993).

**MEASURES TAKEN Legislation** Saunders's Gull is on the Red List of Japan, which means that its conservation importance is recognised and it can be used as a reference species in environmental impact assessment for development projects (Environment Agency of Japan *in litt.* 1999). In South Korea it is designated as a protected species (Lee Woo-shin *in litt.* 1998). It is listed on Appendix I of the CMS (for which see Boere 1991).

**Protected areas Japan** The regular wintering site at Manko on Okinawa and the occasional wintering grounds at Yatsu in Chiba are national wildlife protection areas, and Manko was designated as a Ramsar site in 1999; the designation of the important wintering sites at Hakata bay and Ariake-kai in Fukuoka and Saga as national wildlife protection areas is in progress (as of 1999) (Environment Agency of Japan *in litt.* 1999). *Korea* For measures taken for the protection of wetlands in South Korea, see the equivalent section under Baikal Teal *Anas formosa* and Spoon-billed Sandpiper. *Mainland China* Saunders's Gull has colonies in three established nature reserves in mainland China: Shuangtai Hekou National Nature Reserve in Liaoning (800 km<sup>2</sup>, extensive wetland, reedbeds, agricultural fields and sandflats), Yellow River Delta Nature Reserve in Shandong (1,530 km<sup>2</sup>, disturbed deltaic saltmarsh and intertidal mudflat) and Yancheng Nature Reserve in Jiangsu (467 km<sup>2</sup>, a coastal strip of high-quality, extensive saltmarsh and intertidal mudflats, with large saltwork areas and cultivated fields and reedbeds) (see Distribution; sizes and condition from MacKinnon *et al.* 1996). *Hong Kong* Inner Deep Bay has been designated as a restricted area since the mid-1970s and managed as a nature reserve since the mid-1980s (see equivalent section under Spoon-billed Sandpiper). *Vietnam* Xuan Thuy and Tien Hai have been established as nature reserves (Nguyen Cu 1998). Xuan Thuy was established as the first Ramsar site in Vietnam in 1989, and in 1995 the area was designated a nature reserve (120 km<sup>2</sup>) containing areas of mangrove, aquacultural ponds, intertidal mudflats and sandflats, sandy islands with dunes, saltmarshes and beaches (Pedersen *et al.* 1998).

**MEASURES PROPOSED Legislation** Saunders's Gull should be listed as a national protected species in China (Wong 1994).

**Protected areas and habitat management** Many of the coastal wetlands inhabited by this species in eastern Asia are under pressure from economic development, and improved protection and management of these wetlands is required, to balance the pressures for development with the need to protect the biodiversity of the region. Some specific recommendations are given below by country. *Japan* The important wintering grounds at Sone tidal flat in Fukuoka and Daijyu-garami in Saga should be officially protected. *Korea* Important wetland sites for this species (and other threatened waterbirds) along the western and southern coasts of South Korea should be protected and managed for conservation and education purposes (see the equivalent section under Baikal Teal and Spoon-billed Sandpiper). *Mainland China* A review and, if necessary, revision of all future coastal saltmarsh development projects is required in

order to reconcile the needs of nature conservation and economic development (Wong 1994). More nature reserves should be established to protect the breeding sites, and the management of existing nature reserves should be improved (Wong 1994). The water quality in rivers and estuaries should be monitored to ensure that it meets safety standards (Wong 1994). MacKinnon *et al.* (1996) made the following recommendations for the protected areas where this species has been recorded: at Shuangtai Hekou National Nature Reserve in Liaoning, extend the reserve boundaries to the west, enforce a hunting and egg collection ban, and control reclamation, reed-cutting, agriculture, fishing, oil industry and pollution; at Yellow River Delta Nature Reserve in Shandong, upgrade to national reserve status, strengthen protection especially of coastal saltmarsh and intertidal mudflats, increase funding and technical expertise and conduct surveys of the avifauna; and at Yancheng Nature Reserve in Jiangsu, strengthen protection, especially with regard to the burgeoning coastal development and also hunting, and urgently strengthen management of the core area to prevent unsustainable economic exploitation. Wang Hui and Sai Daojian (1996) proposed that staff training and increased funding is required in order to improve the management of the Yellow River Delta Nature Reserve. The four breeding sites discovered in Liaoning, Hebei and Shandong in 1993 (see Distribution) were not inside nature reserves, and they need to be managed and protected during the breeding season (Liang Yu and Wong 1993), possibly involving the establishment of new protected areas. *Taiwan* Management plans for coastal land use and conservation on the western coast of Taiwan need to be drafted and implement. Conservation NGOs on Taiwan are lobbying for the establishment of more nature reserves to protect this species and other waterbirds, and there are plans to establish the Tatu estuary as a new protected area (CWBF *in litt.* 1998). The important wintering sites for this species in the coastal wetlands at Hanpao and Aoku should also be designated as new nature reserves.

**Research** The breeding population in the Shuangtai Hekou and Yancheng reserves should be monitored, and the zoning of these reserves redesigned if necessary. Scientific research is also required to improve understanding of the distribution of Saunders's Gull in the Yellow River delta, China (Wang Hui and Sai Daojian 1996), and in many other parts of its range. There have been unconfirmed reports that this species occurs inland and breeds in Inner Mongolia (see Remarks 2), which need to be investigated by field surveys.

**Conservation education** Education campaigns should be conducted for the local people near to the breeding grounds, to help prevent egg collecting, hunting and human disturbance (Wong 1994). For example, at the Yellow River delta education work is required in the local schools and communities (Wang Hui and Sai Daojian 1996).

**REMARKS** (1) Saunders's Gull can be confused with several other gull species, so some of the sight records in the Distribution section should be regarded with some caution, although good information is now available on how to separate it from other similar species (see, e.g., Viney *et al.* 1994). (2) David and Oustalet (1877) described this species as "perhaps the commonest of all the freshwater gulls in inland China", and reported that Père David obtained specimens in Mongolia, presumably in error, as there have been no confirmed records since from Mongolia, and indeed few inland records anywhere. However, there are recent reports from Inner Mongolia and Heilongjiang in northern China, including of nesting (Shi *et al.* 1988, Yang Guisheng and Xing Lianlian 1998; also Scott 1989), which need to be investigated before the possibility that this species breeds inland can be dismissed. (3) Breeding colonies were discovered in Dafeng city and Dongtai city in July 1987 (including inside Dafeng Nature Reserve in the extreme south of Dafeng city), when more than 350 birds and 58 nests were counted (Shi *et al.* 1988; see Thouless 1989), while a total of 246 nests was counted in 1992 (Wong 1994). Surveys of breeding localities in these two counties were conducted in the summers of 1993 and 1994 (Wang Hui and Sai Daojian 1996), and these form the basis of the records for the sites from Simaoyou He to Lianxinggang.